suspected breaches of security, suspected sabotage or subversive activity, or any other breach giving rise to doubts as to the trustworthiness of an employee, any changes in the ownership, supervisory or managerial staff of the facility or any changes that affect the security arrangements and security status of the facility, and any other information which may be required by the NSA/DSA, such as reports on holdings of NATO classified information or materiel;

k. Obtain the approval of the programme/project office and NSA/DSA before beginning negotiations with a view to sub-contracting any part of the work which would involve the Sub-contractor having possible access to NATO classified information, and to place the Sub-contractor under appropriate security obligations which in no case shall be less stringent than those provided for the contract;

l. Undertake not to utilise, other than for the specific purpose of the bid, contract or sub-contract, without the written permission of the programme/project office, or the prime Contractor, any NATO classified information supplied to him, and return to the programme/project office all classified information referred to above, as well as that developed in connection with the contract or sub-contract unless such information has been destroyed, or its retention has been duly authorised by the contracting office or the sub-contracting officer. Such NATO classified information shall be returned at such time as the contracting office may direct; and

m. Comply with any procedure established for the dissemination of NATO classified information in connection with the contract or sub-contract.

4. Any person taking part in the performance of work the classified parts of which are to be safeguarded, must possess the appropriate NATO security clearance issued by the relevant NSA/DSA. The level of clearance shall be at least equal to the security category of the materiel, the related information or specifications where NC or above is involved.

5. Unless specifically authorised to do so by the programme/project office, the Contractor shall not pass on any NATO classified information to any third party to whom a request to supply goods or services has been submitted.

6. No change in level of classification or de-classification of documentation or materiel may be carried out unless written authority in this respect is obtained from the programme/project office.

7. No CIS shall be used for processing classified information without prior accreditation by the responsible authorities. At the level of NR, such accreditation can be under delegated authority of the responsible accreditation authority or the contracting authority in accordance with Annex GG.

8. Failure to implement these provisions and the security regulations established by the NSA of the nation where the contractual work is being performed may result in termination of this contract without reimbursement to the Contractor or claim against NATO, the programme/project office, or the national government of the said nation.

9. The programme/project office security classification check list indicates the degree of classification of the data and materiel (equipment, information, technical manuals, and specifications) which may be handled in the performance of work under this contract and

which must be safeguarded in accordance with the provisions of this letter.

10. The contractor shall destroy or return any classified information provided or generated under the contract unless the contracting authority has given written approval to retain such classified information, e.g. for warranty purposes.

11. The Contractor shall be required to acknowledge receipt of an accompanying SAL or Program Security Instruction (PSI) that is made part of the applicable contract and confirm that it understands the security aspects defined. With respect to contracts involving only NR information the Contractor shall also be required to confirm compliance with the provisions of the Contract Security Clause; specifically that any company CIS used to handle or process NR classified information has been appropriately security accredited.

ANNEX II TO
AD 070-001
DATED 22 DEC 21

FACILITY AND PERSONNEL SECURITY CLEARANCE FOR CONTRACTS INVOLVING NATO RESTRICTED INFORMATION NATIONAL REQUIREMENTS

"These national requirements for FSC/PSC and notifications for contract involving NR shall not put additional obligations on other NATO nations or Contractors under their jurisdiction."

MEMBER NATION	FSC		Notification of contract/subcontract involving information classified NR to NSA/DSA		PSC	
	Yes	No	Yes	No	Yes	No
Albania		X	X			X
Belgium		X		X		X
Bulgaria		X		X		X
Canada	X		X		X	
Croatia		X	X			X
Czech Republic		X		X		X
Denmark	X		X		X	
Estonia	X		X			X
France		X		X		X
Germany		X		X		X
Greece		X		X		X
Hungary		X		X		X
Iceland		X		X		X
Italy		X		X		X
Latvia		X		X		X
Lithuania		X		X[53]		X
Luxembourg	X			X	X	
Netherlands	X[54]		X[55]			X
Norway		X	X			X
Poland		X		X		X
Portugal		X		X		X
Romania		X	X			X
Slovakia	X		X			X
Slovenia	X		X			X
Spain		X	X			X
Turkey	X				X	
United Kingdom		X		X		X
United States	X			X		X

[53] NSA/DSA however requests notification by NATO contracting authorities.
[54] For military-related contract only.
[55] NSA/DSA however requests notification by NATO contracting authorities.

ANNEX JJ TO
AD 070-001
DATED 22 DEC 21

PROJECT SECURITY INSTRUCTION – STRUCTURE AND CONTENT

The following is provided as guidance for the structure and content of Project Security Instruction (PSI).

Section	Content
1 Document Control	• The issue number. • The date of issue. • The reference and details of the latest Change Proposal. • Any related Contract Amendment. • Index of amendments. • PSI index of contents.
2 Introduction/Definitions	• The purpose of the PSI. • The authority of the PSI (e.g. APO). • Definitions of frequently used terms in NATO contracts involving classified information.
3 National/NATO (ACO)/Industry Officials	• The contact details (name, address, telephone/fax number, e-mail address) for the national/NATO (ACO) officials involved in the programme/project/construction, who are responsible for the following: - Administration and policy; - Technical security; - CIS Security. Note: This may be included as an Annex to the PSI.
4 Security Instructions	• General aspects relating to the exchange of NCI and the responsibilities of the APO and NSAs/DSAs. • Definition of the security classifications and markings appropriate to the project/programme/construction. • Explanation of terms - classified information, material and documents. • Storage and transfer of NCI. • Disposal / destruction of NCI. • Breaches of security; instructions relating to the loss, compromise or possible compromise of NCI. • Instructions relating to the unauthorised release of NCI.

Section	Content
5 Release of Information	Definitions of terms, for example, public release, marketing release, sales release, project/programme/construction information, participants, authorities, and approval: • A release statement, e.g. “the release of project/programme/construction information (classified or non-classified) to authorities or persons outside of the project/programme /construction (non-participants) without prior approval is strictly prohibited”. • Release of project/programme /construction information: - General information - NATO/National policies, required Facility Security Clearances, contractual requirements, security agreements for marketing activities; - Release of project/programme/construction information to non-participating bodies; - Release in connection with sub-contracting; - Public release - general instructions, management of public releases; - Sales releases - general instructions, management of sales releases; - Marketing releases - general instructions, management of marketing releases. • Formats for request for release of project/programme/construction information to non-participants, for use at symposia, seminars, etc., and for public release.
6 Change Procedures	• Procedures for changes to security instructions, including the PSI. • Procedures for changes to the Security Classification Guide. • The use of interim procedures.
7 International Hand Carriage of NATO Classified Information	• Classification of information for hand carriage. • Conditions when hand carriage of classified information is permitted. • Courier Certificate. • Responsibilities of APOSM and Security Offices in the Government bodies and industry - administrative procedures, packaging. • Responsibilities of the courier. • Instructions in the event of loss of classified information. • Format for “information transfer notification”.

Section	Content
	• Format for “instructions to persons who are authorised to hand-carry NCI”. • Format for “instructions to prevent customs examination”.
8 International Visit Control Procedures	• General instructions for international visits. • Procedures for one-time and recurring visits, including use of the standard ‘Request for Visit’ (RfV) format, and lead times. • Procedures for emergency visits. • Instructions for the use and completion of the standard RfV format; • List of authorities concerned with International Visit Control Procedures. Note: This may be included as an Annex to the PSI.
9 Sub-Contracting	• Definitions of terms, for example, negotiations, Contractor, Sub-contractor, classified contract, and Facility Security Clearance. • Security instructions relating to the negotiation of a NATO classified contract. • Permission to negotiate contracts. • Security classification of contracts.
10 International Transportation	• Security procedures relating to the international transportation of consignment containing NCI. • Transportation Plan to be established if required.
11 Communication and Information Systems (CIS)	Security procedures for the accreditation and use of CIS (or reference to a specific document dealing with project/ programme/construction - related CIS).
12 Security Classification Guide	A document which outlines classifications applicable to the project/programme/construction as allocated and approved by the participants (background and/or foreground information, procedures for downgrading and declassification, caveats).

ANNEX KK TO
AD 070-001
DATED 22 DEC 21

FACILITIES / ORGANISATIONS LIST

From: (Letterhead of Management Office/Agency)

To: (Relevant NSA/DSA or APO)

List of government departments, establishments, contractors and sub-contractors in (**insert country**) employed on NATO programme/project/construction (**insert name**) classified NATO …… (**insert classification**).

Serial Number	**Facilities/ Organisations**	**Address Telephone/Fax/Email of Security Officer**	**Security facilities for holding NATO classified information** **Yes** (level)/**No**
1	Example: British Aerospace Aircraft Group, Warton Division	Warton Aerodrome, Preston, Lancs. UK Tel.: (+44) XXX XXX XXX FAX: (+44) XXX XXX XXX E-mail:	YES (NATO SECRET)
2	……...	……	……..….
3	…….....	……	……..…

The Security Officer:

_____ _____

(Name) (Signature)

ANNEX LL TO
AD 070-001
DATED 22 DEC 21

INTERNATIONAL VISITS PROCESSING TIMES/LEAD TIMES AND NATO UNCLASSIFIED OR NATO RESTRICTE NOTIFICATION REQUIREMENTS

The national requirements for RFV for NU or NR notification shall not put additional obligations on other NATO nations or Contractors under their jurisdiction.

1. The following table depicts the number of working days prior to the date of the one-time visit or the date of the first recurring visit that the request should be in the possession of the receiving host NSA/DSA.

2. Visits involving NR information will be arranged directly between the Security Officer (SO) responsible for the visitor and the SO (e.g. APOSM or ACO component HQSO) of the facility to be visited without formal requirements. The SO of the facility to be visited should be asked if a request for visit is required to be provided to its NSA/DSA and if so, the SO of the facility to be visited should submit a visit request to its NSA/DSA on behalf of the visitor. However, visitors are not required to hold a PSC.

Country	RFV REQUIRED		Number of Working Days	
	UNCLASSIFIED Visits	RESTRICTED Visits	Request	Amendment/Change
Albania	No	Yes	20	10
Belgium	No	No	20	09
Bulgaria	No	Yes	20	No deadline
Canada	Yes 1. May be required for governmental facilities 2. Required for military facilities	Yes 1. May be required for governmental facilities 2. Required for military facilities	20	10
Croatia	No	No	20	7
Czech Republic	No	Yes	20	10
Denmark	No	No	07	05
Estonia	No	Yes	20	05
France	No	No	15	05
Germany	No	No	20	10
Greece	Yes 1. May be required for governmental facilities 2. Required for military facilities	Yes 1. May be required for governmental facilities 2. Required for military facilities	20	10
Hungary	No	No	20	10
Iceland	-	-	-	-

Country	RFV REQUIRED		Number of Working Days	
	UNCLASSIFIED Visits	RESTRICTED Visits	Request	Amendment/Change
Italy	No	Yes	20	07
Latvia	No	No	20	05
Lithuania	No	Yes	20	10
Luxembourg	No	Yes	20	09
Netherlands	No	Yes For military facilities only	10	05
Norway	No	Yes	10	05
Poland	No	No	25	10
Portugal	No	No	21	07
Romania	No	No	25	10
Slovakia	No	No	20	10
Slovenia	No	Yes	21	07
Spain	No	No	20	08
Turkey	Yes For military facilities only	Yes For military facilities only	21	10
United Kingdom	No	No	20	05
United States	No	Yes	21	05

ANNEX MM TO
AD 070-001
DATED 22 DEC 21

SECURITY ACKNOWLEDGEMENT IN CASE OF HAND CARRIAGE

[LETTERHEAD]

SECURITY ACKNOWLEGEMENT DECLARATION

Name and Forename: _____

Name of Company: _____

Position in Company: _____

I have been briefed on and provided with instructions concerning the handling and custody of classified documents/equipment to be carried by me. I have read and understood their contents.

I shall always retain en route the classified documents/equipment and shall not open the package unless required by Customs Authorities.

Upon arrival, I shall hand over the classified documents/equipment intended for the receiving company/organisation, against receipt, to the designated consignee.

(place and date dd/mm/yyyy) (signature of Courier)

Witnessed by: _____
(Security Officer's signature)

ANNEX NN TO
AD 070-001
DATED 22 DEC 21

COURIER CERTIFICATE[56]

[LETTER HEAD]

Courier Certificate or Programme/Project/Construction Title (optional)

COURIER CERTIFICATE No. ……..[57]

For the International Hand Carriage of NATO Classified Documents, Equipment and/or Components

This is to certify that the bearer:
Mr./Ms. _____
(name/title)

Born on: _____ in _____
(dd/mm/yyyy) (country)

A national of _____
(country)

Holder of Passport/Identity Card no.: _____
(number)

Issued by: _____
(issuing authority)

On: _____
(dd/mm/yyyy)

Employed with: _____
(company or organisation)

is authorised to carry on the journey detailed below the following consignment:

(Number and particulars of the consignment in detail, i.e. No. of packages, weight and dimensions of each package and other identification data as on shipping documents)
_____

[56] The "Courier Certificate" is to be used in the instance of a single itinerary. Alternatively, the "Multi-Travels Courier Certificate" can be issued for repeated shipments between the same countries.
[57] May also be used by security guards.

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The attention of Customs, Police, and/or Immigration Officials is drawn to the following:

- The material comprising this assignment is classified in the interests of the security of: (NATO, the country of origin of the shipment and that of the destination shall be indicated. Country(ies) to be transited may also be indicated).

- It is requested that the consignment will not be inspected by other than properly-authorised persons or those having special permission.

- If an inspection is deemed necessary, it is requested that it be carried out in an area out of sight of persons who do not belong to the service and, in the presence of the courier.

- It is requested that the package, if opened for inspection, be marked after re-closing, to show evidence of the opening by sealing and signing it and by annotating the shipping documents (if any) that the consignment has been opened.

- Customs, Police, and/or Immigration Officials of countries to be transited, entered or exited are requested to give assistance, if necessary, to ensure successful and secure delivery of the consignment.

Instructions for the Courier (Appendix 1 to this Annex) are also applicable.

AD 070-001

ITINERARY

From: _____
(originating country)

To: _____
(country of destination)

Through: _____
(list intervening countries)

Authorised stops: _____
(list locations)

Date of beginning of journey: _____
(dd/mm/yyyy)

Signature of Security Officer of the facility	Signature of the Designated Security Authority
(name)	(name)
Facility's stamp	Official stamp or NSA/DSA's seal

NOTE: To be signed on completion of journey:

I declare in good faith that, during the journey covered by this ″Courier Certificate″, I am not aware of any occurrence or action, by myself or by others, that could have resulted in the compromise of the consignment.

Courier's signature: _____

Witnessed by: _____
(signature of Security Officer of the facility)

Date of return of the ″Courier Certificate″: _____/_____/_____

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[LETTERHEAD]

MULTI-TRAVELS COURIER CERTIFICATE

[LETTERHEAD] Programme/Project/Construction Title (optional)

Multi-Travels Courier Certificate N° …….
For International Hand Carriage Of Classified Documents,
Equipments And/Or Components

This is to certify that the bearer:

Mr./Ms. _____
(name/title)

Born on: _____ in _____
(dd/mm/yyyy) (country)

A national of _____
(country)

Holder of Passport/Identity Card no.: _____
(number)

Issued by: _____
(issuing authority)

On: _____
(dd/mm/yyyy)

Employed with: _____
(company or organisation)

is authorised to carry the classified documents, equipments and/or components between the following countries:

_____

The bearer above is authorised to use the present certificate as many times as necessary, for classified shipments between the countries here above until year): __/___/___
(dd/mm/yyyy)

Each sending is attached with the shipment description.

AD 070-001

The attention of Customs, Police and/or Immigration Officials is drawn to the following:

- The material comprising each consignment is classified in the interest of the security of: NATO (the country of origin of the shipment and that of the destination shall be indicated. The country(ies) to be transited also may be indicated).

- It is requested that the consignment will not be inspected by other than properly authorised persons or those having special permission.

- If an inspection is deemed necessary, it is requested that it be carried out in an area out of sight of persons who do not belong to the service and, in the presence of the courier.

- It is requested that the package, if opened for inspection, be marked after re-closing, to show evidence of the opening by sealing and signing it and by annotating the shipping documents (if any) that the consignment has been opened.

- Customs, Police and/or Immigration Officials of countries to be transited, entered or exited are requested to give assistance, if necessary, to ensure successful and secure delivery of the consignment.

Instructions for the Courier (Appendix 1 of this Annex) are also applicable.

AD 070-001

Details for Multi-Travels Courier Certificate No:_____

Description of Consignment No: _____

Transport from _____ to _____
(dd/mm/yyyy) (dd/mm/yyyy)

Bearer (name): _____

Itinerary: from _____ to _____
(originating country) (destination country)

Through _____
(crossed countries)

Authorised stops _____
(list of locations)

References of receipt or inventory list: Description of the consignment (number of package, dimensions and, if needed, weight of each package):

Officials you may contact to request assistance _____

Signature of the Consignor's Security Officer	Signature of the NSA/DSA
_____	_____
Facility Stamp	Official Stamp or NSA/DSA's Seal
_____	_____

Note to be signed on completion of each journey:

I declare in good faith that, during the journey covered by this "shipment consignment", I am not aware of any occurrence or action, by myself or by others, that could have resulted in the compromise of the consignment.

Courier's Signature: _____

Witnessed by: _____
(name and signature of consignor's Security Officer):

Date of return of the "shipment consignment" _____
(dd/mm/yyyy)

APPENDIX 1 TO
ANNEX NN TO
AD 070-001
DATED 22 DEC 21

Annex to the Courier Certificate No. _____ for the International Hand Carriage of Classified Material

INSTRUCTIONS FOR THE COURIER[58]

1. You have been appointed to carry/escort a classified consignment. Your ″COURIER CERTIFICATE″/“MULTI-TRAVEL COURIER CERTIFICATE” has been provided. Before starting the journey, you will be briefed on the security regulations governing the hand carriage of the classified consignments and on your security obligations during the specific journey (behaviour, itinerary, schedule, etc.). You will also be requested to sign a declaration that you have read and understood and will comply with prescribed security regulations.

2. The following general points are brought to your attention:

a. You will be held liable and responsible for the consignment described in the Certificate.

b. Throughout the journey, the classified consignment shall stay under your personal control.

c. The consignment shall not be opened en route except in the circumstances described in sub-paragraph (j) below.

d. The classified consignment is not to be discussed or disclosed in any public place.

e. The classified consignment is not, under any circumstances, to be left unattended. During overnight stops the military facilities or industrial companies having appropriate Facility Security Clearance may be authorised. You are to be instructed on this matter by your facility HQ Security Officer (APOSM or head of ACO Courier Section).

f. While hand carrying a classified consignment, you are forbidden to deviate from the travel schedule provided.

g. In cases of emergency, you shall take such measures as you consider necessary to protect the consignment, but on no account shall you allow the consignment out of your direct personal control; to this end, your instructions include details on how to contact the security authorities of the countries you will transit as listed in sub-paragraph (l) below. If you have not received these details, ask for them from your facility Security Officer (APOSM or head of ACO Courier Section).

h. You and the facility Security Officer are responsible for ensuring that your personal expatriation and travel documentation (passport, currency and medical

[58] May also be used by security guards.

documents, etc.) are complete, valid and current.

i. If unforeseen circumstances make it necessary to transfer the consignment to other than the designated representatives of the company or government you are to visit, you will give it only to authorised employees of one of the points of contact listed in sub-paragraph (l).

j. There is no assurance of immunity from search by the Customs, Police, and/or Immigration Officials of the various countries whose borders you will be crossing; therefore, should such officials enquire into the contents of the consignment, show them your Certificate and this note and insist on showing them to the actual senior Customs, Police, and/or Immigration Official; this action should normally suffice to pass the consignment through unopened. However, if the senior Customs, Police, and/or Immigration Official demand to see the actual contents of the consignments you may open it in their presence, but this should be done in an area out of sight of the general public:

(1) You should take precautions to show officials only as much of the contents as will satisfy them that the consignment does not contain any other item and ask the official to repack or assist in repacking it immediately upon completion of the examination.

(2) You should request the senior Customs, Police, and/or Immigration Official to provide evidence of the opening and inspection of the packages by signing and sealing them when closed and confirming in the shipping documents (if any) that the consignment has been opened.

(3) If you have been required to open the consignment under such circumstances as the foregoing, you must notify the receiving facility Security Officer and the dispatching facility Security Officer (APOSM), who should be requested to inform the NSA/DSA of their respective government.

k. Upon your return, you shall produce a bona fide receipt for the consignment signed by the Security Officer of the facility or agency receiving the consignment or by an NSA/DSA of the receiving government.

l. Along the route you may contact the following officials to request assistance :

_____

_____

_____

_____

_____

_____

_____

ANNEX OO TO
AD 070-001
DATED 22 DEC 21

INTERNATIONAL TRANSPORATION PLAN

[LETTERHEAD]

Transportation Plan
for the Movement of Classified Consignments
(insert name of programme/project/construction)

1. Introduction

This International Transportation Plan (ITP) lists the procedures for the movement of classified _____
(insert Programme/Project/Construction name)

consignments between _____
(insert Programme Participants)

2. Description Of Classified Consignment

Provide a general description of the consignment to be moved. If necessary, a detailed, descriptive listing of items to be moved under this plan, including military nomenclature, may be appended to this plan as an annex. Include in this section a brief description as to where and under what circumstances transfer of custody will occur.

3. Identification Of Authorised Participating Government Representatives

This Section should identify by name, title and organisation, the authorised representatives of each Programme/Project participant who will receipt for and assume security responsibility for the classified consignment. Mailing addresses, telephone numbers, fax numbers and network addresses should be listed for each country's representatives.

4. Delivery Points

a. Identify the delivery points for each participant (e.g. ports, railheads, airports, etc.) and how transfer is to be effected;

b. describe the security arrangements that are required while the consignment is located at the delivery points; and

c. specify any additional security arrangements, which may be required due to the unique nature of the movement or of a delivery point (e.g. an airport freight terminal or port receiving station).

5. Identification Of Carriers

Identify the commercial carriers, freight forwarders and transportation agents, where appropriate, that might be involved to include the level of FSC/PSC and storage capability.

6. Storage/Processing Facilities And Transfer Points

a. List, by participants, the storage or processing facilities and transfer points

that will be used; and

b. Describe specific security arrangements necessary to ensure the protection of the classified consignment while it is located at the storage / processing facility or transfer point.

7. **Routes**

Specify in this section the routes for movements of the classified consignments under the plan. This should include each segment of the route from the initial point of movement to the ultimate destination including all border crossing. Routes should be detailed for each participant in the logical sequence of the shipment from point to point. If overnight stops are required, security arrangements for each stopping point should be specified. Contingency stop-over locations should also be identified as necessary.

8. **Port Security And Customs Officials**

In this section, identify arrangements for dealing with customs and port security officials of each participant. The facility must verify that the courier has been provided with the necessary documentation and is aware of the rules necessary to comply with customs and security requirements. Prior co-ordination with customs and port security agencies may be required so that the Project/Programme/Construction movements will be recognised.

Procedures for handling custom searches and points of contact for verification of movements at the initial despatch points should also be included here.

9. **Couriers**

When couriers are to be used, relevant provisions specified in Annexes MM and NN apply.

10. **Recipient Responsibilities**

Describe the responsibilities of each recipient to inventory the movement and to examine all documentation upon receipt of the movement and:

a. notify the dispatcher of any deviation in routes or methods prescribed by this plan;

b. notify the dispatcher of any discrepancies in the documentation or shortages in the shipment; and

c. clearly state the requirement for recipients to promptly advise the NSA/DSA of the dispatcher of any known or suspected compromise of classified consignment or any other exigencies which may place the movement in jeopardy.

11. **Details Of Classified Movements**

This section should include the following items:

a. identification of dispatch assembly points;

b. packaging requirements that conform to the NATO Security Policy minimum standards as well as requirements for dispatch documents seals, receipts, and

storage and security containers should be explained. Any unique requirement of the programme/project/construction participants should also be stated; documentation required for the dispatch points;

c. courier authorisation documentation and travel arrangements;

d. procedures for locking, sealing, verifying and loading consignments. Describe procedures at the loading points, to include tally records, surveillance responsibilities and witnessing of the counting and loading arrangements;

e. procedures for accessibility by courier to the shipment en route;

f. procedures for unloading at destination, to include identification of recipients and procedures for change of custody, and receipt arrangements;

g. emergency communication procedures. List appropriate telephone numbers and points of contact for notification in the event of emergency; and

h. procedures for identifying each consignment and for providing details of each consignment (see Appendix); the notification shall be transmitted no less than six working days prior to the movement of the classified consignment.

12. **Return Of Classified Material**

This section should identify requirements for return of classified material to the manufacturer or sending entity (e.g. warranty, repair, test and evaluation, etc.).

a. Samples of these forms should be included, as appropriate, as enclosures to the plan as necessary.

(1) packing list;

(2) classified material receipts;

(3) bills of lading;

(4) export declaration;

(5) waybills;

(6) other nationally-required forms.

b. NSAs/DSAs/APOs reserve their right to add additional measures in the course of establishing the Transportation Plan if required.

APPENDIX 1 TO
ANNEX OO TO
AD 070-001
DATED 22 DEC 21

NOTICE OF CLASSIFIED CONSIGNMENT

Notice of _____
(insert programme/project/construction name)

Consignment Approved Transportation Plan Reference No._____
(insert reference)

Reply Before: _____/_____/_____
(insert date (dd/mm/yyyy)

1. **Consignor/Consignee:**

_____

_____

(include the name, telephone number and address of the person(s) responsible for the consignment at both locations)

2. **Government Designated Personnel:** _____
(include name, telephone number and address of releasing and receiving authorised representatives, as applicable)

3. **Description of consignment:**

   a. Contract or tender number: _____

   b. Export licence or other applicable export authorisation citation: _____

   c. Consignment description: _____
   (describe items to be shipped and their classification)

   d. Package description: _____

      - type of package _____
      (wood, cardboard, metal, etc.)

      - number of packages _____

      - number of enclosed classified items in each package _____

      - package dimensions/weight: _____
      (include length, width, height and weight)

   e. Indicate if package contains any hazardous material _____

4. **Routing of Consignment:**

   a. Date/time of departure _____/_____/_____
   (insert date (dd/mm/yyyy)

b. Date/estimated time of arrival_____/_____/_____
(insert date (dd/mm/yyyy)

c. Routes to be used between point of origin, point of export, point of import and ultimate destination _____
(identify specific transfer points, use codes that appear in ITP, if applicable)

d. Method of transport for each portion of the shipment: _____
_____
(include names and addresses of all carriers and flight, rail or ship numbers, as applicable)

e. Freight forwarders/transportation agents to be used: _____
_____
(include name, telephone number, address of companies if not specified in transportation plan)

Note: Consignor shall re-verify security clearances (FSCs/PSCs) and safeguarding capability of these entities prior to releasing shipments);

f. Customs or port security contacts: _____

(list names and telephone numbers, if different from approved ITP procedures)

5. **Name(s) and identification of authorised courier:**

_____
_____
_____

ANNEX PP TO
AD 070-001
DATED 22 DEC 21

AUTHORISATION FOR SECURITY GUARDS

Valid until _____/_____/_____
(dd/mm/yyyy)

This is to certify that Mr/Ms _____
(insert last and first name)

a member of the ACO Component _____
(insert the name of the ACO component)

holder of Passport No. _____ is authorised to act as security guard on the journey detailed below for transportation by:

☐ Air ☐ Rail ☐ Road ☐ Sea

of a classified consignment relating to the work carried out by the above-mentioned ACO Component in the interests of the North Atlantic Treaty Organisation.

ITINERARY

From _____

To _____

Approximate Date _____/_____/_____
(dd/mm/yyyy)

Stamp of ACO component (APO)

_____
(Signature of Authorising Official (APOSM))

Stamp of Government Agency

_____
(Signature of Authorising Official)

ANNEX QQ TO
AD 070-001
DATED 22 DEC 21

ABBREVATIONS

7NNNs	Seven Non-NATO Nations (i.e. Australia, Austria, Finland, Ireland, New Zealand, Sweden, and Switzerland)
AA	Administrative Arrangements
ACCI	Allied Command Counter Intelligence
ACO	Allied Command Operations
ACOS	Assistant Chief of Staff
ADP	Automated Data Processing
AD	ACO Directive
AOR	Area of Responsibility
AJP	Allied Joint Publication
APOs	ACO Programme/Project Offices
APOSM	ACO Project Office Security Manager
Bi-SC	Bi-Strategic Commands (i.e. ACO and ACT)
CACO	COSMIC and ATOMAL Control Officer
CBRN	Chemical, Biological, Radiological and Nuclear
CCTV	Closed Circuit Television
CCO	COSMIC Control Officer
CG	Command Group
CONOPs	Concept of Operations
COS	Chief of Staff
COMSEC	Communication Security
CHI	Counter Intelligence and Human Intelligence
CIS	Communication and Information System
C-M	Council Memorandum
CPs	Control Points
CSyA	Command Security Advisor
CTS	COSMIC TOP SECRET
DA	Delegated Authority
DCOS	Deputy Chief of Staff
DCACO	Deputy COSMIC and ATOMAL Control Officer
DCCO	Deputy COSMIC Control Officer
DSA	Designated Security Authority
DSO	Directorate or Divisional Security Officer

ERV	Emergency Services Rendezvous Point
EAP	Evacuation Assembly Point
FoM	Freedom of Movement
FCP	Forward Control Point
FP	Force Protection
FSO	Facility Security Officer
FSC	Facility Security Clearance
FSCIS	Facility Security Clearance Information Sheet
GO	Governmental Organisation
HQSO	Headquarters Security Officer
HN	Host Nation
HNS	Host Nation Support
IDS	Intrusion Detection System
IEDs	Improvised Explosive Devices
INFOSEC	Information Security
I&IS	Information and Intelligence Sharing
IO	International Organisation
ISP	Internal Security Plan
ITP	International Transportation Plan
JFC	Joined Forces Command
MC	Military Committee
NAC	North Atlantic Council
NAMILCOM	NATO Military Committee
NCI	NATO Classified Information
NCS	NATO Command Structure
NGO	Non-Governmental Organisation
NNE	Non-NATO Entity
NNMF	Non-NATO Multinational Forces
NNN	Non-NATO Nation
NNTCN	Non-NATO Troop Contributing Nation
NOS	NATO Office of Security
NPLO	NATO Production and Logistic Organisation
NSA	National Security Authority
NSP	NATO Security Policy
OPLAN	Operational Plan

OTETC	Operation, Training, Exercise, Transformation and Cooperation
PED	Personal Electronic Devices
PfP	Partners for Peace
PIDS	Perimeter Intruder Detection System
PIN	Personal Identification Number
PSyA	Principal Security Advisor
ProSyA	Programme/Project Security Advisor
PSC	Personnel Security Clearance
PSCC	Personnel Security Clearance Confirmation
PSI	Programme/Project Security Instruction
PSP	Partnership Staff Post
RFV	Request for Visit
ROE	Rules of Engagement
SA	Security Agreement
SAA	Security Accreditation Authority
SACEUR	Supreme Allied Commander, Europe
SAL	Security Aspects Letter
SAV	Security Advisory Visit
SCG	Security Classification Guidance
SD	Supporting Document
SEM	Strategic Employment
SME	Subject Matter Expert
SGO	Senior Government Official
SPO	Security Policy Oversight
SRO	Security Risk Owner
SSC	Single Service Command
TESSOC	Terrorism, Espionage, Sabotage, Subversion and Organised Crime
TCN	Troop Contributing Nation
TDY	Duty Travel
TSA	Technically Secure Area
TSCM	Technical Surveillance Countermeasures
TSO	Theatre Security Officer
TIR	Transport International Routier
TIF	Transport International Ferroviaire
XFOR	NATO Mission

Version: 1.0

Status: FINAL READY FOR SIGNATURE

AGENCY INSTRUCTION

AI 16.31.03

REQUIREMENTS FOR THE PREPARATION OF INTEGRATED PRODUCT SUPPORT PLANS (IPSP)

Effective date: 01/09/2022 (*Precise date as per Approver's e-signature date*)

Revision No: Original

Issued by: Deputy Chief of Acquisition_____

Approved by: Chief of Acquisition _____

Table of Amendments

Amendment No	Date issued	Remarks

Author Details

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AI 16.31.03 REQUIREMENTS FOR THE PREPARATION OF INTEGRATED PRODUCT SUPPORT PLANS (IPSP)

1 REFERENCES

A. AD 01.01 Agency Policy on Management and Control of Directives, Notices, Processes, Procedures and Instructions (latest applicable)
B. AD 03.03 Security (Security of Information) (latest applicable);
C. PDED 16.30 ACQ-IPS (Acquisition – Integrated Product Support) (latest applicable)

2 PURPOSE

2.1 This document of Instruction (INSTR) establishes uniform requirements for the preparation of IPS Plans (IPSP) formally provided by Contractors to the NCI Agency.

2.2 IPSPs are required to describe the organization and the procedures used to manage the IPS deliveries covered by the contract, programme or project. These deliveries can be either goods or services.

2.3 Whenever this INSTR is referred to as a mandatory requirement of a Statement Of Work (SOW) between the NCI Agency and their Contractors, the use of the word 'shall', 'may', 'should', 'must', and 'will' in the following paragraphs – with each occurrence of them uniquely identified by an inline sequence number (e.g. [SHALL-10], [SHOULD-7]) – shall be interpreted as per paragraphs 2.4 to 2.8 when, and only when, they appear in all capitals.

2.4 The word 'shall' in the text expresses a mandatory requirement, departure from such a task is not permissible without formal written agreement between the Contractor and the NCI Agency.

2.5 The word 'may' in the text expresses a permissible practice or action. It does not express a requirement of the Contractor.

2.6 The word 'should' in the text expresses a conditional requirement that is to be followed unless inappropriate for a particular circumstance**.**

2.7 The word 'must' in the text is used for legislative or regulatory requirements (e.g., health and safety) with which both the NCI Agency and the Contractor have to comply.

2.8 The word 'will' in the text expresses a provision or service by the NCI Agency or an intention by the NCI Agency in connection with a requirement of the Contractor. The Contractor is implicitly authorized to rely on such service or intention.

3 APPLICABILITY

3.1 This INSTR applies to Agency's Contractors.

4 SCOPE

4.1 In scope

4.1.1 This INSTR was developed to provide a vehicle by which the ACQ-IPS team can contractually invoke IPSP preparation requirements on Contractors.

4.1.2 For the purpose of this INSTR, the term "project" refer to either "contract", "programme" or "project".

4.2 Out of scope

4.2.1 The preparation of IPS plans released by Agency's elements to manage IPS lifecycle activities, namely Life Cycle Support Plans (LCSPs), is out of scope of this INSTR.

5 ORDER OF PRECEDENCE

5.1 Contract special and general provisions articles [SHALL-1] shall take precedence over any requirements stated in this INSTR.

5.2 In the event of conflict between the project IPS requirements (e.g. SOW requirements) and this INSTR, this INSTR [SHALL-2] shall take precedence.

5.3 Nothing in this document [SHALL-3] shall supersede applicable laws and regulations unless a specific exemption has been obtained.

6 DEFINITIONS

6.1 See 'AI 16.31.02 IPS terms, definitions and abbreviations', for the Agency agreed standard set of IPS terms, definitions and abbreviations.

7 GENERAL REQUIREMENTS

7.1 General

7.1.1 The IPSP [SHALL-4] shall define the organization and procedures used for the management of all IPS activities.

7.1.2 The IPSP [SHALL-5] shall address the following:

- A time schedule as a sequence or work flow describing the interfaces, dependencies and time constraints in regard to all IPS disciplines;
- Establishment of major events/meetings either in person or virtual;
- Definition of IPS milestones;
- List of IPS deliverables;
- Description of the IPS reporting process;
- Definition of the IPS required reports;
- Information Technology (IT) aspects. E.g.: which software packages are used to support the required IPS activities; and
- A mathematical appendix with[1]:
  - Sources and business rule logic from which the data is obtained for calculation (e.g.; spares dimensioning); and Mathematical equations and their explanations including a list of mathematical abbreviations and symbols used (e.g.; calculation of reliability, maintainability and maintainability data).

7.2 Objectives

7.2.1 In preparing the IPSP the authors [SHALL-6] shall:

a) Ensure that all required elements of IPS are applied in such a manner as to provide a comprehensive IPS program;

b) Identify the means by which continuity of effort and understanding is achieved between their subcontractors and themselves, and between the project managers and themselves and internally within their organizations; and

c) Establish their internal IPS requirements for the project.

[1] Either including detailed contents or referring to external documents if e.g. R&M (Reliability and Maintainability) report and RIL (Recommended Items List) are foreseen as specific deliveries of the project.

7.3 Implementation

7.3.1 Unless otherwise stated in the contract, the IPSP [SHALL-7] shall be delivered for approval, no later than two weeks (15) days, after the Effective Date of Contract (EDC).

7.3.2 Depending on project duration, updating of the IPSP [MAY-1] may be necessary.

7.3.3 Procedures and the schedule for such updating [SHALL-8] shall be included in the IPSP itself.

7.3.4 The IPSP, when approved, [SHALL-9] shall serve as a working document to plan, guide, and measure the IPS process.

8 DETAILED REQUIREMENTS

8.1 IPSP format

8.1.1 The format of the IPSP [SHALL-10] shall conform to the following outline.

8.1.2 The IPSP [SHALL-11] shall contain each of the sections listed below.

8.1.3 If there is no data or text requirements, the author [SHALL-12] shall enter 'NOT APPLICABLE' and justify the reason.

8.1.4 Optionally, sections listed [MAY-2] may be further subdivided.

a. Cover page;

b. Record of reviews and history;

c. Organization of the document;

d. Introduction:

(1) Purpose and scope

(2) Description of the product

(3) Description of the support scenario

(4) Definitions

(5) Relationship with other project plans

e. IPS organization:

(1) Project management structure

(2) IPS management structure

(3) Sub-supplier / Vendor control

(4) IPS tools

f. IPS activities schedule;

g. IPS implementation:

(1) Maintenance and support concept

(2) Logistic Support Analysis (LSA)

(3) Reliability, Maintainability, Availability and Testability (RAMT)

(4) Technical Publications

(5) Training

(6) Packaging, Handling, Storage and Transportation (PHST)

(7) Supply support

(8) Warranty

(9) In Service Support (ISS)

h. IPS deliverables;

i. Appendix A – IPS SOW compliancy statement;

j. Appendix B – References

k. Appendix C – Acronyms

l. Other appendices and/or annexes.

8.2 **IPSP Content**

8.2.1 The information described in the following paragraphs [SHALL-13] shall be included in the IPSP.

Cover page. The cover page [SHALL-14] shall provide the name and the configuration identification number of the product, and the signatures page of the authority responsible for the release of the IPSP.

Record of reviews and history. This information [SHALL-15] shall include the history of approved changes to the plan, the approved dates of the changes and a small note describing each change.

Organization of the document. A description of the organization of the IPSP [SHALL-16] shall be provided by including a table of contents, a list of figures and a list of tables.

Chapter 1 – Introduction. The introduction [SHALL-17] shall include the following paragraphs:

a. Paragraph 1.1 – Purpose and scope. This paragraph states the purpose and the scope of the project-specific IPSP.

b. Paragraph 1.2 – Description of the product. The product is briefly described in this paragraph. Information is provided in a manner to avoid security classification of the plan. Sufficient details are presented to permit a basic understanding of the product and its complexity.

c. Paragraph 1.3 – Description of the support scenario. This paragraph briefly describe both the product concept of use, and the operational requirements, taking into consideration that:

- How a product needs to be maintained and supported depends heavily on how it is used – E.g. is the product used primarily in mission time or peace time? Is it used 24/7 or just a few hours a day? Is it used in a protected environment or in adverse conditions? I am also missing the description of the operational requirements of the product;
- The support requirements are derived directly from operational requirements. E.g. the definition of the spares strategy is heavily dependent on the operational availability requirement.

d. Paragraph 1.4 – Definitions. This paragraph lists project references applicable directives or glossaries containing accepted definitions of terminology, complemented with project-specific terminologies.

e. Paragraph 1.5 – Relationship with other project plans. Relationships among the IPSP and the other plans managing the execution of the project (e.g. Project Implementation Plan, Configuration Management Plan) are described.

Chapter 2 – IPS organization. This section of the IPSP [SHALL-18] shall outline the relationship and integration of the author's project management and IPS organization(s) and describe the organizational relationship of the individuals and activities involved in the IPS project.

The responsibilities of each individual or group [SHALL-19] shall be defined as well as the policy directives that govern the IPS program.

This section [SHALL-20] shall include the following paragraphs:

a. Paragraph 2.1 – Project Management Structure. This paragraph includes an organization chart, which illustrates the project management structure. The chart, supplemented by a description or flow diagrams, illustrates the authority/responsibility of the key organizational elements impacted by contractual requirements for IPS.

b. Paragraph 2.2 – IPS management structure. Chart(s) supplemented by narrative descriptions define(s) the relationships between activities directly involved in the IPS program (e.g. logistic support analysis, technical publications design and development). The chart(s) include(s) the IPS manager and other IPS roles, interfacing organizations, data management, and sub-suppliers to the extent employed in the IPS program, and any other elements involved. The integration of IPS activities with other project activities are also described. Each activity or individual shown on the organization chart(s) is the subject of a subparagraph, which details the authority and responsibility for which IPS is assigned.

c. Paragraph 2.3 – Sub-supplier / Vendor control. This paragraph indicates the proposed methods for control over suppliers and vendors, insofar as it impacts on his IPS commitments to the project management. The methods used to determine their capability and to monitor their ability to support the requirements of IPS are explained.

d. Paragraph 2.4 – IPS tools. All IT systems and databases used to carry out the IPS activities addressed within the IPSP are listed. E.g. tools supporting RAMT analysis, tools for developing technical publications, e-learning systems, LSA databases, supply chain IT systems.

Chapter 3 – IPS activities schedule. This section [SHALL-21] shall include the time schedule of the IPS program as a sequence or work flow (without the absolute dates as they [WILL-1] will be managed in the overall master schedule) describing the interfaces, dependencies and time constraints in regard to all IPS disciplines.

This section [SHALL-22] shall also address the establishment of major IPS events/meetings (e.g. LSA Conference, Provisioning conference) either in person or virtual.

Chapter 4 – IPS implementation. This section [SHALL-23] shall describe the process being applied for the implementation of the IPS program. More details for each IPS activity of the project [SHALL-24] shall be covered in each of the following paragraphs[2].

a. Paragraph 4.1 – Maintenance and support concept. This paragraph addresses maintenance and support concept definition and application.

b. Paragraph 4.2 – Logistics Support Analysis (LSA). The Contractor address in this paragraph the execution of the LSA activities. This paragraph is required to address, at least:

- The execution of the LSA conference event, either in person or virtual;
- The establishment (rules and conventions) of the LSA breakdown structure;
- The execution of the Level Of Repair Analysis (LORA);

[2] Paragraphs relevant to activities not included within the subject IPS program shall be kept 'Reserved' for consistency, if any.

- Either the tailoring of the LSA specification mandated by the project (e.g. ASD/AIA S3000L) or the plan to establish (and document into a dedicated LSA Guidance document/annex) the tailoring of such specification;
- Either the Data Element List (DEL) or the planned activities to establish the list of all required Data Element (DE) documented into a LSA Guidance document/annex and recorded in an IPS database;
- Either the definition or the description of the planned activities to define the LSA reports.

c. Paragraph 4.3 – Reliability, Availability, Maintainability and Testability (RAMT). This paragraph provides a description of the RAMT activities. The RAMT data are collected, generated or allocated for all the applicable elements of the LSA breakdown. This paragraph addresses either the definition or the description of the planned activities to define the RAMT reports;

d. Paragraph 4.4 – Technical Publications. This paragraph identifies the processes and procedures necessary to develop, review, deliver and maintain the set of technical publications (or technical manuals) for the product i.a.w. the specification mandated by the SOW (e.g. ASD/AIA/ATA S1000D). In the event that the delivery of a project-specific Technical Publications Development Plan (TPDP) is mandated by the project, this paragraph is required to contain:

- If the TPDP is required at a later stage of the project, all initially taken decisions on technical publications design; and/or
- A (hyper)link to a “referenced publication” (i.e. the TPDP) once/if the TPDP is available.

e. Paragraph 4.5 – Training. This paragraph outlines the approach undertaken to deliver the required training for the product. It addresses both, the design and development of the training materials, and the actual delivery of the training. In the event that a project-specific Training Plan (TRNP) is mandated by the project, this paragraph is required to contain:

- If the TRNP is required at a later stage of the project, all initially taken decisions on training design; and/or
- A (hyper)link to a “referenced publication” (i.e. the TRNP) once/if the TRNP is available.

f. Paragraph 4.6. – Packaging, Handling, Storage and Transportation (PHST). This paragraph addresses the requirements of packaging, handling, storage and transportation of parts.

g. Paragraph 4.7 – Supply support. This paragraph describes the supply support activities mainly related to the initial provisioning of material resources (e.g. spares, tools, consumables) i.a.w. the specification mandated by the SOW (e.g. ASD/AIA S2000M). This paragraph addresses, at least:

- Identification of spare parts, tools (common hand and support equipment, and peculiar support equipment) and consumables;
- Definition of spare parts and consumables models; and
- Spares scaling and ranging;

There are key events/deliveries for the provisioning of parts that are addressed in this paragraph:

- The provisioning guidance conference event, either in person or virtual;
- Spare Parts List assessment events, either in person or virtual;
- The time scale of the provisioning process;

- Either the tailoring of the provisioning specification mandated by the project (e.g. ASD/AIA S2000M) or the plan to establish (and document into a dedicated Provisioning Guidance document/annex) the tailoring of such specification;
- Either the DEL or the planned activities to establish the list of all required DE that shall be documented into a Provisioning Guidance document/annex and recorded in a logistic database;
- Either the definition or the description of the planned activities to define provisioning reports.

h. Paragraph 4.8 – Warranty. This paragraph describes the activities carried out to provide warranty services. In general, such warranty services are expected to begin on successful completion of the (first) Provisional System/Site, Acceptance (PSA)[3] and to end one year (or more) after successful completion of the Full System Acceptance (FSA).

i. Paragraph 4.9 – In Service Support (ISS). This paragraph includes the description of the ISS activities and is expected to transit (if any) to a formal In Service Support Plan (ISSP). The ISS activities are described so as to address the main ISS processes: Engineering Support (e.g. change management, obsolescence management, failure reporting analysis and corrective action system), Material Management (e.g.: repair process, procurement, stock level replenishment), and Field Engineering (e.g.: Contractor's support concept for higher level of maintenances, OJT for lower level of maintenances).

Chapter 5 – IPS deliverables. This section [SHALL-25] shall provide a comprehensive list of all IPS deliverables foreseen for the project using a table as per the following template:

Table 1 – IPS deliverables

Deliverable	Life cycle phase or milestone	Reference	Included in	Revision/Issues

Appendix A – IPS SOW compliancy statement. This appendix [SHALL-26] shall provide compliancy statements against the IPS project requirements using a table as per the following template:

Table 2 – IPS compliancy statement

SOW Para.No	SOW Description	Compliance	Remark

Appendix B – References. This appendix [SHALL-27] shall list the external references used to build up the IPSP, grouped by STANdardisation AGreements (STANAGs), Allied Publications, NATO security documents, policy directives (government and Contractor)[4], non-NATO standards, etc.

Appendix C – Acronyms. This appendix [SHALL-28] shall list all acronyms used within the IPSP using a table as per the following template:

[3] Depending on the nature of the Product and i.a.w. relevant contract agreements, the project can have a single PSA or multiple PSAs, one for each site, build, etc.

[4] Bi-SC-75-7 Training

Table 3 – List of Acronyms

Acronym	Description

Other appendixes and/or annexes. Other appendices and/or annexes [MAY-3] may be appended and/or annexed (e.g. SX000 tailoring, RAM data reporting) to this plan, depending on the decisions taken on the section 'IPS implementation'.

APPENDIX 1 - ACRONYMS

A consolidate list of all acronyms that can be found in this INSTR is reported here below:

Acronym	Description
DE	Data Element
DEL	DE List
EDC	Effective Date of Contract
INSTR	Instructions
IPS	Integrated Product Support
IPSP	IPS Plan
IT	Information Technology
LORA	Level Of Repair Analysis
LSA	Logistics Support Analysis
PHST	Packaging, Handling, Storage and Transportation
RAM	Reliability, Maintainability and Availability
SOW	Statement Of Work
TPDP	Technical Publications Development Plan
TRNP	Training Plan

NATO STANDARD

ALP-10

NATO GUIDANCE ON INTEGRATED LOGISTICS SUPPORT FOR MULTINATIONAL ARMAMENT PROGRAMMES

Edition C Version 1
OCTOBER 2017

NORTH ATLANTIC TREATY ORGANIZATION

ALLIED LOGISTICS PUBLICATION

Published by the
NATO STANDARDIZATION OFFICE (NSO)

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

23 October 2017

1. The enclosed Allied Logistics Publication ALP-10, Edition C, Version 1, NATO GUIDANCE ON INTEGRATED LOGISTICS SUPPORT FOR MULTINATIONAL ARMAMENT PROGRAMMES, which has been approved by the nations in the Life Cycle Management Group (AC/327), is promulgated herewith. The recommendation of nations to use this publication is recorded in STANREC 4808.

2. ALP-10, Edition C, Version 1, is effective upon receipt and supersedes ALP-10, Edition 2 which shall be destroyed in accordance with the local procedure for the destruction of documents.

4. This publication shall be handled in accordance with C-M(2002)60.

Edvardas MAŽEIKIS
Major General, LTUAF
Director, NATO Standardization Office

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RESERVED FOR NATIONAL LETTER OF PROMULGATION

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]

Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.

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1. GENERAL

1.1 Aim

The aim of this document is to provide general guidance on the policy, implementation and responsibilities for the application of Integrated Logistics Support (ILS) in multinational armament programmes within NATO.

1.2 Applicability

This guidance applies to armament programmes whereby two or more NATO nations collectively manage the logistics support of the materiel solution/component, in the form of one or more Systems-of-Interest (SOI), through its life cycle stages, as described in the Handbook on the Phased Armaments Programming System (PAPS, AAP-20) document. It includes commonly, co-operatively, multinationally, as well as jointly funded armament programmes, and may also be applied to national armaments programmes. While ILS can be applied to all armament programmes, the level of implementation will be dependent on the degree of innovation and complexity of the materiel solution, support environment, and the availability of resources such as funding and specialized personnel.

Decisions on support requirements have the greatest impact on system performance, life cycle cost and supportability when taken early in the period of the life cycle of a programme and a system. ILS disciplines shall plan and develop Logistics support requirements and ensure SOI quality in terms of Reliability, Availability, Maintainability, Supportability and Testability (RAMST). ILS of the SOI shall include the whole composite of hardware, software, data, communications, personnel, procedures, tools and facilities. ILS can provide the tools to accomplish that objective in a structured and integrated way, however to obtain that objective, the provision of front-end funding for ILS activities is required to reduce overall life cycle costs.

2. DEFINITIONS

ILS is the management and technical process through which supportability and logistics support considerations of materiel (hardware or software) solutions are integrated from the early stages and throughout the life cycle of an armament programme and by which all elements of logistics support are planned, acquired, implemented, tested and provided in a timely and cost-effective manner.

Other terms used in this guidance are explained in Annex A.

3. POLICY AND PROCEDURES

3.1 General

System operational availability to improve the military capabilities of the alliance is a primary objective of multinational armament programmes. It is NATO policy to ensure that financial and other resources required to maintain operational availability receive the same emphasis as those required to achieve performance objectives and timely delivery of the system. These resources should include those necessary to design desirable support characteristics into the system, implement them through manufacturing or integration, as well as those to plan, develop, acquire and evaluate their support. Performance-based agreements, including contracts, should include appropriate ILS performance requirements.

ILS is structured around the life cycle management model used in the Phased Armaments Programming System (PAPS). The model portrays the total life span of a system commencing with considerations in the Pre-Concept Stage and extending through the Utilisation Stage to its eventual withdrawal in the Retirement Stage. The stages and approval documents used in the PAPS are shown in Annex B.

The ILS process should begin at the Concept Stage of the life cycle of the armament programme and continue for the life of the system. The primary objective of the ILS programme should be to achieve the required system operational availability at minimum life cycle cost. Early ILS activities should focus on designing desirable support characteristics and on determining support requirements. Subsequent activity focuses on equipment support requirement evaluation and preparation of provision of support resources. The scope and level of detail should be tailored to meet specific programme needs at each stage of the system life cycle. Annex C lists the ILS considerations for each stage of an armaments programme.

The full ILS process, as described, would be applied in its entirety to a complex armament programme involving the incorporation of new technologies, design development, integration and manufacturing. However, not all armament programmes proceed in perfect accordance with the “regular” stage life cycle model as described in AAP-20, Section 3. Stages may be by-passed or deliberately conducted in parallel, such as production of end items while sub-system continues to evolve. The ILS process would apply in all cases, but some ILS activities may be undertaken out of sequence or may not be appropriate to all programmes.

Some military needs can be satisfied by utilizing the Accelerated Fielding process that is described in the PAPS, Chapter 4. The procurement of “off-the-shelf” items is one such alternative and is the one that ALP-10 will highlight. Such acquisitions are referred to as non-developmental items and are normally identified within the Concept Stage. Therefore, the Development and Production Stages would not be carried out as described in Annex C. ILS considerations for non-developmental items are described in Annex D.

3.2 Systems Engineering and Utilisation/Support Relationship

Systems engineering is an essential element throughout the lifecycle of multinational armament programmes. Associated ILS activities such as operating doctrine, development of support functions, monitoring and testing, training and personnel management are concurrent with the equipment acquisition and systems engineering effort. ILS should be involved early in the systems engineering process to influence the design and facilitate supportability of the system by maximizing the availability, effectiveness, and capability of the system.

Design and support decisions during system development and modification have the greatest impact on performance, life cycle cost, and RAMST when accomplished early in and throughout the systems engineering process.

One of the principal vehicles for achieving ILS objectives in this process is the Logistics Support Analysis (LSA). LSA is a disciplined process which includes actions to define, analyse, and quantify logistics support requirements, and to influence design for supportability, throughout system development. It stresses simplicity and reduced logistics requirements. The objective of an LSA is to enable optimum system performance, continuity and availability to be achieved at minimum life cycle cost. The LSA is conducted on an iterative basis throughout the acquisition cycle as studies, trade-offs, service advice and test and evaluation lead to successive design refinement. The LSA should be tailored to the level of complexity of the system to which it is applied, as well as to the availability of resources within nations participating in the armament programme. Any changes that affect the ILS elements may require the LSA process to be performed again.

Information obtained from systems engineering sources is required to ensure that all aspects of utilisation support are recognized and considered during the planning and acquisition of the support elements (i.e. support equipment, repair parts, personnel and training, facilities, communication, security, Information Technology (IT) framework, supply and maintenance technical assistance, equipment and software publications).

During design within the Development Stage, the analysis is oriented toward assisting the systems engineer in incorporating logistics requirements into equipment design. This includes the incorporation in the design process of the key logistics-related design objective, cost-effective supportability. The goal is to produce a system that meets specifications and the operation and support of which is cost effective over its planned life cycle.

As the armament programme progresses and designs mature to become stable, the LSA process concentrates on providing detailed descriptions of specific resources required to support a system throughout its Utilisation Stage by providing timely valid data for all areas of ILS. This data is used to plan, acquire and position support resources (personnel, funding and material) to ensure deployed systems meet their availability requirements. During the later production and utilisation stages of the armament programme field, feedback of operational use and maintenance data is used

to review the continuing validity of the data to ensure that life cycle cost plans are being realized.

LSA can be performed either by agencies of Governments participating in the armament programme, contractors, or a combination of both. Contractors and Governments are strongly urged to set up an organization to manage contractual ILS activities.

The involvement of service field teams or maintenance advisory groups to provide practical advice to designers and supportability under field conditions, including details of existing facilities and skill levels, is an essential part of the LSA process.

3.3 ILS Elements:

The primary objective of any new armament programme is to provide a military capability at minimum life cycle cost. Operational availability is one of the principal determinants of military capability. For effective ILS management, the various support aspects required to achieve system objectives are arranged into groups termed ILS elements, which may be individually managed by technical specialists. It is important to establish and maintain the inter-relationship between all ILS elements throughout the system's life cycle. This inter-relationship should be documented in the ILS Plan (Template - Annex E) and maintained by the ILS manager. The ILS elements are:

3.1.1 Maintenance Planning

Maintenance Planning comprises the identification of hardware, software, network, communication, security requirements, materiel, facilities, personnel, procedures, processes, documentation and data needed to enable maintenance services for the system and its support. The aim is to develop the maintenance concept based on maintenance strategies and requirements, for the life of the system.

Maintenance Planning includes, but is not limited to the following:

- Levels of repair
- Repair times
- System Reliability, Maintainability, Testability characteristics
- Support equipment needs
- Training
- Manpower skills
- Inter-service, organic and contractor mix of repair responsibility
- Site activation
- Certification (e.g. safety and security)
- Establishment of maintenance programs using condition-based maintenance, reliability-centered maintenance, and/or post production software support

3.1.2 Supply Support

Supply Support ILS Element comprises all management actions, procedures, and techniques necessary to determine requirements to acquire, catalogue, receive, implement, store, transfer, issue and dispose of spares, repair parts, updates and supplies. This includes initial provisioning for stock of spare parts and support, as well as acquiring, distributing, updating and replenishing inventories in support of supply chain management.

3.1.3 Personnel

Personnel ILS Element involves identifying, planning and supporting the availability of qualified personnel required to operate, maintain, and support the system over its life cycle.

3.1.4 Support and Test Equipment

The Support and Test Equipment ILS Element includes the identifying, planning and ensuring the availability of equipment (fixed or mobile) required to support the operation and maintenance of a system. Examples of support and test equipment are: associated multi-use end items, maintenance equipment, tools, software support and reporting environment, metrology and calibration equipment.

3.1.5 Design Influence/ Interface

The aim of this ILS Element is to participate in the systems engineering process to impact the design from the early stages throughout the life cycle, facilitating supportability to maximize the availability, effectiveness and capability of the system.

Design influence/interface consists of logistics-related design influence parameters including, but not limited to the following:

- Reliability, availability, maintainability, supportability, and testability (RAMST)
- Human factors
  - Soldier
  - Machine
  - Software
  - Interface
  - Usability
- System safety
- Survivability and vulnerability
- Hazardous material management
- Environmental factors such as assessment of air, water, and noise pollution
- Information Security (INFOSEC)
- Service Level and Operational Level Agreement (SLA/OLA)
- System compatibility

- Standardization and interoperability
- Energy management
- Corrosion
- Non destructive inspection
- Transportability
- Handling and Storage

3.1.6 Technical Information and Data

Technical information and data is the information necessary to operate, maintain, repair, support and dispose of a system throughout its life. The objective is to identify the standard(s) to be used for the supply of information and data such as:

- Technical documentation, including Interactive Electronic Technical Manuals (IETMs) Illustrated Parts Lists/Catalogues (IPL/IPC)
- System identification and classification
- System description and operation (system description can be provided in the form of models, illustrations, source codes, textual descriptions, among others.)
- System servicing and maintenance
- Security documentation
- Diagnostic support
- Repair information
- Supporting flow, system and schematic diagrams
- Software and hardware documentation
- Network and communication documentation
- Training needs analysis data
- Factory Level Maintenance and Repair Applications Document

Technical information and data can be provided through various media to include paper, fiche, graphics, video and digital. Data rights and data delivery, as well as use of any proprietary data, should be addressed as part of this element and included in the overall programme plan.

One of the most effective ways to collect, review, and analyse this data is through the use of a resource planning software tool. This tool can be a data mine linking technical information, financial information and supply information. The benefits for the armament programme can be:

- Tracking operational availability through the life of the equipment
- Creating and monitoring performance criteria for the support of the equipment
- Maintaining a real time configuration management, supply and maintenance databases
- Providing the capacity to assess engineering changes proposals, track approved changes, with the inclusion of costing information
- Providing end item tracking and asset visibility
- Tracking and maintaining commonality with industry-supported engineering activities

3.1.7 Training and Training Support

Training and Training Support consists of processes, procedures, techniques, training devices and equipment, used to train personnel to operate, maintain and support a system, as determined by the training needs analysis.

The training needs analyses may consider the following:

- New equipment training
- Training aids, including simulators
- Training aids support
- Training courses
- Training type (e.g. Classroom, distance, on the job, etc…)
- Training environment

3.1.8 Facilities and Infrastructure

Facilities and Infrastructure consists of the permanent and semi-permanent real property assets required to support a system. It includes studies to define types of facilities (e.g. training, equipment storage, maintenance, supply storage, ammunition storage, computer hardware/software systems, network and communication systems) or facility improvements, location, space needs, environmental and security requirements, and equipment.

3.1.9 Packaging, Handling, Storage and Transportation

This ILS Element consists of resources, processes, procedures, design considerations, and methods to ensure that all systems, equipment, and support items are preserved, packaged, handled, and transported properly, including environmental considerations, and equipment preservation for storage.

3.4 Life Cycle Cost (LCC)

The goals of LCC analysis are to (1) identify the comparative overall costs of alternative means of attaining system performance and availability objectives, and achieving production schedules; (2) estimate the cost impact of various designs and support options; (3) refine cost estimate of the selected design as it progresses in the life cycle. The use of LCC is most effective during the early stages of the life cycle. Typically, by the end of the Concept Stage roughly 85 percent of the system's LCC has been committed by design and logistics choices made within or prior to this period.

Early in the life cycle, the LCC analysis concentrates on quantifying the cost implications of selected design alternatives, which provide the desired level of performance. ILS activities at that stage focus on designing supportability characteristics into the system and evaluating the life cycle cost of hardware, software, support requirements, and other related costs. In later stages, evaluations are oriented

toward identifying lower cost means of support to achieve availability objectives. In particular, support elements costs such as personnel and spares are evaluated to identify effective alternative policies using trade-off studies and regular audits, which are carried out to test the continued relevance and validity of earlier decisions and support plans.

LSA can provide valuable data for inputs to logistics simulations, cost effectiveness models, trade-offs studies and LCC analysis. LSA and LCC analysis interface throughout the life of the system to ensure that all data changes generated by iterative LSA actions are evaluated to assess their consequences on acquisition, operation and support cost.

Multinational armament programmes will be required to implement a LCC programme. The purpose of this programme is to ensure that the developed system will have the lowest possible life cycle cost consistent with performance and schedule requirements. Toward this goal, operation and support cost estimates assist designers and programme managers to focus their attention on those design aspects that drive costs.

4. PROGRAMME RESPONSIBILITIES AND ILS MANAGEMENT

4.1 General

Cooperation in the acquisition of military equipment is primarily the responsibility of the nations participating in an armament programme. This cooperation is based on the recognition of the sovereignty of the nations in making equipment decisions, while providing the means of achieving and maintaining cooperation in research, development and procurement efforts.

4.2 Organisation

A Project Group, or equivalent, is normally created at the end of the Pre-Concept Stage or at the beginning of the Concept Stage. Any nation having an interest to establish a multinational armament programme may participate. The primary task of the Project Group is to identify, through concept studies, possible solutions to the requirement set. The Concept Stage is usually characterized by the formal establishment of a Project or Programme Steering Committee (or Board of Directors in cases where a NATO Production and Logistics Organization is established). For a NATO commonly funded armament programme, oversight of the programme will normally be accomplished by a standing senior committee responsible for general matters, with the NATO Infrastructure Committees being responsible for the financial approval process.

A Project/Programme Steering Committee is a body composed of national representatives established by a governmental arrangement (MOU) between two or more nations in order to coordinate, execute and supervise a multination armament programme. To carry out the programme, a management organization

(Project/Programme Management Office, specific Agency or Project/Programme Management Team) is established. A Policy Committee should establish a Working Group on ILS responsible for co-ordinating the policy aspects with respect to the implementation of ILS in the project.

A project/programme manager, on behalf of the participants in the armament programme, has the overall responsibility for establishing and managing an ILS programme that relates support to system availability objectives, system design, acquisition, operations and support cost. The project/programme manager should be supported by an ILS manager or staff officer, designated before development of the project definition, to assist in executing ILS responsibilities and to maintain a continuous interaction with the support community throughout the acquisition process. Specific project/programme manager and ILS manager responsibilities are contained in Annex E.

5. IMPLEMENTATION

Nations taking part in a multinational armament programme, agree in principle to endeavour to apply these ILS guidelines and, where possible, to provide the resources to implement them to an extent consistent with the nature of the system concerned and the overall availability of resources. Agencies being involved in commonly funded armament programmes should also endeavour to apply these guidelines. Nations are encouraged to apply this guidance to national armament programmes as well. Doing so, promotes a consistent approach to logistic support planning within Government, agencies, and contractors and facilitates other nations joining programmes at a later stage.

The MOU(s) for the armament programme and the terms of reference (TOR) or statement of work (SOW) for the conduct of activities in the respective life cycle stages of the programme should recognise the general applicability of, and make reference to this ILS guidance document.

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ANNEX A GLOSSARY OF TERMS

Acquisition - The process through which a Governmental and/or NATO Organization enters into a contractual relationship with a Supplier to obtain a product and/or service.

Availability (Operational) - A measure of the degree to which a system is either operating or is capable of operating at any time when used in its typical operational and support environment.

Common Funding - Regular contributions by NATO nations in accordance with a preset cost-sharing formula, to a common fund administrated by NATO which is used for the financing of NATO activities, assets or personnel (Examples: NATO Civil, Infrastructure and Military Budgets).

Configuration - The functional and physical characteristics of materiel as described in its technical documentation and later achieved in the product.

Configuration Management - A discipline applying technical and administrative direction to configuration identification, documentation, control, status accounting and audit.

Cost Analysis - A systematic procedure for estimating the aggregate cost of a system/equipment, and for comparing the costs of alternative systems in order to determine the relative economy and effectiveness of the alternatives.

Cost Effectiveness - A comparative evaluation derived from analysis of alternatives (actions, methods, approaches, equipment, weapon systems, support systems, force combinations etc.) in terms of the interrelated influences of cost and effectiveness objectives and support costs of the system.

Design Interface – The relationship of logistics-related design parameters, such as reliability and maintainability, to operational availability and support resource requirements. These logistics-related design parameters are expressed in operational terms rather than as inherent values and specifically related to system availability objectives and support costs of the system.

ILS Manager/Staff Officer - An individual responsible for the execution of ILS within a project/programme management organization.

ILS Plan - The formal planning document for the integration of the activities concerned with logistics support. It is kept current throughout the project life. It sets forth the concept of operational support, provides a detailed ILS programme to fit with the overall

programme and results in the necessary ILS information required by decision making bodies to make sound decisions in system development and production.

INFOSEC - The protection of information systems against unauthorized access to or modification of information, denial of service to authorized users and provision of service to unauthorized users (NSTISSI 4009 definition).

IT Infrastructure – All the hardware, software, network, facilities etc. that are required to develop, test, deliver, monitor, control or support IT services. The term IT infrastructure includes all of the Information Technology but not the associated people, processes and documentation (ITIL v3).

Joint Funding - Funding, on a case-by-case basis, by two or more NATO nations of a collaborative project or activity on a cost sharing basis governed by a Memorandum of Understanding between the participating nations.

Life Cycle Cost (LCC) – Consists of all direct costs plus indirect variable costs associated with the Life Cycle stages of the System of Interest.

Logistics Support Analysis (LSA) - The selective application of scientific and engineering efforts undertaken during the acquisition process, as part of the system engineering process, to assist in:

(a) Causing support considerations to influence design.

(b) Defining support requirements that are related optimally to design and to each other.

(c) Acquiring the required support.

(d) Providing the required support during the operational phase at minimum cost.

During the later production and the in-service phase LSA is conducted on a repetitive basis in order to meet life cycle costs, readiness and supportability objectives.

Maintainability - A characteristic of design and installation which is expressed as the probability that an item will be retained in or restored to specified condition within a given period of time, when the maintenance is performed in accordance with prescribed procedures, conditions and resources.

Non-developmental system/item - A generic term that covers equipment available which will meet an approved operational requirement with little or no development effort required by defence organizations. Normally these sources are commercial products or equipment developed and in use by defence organizations of other nations. In most cases the equipment has to be adapted, modified, customised or improved to meet requirements set.

Project/Programme Manager - An individual charged, on behalf of the Project/Programme Steering Committee, with the responsibility for design development and acquisition of the programme or system and for the design, development and acquisition of the integrated logistics support.

Reliability – The ability of an item to perform a required function under stated conditions for a specific period of time.

Supportability – A measure of the degree to which all resources required to operate and maintain the system/equipment can be provided in sufficient quantity and time (ARMP-7 Edition 2)
SW Training environment – A controlled and limited deployment of an IT Service, a release or a Process to the Production (Live) Environment. A Training environment is used to train users to operate, maintain and support a software system (ITIL v3).

Systems Engineering - An engineering discipline whose responsibility
is creating and executing an interdisciplinary process to ensure that the customer and stakeholder's needs are satisfied in a high quality, trustworthy, cost efficient and schedule compliant manner throughout a system's entire life cycle.

System Life Cycle - The period divided into stages, ranging from the first considerations on the need for a system in the Pre-Concept Stage through the Concept, Development, Production and Utilisation/Support Stages down to the Retirement Stage.

Testability - A design characteristic to determine the operational condition of a system or component by identifying or isolating any actual or potential malfunction, security breach or compatibility issue.

Threshold - A quantitative requirement against which acquisition programme achievements are measured.

Trade off (Analysis) - The determination of the optimum balance between system characteristics (cost, schedule, performance and supportability).

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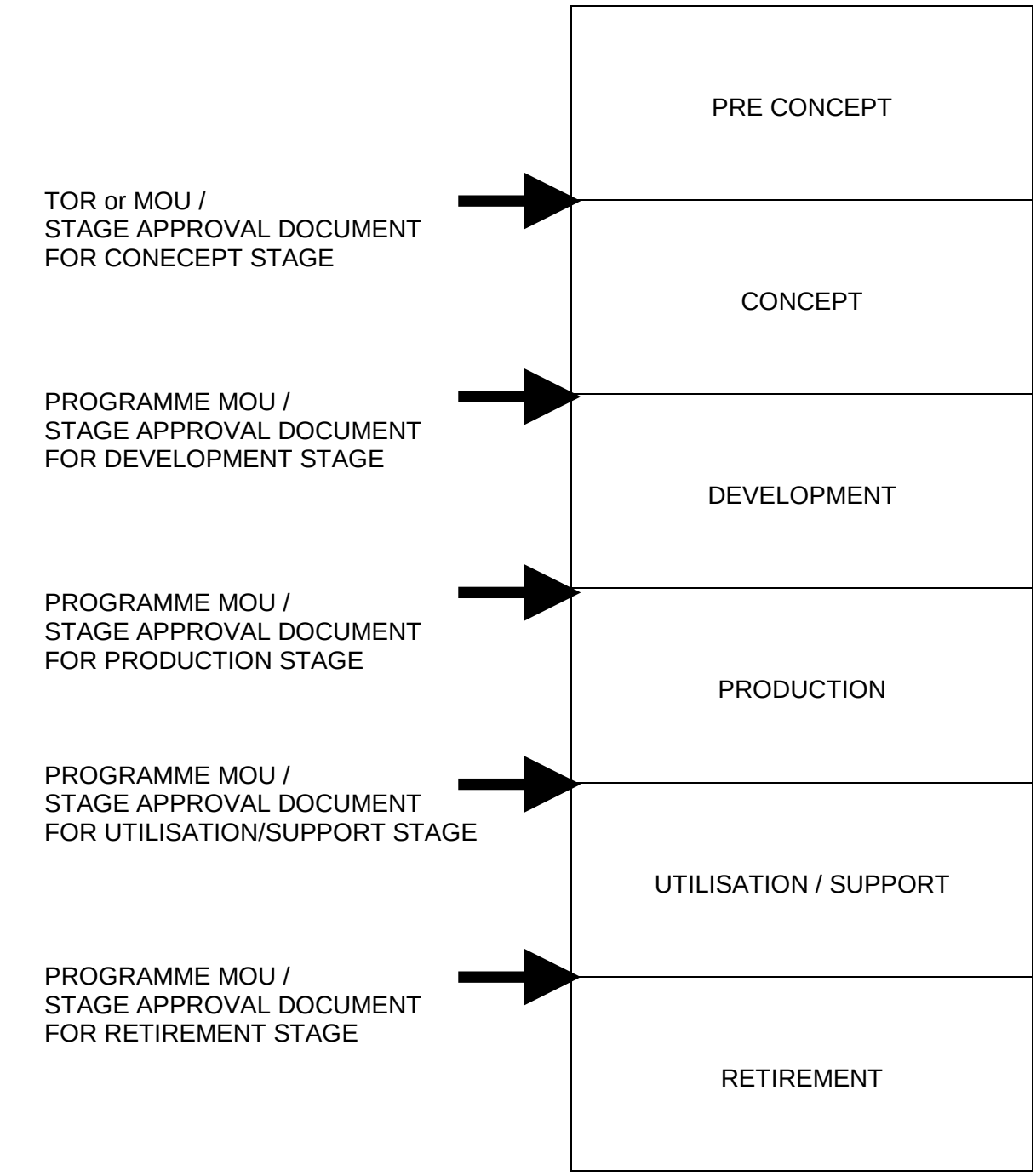
ANNEX B PHASED ARMAMENTS PROGRAMMING SYSTEM (PAPS)



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ANNEX C INTEGRATED LOGISTICS SUPPORT CONSIDERATIONS IN THE MULTINATIONAL ARMAMENT PROGRAMME

The following are ILS considerations for each stage of the life-cycle of a multinational armament programme. The grouping and listing of activities are not to be used as an all inclusive checklist or model of the single correct approach to ILS activities, because all programmes have unique materiel requirements and schedules. Therefore, the activities described below are not necessarily complete and may differ for specific armament programmes.

1. Pre-Concept Stage

The purpose of the Pre-Concept Stage is to identify and document stakeholder requirements (e.g., Force Goals). Also important, is the identification of risk areas (at a high level) to the capability delivery. This provides focus for research and industry capability/capacity to ensure delivery to an acceptable timescale and affordable cost.

ILS activities to be accomplished during the stage
Define supportability concept and objectives

2. Concept Stage

The Concept Stage starts after a decision is made to fulfill a capability gap with a materiel (hardware and/or software) solution and end with the requirements specification for the materiel solution. The Concept Stage is divided into two phases, the Study Phase and the Programme Establishment Phase. The main thrust of the Study Phase is to conduct an evaluation of alternative technical concepts for satisfying the identified capability need and to identify the most promising technical concepts for further evaluation. At the beginning of the Programme Establishment Phase, the participating nations will seek establishment of a NATO Programme, form a Steering Committee and establish a management organization to carry the Programme to completion. The result of this phase is an agreed set of specifications and a proposed programme that can be used as the basis for entering the Development Stage.

ILS activities to be accomplished during the Study Phase

a) Identify support resource constraints of alternative technical options considered. (e.g. broad limitations dictated by national maintenance concepts, level of skill available to the future users or maintenance workers, capabilities of national supply systems, etc)

b) Estimate for each alternative the life-cycle costs and the gross percentages of the total costs that will have to be allotted for operations and support, in order to facilitate the participating nations' understanding of the operations and support costs involved.

c) Incorporate logistics experts in the project group or establish a logistics working group.

d) For each alternative solution being evaluated, identify and take into account potential logistics support, manpower and training requirements or constraints. Draft an ILS Plan with milestones and costs for critical requirements for each alternative.

e) Develop system availability objectives and establish tentative thresholds for later incorporation into measurable standards of availability criteria.

f) Assess each potential solution's impact on reliability, compatibility, maintainability and utilisation support arrangements in general.

g) Consider the extent of logistics support require for the new system/equipment, including provision for adequate technical and training documentation, support equipment, training devices, etc. The scope and depth of these considerations will have to be refined as the project matures and proceeds through each stage of the life-cycle, taking account of existing utilisation support resources and facilities.

h) For commonly funded projects, identify the ownership and territorial host nation(s) of the SOI and the related support matters such as facilities and personnel.

i) Identify options for cooperative logistics activities; avoid early decisions that might preclude cooperative logistic schemes.

j) Determine logistics related standardization objectives and decide on application of standards and STANAGs.

<u>ILS activities to be accomplished during the Programme Establishment Phase</u>

a) If not yet arranged for, establish a Joint Logistics Working Group in the framework of the Project/Programme Steering Committee to coordinate the policy aspects of the application of ILS in the project.

b) Provide support element experience factors, challenges and objectives to be used in the design synthesis of all system engineering input elements.

c) Establish a consistent set of measurable objectives and thresholds for RAMST and other logistics support parameters.

d) Develop logistics support milestones for inclusion in the overall programme plan. These should include milestones for development of support hardware and software, training plans (including courses and facilities, if required) and funding options for facilities construction required.

e) Define measurable supportability and support cost objectives that are optimally related to system/equipment design and to each other. The following are examples of supportability issues upon which specific objectives can be based:

   (1) Maintenance manpower and man-hour constraints.

   (2) Personnel skill level constraints.

   (3) INFOSEC constraints.

   (4) Operation and support cost constraints.

   (5) Target percentages of system failures correctable at each maintenance level.

   (6) Mean down-time in the operational environment.

   (7) Turn-around time in the operational environment.

   (8) Standardization and interoperability requirements.

f) Develop a common logistics support concept with a special emphasis on maintenance and supply requirements necessary to provide an operational ready and serviceable system at the beginning of the Utilisation Stage.

g) Continue in-depth analysis of systems specifications with a view to their logistics implications and focus on the logistics concerns.

h) Initiate studies into possible options for collaborative support, including consideration of NAMSA or other appropriate NATO agencies or industry. Ensure that there are no legal, contractual and/or intellectual

property right restrictions for establishing a collaborative logistics support.

i) Establish baseline life-cycle costs for the selected alternative. Identify funds and the mode of funding (commonly or jointly) for preparatory logistics activities which aim at the implementation of logistics plans.

j) Identify manpower and facilities requirements of the new project.

k) Decide on kind of technical documentation and computer facilities.

l) Foster the optimum use of standard parts and components.

m) Ensure that logistics considerations have been integrated into the statement of work, specifications, requests for proposal, source selection evaluation criteria and contracts.

3. Development Stage

During this stage detailed engineering and prototype development/ fabrication is conducted to ensure full validation of the selected technical approach, including complete system integration to the point where production contract action can be taken. The Development Stage is the last opportunity to give initial effect to the development of the SOI for common activities of training and logistics support, for which the relevant planning will have already been considered.

ILS activities to be accomplished during the stage

a) Verify by test and evaluation the attainment of the objectives for RAMST and other logistics support parameters.

b) Continue to consider possible systems for collaborative in-service support including consideration of NAMSA or other appropriate NATO agencies or industry.

c) Devise and finalize a formal document that specifies logistics support arrangements to be agreed upon by the participants.

d) Ensure the development status and production lead times of support elements, including facilities construction and training equipment, are commensurate with support capability objectives and deployment needs.

e) Ensure allocation of funds for preparatory logistics activities which aim at the implementation of logistics plans at the beginning of the Utilisation Stage.

f) Ensure that NATO standardization and interoperability requirements are reflected in ILS planning.

g) Refine manpower and facilities requirements of the armament programme.

h) Workout the necessary common procedures to perform logistics activities.

i) Take steps to ensure that ILS considerations are given appropriate weight in requests for criteria for source contractor selection and contract provisions. Contract requirements clearly define a baseline operational scenario, baseline maintenance concepts, NATO peacetime availability and wartime deployment objectives and support schedule objectives. ILS programme and data requirements should be tailored to meet these objectives.

j) Ensure that the test and evaluation of the planned logistics support is conducted and that operational objectives are met. This may be demonstrated through a contractual utilisation reliability assessment.

k) Initiate decision making for the organization of the multinational equipment utilisation support to be performed in the Utilisation Stage.
l) Develop maintenance plan.

4. Production Stage

The purpose of the Production Stage is to manufacture and test the system and its related support and enabling systems, in accordance with production specifications, and deliver the needed materiel solution, in a tested and operationally ready and logistically supportable condition, to the users.

ILS activities to be accomplished during the stage

a) Assure production items meet design and operational availability and supportability requirements.

b) Validate and deliver ILS elements to meet deployment needs. Ensure that logistics support arrangements will be implemented prior to the start of the Utilisation Stage.

c) Correct supportability deficiencies and validate corrective actions through follow-on test and evaluation, if required.

d) Finalize and endorse a formal document which addresses the multi-nationally organized utilisation support and its essential elements.

e) Verify the availability of:

- Technical publications.
- Tools and test equipment.
- Initial provision of spares.
- Software licences and support software licences.
- Manpower and facilities required for equipping the first and subsequent operational organization.

f) Update maintenance plans. Make sure, that the user is presented with full briefings and explanations of the system and its peculiarities.

5. Utilisation Stage

This period covers the operational utilization of equipment. After equipment fielding, ILS will continue for the entire life cycle of an item. Although the project/programme manager and ILS manager may be discontinued, system user/command ILS responsibility will continue.

ILS activities to be accomplished during the stage

a) Establish and maintain the ILS management system and arrange appropriate funding, controls and resources. Conduct periodic reviews as necessary of the ILS management system to ensure optimum operation.

b) Determine supportability requirements and life cycle cost implications of proposed changes.

c) Analyse and assess anticipated and actual in-service performance data feedback of the system and its logistics support.

d) Identify and develop RAMST and life cycle cost improvements in fielded equipment and support systems.

e) Identify deficiencies and updates in the system and evaluate by design/support trade-offs prior to making modification decisions.

6. Retirement Stage

The Retirement Stage is to demilitarize and dispose of the SOI at the end of its useful life and remove related operational and support services. Demilitarization and retirement requirements are addressed in the preceding stages. Disposal should be carried out in a way that is in accordance with all legal and regulatory requirements relating to safety, security, and the environment. Environmental considerations are particularly critical during retirement, as there may be international treaties or other legal considerations requiring intensive management of the system's demilitarization and retirement.

ILS activities to be accomplished during the stage

a) Terminate support activities required in the Utilisation Stage in accordance with the Disposal Plan

b) Analyze ILS elements as applicable for the system of interest in the retirement stage and document them in the ILS plan for implementation. Consider the following:
   - Backward supply chain
   - Removal of support and enabling systems
   - Disassembly of the SOI into manageable elements to facilitate its removal for reuse, recycling, reconditioning, overhaul, archiving or destruction
   - Removal of the SOI from the operational environment for reuse, recycling, reconditioning, overhaul or destruction
   - Specification of containment facilities, storage locations, inspection criteria and storage periods if the SOI is to be stored
   - Destruction of the SOI, as necessary, to reduce the amount of waste treatment or to make the waste easier to handle

c) Ensure the ILS data and information for the SOI is archived, for possible future use, in an appropriate manner.

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ANNEX D INTEGRATED LOGISTICS SUPPORT CONSIDERATIONS IN THE NON-DEVELOPMENTAL ACQUISITION PROCESS

The following are the two stages and associated ILS activities for non-developmental acquisition, which replace the development and production stages of the life cycle model.

1. Concept Stage

In a non-developmental system item acquisition there is only one milestone: the non-developmental system/item buy decision which is based on the determination that an "off-the-shelf" alternative is available, meets operational requirements, and can be supported in a cost-effective manner.

ILS activities to be accomplished prior to the non-developmental system/item buy decision

(a) Perform user/market survey to assess the supportability of the system/item, to include the manufacturer's technical support base, publications, warranties, parts availability, reliability, maintainability, etc.

(b) Incorporate support considerations into system specifications.

(c) Ensure appropriate weighting of supportability in source selection criteria. Calls for bids should contain clauses inviting the manufacturer to describe the various facets of supportability including reliability, maintainability, testability and life cycle costs.

(d) Estimate, for each possible alternative, the life cycle costs and the gross percentages of the total costs that will have to be allotted to operations and support.

(e) Identify critical supportability test issues and include plans for contractor compliance tests, preproduction tests and initial production tests.

(f) Complete actions relative to the deployment plan, personnel and training requirements.

(g) Complete the ILS plan to include:

- A tailored LSA programme to assess alternative means of support;

- Development of ILS elements;

- Identification of methods to overcome potential deficiencies in organic support.
- Draft ILS statements of work;

- Planning for contractor support where mandated.

2. Acquisition/Deployment Phase

After the non-developmental system/item buy decision, the ILS manager may be constrained by the span of time between contract award and delivery of production items. This span of time is frequently less than the development and delivery of support elements. This difficulty may be overcome by contractor support or other interim mechanisms capable of providing required support capabilities.

ILS activities to be accomplished after non-developmental system/item buy decision

(a) Implement LSA programme.

(b) Initiate materiel fielding actions at time of non-developmental system/item buy decision.

(c) Monitor accomplishment of contractually required support.

(d) Monitor, test and evaluation to ensure support deficiencies are identified and corrected. Expedite correction of support deficiencies revealed by initial using units.

ANNEX E ILS PLAN TEMPLATE

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   - 3.8. Facilities and infrastructure
   - 3.9. Packaging, handling, storage, and transportation
4. **Supportability in fielding and operational life**
   - 4.1. Initial fielding
   - 4.2. Program transition
   - 4.3. Post production support
   - 4.4. Post fielding support analysis
   - 4.5. Disposal

1. **General –** General information on the acquisition program and top-level supportability issues.

   1.1 **Introduction** – A short introduction may be appropriate to introduce the reader to the purpose of the ILS Plan, provide any background, and describe the overall approach taken in developing the document.

   1.2 **System Description** – Describe the overall materiel system including its physical configuration and functional requirements. The ILS Plan may include pictures, tables, charts, graphs, and so on.

   1.3 **Program Management** – The organization for managing the acquisition of the system should be described. Identify the Program Manager (PM) and all participating organization along with the responsibilities of these organizations. Describe the different teams which may be involved, including specifics points of contact.

   1.4 **Milestone Schedule** – The milestone schedule serves as a tailored map for the acquisition program. It shows where and when it started, where it is going, and how and when the ILS tasks will be completed. The milestone schedule should be updated before each program review and anytime significant changes are made. A typical chart will show all mandatory milestones and significant intermediate goals along the way. This section may contain selected milestones.

   1.5 **Applicable Documents** - List the applicable documents which can provide additional information and guidance with regard to the acquisition program.

2. **Supportability in the Acquisition Program -** Describe the strategies for attaining ILS objectives within the context of the overall acquisition strategy. A description of the operational requirements, supportability objectives, acquisition strategy, Life Cycle Cost (LCC) and funding issues, Supportability Analysis strategy, and the supportability T&E concept will provide essential information to ensure that supportability is thoroughly planned.

   2.1 **Operational and supportability requirements** - Briefly describe the mission scenarios and requirements, operational environment, security requirements, transportability requirements, employment, concepts, deployment plans, and combat service support force structure. Requirements documents should provide the needed details (for example,

annual operating days, annual number of missions, mean mission duration) to input to the SA process. Define the proposed system readiness objectives and supporting RAM thresholds for both peacetime needs and wartime requirements. Specify anticipated or fully mission capable (FMC) requirements. Update SRO information to reflect requirements generated during studies and evaluations. As system designs mature and available technology is utilized, FMC and other requirements must be validated. Determine and indicate applicable readiness reporting system, forms and frequency.

2.2 **Acquisition strategy** - Describe the anticipated acquisition approach. Initially it may consist of several methods, depending on whether system requirements might be met by a system modification, a foreign materiel system, a new development, or commercial item. Define contractual approaches and incentives for these areas.

2.2.1 Support risks: Identify risk associated with system support alternatives. As a minimum, the following areas should be addressed:

- What are the effects of changing the level of maintenance/repair capability?
- Are there items or subsystems in the inventory that can be used to reduce development risk/requirements?
- How will the proposed materiel system be integrated into the Service's structure at maturation? (The system must be designed to fit into the appropriate Service's support structure planned for the fielding time frame to reduce changes needed).

2.2.2 Personnel requirements: Describe actions to reduce requirements for a high degree of skill to operate , support and maintain the system. Describe any anticipated approaches or incentives to reduce Operations & Support (O&S) cost requirements. Identify the goals and actions to reduce quantity and skill level of personnel operating and maintaining the materiel system.

2.2.3 Source selection: Describe how ILS and supportability will be addressed in the source selection process. Include any plans to consider estimated cost of operation, maintenance, and support, in addition to anticipated acquisition cost, when making the source selection evaluation.

2.2.4 Elements of support in acquisition: Briefly describe the ILS requirements which will be included in solicitation documents and contracts. If accelerated acquisition is a possibility (for example, pre-planned product improvements or commercial items), identify those items that may need to be accelerated and how they will be accomplished. Identify any non-standard budgeting or funding actions.

2.2.5 Planned deployment and employment: Describe the planned operational concepts.

2.3 **Performance based logistics (PBL)** – Discuss the PBL strategy and implementation, to include the use of performance based contracts rather than transaction based contracts.

2.4 ILS/Supportability funding

- Describe studies and investigations to be conducted and updated in determining, by ILS element, total life-cycle cost estimates to include an identification of the scope and depth of studies to be conducted. Include plans for transition of support to item managers and the respective sustainment command.
- State support models and modifications to be used in cost estimating and limitations and assumptions to be made in modeling.
- Provide coordination channels and reporting schedules.
- State results (dollars/type funds) of cost estimating, by ILS element, major function, operation and maintenance. Include total requirements.

2.5 Supportability Analysis (SA) strategy

2.5.1 Describe the SA to be conducted in the acquisition effort. Identify the specific types of analyses required. Identify how the SA process is being accomplished and any actual or potential problems.

Include brief descriptions of the following:

- SA required: Describe how the SA selected will be tailored to specific acquisition program needs and stages.

- SA application to ILS elements: Describe how Logistics Management Information (LMI) will be used to provide input for development of ILS elements.
- Structure of the LMI data products: Specify the hardware and software indenture level and level of maintenance for which the LMI will be generated and documented. Identify the planned degree of LMI tailoring.
- SA data verification: Identify how data will be verified for adequacy and accuracy and who will be responsible for such verification.
- Identify the source of data for SA.

    - Describe controls to assure the SA does not include duplicate, incoherent or redundant data requirements.
    - Describe results of the SA. This should summarize results of analyses performed in prior phases.

2.6 **Supportability Test & Evaluation** – Briefly describe the planned supportability T & E concept, scope, and objectives, and how they will be met during developmental and operational testing. List the organizations (for example, logistician, testers, independent evaluator, and so on) that will identify supportability test issues. These issues and objectives will be summarized in the ILS Plan and incorporated into the Test and Evaluation Master Plan. Information developed should consider, but not be limited to the following:

2.6.1 Peculiar test requirements that are directly related to the ILS Plan.

2.6.2 Anticipated critical supportability issues and their impact on the support planning.

2.6.3 Testing and evaluation necessary to assess actions taken to resolve critical issues.

2.6.4 Training, manpower, and skills required to accomplish T&E.

2.6.5 Dates for initiation and completion of actions required to resolve supportability issues.

2.6.6 The interface between the LMI and the test data collection systems.

2.6.7 T&E of built-in or supporting automatic operating, testing, and maintenance equipment (and associated software, if applicable).

2.6.8 How completed test results will affect planned test actions, criteria, requirements, and so forth.

2.6.9 Provide a summary of significant actions and activities to include the following:

- Proposed test locations.
- Data collection procedures and data uses.
- Organizations and responsibilities involved in the T&E efforts.

2.6.10 Plans for the Logistics Demonstration (LD), verifying the LMI and components of the system support package, draft/final equipment publications, all test, measurement, and diagnostic equipment, the maintenance allocation chart, the repair parts/special tool list, recovery tools,etc. The LD should be accomplished as soon as feasible after a representative engineering development unit/software release is available (during military suitability or feasibility testing for Non Developmental Items (NDI)). LD must be completed in a timely manner so that the source and availability of the system support package components can be established prior to the developmental and operational testing).

2.6.11 Identify the requirements and methods to be used for providing a representative engineering development unit/software release for LD (for example, dedicated or on a time-phased sequential claimant basis).

3. **ILS element plans -** Provide details on plans for each ILS element. The bulk of the ILS Plan will be in this subsection which explains issues and requirements in detail for each of the ILS elements. Each ILS element needs full consideration in the ILS Plan. If the area is not applicable, provide supporting rationale. Each ILS element will include consideration of the relevant personnel requirements and constraints.

3.1. Maintenance planning

3.1.1. Describe the maintenance concept for the system including all levels of maintenance. Identify tradeoffs to be performed and maintenance considerations peculiar to the system.

3.1.2. Identify maintenance tasks required to sustain the end item at a defined level of readiness, include all critical and high driver tasks. The LMI data product format can be used to provide part of the maintenance planning data.

3.1.3. Describe the general overall support concepts contained in the CD or resulting from logistic studies. Identify proposed or actual skills, tools, test, security procedures, measurement, and diagnostic equipment, support equipment, and so on, to be available at each level of maintenance. Include analysis of possible design for discard of components and repair parts.

3.1.4. Indicate strengths and weaknesses of each support alternative and the effect of the support concept on the system design, acquisition and O&S costs, and on affected ILS elements.

3.1.5. For systems being acquired for multi-national use, address the feasibility and desirability of centralized repair and supply support by a single nation, the predominant user in a geographical area or the one with centralized support capability.

3.1.6. Describe maintenance environment.

- Describe the maintenance environment, limitations, constraints, and requirements projected for the deployment timeframes. Provide sufficient detail (turnaround time, direct productive annual maintenance man-hours to support SA. Include logistic support parameters stated in the requirements documents. Use LMI data when available.
- State the nature and extent of maintenance to be performed by each level of maintenance to include battle damage expedient repair procedures. Discuss alternative approaches when applicable. Identify tradeoff criteria used for selection of the preferred alternative.
- Identify the organizational and logistic support structure that will be responsible for providing direct and general supply support and maintenance support.
- Identify depots, special repair activities, or other support activities scheduled for special support missions. Identify the depots that will be responsible for depot repair/overhaul of those components comprising the total system.
- Identify the need for maintenance float items.

- Identify all depot maintenance studies applicable to the materiel system. Report the latest status of each of the studies. If studies have not been initiated, indicate plans to accomplish this task.
- Describe efforts to minimize potential safety problems during maintenance.
- Where applicable, describe maintenance concepts, requirements and procedures for
- Nuclear hardness maintenance and surveillance procedures contemplated to assure the nuclear hardness of the system throughout its life cycle.
- The Nuclear, Biological, and Chemical (NBC) contamination survivability maintenance procedures must be maintained throughout the life cycle of the system.

3.2. Supply support

Describe the proposed supply support concept(s), supply support limitations, constraints, and system-peculiar requirements for not only the end item, but also for the support equipment and TMDE. Consider the following areas:

3.2.1. Identify any potential deviation from standard supply support procedures. Evaluate the impact of deviation on readiness, cost, manpower, and so forth.

3.2.2. Describe plan, as applicable, for cataloging, acquisition, packaging, preservation, receipt, storage, issue, and disposal of the following:

- Repair parts, ammunition, Petroleum, oils and lubricants (POL), and so on.
- Major components and secondary items.
- Special and common tools and TMDE.

3.2.3. Include plans for reviewing and adjusting the usage and failure factors based on SA/LMI, test data, and field experience data. Include support planning not only for the end items being procured, but for any of the following claimants receiving assets:

- War reserves; operational projects, operational readiness float, and repair cycle float stocks.
- Decrement stocks (to include early mission Reserve Components (primary mobilization)/ full Service mobilization war reserves).
- Other claimants, as appropriate.

3.2.4. Include plans for

- Determining the range, quantity, and specific requirements for supply support elements needed.
- Identifying long lead-time items and vendor supplied items.
- Identifying critical parts, services and equipment.
- Re-procurement.
- Identifying all Government-furnished equipment.
- Identifying all nuclear hardness critical items for both initial provisioning and replenishment.

3.2.5. Describe method and type of supply support (for example, piece part, assembly, module or fabrication concept of replacement of parts).

3.2.6. Address possible need for inter-service supply support agreements

3.2.7. Assess the effect of the acquisition schedule on provisioning efforts.

3.2.8. Provide necessary information to other supply supporting organizations, which will provide piece-part, bulk stockage items, and so on. Early submission of projected requirements is needed to permit increased stockage of these items.

3.2.9. Identify requirements for basic sustainment material (BSM). BSM is the material consumed in the operation, and will include, but not be limited to, ammunition, POL, power sources (for example, batteries), data processing paper and tapes, war reserve requirements, and other consumable and bulk supplies. These requirements will include both those for initial fielding and those projected for annual unit consumption during peacetime (training) and wartime.

3.3. Personnel

3.3.1. Describe the operator and maintenance manpower and personnel impact (including burden on gaining commands) of the materiel system, and how manpower and personnel (number and skill level) will be provided to test proposed items. Include limitations, constraints, system-peculiar requirements, and man-machine interface. Assess projected force structure (at time of deployment) to meet both peacetime needs and wartime requirements.

3.3.2. Describe skill requirements for personnel necessary to operate, maintain, and support the end item. Consider the following:

- Present skills that may be used with little or no retraining.
- New skills required (skill evaluation and justification).
- Assigned duties.
- Task, skill, behavior, and man-machine interface analyses.

3.3.3. Define coordination with all ILS functions, and use of LMI as data source. Define data requirements.

3.3.4. Identify system safety and human factors constraints to help minimize problems with the human interface during system operation, maintenance, and transport. Include any system safety and hazard assessment requirements and results as applicable.

3.4. Support and test equipment

3.4.1. Describe procedures used to identify requirements for support equipment.

3.4.2. Identify requirements for investigation of existing standard support equipment in the inventory. Describe procedures for maximizing selection of standard tools, TMDE, support equipment and environment, to include vehicles, generators, and trailers. If modifications to current or planned materiel systems are needed, summarize plan to assure changes are completed by required time of need.

3.4.3. Identify major items of support-related hardware, to include any requirements for scarce support resources.

- Include the TMDE register and preferred items list for mandatory use of specific items.
- Define procedures for establishing TMDE requirements during SA.
- Describe use of LMI for establishing materiel system unique support equipment requirements by maintenance level.
- Identify requirements for TMDE registration and acquisition approval. Indicate direction to be given to the contractor regarding the use of common TMDE, including requirements for calibration and calibration support.
- Identify calibration requirements of the system and its support equipment.

3.4.4. Identify support equipment and TMDE peculiar hardware test, development, and support requirements. Identify any environmental and storage requirements needed for TMDE, automated test equipment, and test program set.

- Define support equipment and TMDE peculiar T&E objectives, and provide appropriate input to the test and evaluation master plan (and coordinated test plan, if prepared).
- Identify requirements (and materials needed) for local fabrication of tools, maintenance or test stands, or any other support items.
- Identify software changes to maintenance equipment where required and interconnecting devices required to test systems on existing test stands.

3.5. Design influence/ interface

3.5.1. Describe how ILS and Life Cycle Cost (LCC) will influence source selection, system design, and acquisition decisions. Explain design constraints related to ILS and any plans to ensure that ILS is fully considered in design proposals and proposed engineering changes. Describe the extent and nature of the ILS personnel participation in design reviews and tradeoff studies. List and discuss any factors that might influence design.

3.5.2. Describe climatic, environmental, and energy constraints and initiatives and any related tradeoffs.

3.5.3. Describe use of the independent research and development program or other supportability studies to identify new technologies

3.5.4. Describe logistics-related durability and survivability (to include corrosion protection, long-term storage, nuclear, biological, chemical (NBC) resistance).

3.5.5. Describe component and major item standardization and interoperability requirements.

3.5.6. Describe applicability of experience with similar materiel systems or other lessons learned which might influence system design.

3.5.7. Describe any other areas.

3.6. Technical information and data

3.6.1. Identify equipment publications concept.

3.6.2. State requirements for publications updating and finalization. Coordinate scheduling with the system production schedule. Describe how the LMI will be used as source data in publication preparation to assure compatibility between the repair parts list, support equipment and tool lists, task allocation, skills, and the narrative operating and maintenance instructions of equipment publications.

3.6.3. State evaluation criteria for validation and verification of publications, and indicate quantities and types required in support of testing.

3.6.4. Identify actions, events, milestones, and schedules for preparation and printing of final publications.

3.6.5. Describe plan for inter-service coordination on technical data requirements for multiservice acquisition.

3.6.6. Describe plan for determining if a technical data package (TDP) will be purchased, amount of data needed for example, no data or level 1 drawings for non-developmental items (NDI) with CLS versus level 3 drawings for organic maintenance/training), and what effect this will have on the acquisition strategy and acquisition plan.

3.7. Training and training support

3.7.1. Describe how training and training device requirements will be met and who is responsible for meeting those requirements. Include description of Government and contractor responsibilities and of training T&E procedures. Provide information on training constraints and target audiences.

3.7.2. Identify long-term training facilities programming requirements and coordination needed.

3.7.3. Describe plan for acquiring the required training and training devices.

3.7.4. Describe institutional training requirements and plans unique to operation and maintenance of hardware, software, human interface, support items, and test equipment.

3.7.5. Identify any nonstandard packaging, handling, storage and transportation (PHS&T) training requirements for movement and storage of sensitive, classified, or hazardous components, parts, materials, or ammunition.

3.8. Facilities and infrastructure

3.8.1. Describe all facility requirements for the use, storage, testing, training, maintenance, and disposal of the system of interest and its support equipment.

3.8.2. Describe known or planned maintenance, calibration, software setup, storage, training, and personnel facilities requirements and constraints. Also, address utilities requirements. Use the LMI output summary for Special Facility Requirements (if available)

3.8.3. Describe the adequacy or inadequacy of existing facilities (both fixed and mobile) for both the end item and its maintenance and support needs.

3.8.4. Describe any modifications necessary to existing facilities (both fixed and mobile) for inadequacies described above.

3.8.5. Describe any new facilities requirements for personnel using, testing, training, operating, and doing field and depot maintenance.

3.8.6. Identify program requirements (including responsibilities and funding) and schedules required to provide necessary modified or new facilities (fixed and mobile).

3.8.7. Describe any special security requirements for storage and use of classified end items, components, manuals, data and information set, test program set, etc. Include quantity and volume of materiel, security level of materiel, and any electronic and INFOSEC countermeasures.

3.9. Packaging, handling, storage, and transportation (PHS&T)

3.9.1. Describe system-unique requirements, management responsibilities, and procedures used to ensure that PHS&T requirements are identified and met in a timely manner during the acquisition process.

3.9.2. Describe anticipated PHS&T modes and constraints.

3.9.3. Identify system, component, part, and test equipment environmental storage and climatic requirements (for example, humidity and static control and grounding requirements).

3.9.4. Summarize actions necessary to resolve logistic problem areas identified, to include the following:

- Tradeoffs of PHS&T requirements.
- Tradeoffs of PHS&T risk areas affecting LCC.

3.9.5. Describe PHS&T assets required and those expected to be available at first unit equipped.

3.9.6. Identify current and projected changes of PHS&T systems and procedures. Determine the interface with PHS&T equipment undergoing parallel development, integration or testing.

3.9.7. Verify PHS&T test requirements have been identified and included in the test and evaluation master plan.

3.9.8. Identify special care required during PHS&T (that is, removal of sensitive components, calibration, special PHS&T requirements during repair and movement).

3.9.9. Identify actions taken to determine if containers are or will be available for system shipment.

3.9.10. List the supply bulletin number(s) of the storage serviceability standard that is appropriate for the materiel system.

3.9.11. Describe any unique transportation and transportability responsibilities, requirements, and constraints, including those related to unit and force deployability. Identify required strategic and tactical transport modes and aircraft and rail/road/water vehicle type. Identify user transportability limitations and restrictions including container compatibility. When appropriate, discuss design or performance tradeoffs for mobility, transportability, and rapid deployment.

3.9.12. Describe current transportation assets and those expected to be available at deployment and identify current and projected changes to transportation systems and procedures. Determine the interface with new equipment undergoing parallel development or testing.

3.9.13. Identify transportability test requirements for inclusion in the test and evaluation master plan.

3.9.14. For systems being acquired for multiservice use, the following apply:

- Identify transportability requirements for shipment of equipment, including special requirements of participating services.
- Describe loading and unloading configuration layout by appropriate aircraft type when air transportation is to be used. Include weight and cube.
- Identify lifting and tie-down requirements and procedures to ensure these are included in final system configuration.

4. Supportability in fielding and operational life

4.1. Initial fielding

Briefly describe planning for initial fielding and achieving initial operational capability. Summarize the procedure and schedule for preparation of all materiel fielding documentation. Provide information on how fielding will be implemented.

4.2. Program transition

If applicable, provide a description of how and when the program will be transitioned from the program management office to the support organization. Identify transition lessons learned applying to the current program. Show how repair parts usage, skills, training, procedures, technical data, and so forth will be obtained and used. Provide sufficient detail to assure that all necessary data is provided in time to adequately provision, train, and maintain the system after transition to Government support.

4.3. Post production support (PPS)

4.3.1. An initial post production support plan will be developed during the early part of the Development stage. It will document resources and management actions to ensure the sustainment of requirements and logistic support at all levels following the cessation of the Production stage for a system

4.3.2. A schedule for updating the PPS plan will be developed to ensure the plan is maintained current. The PPS plan will be updated prior to the production decision, at production phase-out, and at any other time a significant change has occurred in the anticipated support timeframe.

4.4. Post fielding support analysis

It is important to ensure high readiness while minimizing support costs for a system throughout its operational life. A plan must be developed for monitoring support of the system after it is fielded. Describe the readiness and support data to be collected; data sources; methods of data analysis; and procedures for using the results to correct ILS problems or to enhance the supportability of the system.

4.5. Disposal

This portion of the ILS Plan is often neglected. It is important to plan for disposal even though the system is expected to have a long service life. Although salvage is of little economic concern, the potential environmental impact of system components is the driver for the emphasis on disposal planning. And disposal at any time during the life of a
system if a catastrophic failure or accident results in the need to scrap it.

ANNEX F PROJECT MANAGEMENT ILS RESPONSIBILITIES

Appendix: 1 – Relationship of organizations/individuals having ILS responsibilities

The arrangements under which nations participate in one or more successive stages of the life cycle of a jointly funded multinational armaments programme are set out in a Memorandum of Understanding (MOU). This MOU contains arrangements for the governmental organization which will be responsible for the implementation of the memorandum. Prior to or starting with the Concept Stage the governmental organization may consist of:

(a) A Policy Committee – a Project/Programme Steering Committee or Board of Directors;

(b) An Executive Body – a Project/Programme Management Office (PMO), headed by a Project/Programme Manager (PM) or an Agency headed by a General Manager.

For a commonly funded programme, other standing committees, such as the Infrastructure Committees, the Military Budget Committee and the NATO Communications and Information Systems Committee, may be involved in the overall decision making for the programme. The Executive Body responsible for the execution of the programme is generally a project/programme management team within a NATO agency (e.g. NACISA).

The Policy Committee, which makes its decisions unanimously and consists of representatives from the participating nations, will be responsible for direction of the task to be carried out. It will have authority over and issue directives to the head of the Executive Body concerned. The Head of the Executive Body should have overall responsibility for establishing and managing an ILS Plan that relates support to system availability objectives, system design and acquisition, operations and support cost. That person should be supported by the ILS Manager or staff officer to assist in executing ILS responsibilities and to maintain a continuous interaction with the support community throughout the acquisition process.

The Policy Committee should establish a Working Group on ILS responsible for co-ordinating the policy aspects with respect to the policy aspects with respect to the implementation of ILS in the project. The ILS Working Group will assist and advise the ILS Manager in all activities, which will be carried out to develop, update and implement the ILS Plan on behalf of participating nations. More specifically, members of the ILS Working Group should be responsible for national staffing and co-ordination with other Working Groups of all aspects of the ILS Plan prior to its implementation.

The Project/Programme Manager, General Manager or Project/Programme Team Leader is responsible to the Policy Committee concerned for directing the Executive Body in the efficient discharge of its duties and responsibilities which include:

(a) The successful completion of the task as reflected in the MOU.

(b) The overall financial management of the budget of the executive body.

(c) The liaison with NATO agencies/bodies.

(d) The co-ordination of the day to day activity of the office/team.

7. In the ILS process most elements represent functional areas which are individually managed by technical specialists. The ILS Manager's role should be to co-ordinate and interface these functional areas to achieve integration of all ILS elements into an ILS Plan. Thus, responsibilities of the ILS Manager or staff officer are intended to:

(a) Develop an ILS Plan and monitor its implementation, integrate schedules and identify inter-relationships among ILS elements and design activities;

(b) Establish internal procedures and techniques to assess ILS programme management and execution of the project.

(c) Update the ILS Plan as the project/programme progresses through the acquisition phases;

(d) Prepare ILS input for contractual documents and evaluate output of contractor's ILS organization;

(e) Coordinate all ILS efforts which influence equipment design from the supportability viewpoint and monitor accomplishment;

(f) Maintain visibility of all essential ILS resource requirement assets, and the extent to which budgeted resources are or will be available to meet these asset requirements.

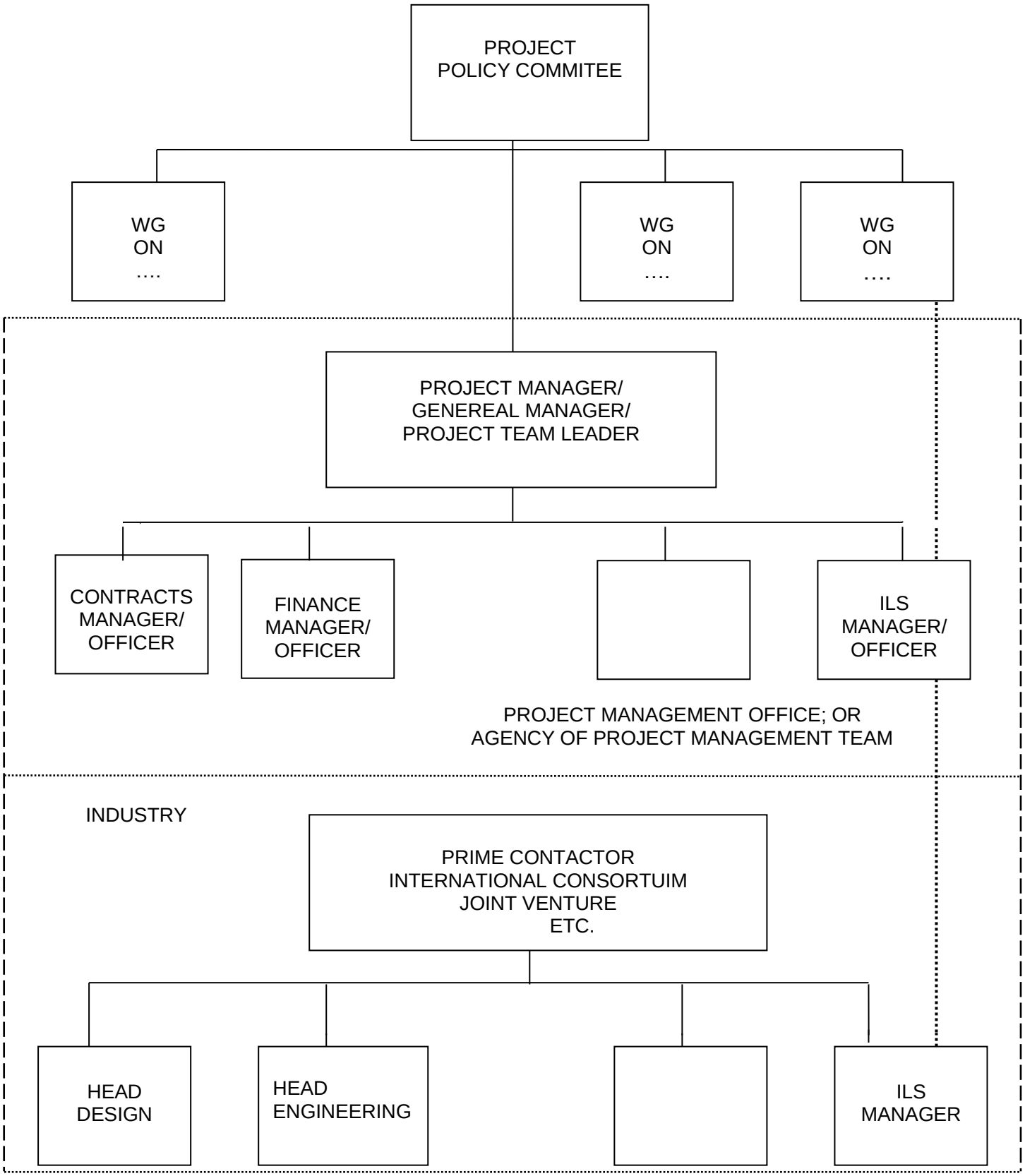
(g) Maintain current ILS management information (including detailed schedule and LSA documentation) to support ILS planning and management decisions.

(h) Interface and coordinate logistic support activities with other NATO organizations (e.g. NAMSA, NATO military commands, and national organizations).

(i) Ensure an orderly, timely and efficient transfer of overall logistic support responsibilities and know-how to the system user or in-service support organization.

A schematic structure portraying the relationships of the organisations/individuals having ILS responsibilities is at Appendix 1.

APPENDIX 1 to ANNEX F
Relationship of Organizations/Individuals Having ILS Reponsibilities



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NATO STANDARD

AQAP-2070

NATO MUTUAL GOVERNMENT QUALITY ASSURANCE (GQA)

Edition B Version 4

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NATO LETTER OF PROMULGATION

4 October 2019

1. The enclosed Allied Quality Assurance Publication AQAP-2070, Edition B, Version 4 NATO MUTUAL GOVERNMENT QUALITY ASSURANCE (GQA), which has been approved by the nations in AC/327, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 4107.

2. AQAP-2070, Edition B, Version 4, retains the procedure for mutual Government Quality Assurance as outlined in previous versions but has been updated to reflect the cancellation of a number of AQAPs, update of AQAPs and referenced international standards and to incorporate minor editorial changes. specifically:

2.1. Editorial change at paragraph 1.2.b): Reference to “ISO 9000:2005” has been modified to refer to “ISO 9000:2015”.
2.2. Editorial change at paragraph 1.2.d): Reference to “ISO 19011:2002 Guidelines for quality and/or environmental management system auditing.” has been modified to refer to “ISO 19011:2018 Guidelines for auditing management systems.”.
2.3. Editorial change at paragraph 2.2: Reference to “ISO 9000:2005” has been modified to refer to “ISO 9000:2015”.
2.4. Editorial change at paragraph 2.2.: Reference to “ISO 9000:2005, 3.6.2.”Nonconformity”” has been modified to refer to “ISO 9000:2015, 3.6.9 “Nonconformity””.
2.5. The paragraph 3.1. has been modified to reflect the change of name of NATO Standardization Agency to NATO Standardization Office.
2.6. Editorial change at paragraph 4.2.2.4.: Reference to “STANAG 4107 para. 6a)” has been modified to refer to “AQAP 4107 para. 4.2 1.a.)”.
2.7. Editorial change at paragraph 5.4.2.: Reference to “STANAG 4107 para. 2c)” has been modified to refer to “AQAP 4107 para. 2.1 1.c.)”.
2.8. The Figure 6-A has been modified to reflect the new Edition of AQAP 2110 to: “Example: Heat treatment Process / AQAP 2110 Section 5.4.7 Control of Production and Service Provision / 5.4.6 Control of externally provided processes, products and services”.
2.9. Editorial change at paragraph 8.5.: Reference to “STANAG 4107 Annex A” has been modified to refer to “AQAP 4107-SRD.1”.
2.10. The paragraph 14.2 has been modified to reflect the cancellation of AQAP-2120 and -2130 and to remove reference to specific standard-related documents.
2.11. The Annex A paragraph 2.1 has been modified to reflect the new Edition of AQAP 2110 to:” AQAP 2110 para. 5.4.12 and 5.6.”.
2.12. The Annex A paragraph 2.3.2 has been modified to reflect the cancellation of AQAP-2120 and -2130 and to remove reference to specific standard-related documents.

2.13. The Annex A paragraph 4.1 has been modified to reflect the new Edition of AQAP 2110 to:" AQAP 2110 para. 5.6.1".
2.14. The Annex A paragraph 4.5.1 f) has been modified to reflect the new Edition of AQAP 2110 and AQAP 2310 to:" AQAP 2110 and 2310 para. 5.6.1".
2.15. The Annex A paragraph 4.5.2 has been modified to reflect the new Edition of AQAP 2110 and AQAP 2310 to:" AQAP 2110 and 2310 para. 5.5.2 and 5.5.3".
2.16. The Annex A paragraph 5.5 has been modified to reflect the cancellation of AQAP 2120 and AQAP 2130 and the new Edition of AQAP 2110 and AQAP 2310 to: "AQAP 2110 and 2310 para. 5.6.1".
2.17. The Annex A paragraph 5.5.1 has been modified to reflect the cancellation of AQAP-2120, -2130 and the new Edition of AQAP 2110 and AQAP 2310 to:" AQAP 2110 and 2310 para. 5.4.12".
2.18. Editorial change at Annex B RGQA Form: Reference to "STANAG 4107 Annex A" has been modified to refer to "AQAP 4107-SRD.1".
2.19. Editorial change at Annex B RGQAR Form: Reference to "STANAG 4107 Annex A" has been modified to refer to "AQAP 4107-SRD.1".
2.20. Editorial change at Annex B GQACR Form: Reference to "STANAG 4107 Annex A" has been modified to refer to "AQAP 4107-SRD.1".
2.21. Editorial change at Annex D paragraph 4.2: Reference to "ISO 19011:2002" has been modified to refer to "ISO 19011:2018".
2.22. Editorial change at Figure C-6 Example of a Delegator Risk to reflect change of ISO 9001 and new Edition of AQAP 2110.
2.23. Editorial change at Figure C-7 Example of a Delegatee Risk to reflect change of ISO 9001 and new Edition of AQAP 2110.
2.24. Editorial change at Figure D-2 to reflect change of ISO 9001 and new Edition of AQAP 2110.
2.25. Editorial change at Figure D-3 RIAC Updated Throughout the Life of the GQA to reflect change of ISO 9001 and new Edition of AQAP 2110.

3. AQAP-2070, Edition B, Version 4, is effective upon receipt and supersedes AQAP-2070, Edition B, Version 3, which shall be destroyed in accordance with the local procedure for the destruction of documents.

5. This publication shall be handled in accordance with C-M(2002)60.

Zoltán GULYÁS
Brigadier General, HUNAF
Director, NATO Standardization Office

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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RECORD OF SPECIFIC RESERVATIONS

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Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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SECTION 1. INTRODUCTION

1.1. General

Mutual Government Quality Assurance (GQA) is the process by which NATO Nations provide each other and NATO organisations Quality Assurance services on defence products, to establish confidence that the contractual requirements relating to quality are met.

GQA is performed on those contractual requirements either posing risks to or required by law of the acquiring Nation.

1.2. References

a) Standardisation Agreement, STANAG 4107, Mutual Acceptance of Government Quality Assurance and Usage of Allied Quality Assurance Publications (AQAPs).
b) ISO 9000:2015 Quality Management Systems - Fundamentals and Vocabulary.
c) Allied Quality Assurance Publications.
d) ISO 19011:2018 Guidelines for auditing management systems.

SECTION 2. ACRONYMS, TERMS AND DEFINITIONS AND FLOWCHART CONVENTION

2.1. Acronyms

The following is a list of acronyms used throughout this AQAP:

AQAP
Allied Quality Assurance Publication

CoC
Certificate of Conformity

DFB
Delegation Feedback

FAI
First Article Inspection

GQA
Government Quality Assurance

GQACR
Government Quality Assurance Closure Report

GQAR
Government Quality Assurance Representative

QDR
Quality Deficiency Report

QMS
Quality Management System

RIAC
Risk Identification, Assessment and Communication

RGQA
Request for Government Quality Assurance

RGQAR
Response to Government Quality Assurance Request

2.2. Terms and Definitions

The definitions of AQAP 2110 - NATO QUALITY ASSURANCE REQUIREMENTS FOR DESIGN, DEVELOPMENT AND PRODUCTION (Including those of ISO 9000:2015) shall apply to this AQAP. Additional terms used in this AQAP are defined below:

acquirer
Government and/or NATO Organisation, that enters into a contractual relationship with a Supplier, defining the product and quality requirements.
Note: Normally this is a customer organisation that establishes the appropriate contractual requirements i.e. functional, technical, cost, schedule, quality etc.

critical items
Those items (e.g. functions, parts, software, characteristics, processes) having significant effect on the product realisation and use of the product; including safety, performance, form, fit, function, productibility, service life; that require specific actions to ensure they are adequately managed. Examples of critical items include safety critical items, fracture critical items, mission critical items, and key characteristics.

delegatee
The appropriate authority of a NATO Nation performing GQA after acceptance of the RGQA.

delegator
The appropriate authority of a NATO Nation or NATO Agency requesting GQA in a NATO supplying Nation.

government quality assurance participants
Collective term for those active in Mutual GQA.

key characteristic
An attribute or feature whose variation has a significant effect on product fit, form, function, performance, service life or producibility that requires specific actions for the purpose of controlling variation.

quality deficiency report
Report or record initiated by Government personnel identifying nonconformity. See ISO 9000:2015, 3.6.9 “Nonconformity”.

risk
Within the context of GQA, risk is an uncertain event or condition that has both a likelihood of occurring and a negative effect on the fulfilment of the contractual requirements relating to quality.

risk cause
The potential reason(s) why a risk will occur, expressed in terms of a breakdown of Supplier processes or process control and linked to the contractual requirements relating to quality.

risk impact
The consequence of an uncertain event occurring.

risk index
The degree of importance of a risk expressed as the product of the impact and likelihood, used to prioritise GQA activities.

risk likelihood
The degree of confidence that the risk will occur.

risk statement
A statement of what might potentially go wrong with respect to the contractual requirements relating to quality. It can be associated with any product, life cycle stage or process.

risk status
The reflection of the risk index, at a moment in time, can be increasing, decreasing or stable compared to its previous state.

special requirements
Those requirements identified by the customer, or determined by the organisation, which have high risks to being achieved, thus requiring their inclusion in the risk management process. Factors used in the determination of special requirements include product or process complexity, past experience and product or process maturity. Examples of special requirements include performance requirements imposed by the customer that are at the limit of the state-of-the-art, or requirements determined by the organisation to be at the limit of their technical or process capabilities.

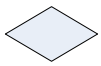
statement of GQA
A statement signed by the GQAR to attest that GQA has been performed within the provisions of STANAG 4107 and the agreed RGQA.

2.3. Flow Chart Convention

Throughout this document the following flowchart conventions are applied.

Process Input or Initiator 

Process Activity 

Decision Block 

Document 

Stored Data 

Process Terminator 

Link to Another Process 

SECTION 3. INTENT AND SCOPE

3.1. The intent of this publication is to standardise and harmonise the process by which the participating Nations request and provide GQA to each other. The Mutual GQA process described herein is implemented by authority of NATO Standardisation Agreement 4107 that has been ratified by each of the participating NATO Nations. The ratification status including Nations' reservations can be viewed, by authorised users, at the NATO Standardisation Office website http://nso.nato.int

3.2. The Mutual GQA process described in this document is initiated after a contract and/or a derived subcontract is issued and a risk assessment determines that GQA is necessary.

3.3. Acceptance of product and/or any kind of product certification (e.g. airworthiness or seaworthiness) are not activities and responsibilities of the GQAR, therefore, are not part of the Mutual GQA process, but compulsory/legal requirements under exclusive responsibility of the Acquirer and the Supplier.

3.4. GQA is not intended to replace or replicate Supplier activities, including inspection and QMS auditing. GQA is intended only to provide confidence that the Supplier activities related to quality are performed effectively, giving confidence to the Acquirer that contractual requirements relating to quality will or have been met.

SECTION 4. CONCEPT OF OPERATION

General

4.1.1. This publication provides instruction detailing what is considered the minimum to fulfil Nations' commitments within STANAG 4107. Guidance is also provided to aid the application of the fulfilment of the instructions and provides some helpful examples and good practice. An overview of the process is provided at Figure 4A.

4.1.2. Within this document the word 'shall' is used to indicate an instruction, which directly relates to the commitments within STANAG 4107. The word 'should' is used to indicate guidance or recommendations.

4.1.3. GQA Supporting Processes, reference material and forms are provided in the annexes to this publication.

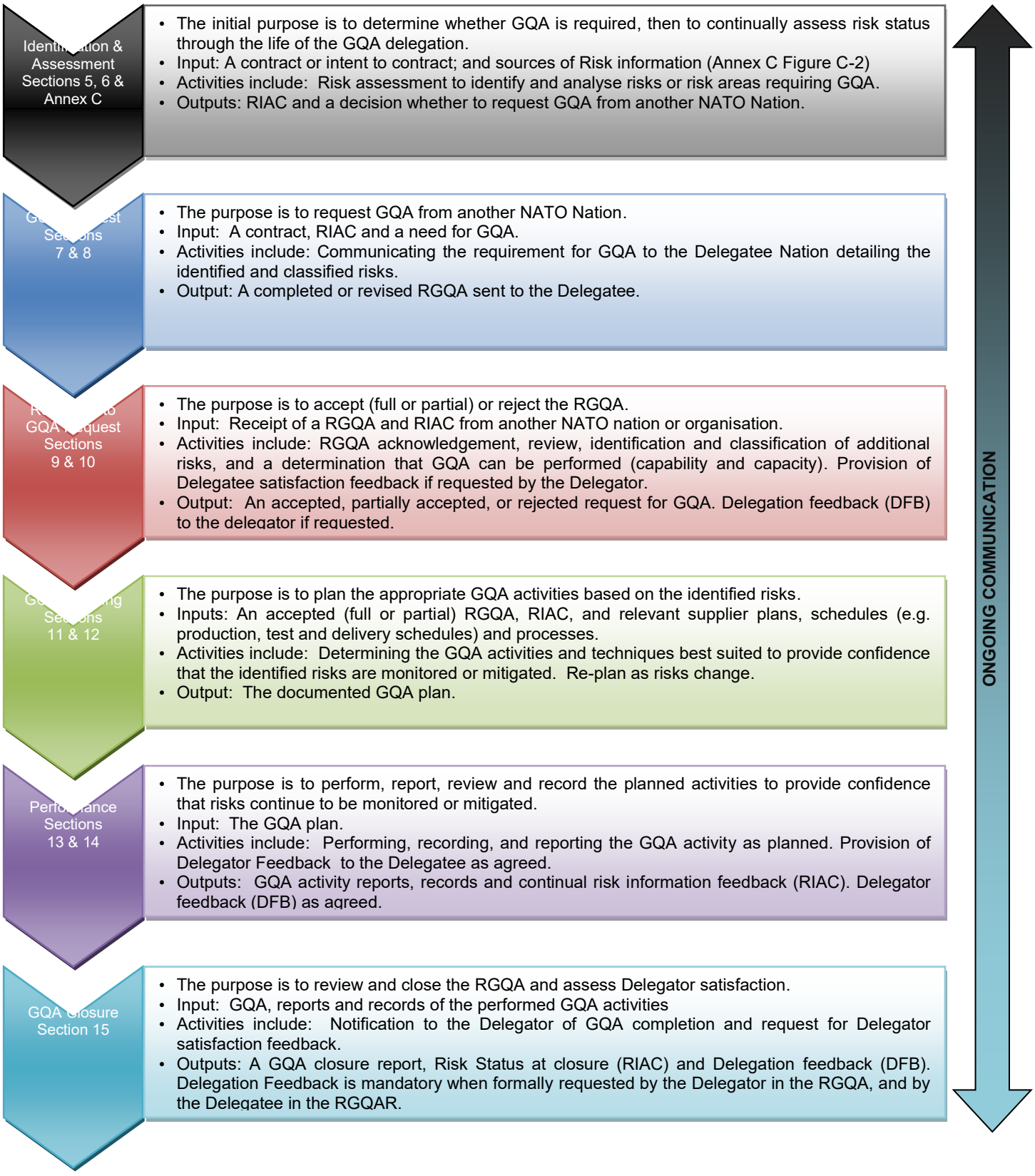
4.1.4. The forms are designed to support the process and standardize communications between GQA participants. The use of the RIAC, RGQA, RGQAR and GQACR is mandated. GQA participants are strongly encouraged to use all of the other forms in order to assure coherence and continuity. Electronic transmission e.g. email, fax and telephone should be the usual method of information exchange between the GQA participants.

4.1.5. Participating Nations are required to implement and manage their GQA process in accordance with this publication. Nations' GQA process should be subject to continual improvement (reference para. 4.4).

4.1.6. Risk assessment is an effective means of determining the appropriate amount and type of Government resources to be applied to a GQA delegation. Where risks are common across different contracts and/or Acquirers with a Supplier, the Facility Wide Approach should be considered (reference Annex D para. D.6). It should be recognised that risk, by definition, is uncertain and confidence is subjective. Delegatees are therefore, encouraged to address the expectations and concerns of the Delegator in responses to GQA requests and communications (reference para. 6.2).

4.1.7. Contracts involving one Nation acting on behalf of a third party other than that Nation will be handled on a case by case basis.

Figure 4A The Mutual GQA Process Overview



4.2. GQA Information

4.2.1. Information Exchange

4.2.1.1. The continual exchange of information between the GQA participants is key to the effective implementation of the Mutual GQA process. The aims of information exchange between Delegator and Delegatee are to provide:

a) The Delegatee with the necessary information to plan and perform GQA,
b) The Delegator with objective evidence that the contractual requirements relating to quality are or will be met.

4.2.1.2. Communication and information exchanged between Delegator and Delegatee should start as soon as possible in compliance with the applicable local contract laws and without interfering with the contract process, for example:

a) Prior to the contract issue, NATO Nations may contact each other to discuss the availability of GQA resources.
b) Prior to initiating the RGQA and when the contract is signed, the Delegator is encouraged to contact the Delegatee to discuss risks for inclusion on the RGQA.

4.2.1.3. Once an RGQA is generated all written communications between the Delegator and Delegatee should reference the relevant RGQA Number. It is recognised that Nations' referencing processes may differ; It is therefore, permissible for the Delegatee to assign an additional reference number to GQA Forms. In these cases both reference numbers should be quoted. The 2 reference numbers must be traceable to each other.

4.2.1.4. Classified information shall only be exchanged in accordance with national procedures currently in place between the participating Nations.

4.2.2. Reports

4.2.2.1. The GQA process is intended to provide Acquirers with confidence that their contractual requirements relating to quality will be or have been met. Confidence can be gained through the knowledge that GQA is being performed. Where the Delegator requires more visibility, GQA reports should be requested. The Delegator should recognise that the GQAR's primary task is the performance of GQA and so reporting requirements should be proportional to the project or contractual risks.

4.2.2.2. Reports that may be requested include:

a) Ongoing Risk Status (The Risk Identification, Assessment and Communication Form),
b) GQA Reports for specific activity or periodically,
c) Quality Deficiency Reports (QDR).

4.2.2.3. Reporting details, frequency and format should be agreed through the RGQA. A RGQA Closure Report including the risk status at closure is mandatory and shall be provided by the GQAR without request.

4.2.2.4. Notification of Unsatisfactory Conditions

If the GQAR finds that, at any time during the course of the order, GQA cannot proceed because of deficiencies in the Supplier's quality system or product and such deficiencies are of major importance or will be a cause of excessive delay, the GQAR will immediately advise the Delegator (reference AQAP 4107 para. 4.2 1.a).

4.2.2.5. GQA reports shall be considered as records.

4.2.3. Records

4.2.3.1. Within the Mutual GQA process, records shall be established and maintained to provide evidence of GQA performance, satisfy reporting requirements, and provide confidence that contractual requirements relating to quality are or will be met.

4.2.3.2. GQA records shall include as a minimum:

a) The RGQA,
b) RIAC,
c) GQA Plan,
d) Results of GQA activities indicating the system, process or product verified and dates performed. Activities associated with critical items shall be highlighted,
e) All activity associated with the disposition, investigation and correction of the nonconforming product e.g. QDRs, Customer Complaints and Concessions,
f) GQA Reports (reference sub-heading. 4.2.2.).

4.2.3.3. Records should be controlled in accordance with national practices but shall be appropriately protected, legible, readily identifiable and retrievable. Record retention periods will be in accordance with national practices and at least until the completion of the contract unless otherwise agreed on the RGQA.

4.2.3.4. Records shall be made available to the Delegator upon request.

4.2.3.5. The RIAC and other GQA records shall be used by the Delegator to review, revise or adjust current RGQA requirements, as necessary, and for enhancing the quality of future GQA requests and by the Delegatee to adjust GQA plans accordingly.

4.3. Skills and Competence

4.3.1. The GQA participants shall have the necessary skills and competence to properly plan and execute their responsibilities associated with the Mutual GQA process. The GQA participants are expected to be knowledgeable of relevant industry and technical practices, AQAPs and techniques used by the Supplier in fulfilment of the contract requirements.

4.3.2. The GQA participants shall be appropriately trained, in accordance with national practice.

4.4. Measurement, Analysis and Improvement

4.4.1. The GQA participants are encouraged to provide feedback to aid the participating Nations to measure their implementation of the Mutual GQA process. Feedback can occur at any point throughout the life of the GQA Delegation but should be as early as possible so that any misunderstandings can be resolved quickly. This feedback may be communicated by whatever means is deemed appropriate.

4.4.2. The following are the recommended minimum performance indicators to measure the Mutual GQA process:

a) The quality of RGQA and RIAC
   - Risks clearly identified,
   - Contain or reference all information needed for the GQAR to plan and perform GQA,
   - Timely transmission.

b) Effective communication including
   - Timely RGQA acknowledgment ,
   - Timely RGQA Acceptance.

c) The Delegator's opinion of the service provided by the Delegatee
   - Standard of communication,
   - Standard of GQA Reports,
   - Timeliness of Reports,
   - Level of confidence that contractual requirements relating to quality should or have been met.

Note: The DFB form at Annex B provides a common framework for delegation feedback and its use is strongly encouraged.

4.4.3. For measurement purposes the:

a) Delegatee is encouraged to provide feedback to the Delegating Nation's GQA Focal Point on the Quality of the RGQA and RIAC (reference Sections 9 and 10).

b) Delegator is encouraged to provide feedback to the Delegatee Nation's GQA Focal Point on the quality of services provided (reference Section 13 and 15).

4.4.4. Participating Nations are strongly encouraged to analyse feedback received and take action to address any validated improvement opportunities.

Note: Analysis of feedback should be rationalised by taking into account the following:

a) The number of RGQAs submitted,
b) The number of RGQAs received,
c) Any issues arising from GQA reports (but not identifying Nations or Suppliers),

d) The number of delegations either requested or received by the GQA participating Nation.

SECTION 5. RISK IDENTIFICATION, ASSESSMENT AND COMMUNICATION INSTRUCTIONS

Purpose: To determine whether GQA is required, then to continually assess risk status throughout the life of the GQA delegation.
Inputs: A contract or intent to contract; and sources of risk information (Annex C, Figure C-2).
Activities: Activities include risk assessment to identify and analyse risks or risk areas requiring GQA.
Outputs: RIAC and a decision whether to request GQA from another NATO Nation.

5.1. Inputs/Initiators

Risk information is used to initiate the process and shall be continually reviewed and revised to assure the GQA activities remain appropriate.

5.2. Risk Identification

The Delegator shall identify risk by writing a risk statement. The risk statement should answer the question 'What might go wrong on this contract?' Then, whenever possible identify the risk causes asking, 'Why identified risks might occur?'

Where specific risk cause information is not known please refer to para. 6.2.

5.3. Risk Assessment

Risk shall be assessed to determine whether to request GQA from another Nation. Assessments shall continue throughout the life of the GQA delegation by all GQA participants, to assure that the GQA remains aligned to the current risks to the fulfilment of the requirements relating to quality. For details refer to Annex C.

5.4. Delegation Determination

The Delegator shall consider whether:

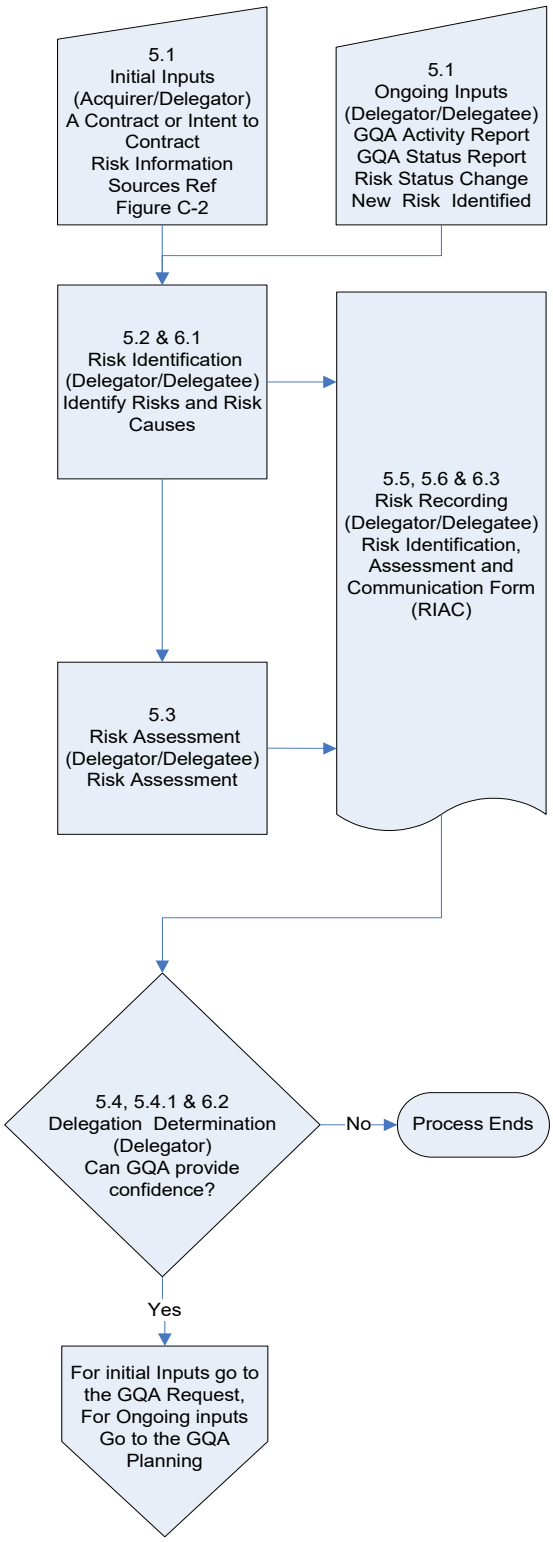
a) The risk can be adequately monitored or mitigated at delivery of the supplies to the Acquirer and if the capability to do so is available,
b) The magnitude of the identified risk warrant requesting GQA,
c) GQA can influence Supplier's performance associated with the risk and risk causes.

5.4.1. Any decision to delegate shall be based on risk and the fact that GQA will be able to provide confidence that contractual requirements relating to quality will be met.

Note: GQA can not influence the impact of a risk, only the likelihood of its occurrence.

5.4.2. Contractual Conditions

The Delegator shall verify that the contract or intended contract contains appropriate contractual conditions (reference AQAP 4107 para. 2.1 1.c).



5.5. Risk Communication

The RIAC, at Annex B3, shall be used to communicate the GQA related risks and their ongoing status.

5.6. Risk Information

Risk information from the RIAC shall be stored by the GQA participants and be readily retrievable based on product, process and Supplier. Risk information is considered commercially sensitive and shall be used for GQA purposes only. Risk information shall not be shared outside of the Mutual GQA participants, unless by prior agreement with the Acquirer, Supplier and GQAR.

SECTION 6. RISK IDENTIFICATION, ASSESSMENT AND COMMUNICATION GUIDANCE

6.1. Risk Statements and Identification of Risk Causes Guidance

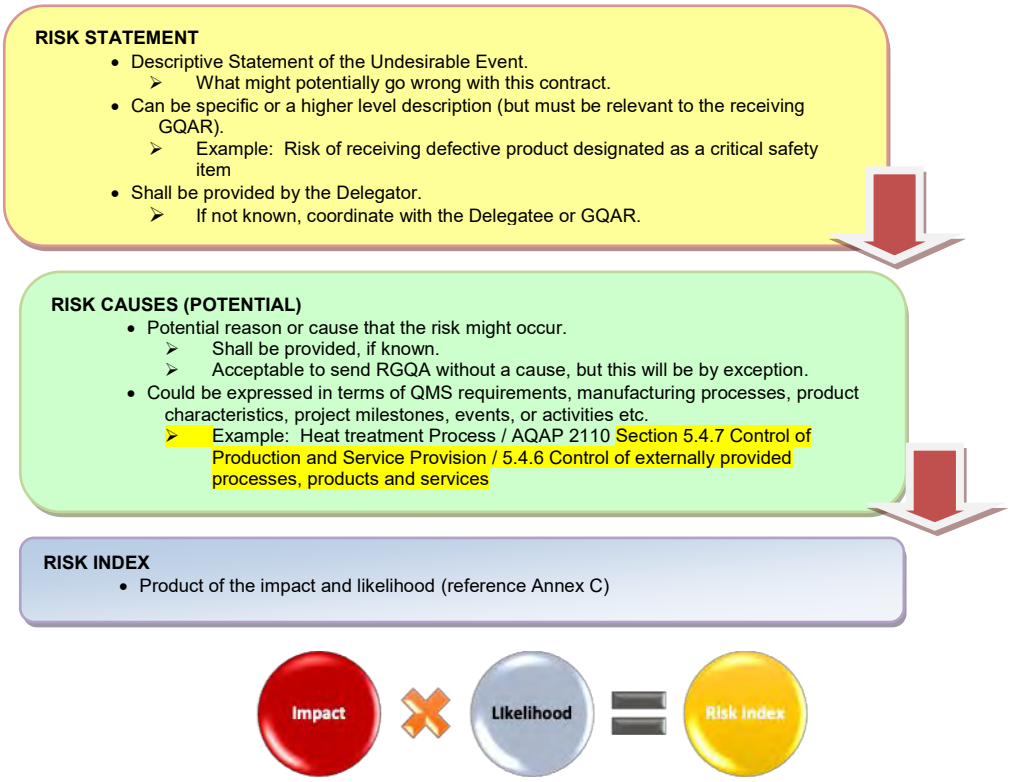
Identifying risks associated with a project, contractual requirements or Supplier usually requires the consolidated input of the Delegator and the Delegatee. Generally the Delegator should have greater access and insight into project and contract risks and be better placed to assess the impact of a risk occurring. The Delegatee should have greater access and insight into Supplier performance risks and is better placed to assess the likelihood of a risk occurring. With continual sharing of risk information both have access and insight into the risk information necessary to focus and plan GQA activities on those systems, processes and products that pose risks to the Acquirer.

6.2. Unknown Risks

It is recognised that, in some situations, risk information may not be available to the Delegator or that the Delegator does not possess the technical expertise to identify the risks. In these situations, the lack of risk information may be, in fact, the risk to the Acquiring Nation. In either case, the Delegator may delegate in order to have the GQAR confirm or invalidate the risk, especially risks associated with the Supplier's performance.

Figure 6-A illustrates the concept of the GQA risk identification and assessment process.

Figure 6-A



6.3. Risk Information Guidance

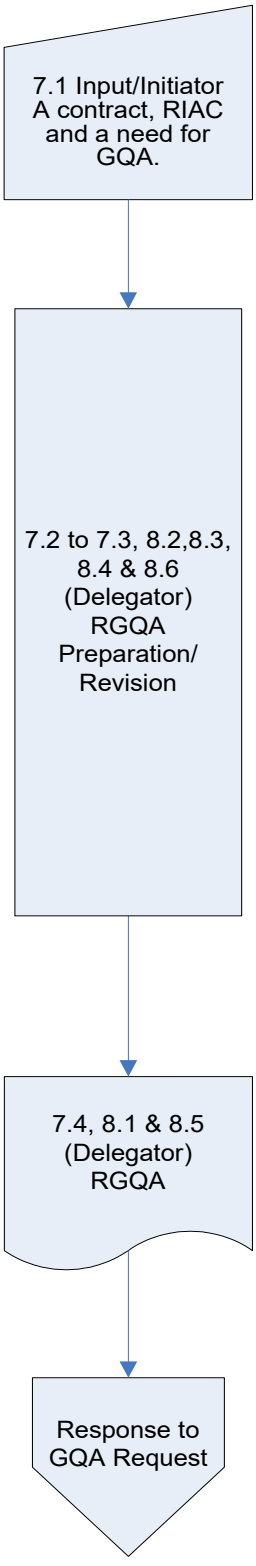
Frequent reference to risk information or records is made throughout this document. These references refer to risk information records maintained by the Acquirer, Delegator and Delegatee. They should be a historical record of risks and when consolidated, provide the complete view of risk to the fulfilment of contractual requirements relating to quality.

Note: The degree or amount of risk information available to the Delegator can vary depending on the RGQA point of initiation. Risks can change depending on the life cycle phase of project or contract.

Note: Additional guidance on identifying and classifying risks is at Annex C.

SECTION 7. GQA REQUEST INSTRUCTIONS

Purpose: To request GQA from another NATO Nation.
Input: A contract, RIAC and a need for GQA.
Activities: Activities include communicating the requirement for GQA to the Delegatee Nation detailing the identified and classified risks.
Output: A completed or revised RGQA and RIAC sent to the Delegatee.



7.1. Input/Initiator

The Mutual GQA process becomes applicable after the Government contract and/or derived subcontract is issued and where a requirement for GQA is determined (reference paras. 5.4 & 5.4.1).

7.1.1. RGQA Revision

Any changes to the RGQA shall be communicated and recorded.

7.2. RGQA Preparation

The Delegator shall complete the RGQA form at Annex B. The Delegator shall clearly identify, on the RGQA, any specific requirements or expectations including:

a) Whether a copy of the GQA plan is required (reference para.12.7),
b) Whether the GQAR is required to sign a Statement of GQA on the CoC (reference para. 14.4),
c) Any applicable product release requirements,
d) The authority delegated to the GQAR concerning the processing requests for deviation permits or concessions from Suppliers or Sub-suppliers (reference Annex A.3),
e) Reporting requirements (reference para. 4.2.2),
f) Any sub-delegation requirements (reference Annex A para. A.6),
g) The requirement for Delegatee satisfaction feedback
h) Any other requirements or exclusions.

7.2.1. GQA Activities and Techniques

The Delegator cannot impose, but may suggest, GQA activities or techniques to be used. The GQAR, during the GQA planning, will identify the activities and techniques best suited to handle and monitor risks.

7.2.2. The Facility Wide Delegation

The Facility Wide Delegation allows a Delegator to cover a number of contracts for the same type of equipment with the same type of risks at a particular Supplier under a single delegation (see Annex D, D.6). The use of Facility Wide Delegations can be proposed by either the Delegator or the Delegatee and should be agreed by both participants.

7.2.3. Facility Wide Delegation Review

Additional contracts may be added to an existing Facility Wide Delegation by referencing the initial RGQA. The Delegator is still required to provide all relevant contractual documentation. Facility Wide Delegations shall be reviewed at least once a year on the anniversary date of the RGQA by the Delegator and Delegatee (see Annex D para. D.6.4.2).

7.3. Contractual Information

It is the Delegator's responsibility to ensure that the RGQA contains or references all the information needed for the GQAR to plan and perform the GQA. As a minimum this includes the completed RIAC and Delegator requirements and product descriptions. The Delegator shall ensure that the Delegatee receives a copy of the contract and the

references for the associated documents. If the contract is to be provided by the Supplier, the applicable contractual clause shall be provided with the RGQA.

7.4. RGQA Transmission

The RGQA and RIAC shall be sent in sufficient time with the contractual schedule in order to allow the GQAR to prepare for and perform the requested GQA.

7.5. Urgent Situations

In urgent situations where an immediate GQA requirement precludes preparation of the RGQA, the Delegator may email or fax the Delegatee and request that GQA is initiated immediately. This shall always be followed up by a formal RGQA as soon as possible, but not later than a maximum of 15 working days (reference para. 7.2).

SECTION 8. GQA REQUEST GUIDANCE

8.1. The RGQA

The objective of the RGQA is to communicate all relevant information to the Delegatee with respect to the product, the risk, the Delegator requirements and expectations.

Note: This process shall be applied for all GQA sub delegations, refer to the GQA Planning Process and Annex A section A.6.

8.2. Delegator GQA Requirements

The Delegator should ensure that specific requirements or exclusions are clearly communicated on the RGQA. The RGQA form includes check boxes to highlight the most common requirements. Open text fields are provided to allow the Delegator to detail specific requirements relating to the common or additional requirements.

8.3. The Facility Wide Delegation

The use of Facility Wide Delegation is recommended where the Delegator has more than 1 delegation with similar risks (see Annex D section D.6).

8.4. GQA on Low Risk

For non complex, non critical products and other low risks, from Suppliers with a proven track record of successful deliveries will not normally require intensive GQA. In such cases it is important that the Delegator monitors the Supplier's delivery performance. Any adverse trends should result in a revision of the RIAC and subsequent need to increase in GQA effort.

8.5. RGQA Transmission

Preferably, the Delegator should electronically transmit the RGQA and RIAC (Word or PDF format) along with the contract and supporting information (reference para. 4.1.3), to the appropriate National Authorities or focal points (reference AQAP-4107-SRD.1).

8.6. Associated Documentation

The Delegator should provide directly or through the Supplier, the documentation necessary to plan and perform GQA including the contract and product specifications to the Delegatee. The documentation should detail, as applicable, the following:

a) Legal/statutory requirements that could affect the contract and/or the performance of GQA,
b) Appropriate contractual AQAP; or equivalent QMS requirements and GQAR and Acquirer right of access into the Supplier's or Sub-supplier's facility to perform GQA,
c) Appropriate contract technical requirements or reference thereto,
d) Instructions related to product release from the Supplier's facility, including CoC requirements,

e) Procedures for dealing with requests for deviation permit/concession (reference Annex A section A.3),
f) Requirements for Supplier generated deliverable plans, e.g. quality plan, risk management plan, configuration management plan,
g) Design reviews, first article inspection and/or specific testing requirements,
h) Contract delivery schedule requirements.

8.7. The GQAR may be requested to advise on the suitability of the Supplier documentation e.g. plans, process or product documentation.

SECTION 9. RESPONSE TO GQA REQUEST INSTRUCTIONS

Purpose: To accept (full or partial) or reject the RGQA.
Input: Receipt of a RGQA and RIAC from another NATO Nation or organisation.
Activities: RGQA acknowledgement, review, identification and classification of additional risks, and a determination that GQA can be performed (capability and capacity) and request for Delegator satisfaction feedback.
Output: An accepted, partially accepted, or rejected request for GQA. Delegation feedback (DFB) to the Delegator if requested.

9.1. GQA Acknowledgement

The focal point shall acknowledge receipt of the RGQA. The acknowledgement should be sent as soon as possible, but not later than 5 working days. The acknowledgement signifies that the RGQA has been received.

9.2. RGQA and Associated Documentation Review

In order to properly plan GQA activities the GQAR shall review the RGQA and associated documentation (reference para. 8.6). The review is to ensure the GQAR is knowledgeable of the requirements of the contract as related to the requested GQA. The results of the review shall be used to assist the GQAR in planning the appropriate GQA activities.

9.2.1. GQAR Risk Review

The GQAR shall review the RIAC and identify and classify risks in accordance with the risk Identification and Assessment process, (See section 5).

9.2.2. Additional/Revised Risk Information

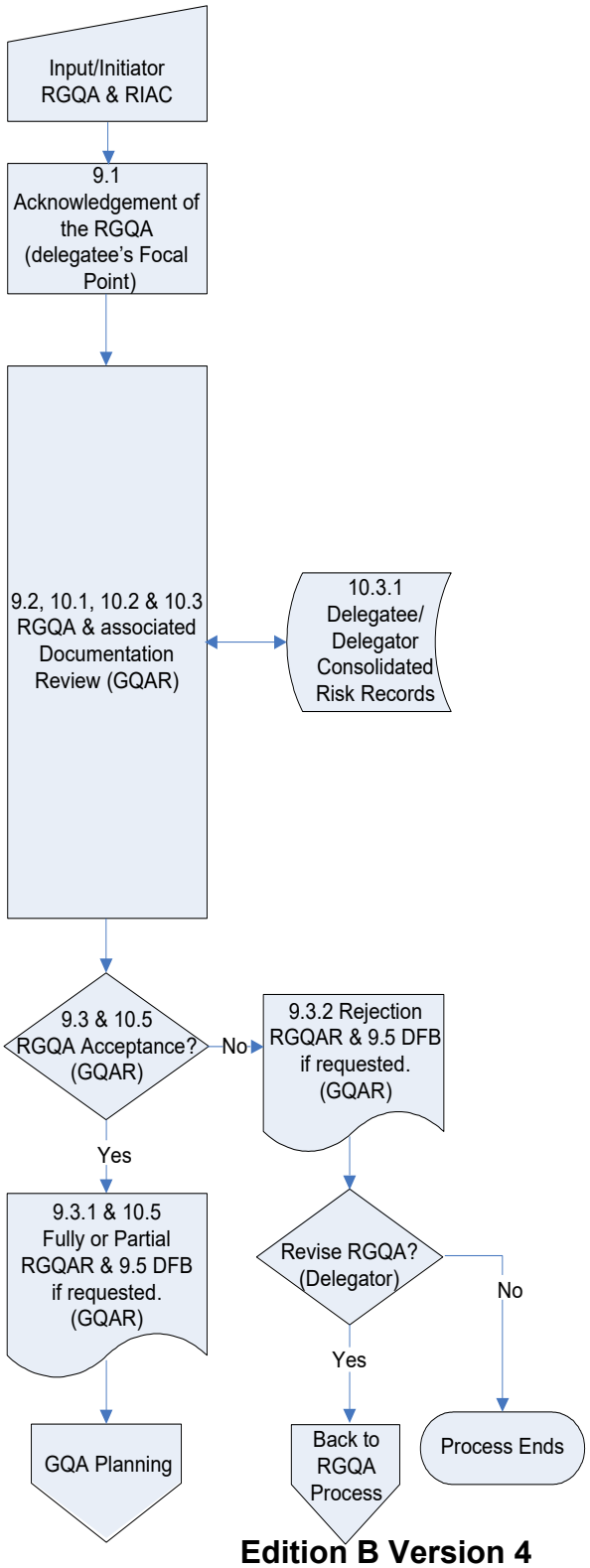
Where the GQAR possesses risk information that adds or contradicts the Delegator risk identification and/or classification they shall provide the Delegator with a revised RIAC. Accurate risk information is valuable to project or contract managers.

9.3. Response to GQA Request

Based on the review of the RGQA, contract and outcomes of the joint risk identification, the GQAR determines if the RGQA can be accepted fully or in part. The GQAR shall notify the Delegator of the determination by returning the completed Response to GQA Request (RGQAR) Form. Where the Delegatee has elected to adopt a Facility Wide Approach to GQA (see Annex D section D.6), this should be indicated by checking the appropriate box on the RGQAR. This shall be done as soon as possible but not later than 20 working days of receipt of the RGQA, unless by prior agreement with the Delegator.

9.3.1. RGQA Partial Acceptance

Where the GQAR can only accept the RGQA in part, the GQAR shall complete the RGQAR accordingly and discuss alternatives for the requirements that cannot be accepted with the Delegator refer to para 10.5.



While issues are being resolved, the implementation of GQA on the accepted aspects of the RGQA shall not be delayed. Acceptance, in part, of a RGQA shall be on an exception basis unless reservations are posted in STANAG 4107. Acknowledgement of the partial acceptance from the Delegator is not needed prior to GQA performance.

9.3.2. RGQA Rejection

If the GQAR cannot accept the RGQA, the GQAR shall complete the RGQAR accordingly, as soon as possible, but not later than a maximum of 20 working days, explaining why the RGQA cannot be accepted. Rejection of an RGQA shall only be on an exception basis refer to para 10.5.

9.4. Termination of GQA

Once the GQAR accepts the RGQA, the GQA shall not be terminated without the coordination and concurrence of the Delegator.

9.5. Delegation Feedback

9.5.1. If the Delegator has requested Delegation Feedback on the RGQA, then the Delegatee should provide feedback to the Delegator.

9.5.2. Where the Delegation may be in place for an extended period, the Delegatee may request satisfaction feedback before closure of the RGQA, or on an annual basis or as agreed with the Delegator. This agreement should be recorded on the RGQAR.

SECTION 10. Response to GQA Request Guidance

10.1.Contract Review

The RGQA and associated contractual requirements should be clear, complete and understood by the GQAR. If clarification is required the GQAR should contact the Delegator. E-mail or telephone conversations are often the quickest means to resolve such issues.

Note: Records of communications should be maintained.

10.2.Contract Review Considerations

During the review, particular emphasis should be placed on the following as applicable:

a) Ensuring the GQAR has the necessary right of access to the Supplier or Sub-supplier's plant for the purposes of performing the necessary GQA,
b) The GQAR's delegated authority with respect to the processing of Supplier's deviation permits and/or concessions,
c) The Supplier's authority concerning deviation permits and/or concessions,
d) QMS requirements (reference STANAG 4107),
e) Product technical requirements, if provided,
f) The Delegator's requirements relating to product release including the signing of a statement of GQA,
g) Requirements for Supplier generated plans, e.g. quality plan, risk management plan, configuration management plan, sub delegations,
h) Specific tasking such as requirements for first article inspections, special testing requirements, involvement in design reviews,
i) Reporting requirements including risk information (RIAC), activity reports, and QDRs,
j) Pre-contract award information,
k) Identification of critical items such as critical safety items, flight critical, submarine safety items, and key characteristics or other national high emphasis designators.

10.3.GQAR Risk Review

The GQAR should provide recommendations and/or comments concerning the risks identified by the Delegator. It is not necessary for the Delegator and GQAR to agree on the risk identification and/or assessment as their perspectives and accessibility to risk information can be different.

10.3.1. Additional Risks

If additional risks, which have not already been identified by the Delegator, require monitoring through GQA, the GQAR is expected to provide a revised RIAC to the Delegator.

10.4.Facility Wide Approach

Where several contracts have been placed with the same Supplier, the GQAR may perform GQA using a Facility Wide Approach where risk levels permit.

10.5.RGQA Partial Acceptance or Rejection

The Delegator may elect to conduct their own GQA activities at the Supplier if:

- an RGQA has been partially accepted and the Delegatee GQA Plan does not address all risks identified by the Delegator,
- the Delegator chose to suggest specific GQA activities on the RGQA that the Delegatee cannot or will not perform,
- an RGQA has been rejected.

Any such visits shall be coordinated with the Delegatee who shall have the right to accompany the Delegator. It is important that information is openly shared between the Delegator and Delegatee to ensure that both parties have a consistent understanding of risk status at the Supplier and do not duplicate GQA activity. Both parties are to agree on the management of GQA Information (see section 4.2).

10.6. Where a delegation is expected to be in place for a long period, the Delegatee may request Delegator satisfaction feedback before closer of the RGQA, on an annual basis or as agreed with the Delegator.

SECTION 11. GQA PLANNING INSTRUCTIONS

Purpose: To plan the appropriate GQA activities based on the identified risks
Inputs: An accepted (full or partial) RGQA, RIAC, and relevant Supplier plans, schedules (e.g. production, test and delivery schedules) and processes.
Activities: Determining the GQA activities and techniques best suited to provide confidence that the identified risks are monitored or mitigated. Re-plan as risks change (reference Annex C and D).
Output: The documented GQA plan

11.1. GQA Planning Initiation and Review Inputs

The GQA Plan is a dynamic document based on the initial RGQA and RIAC. Throughout the life of the GQA delegation, the risk status is expected to change. The RIAC will be revised accordingly. The GQA plan shall be revised to maintain alignment to ongoing risk status (reference Annex D).

11.2. Communication

The Delegator and Delegatee shall communicate risk information.

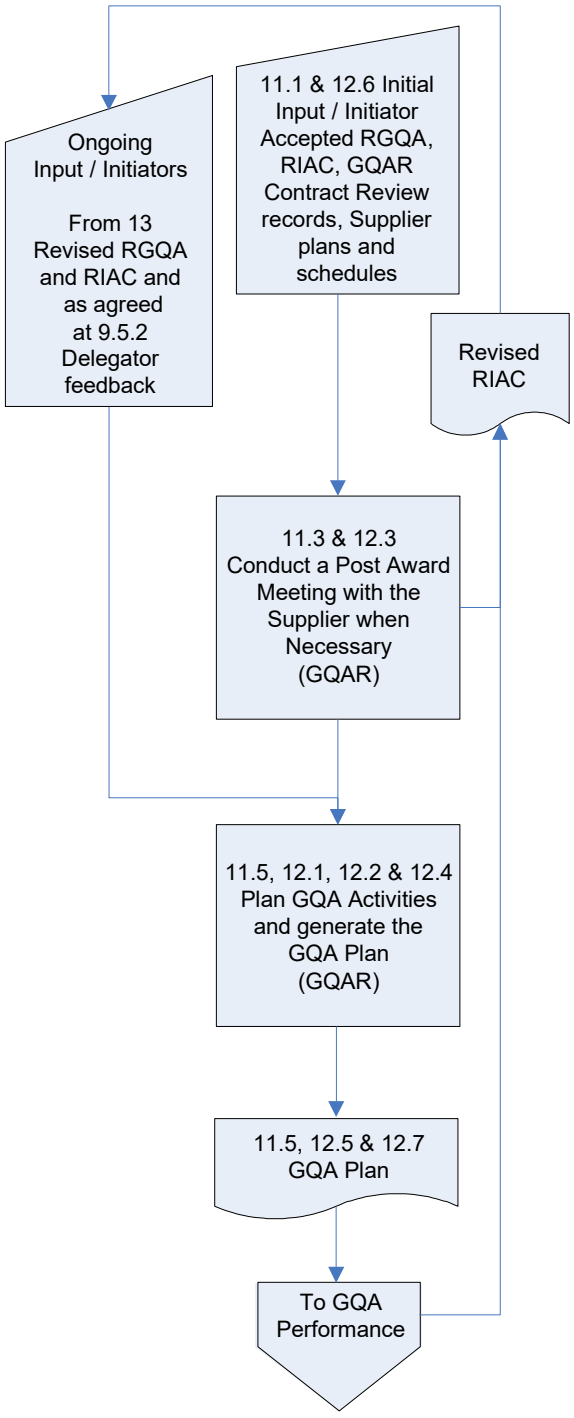
11.3. Post Award GQA Meeting

A post award GQA meeting shall be initiated at the request of the Supplier or if:

a) Communication lines or GQAR rights of access require clarification,
b) The GQAR believes that the Supplier does not have a clear understanding of the QA requirements of the contract and/or,
c) The GQAR needs to discuss Supplier plans, schedules and/or
d) The GQAR needs to discuss product specifications or standards.

11.4. Sub Delegation

The GQAR shall apply the Risk Identification and Assessment Process to determine the need for GQA at the Sub-supplier's facility. If the GQAR at the Supplier's level determines that GQA at a Sub-supplier's facility is necessary, the GQAR shall raise an RGQA in accordance with the GQA Request Process and notify the Supplier of the requirement. GQARs operating at the Sub-supplier level shall not take any action or make any statement that could be construed as interfering with the contractual arrangements between the Suppliers and their Sub-suppliers.



11.5. The GQA Plan

It is the GQAR's responsibility to determine the GQA activities and techniques best suited to monitor the identified risks and influence the Supplier's risk mitigation. The GQAR shall plan appropriate activities, taking in account relevant Supplier plans and schedules, to satisfy the accepted requirements of the RGQA (reference Annex D). All GQA activities to be performed by the GQAR shall be traceable to

the risk documented in the GQA plan. Any identified risks not addressed by the GQA plan shall be communicated to the Delegator so that other arrangements can be made.

11.5.1. The GQA plan shall be prepared in accordance with national practices but shall include as a minimum:

a) Reference to all risks being monitored;
b) Identification of the specific systems (or elements thereof), processes and/or products requiring GQA,
c) GQA activities for each identified Risk,
d) Schedule of the GQA activities,
e) Intensity of GQA, e.g. periodicity, sampling and FWA (see Annex D section D.6),
f) Other GQA activities to be performed.

11.5.2. The GQA activities identified below shall be planned and performed by the GQAR without the need for specific tasking in the RGQA:

a) Reviewing the Supplier QMS documentation,
b) Establishing and maintaining GQA records (reference para. 4.2.3),
c) Reviewing the results of GQA,
d) Initiating and processing of QDRs; including verification of preventive and corrective actions (reference Annex A section A.4),
e) Initiating Sub-supplier RGQA, as required (reference Annex A section A.6) ,
f) Verifying the Supplier's investigations of customer complaints on current delegations (reference Annex A section A.5).

11.5.3. GQA Plan Adjustment

The GQA plan and associated GQA shall be adjusted throughout the life of the GQA delegation if risk status changes or as confidence in the Supplier's ability to fulfill contractual requirements changes.

SECTION 12. GQA PLANNING GUIDANCE

12.1. Risk Based GQA Planning

For examples of how risk can be used to plan GQA activities refer to Annex C.

12.2. Communications

The Delegator and GQAR should discuss the risks and planning of GQA activities, especially for larger programs or for longer duration delegations (reference Annex C).

12.3. Post Award GQA Meeting

The meeting should be used to identify and/or clarify such issues as:

a) QMS or inspection requirements,
b) Quality plan, configuration management plan, software plan, reliability and maintainability plan or other contractually required documentation or deliverable technical data,
c) GQA activities to be performed in support of the RGQA,
d) Evidence and elements of evidence,
e) Procedures for dealing with requests for deviation permits and/or concessions
f) Product release requirements e.g. Certificate of Conformity requirements,
g) Critical items such as critical safety items, flight critical, submarine safety items and key characteristics or other national high emphasis designators,
h) GQAR involvement in design reviews, configuration management activities, testing, release of product from the Supplier's facility etc.
i) First article testing/Pre-production testing,
j) Supplier risk mitigation activities,
k) Subcontracting plans,
l) Sub-supplier information.

12.4. GQA Sub Delegations

Planning and issuing Sub-supplier RGQAs should be conducted throughout the life of the GQA delegation as appropriate, and does not have to be completed prior to development of the GQA plan. The Supplier is solely responsible for Sub-supplier management (reference to Annex A section A.6.2).

12.5.GQA Plan

The GQA Plan provides the focus for GQAR surveillance activities. The GQA Plan is a stand alone document that will guide the GQAR in providing surveillance on appropriate processes with respect to the stated risk and risk cause. An example of a GQA plan template can be found at Annex B.

12.6. GQA Planning, Initiation and Review

Revision of the GQA plan should be considered after the following:

a) Analysis of GQA records indicate favourable/unfavourable trends,
b) Analysis of Supplier data indicate favourable/unfavourable trends,

c) Identification of system, process, or product nonconformity that resulted in a QDR being issued
d) Customer complaint investigations.

12.7.Communicating the GQA Plan

When requested, the GQA plan and subsequent revisions, will be provided to the Delegator. Requesting a copy of the plan should not be a common occurrence on routine RGQAs. Where major programs or higher risks are involved, it may be appropriate to request a copy of the GQA plan. This will help the Delegator understand the depth of surveillance through the supply chain and prevent duplication of QA activity after receipt.

SECTION 13. GQA PERFORMANCE INSTRUCTIONS

Purpose: To perform, report, review and record the planned activities to provide confidence that risks to the fulfilment of contractual requirements relating to quality continue to be monitored or mitigated.

Input: The GQA Plan.

Activities: Performing, recording and reporting of the GQA activity as planned. Provision of Delegator feedback to the Delegatee as agreed.

Output: GQA activity reports, records and continual risk information feedback (RIAC). Delegator Satisfaction Feedback (DFB) as agreed.

13.1. GQA Planned Activities

The GQAR shall perform the GQA activities as planned.

13.2. GQA Performance Records

The GQAR shall record the results of all GQA activities performed in accordance with para. 4.2.3.

13.3. Sub Delegation

If risk requiring GQA becomes apparent in the supply chain, during a GQA delegation, the GQAR shall initiate a Sub-supplier delegation in accordance with the GQA request instructions (reference Section 7). For further information refer to Annex A section A.6.

13.4. Nonconformity

If nonconformity is detected by the GQAR, the GQAR shall request the Supplier to implement corrective action. The GQAR shall raise a QDR where nonconformity adversely impacts the product performance or delivery schedule and/or situations specified in the RGQA.

13.4.1. The GQAR shall verify the effectiveness of the Supplier's corrective action. The managing nonconformity process is outlined at Annex A section A.2.

13.5. GQA Activity Review

The GQA participants shall review the results of the GQA periodically to assure the effectiveness of the planned activity.

13.5.1. Where planned activities cannot be performed, for any reason, the Delegatee shall notify the Delegator as soon as possible, so that the Delegator can make alternative arrangements.

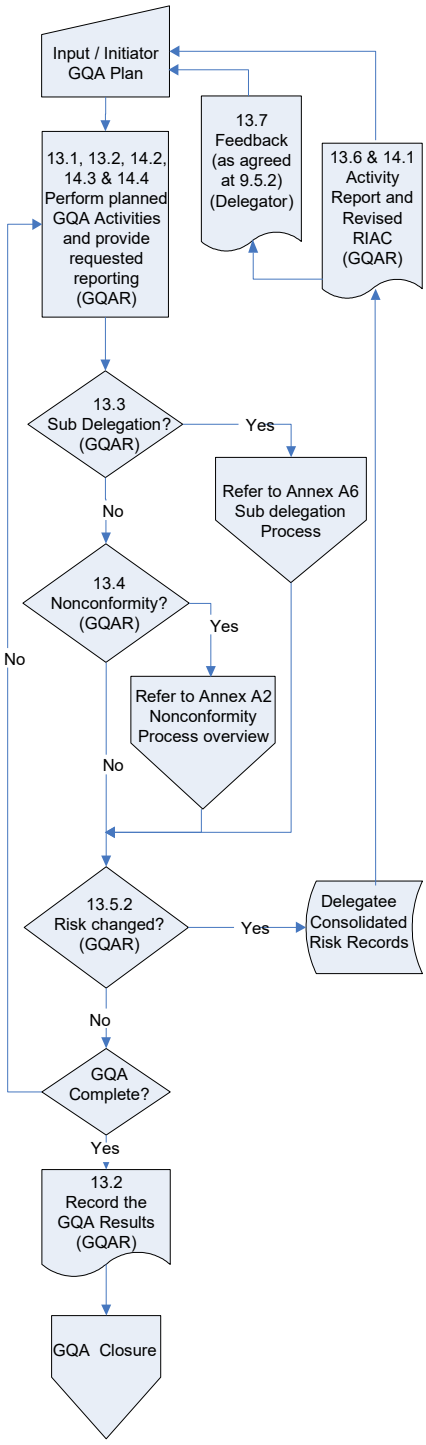
13.5.2. Significant new risk may become apparent or existing risk status may change. This shall initiate a GQA activity review, in addition to any planned reviews. The results of the review and revised RIAC shall be communicated to the other participants.

13.6. GQA Risk Information Feedback

The GQAR shall provide risk information feedback on a continual basis, as appropriate, using the RIAC. Records of GQA activity shall be provided to the Delegator upon request (reference Annex D).

13.6.1. Statement of GQA

When requested on the RGQA and required by the contract, the statement of GQA on the CoC shall be signed by the GQAR.



13.6.2. GQA Reporting Chain
GQA reports shall be communicated through the chain of Delegators back to the original (Initial) Delegator.

13.7. Delegator Satisfaction
For delegations of an extended duration, the Delegator should provide Delegatee feedback on the DFB at Annex B as agreed (reference section 9.5). The feedback will enable the Delegatee to analyse the GQA provided and continually improve their GQA processes (reference section 4.4).

SECTION 14. GQA PERFORMANCE GUIDANCE

14.1.GQA Risk Information Feedback

Typically, risk levels will change during the course of a GQA delegation or if/when new risks are identified. These changes may result from the identification of Nonconformities, improvement or degradation of Supplier performance, changes in contractual requirements, etc.

Note: The GQAR may recommend a revision of the RGQA upon significant changes to the risk status.

14.2.Access to Relevant Documentation

It is an AQAP 2110, 2131 and 2310 requirement that the Supplier makes available, to the Acquirer and GQAR, all relevant documentation needed to plan and perform GQA.

14.3.CoC and Statement of GQA

An example CoC form is provided at Annex B. Within the context of Mutual GQA, the CoC is a dual-purpose form, it is used as a confirmation by the:

Part 1 - Supplier to the Acquirer that apart from any identified and approved deviation permits and concessions, the contract deliverables conform to contractual requirements.

Part 2 - GQAR to attest that, within the provisions of STANAG 4107, AQAP 2070 and the RGQA the planned GQA has been performed.

14.4. The GQAR signature on the statement of GQA signifies that the planned GQA has been performed. It does not mean acceptance of the supplies on behalf of the Delegator, does not necessarily mean that the individual items have been inspected, nor does it mean that certification (e.g. airworthiness and seaworthiness) has been granted.

SECTION 15. GQA CLOSURE INSTRUCTIONS AND GUIDANCE

Purpose: To review and close the RGQA and assess Delegator satisfaction.
Inputs: Completed GQA, reports and records of the performed GQA activities.
Activities Notification to the Delegator of GQA completion and request for Delegator satisfaction feedback.
Outputs: The GQA closure report, risk status at closure (RIAC) and Delegation feedback (DFB)

15.1. GQA Review

When the GQAR considers the GQA performance is complete, the GQAR shall conduct a review of the GQA records.

15.1.1. The review shall focus on, as a minimum:

a) Whether the requested GQA had been performed,
b) Whether the risk status had changed,
c) QDRs issued,
d) Supplier CoCs issued.

15.1.2. Using the results of the review the GQAR should consider the effect of the GQA on the risks and consider making recommendations to the Delegator regarding future GQA requests with the same Supplier and/or products.

15.2. GQA Closure Report

Using the results of the GQA review the GQAR shall complete the GQA Closure Report (GQACR) at Annex B. The GQACR shall be sent to the Delegator within 20 working days of the completion of the GQA.

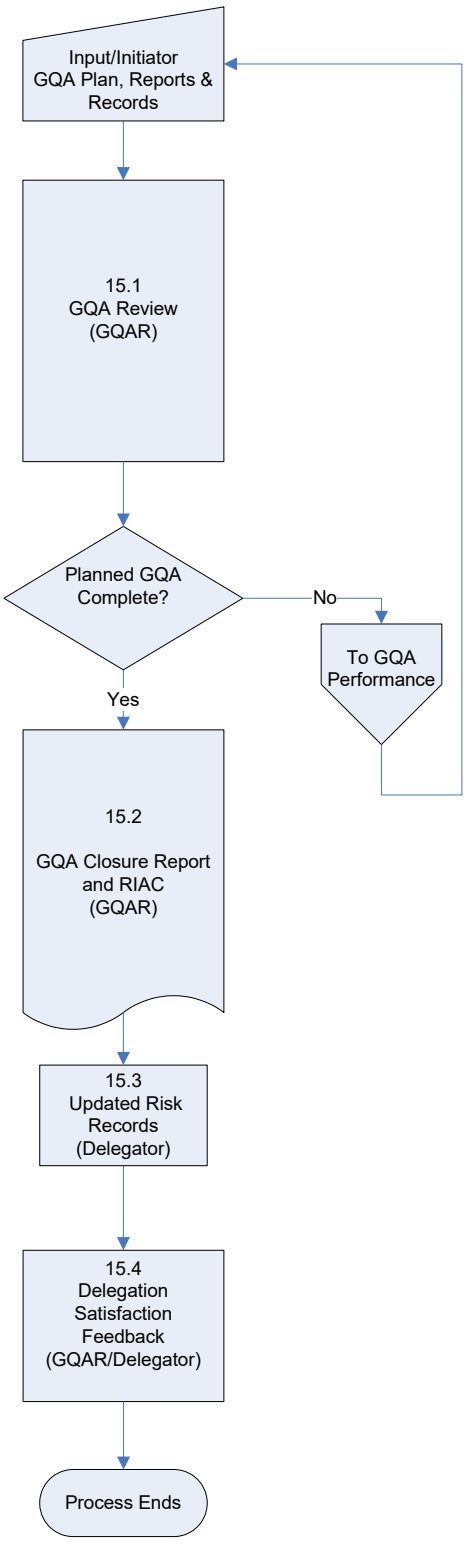
Note: If requested on the RGQA, the signing of a statement of GQA on the Supplier CoC, is part of the GQA performance process and does not, on its own, indicate that the GQA is complete.

15.3. Records

The Delegator risk records should be updated as appropriate. The GQA participants shall retain the GQACR for reference to inform potential future delegations.

15.4. Delegator Satisfaction

The Delegator is strongly encouraged to provide the Delegatee feedback on the DFB at Annex B. The feedback will enable the Delegatee to analyse the GQA provided and continually improve their GQA processes (reference section 4.4). Delegation Feedback is mandatory when formally requested by the Delegator in the RGQA, and by the Delegatee in the RGQAR.



ANNEX A: GQA SUPPORTING PROCESSES

A.1 PURPOSE OF THIS ANNEX

A.1.1 This annex contains supporting process outlines:

a) Nonconformities Process Overview,
b) Deviation Permits and Concessions Process,
c) Corrective Action Process,
d) Product or Customer Complaints Investigation Process,
e) Sub Delegation Process.

A.1.2 GQA is a proactive process designed to reduce the likelihood that risks will occur. The supporting processes are reactive and should be implemented, if risks occur at any time during the performance of GQA. The events may be related to the occurrence of a risk scenario or a previously unidentified risk. In either case the results of the supporting process should initiate a risk review.

The supporting processes are intended to minimise the adverse effect when a risk occurs.

A.2 NONCONFORMITIES PROCESS OVERVIEW

A.2.1 Purpose

The purpose of this overview is to outline the typical activities, and responsibilities relating to the nonconformities where GQA is being or has been performed. It is merely an example of the processes and their interaction. It is recognised that national practice will dictate the specific actions of the GQA participants.

Note: The Supplier's obligations are assumed, through the contractual Quality Requirements e.g. AQAP 2110 para. 5.4.12 and 5.6.

A.2.2 Input/Initiator

This process is initiated when nonconformity is identified by the Supplier, GQAR, Acquirer or Delegator at any point before or after product delivery.

A.2.3 If the GQAR identifies a system, process or product nonconformity at any point during the course of GQA, the GQAR should request corrective action for the identified nonconformity.

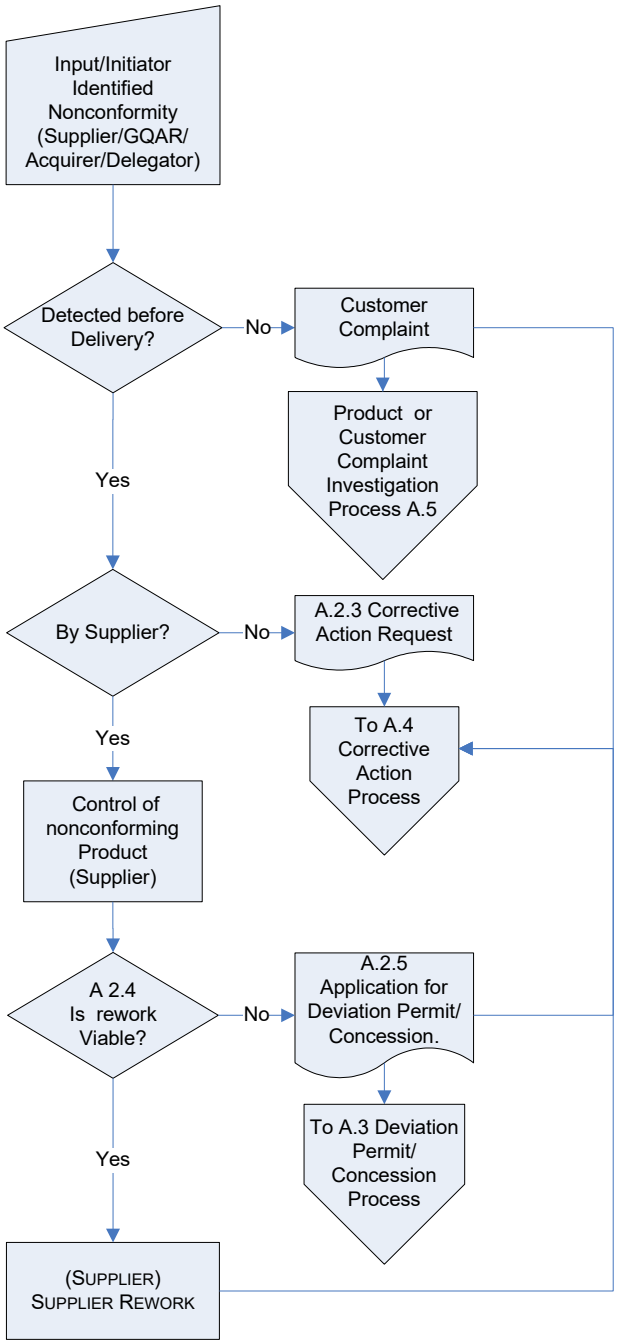
A.2.3.1 If the occurrence is an isolated case and/or minor in nature an informal request may be appropriate.

A.2.3.2 It is an AQAP 2110 and 2310 requirement that the Supplier establishes the cause of the nonconformity and takes appropriate corrective action to prevent recurrence.
The GQAR should review and verify the Supplier's corrective action.

A.2.4 If rework to contractual specifications is viable this should always be the first option, sometimes operational needs or financial incentives can justify accepting a nonconformity.

A.2.5 The Supplier can seek acquirer approval to deliver nonconforming parts, if allowed under contractual arrangements, via a request for deviation permit or concession (reference Annex A section A.3).

Note: The Supplier may decide to scrap the product and replace it with a conforming product, in this case the process ends.



A.3 DEVIATION PERMIT AND CONCESSION PROCESS

Purpose: To outline the GQAR activities associated with Supplier applications for deviation permits / concessions.
Input: Delegated authority on the RGQA and Supplier application for deviation permit / concession.
Activities Reviewing / assessing Supplier applications for deviation permit / concession on case by case basis or system approach.
Output: Concurrence or non-concurrence with Supplier application(s) for a concession/deviation permit.

A.3.1 Introduction

NATO Acquirers require that Suppliers deliver product that complies with contractual requirements. Exceptionally, however, there may be circumstances when it is to the Acquirer's benefit to accept the delivery of products that do not conform to contractual requirements (e.g. urgent operational commitments).

Note: Only authority to participate in the Deviation and concession process, not responsibility, can be delegated.

A.3.2 Applicability

This instruction applies only to Supplier deviation permits and concession applications classified as minor. All major applications will be forwarded to the Acquirer for action with comment from the GQAR, if requested on the RGQA.

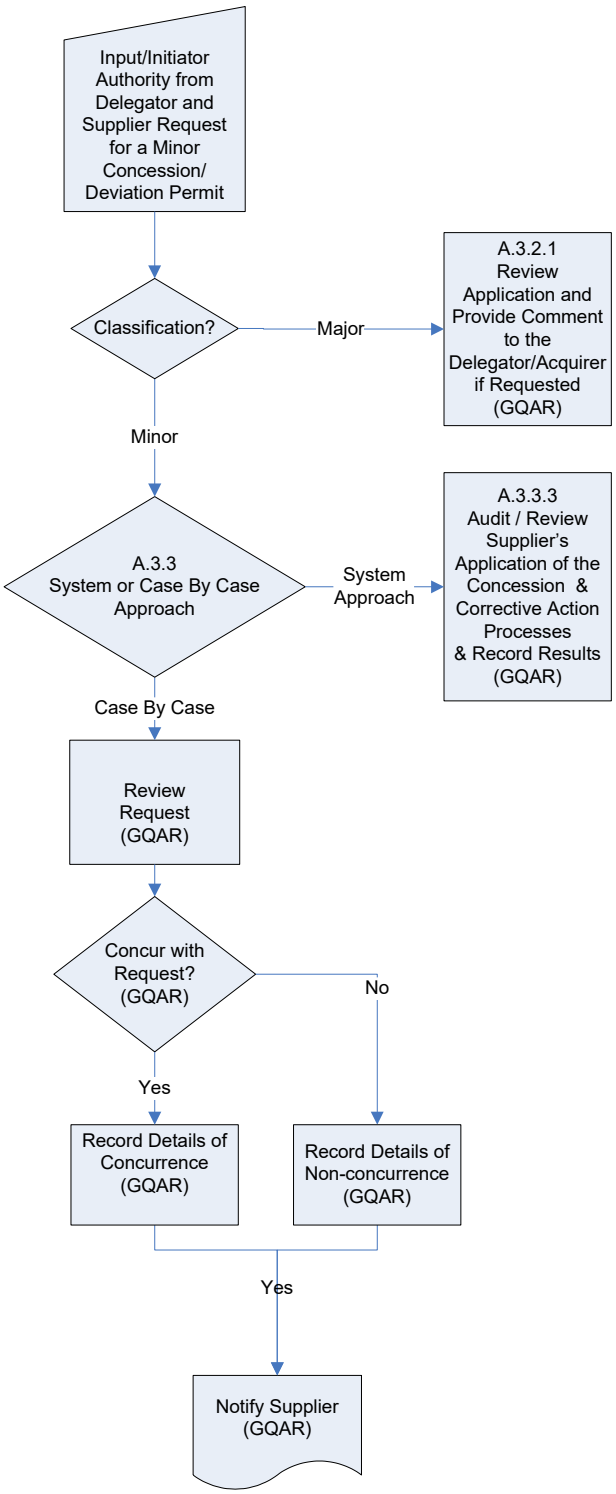
A.3.2.1 Classification

Requests for major deviations involve nonconformities that are likely to adversely affect performance; environment; safety; interchangeability; maintainability; reliability; service life or appearance of the product or when cost to the customer or delivery date agreed with the customer is likely to be affected. All other departures from the specified technical requirements, which do not fall into the major category, are considered minor.

A.3.3 GQA Approach

The GQAR may be requested to perform GQA of the Supplier's deviation permit and concession process on an application by application (case by case) or system basis. The approach taken depends on national practice; the system approach is the preferred method under normal conditions. The case by case approach would be considered appropriate for critical items or where the Supplier's process is a high risk. Any specific instruction for the processing of Supplier deviation permits and concessions shall be provided on the RGQA.

A.3.3.1 If specific process specifications are contractually invoked for processing deviation permits and concessions; the contractual requirement shall be identified on the RGQA.



A.3.3.2 When performing GQA on a case by case approach, the GQAR shall review the request against the following criteria:

a) The nonconformity is accurately described,
b) The nonconformity is properly classified as minor or as major in accordance with criteria established within the contract,
c) The request accurately describes the number of units or parts associated with the application,
d) The request has been made on an appropriate form,
e) Supplier proposed corrective action is adequate to prevent recurrence of the nonconformity,
f) Authorities of Supplier signatories.

The GQAR will record the details of concurrence or non-concurrence on the application and notify the Supplier.
Where a case by case approach is agreed the GQAR is strongly encouraged to clarify the process with the Supplier (reference para. 11.3).

A.3.3.3 The System Approach
When performing GQA using a system approach, the GQAR will audit or review the Supplier's processing and controlling of deviation permit and concessions. The GQA shall be performed at intervals sufficient to demonstrate high confidence in the Supplier's process. Where the process is not adequately controlled, a corrective action request should be issued by the GQAR in accordance with national practices.

A.3.4 At any point during this process the GQAR should request corrective action from the Supplier if either they have failed to implement the contractual procedures or the stated corrective actions are inadequate.

A.3.5 If, at any point the GQAR feels that the required action exceeds their technical expertise/competence, they shall notify their management. If necessary, the Delegator should be notified so that appropriate support can be provided.

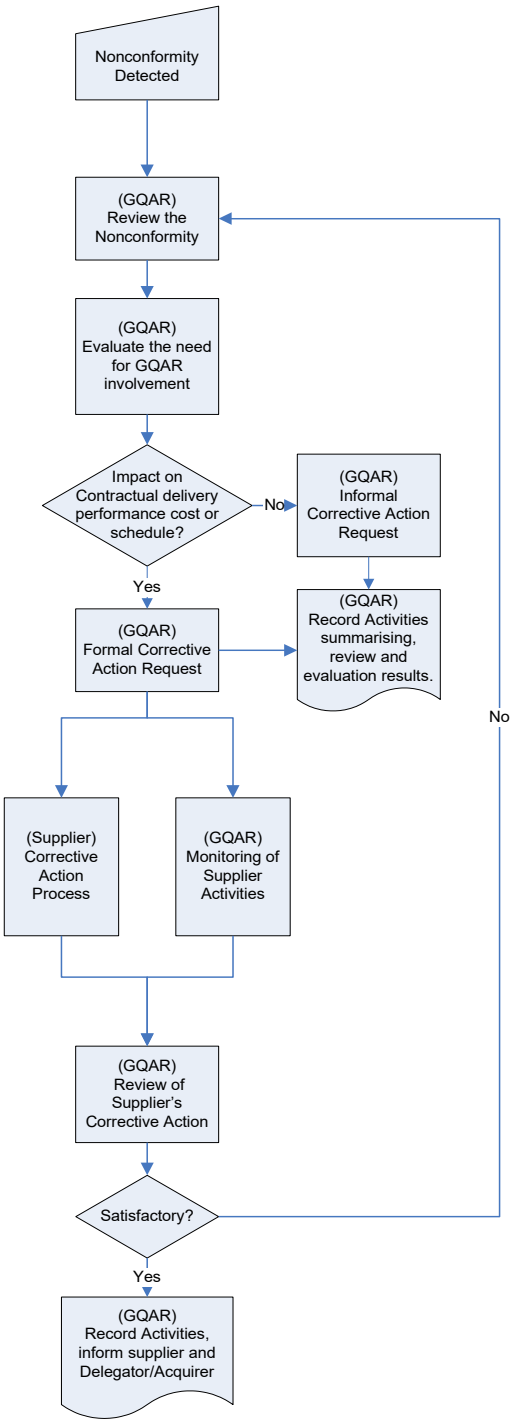
A.3.6 The GQAR shall maintain records of their activities relating to concessions/deviation permits and provide timely reports to the Delegator and/or Acquirer as agreed.

A.4 CORRECTIVE ACTION PROCESS

A.4.1 Purpose of the Process

The purpose of this process is to identify the typical corrective actions with respect to the nonconformities where GQA is or has been performed. It is recognised that national practice will dictate the specific actions of the GQA participants.

Note: The Supplier's obligations are assumed, through the contractual quality requirements e.g. AQAP 2110 para. 5.6.1.



A.4.2 Introduction

During the life of a GQA delegation product, QMS or process nonconformities might be identified. Nonconformities are evidence of a breakdown of the Supplier's QMS. QMS nonconformities are nonconformities that have not yet become apparent in the product. The principles of the corrective action process should be applied to all types of nonconformities.

A.4.3 Detected Nonconformities

When Nonconformities associated with the Supplier's QMS, processes or products are detected the GQAR will ensure that the Supplier corrective actions are requested, implemented and effective. Corrective actions may be requested by the customer (Delegator/Acquirer), if this is not the case the GQAR should make the corrective action request in accordance with national practices.

A.4.4 Nonconformity Review

The GQAR shall review the nonconformity to determine the appropriate level of involvement (reference Annex A section A.2). Where nonconforming product has been delivered to the customer, GQAR is expected to closely monitor the Supplier's investigation and corrective actions. Activities should also include a review of the GQA plan and its implementation. Other indicators that should direct increased GQAR involvement are where the nonconformity may impact on product performance, cost, and delivery schedule or where previous corrective actions have proved ineffective.

A.4.5 Corrective Action Request

Where the nonconformities are isolated incidents and unlikely to impact on the product cost, performance or delivery schedule the GQAR may decide to request corrective action in an informal manner. Where formal corrective action requests are necessary, the GQAR should clearly state that the request should be treated as a customer complaint. This will ensure that it will be entered onto the customer complaint log and be subject to review under applicable certification audits.

A.4.5.1 Supplier Corrective Action

The GQAR should assure that the Supplier has a documented procedure covering:

a) Nonconformity review,
b) Determining cause of nonconformities,
c) Evaluating the need for corrective action,
d) Implementing corrective actions,
e) Recording records of Nonconformities,
f) Reviewing corrective actions (reference AQAP 2110 and 2310 para 5.6.1)

A.4.5.2 GQAR Corrective Action Monitoring and Review
The GQAR should verify that the Supplier has effectively implemented appropriate corrective actions to prevent recurrence of the nonconformity. This should include reviewing the results of the Supplier's review of corrective actions. Where nonconformities within the QMS are identified, this should include, the results of the relevant Supplier Internal Audits and management Reviews (reference AQAP 2110 and 2310 paras 5.5.2 and 5.5.3).

A.4.5.2.1 Where the GQAR finds objective evidence that the Supplier's corrective action may be ineffective the corrective action request should be resubmitted to the Supplier and include the evidence of inefficacy.

A.4.6 Corrective Action Closure
Once the GQAR is satisfied that the Supplier's corrective actions are likely to preventive recurrence of the nonconformity, the corrective action details should be recorded, including root cause. The details shall be provided to the Delegator if requested.

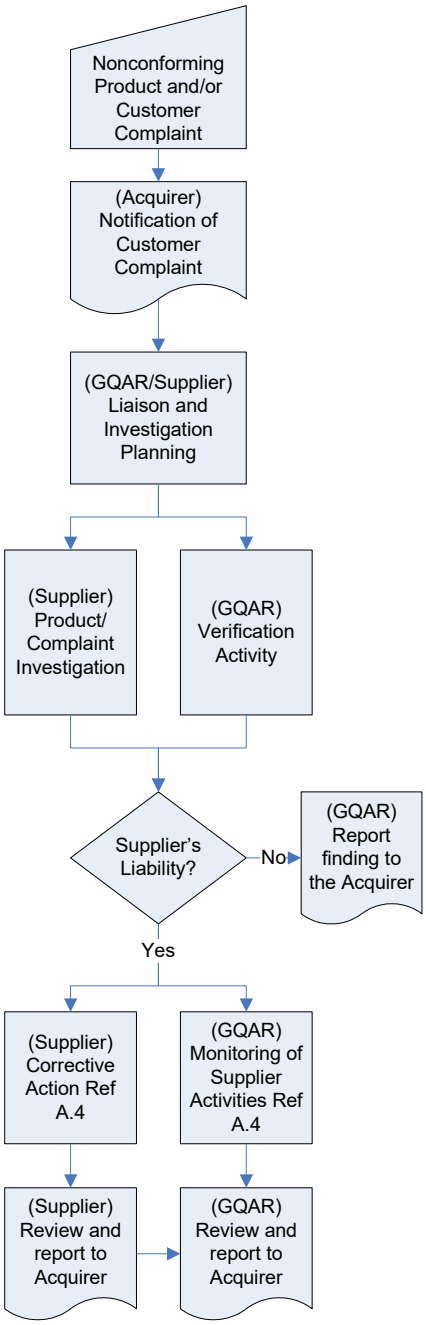
A.5 NONCONFORMING PRODUCT AND CUSTOMER COMPLAINT INVESTIGATION PROCESS

A.5.1 Purpose

The purpose of the process is to outline the responsibilities and typical activities of the GQA participants resulting from a nonconforming product and customer complaint.

A.5.2 Application

Nonconforming product that has been delivered to the customer is typically reported via a customer complaint (reference Annex A para. A.2.2). It is assumed that the customer complaint refers to an existing/current delegation. Where the delegation is closed, the Delegator may submit a new RGQA, referencing the original RGQA, if it is considered that there are risks associated with the Suppliers investigation.



A 5.3 Notification

It is the Acquiring Nation's responsibility to notify the Supplier in writing of the customer complaint. The notification shall include:

a) A request for the Supplier to initiate an investigation and take the necessary corrective actions;
b) Any special requirements to the Supplier;
c) Notification that the GQAR will be involved in verifying the Supplier's activities and
d) Required response schedule.

A copy of the notification shall be provided to the GQAR by the Acquirer, if requested.

A.5.4 Investigation Planning

When notified by the Delegator of the customer complaint, the GQAR shall liaise with the Supplier to coordinate the investigation activities. In many cases, the nonconforming product will be returned to the Supplier as an exhibit to assist in the investigation. The Acquirer, through the Delegator should notify the GQAR and Supplier as to whether the nonconforming product is being returned to the Supplier and whether the Supplier is to open the exhibit package in the presence of the GQAR.

Note: If the nonconforming product is to be opened by the Supplier in the presence of the GQAR for verification of condition, and is opened without the GQAR being present, the GQAR should inform the Acquirer through the Delegator and seek advice on the actions to be taken.

A.5.5 Investigation

The GQAR should assure that the Supplier conducts an investigation, (reference AQAP 2110 and 2310 para. 5.6.1). The GQAR shall verify the Supplier's investigation either independently or in conjunction with the Supplier to determine the root cause of the nonconformity.

A.5.5.1 Where it is proven that the Supplier is responsible for the nonconformity, the GQAR will verify the Supplier's corrective actions have been implemented and are effective (reference Annex A para. A.4.4 and section A.4.5). The Supplier activities should address other previously delivered products and products in production (reference AQAP 2110 and 2310 para. 5.4.12).

A.5.5.2 The Acquirer and Supplier will coordinate arrangements concerning the Supplier's cost of investigations or product expended in the course of the investigation. The GQAR shall not authorise the Supplier to incur costs without the express written authorisation of the Acquirer.

A.5.6 Review and Reporting

The GQAR shall review the relevant GQA records and provide a report to the Delegator summarising the GQA activities including any adjustments made to the risk information and GQA plan (reference para.13.4).

A.6 SUB DELEGATION PROCESS

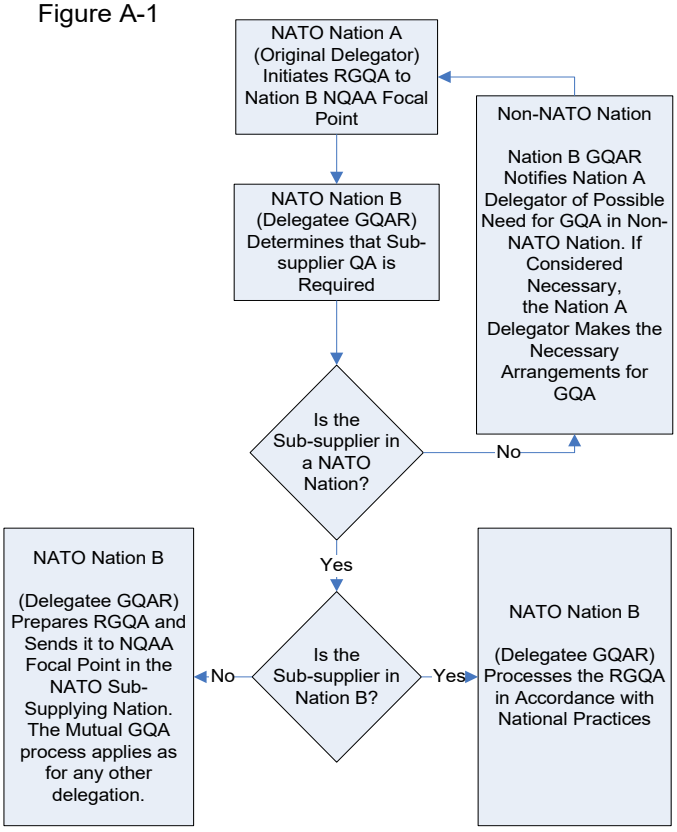
A.6.1 Purpose
The purpose of figure A-1 is to outline the process for determining whether a GQA sub-delegation is required, and details how sub-delegations should be managed.

A.6.2 Introduction
It is solely the responsibility of the Supplier to control Sub-suppliers; GQA activities at the Sub-supplier level are not intended to supplement or replace that responsibility.

A.6.3 Applicability
Sub-delegations can be as a result of an initial RGQA, risk assessment or as a result of risk reviews during the life of a GQA delegation. The decision to sub-delegate shall be based on the Risk Identification, Assessment and Communication Process.

Sub-Delegations are governed by the original (Initial) RGQA at the Supplier level.

Figure A-1



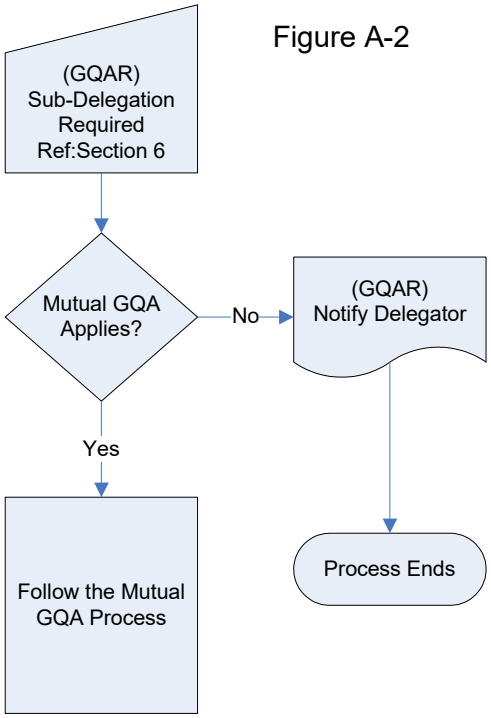
A.6.3.1 Figure A-1 illustrates the NATO Sub-supplier RGQA process and is used as an example to demonstrate the various delegation scenarios that the GQAR may encounter when considering GQA at the Sub-supplier level.
The Mutual GQA process only applies if the original Delegator (Acquirer) is a NATO member Nation that has ratified STANAG 4107.

A.6.4 Sub Delegation Planning
Planning for and issuing Sub-supplier requests for GQA should be conducted throughout the life of the GQA delegation and does not have to be completed prior to development of the GQA plan. The GQAR is responsible for managing the Sub-supplier GQA effort, based on continuing risk assessments relating to sub-supplied products.

A.6.4.1 Prior to any sub delegation the GQAR shall use the Risk Identification, Assessment and Communication Process to establish the risks determine whether GQA can provide required confidence.
For internal sub delegations national practice may be applied.

A.6.5 Using Figure A-2 the GQAR shall determine whether Mutual GQA Process Applies. If it does not the GQAR shall notify the Delegator, advising of the risks that are not addressed.

Figure A-2



the

A.6.6 Sub Delegation Notification
If specified on the RQGA the GQAR shall provide copies
of all sub delegations to the Delegator, and Supplier (reference para. 7.2).

A.6.7 Delegation
The GQAR shall raise an RGQA and the delegation shall follow the RGQA process as any other Delegation.

A.6.8 Contractual Considerations
GQARs operating at the Sub-supplier level shall not take any action or make any statement that interferes with the contractual arrangements in the supply chain.

ANNEX B: GQA FORMS

B.1 GQA Forms General

B 1.1 Mandatory Forms

The GQA Forms are designed to support the process and standardise communication between GQA participants. Standardised communication of risk information and requests for GQA is considered fundamental. The use of the forms provided for these purposes is therefore, mandatory. GQA participants are encouraged to exchange all relevant information electronically (Word or PDF format), including the GQA Forms.

B.1.2 Recommended Forms

Additional forms are provided in this annex to aid the GQA participants. The use of these forms is recommended but, not mandatory. GQA participants may choose to use alternative forms.

B.1.3 List of GQA Forms

The forms contained in the annex and their usage status is listed below:

1. Risk Identification, Assessment and Communication Form (RIAC) - **Mandatory**
2. Request for Government Quality Assurance (RGQA) - **Mandatory**
3. Response to Government Quality Assurance Request (RGQAR) - **Mandatory**
4. Government Quality Assurance Closure Report (GQACR) - **Mandatory**
5. Delegation Feedback (DFB)
6. Example Certificate of Conformity (CoC)
7. Example Deviation Permit / Concession Request Form
8. Example GQA Plan Template

Note: If, to satisfy national practice, GQA participants need to add further reference numbers, the form headers may be expanded.

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Risk Identification, Assessment and Communication (RIAC)

Page of

Risk information is considered commercially sensitive and shall be used for GQA purposes only. Risk information shall not be shared outside of the Mutual GQA Participants, unless by prior agreement by the Acquirer, Supplier and GQAR.

RGQA Number:		**Revision Number:**		**Date:**	
RIAC Number:		**Revision Number:**		**Date:**	

Risk Statement							
Risk Cause(s):							
Risk Assessment:	**I**mpact: **1**, **4** or **9**		**L**ikelihood: **1**,**4** or **9**		Risk Index = **I** x **L**		
On going GQA Risk Status:	Decreasing ☐		Stable ☐		Increasing ☐		
Delegator/Delegatee (GQAR) area for comments and recommendations:							
Risk Status at Closure:	No Occurrence ☐		Occurred & Controlled ☐		Occurred & Uncontrolled ☐		
Risk Statement:							
Risk Cause(s):							
Risk Assessment:	**I**mpact: **1**, **4** or **9**		**L**ikelihood: **1**,**4** or **9**		Risk Index = **I** x **L**		
On going GQA Risk Status:	Decreasing ☐		Stable ☐		Increasing ☐		
Delegator/Delegatee (GQAR) area for comments and recommendations:							
Risk Status at Closure:	No Occurrence ☐		Occurred & Controlled ☐		Occurred & Uncontrolled ☐		
Risk Statement:							
Risk Cause(s):							
Risk Assessment:	**I**mpact: **1**, **4** or **9**		**L**ikelihood: **1**,**4** or **9**		Risk Index = **I** x **L**		
On going GQA Risk Status:	Decreasing ☐		Stable ☐		Increasing ☐		
Delegator/Delegatee (GQAR) area for comments and recommendations:							
Risk Status at Closure:	No Occurrence ☐		Occurred & Controlled ☐		Occurred & Uncontrolled ☐		

Risk Statement: A statement of what might potentially go wrong with respect to the contractual requirements relating to quality. It can be associated with any product, life cycle stage or process (see Section 2.2 and Annex C 3.3.2).
Risk Cause: The potential reason(s) why a risk will occur, expressed in terms of a breakdown of a process or process control, linked to the contractual requirements relating to quality (see Section 2.2 and Annex C 3.3.3).
Risk Impact: The consequence of an uncertain event occurring (see Section 2.2 and Annex C 3.4.1).
Risk Likelihood: The degree of confidence that the risk will occur (see Section 2.2 and Annex C 3.4.2).
Risk index: The degree of importance of a risk expressed as the product of the impact and likelihood, used to prioritise GQA activities.

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Request for Government Quality Assurance (RGQA)

Government Quality Assurance (GQA) for the Referenced Defence Contract is Hereby Requested by Authority of STANAG 4107.		**Delegator RGQA No:**	
		Revision Number:	
From: (Delegator)		To: Delegatee: (Appropriate National Authority or Focal Point Listed in AQAP-4107-SRD.1)	
Name:		Name:	
Organisation:		Organisation:	
Mailing Address:		Mailing Address:	
Telephone:		Telephone:	
Fax:		Fax:	
E-mail:		E-mail:	
Acquirer:		Supplier:	
Mailing Address:		Mailing Address:	
Facility Wide Delegation:			☐
Government Contract No:		Subcontract No:	
Contract Modification No:		Estimated Contract Final Delivery Date:	
Is this contract on behalf of a third party other than the requesting Nation?			Yes / No
Contractual Quality Assurance Requirements / Standards:			
Product / Supplies Descriptions (Include reference to Essential Items if applicable):			
Attachments:			
RIAC Reference Number:			
Copies of the Contract / Subcontract / Purchase Order to be Subjected to GQA:			☐
Technical Data Specifications and Quality Assurance Standards:	Are Attached:		☐
	Will be Furnished by the Supplier:		☐
Other Attachments or Forms (Specify):			☐

Delegator Requirements:		
Delegation feedback is requested:		☐
Provide information copy of GQA Plan: Note: Requesting a copy of the plan should not be a common occurrence on routine RGQAs. Where major programs or higher risks are involved, it may be appropriate to request a copy of the plan.		☐
GQAR is requested to sign the Statement of GQA on the CoC:	For partial shipments:	☐
	and final shipments:	☐
GQAR is requested to forward electronic copy of signed CoC (in pdf format):		☐
Product Release Special instructions related to product release (if CoC is not used):		
Deviation Permits/Concessions (Reference Annex A section A.3)		
GQAR is authorised to concur or non-concur with classification/disposition of Supplier's minor deviation permits and/or concessions.	System Approach	☐
	Case By Case	☐
GQAR is requested to provide comments and/or recommendations for major deviation permits and/or concessions submitted by the Supplier for approval by the Acquirer Provide contractual reference and instructions as necessary.		☐
Reporting (reference para. 4.2.2):		
Report risk status on an ongoing basis: ☐	Copies of Quality Deficiency Reports issued to the Supplier or Sub-supplier are requested:	☐
At RGQA Completion: ☐		
Other reporting, please Specify:		☐
Other Requirements:		
Delegator Signature (Signature not Required if Sent Electronically)	**Date**	

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Response to Government Quality Assurance Request (RGQAR)

Request for Government Quality Assurance (RGQA) for the Referenced Defence Contract is Hereby.	Accepted:	☐	**Delegator RGQA No:**	
	Partially Accepted:	☐	**Revision Number:**	
	Rejected:	☐		

Delegation Feedback is requested on an annual basis or as agreed:	☐

Delegatee Comments (Mandatory, if Not Accepted):

Facility Wide Approach:	☐

To: (Delegator)		From: Delegatee: (Appropriate National Authority or Focal Point Listed in AQAP-4107-SRD.1)	
Name:		Name:	
Organisation:		Organisation:	
Mailing Address:		Mailing Address:	
Telephone:		Telephone:	
Fax:		Fax:	
E-mail:		E-mail:	
Acquirer:		Supplier:	
Mailing Address:		Mailing Address:	

Government Contract No:		Subcontract No:	
Contract Modification No:		Contract Final Delivery Date:	

Delegatee revised RIAC Form:	☐

Delegatee GQAR Details:	
Name:	
Organisation:	
Mailing Address:	
Phone No.:	
Email Address:	
Fax No.:	

Delegatee/GQAR Signature (Signature not Required if Sent Electronically):	**Date:**

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Government Quality Assurance Closure Report (GQACR)

Government Quality Assurance (GQA) for the Referenced Defence Contract is Hereby Complete.		**Delegator RGQA No:**	
		Revision Number:	
To: (Delegator)		From: Delegatee: (Appropriate National Authority or Focal Point Listed in AQAP-4107-SRD.1)	
Name:		Name:	
Organisation:		Organisation:	
Mailing Address:		Mailing Address:	
Telephone:		Telephone:	
Fax:		Fax:	
E-mail:		E-mail:	
Acquirer:		Supplier:	
Mailing Address:		Mailing Address:	
Government Contract No:		Subcontract No:	
Contract Modification No:		Contract Final Delivery Date:	

Attachments:	
Please find the attached RIAC indicating the current risk status and trends:	
CoC attached as requested:	☐
Supplementary report attached:	☐
Summary of nonconformities attached:	☐
Delegation Feedback is requested:	☐
Additional Comments:	

Delegatee GQAR Details:	
Name:	
Organisation:	
Phone No.	
Email Address:	
Fax No.:	

Delegatee/GQAR Signature (Signature not Required if Sent Electronically):	**Date:**

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Delegation Feedback Form (DFB)

RGQA		RIAC	
RGQA Number:		**RIAC Number:**	
Revision Number:		**Revision Number:**	
Date:		**Date:**	

Part 1 Delegatee Feedback on RGQA and RIAC			
1.1 Were you fully satisfied with the risk identification?	Yes ☐	No ☐	*If you mark off No, please specify what was wrong.*
1.2 Were you fully satisfied with the completeness of the RGQA and RIAC?	Yes ☐	No ☐	*If you mark off No, please specify what was wrong.*
1.3 Was the RGQA received in a timely manner?	Yes ☐	No ☐	*If you mark off No, please provide details.*
Delegatee additional comments:			

Part 2 Delegator Feedback on Communication and GQA Services provided by the Delegatee			
2.1 Was the Acknowledgment of Receipt received in a timely manner?	Yes ☐	No ☐	*If you mark off No, please provide details.*
2.2 Was the Response to the RGQA received in a timely manner?	Yes ☐	No ☐	*If you mark off No, please provide details.*
2.3 Are you fully satisfied with the communication in the course of GQA?	Yes ☐	No ☐	*If you mark off No, please specify what was wrong.*
2.4 Are you fully satisfied with the content (quality) of the GQA deliverable documents (RIAC, reports, CoCs, QDRs)?	Yes ☐	No ☐	*If you mark off No, please specify what was wrong.*
2.5 Are you fully satisfied with the timescale of the GQA deliverable documents (RIAC, reports, CoCs, QDRs)?	Yes ☐	No ☐	*If you mark off No, please specify what was wrong.*
2.6 Are you fully satisfied with the confidence provided by the GQA services?	Yes ☐	No ☐	*If you mark off No, please specify what was wrong.*
Delegator additional comments:			

Delegatee/Delegator Signature (Signature not required if sent electronically):	Date:

Example of a Certificate of Conformity (CoC)

<table>
<tr><td colspan="5">Part I - Supplier Certificate of Conformity</td><td>1. Supplier CoC Serial No.</td></tr>
<tr><td colspan="3" rowspan="2">2. Supplier (Include Name, Address, Email etc.):</td><td colspan="3">3. Contract Number:</td></tr>
<tr><td colspan="3">4. Contract Modification Number:</td></tr>
<tr><td colspan="3">5. Approved Deviations and/or Concessions:</td><td colspan="3">6. Acquirer (Include Name, Address, Email etc.):</td></tr>
<tr><td colspan="3">7. Delivery Address:</td><td colspan="3">8. Applicable to:
Partial Delivery Number:
Final Delivery Number:</td></tr>
<tr><td>9. Contract Item #</td><td>10. Product Description or Part #</td><td>10. Quantity</td><td>11. Shipment Document</td><td>13. Undelivered Quantity</td><td></td></tr>
<tr><td colspan="6">14. Remarks or Comments:</td></tr>
<tr><td colspan="6">15. Supplier Statement of Conformity:
It is certified that apart from the approved deviation permits/concessions noted in block #5 above, the products listed above conform in all respects to the contract requirements.</td></tr>
<tr><td>Date:</td><td colspan="2">Supplier Name and Title:</td><td colspan="3">Supplier Signature:</td></tr>
</table>

Part II – GQAR Statement of GQA	1. Supplier CoC Serial No.
2. Supplier:	
3. Contract Number:	4. Contract Modification Number:
5. Remarks or Comments:	

6. Government Quality Assurance Representative Statement of GQA:

Referring to the CoC indicated in block 1, this is to attest that within the provisions of STANAG 4107, AQAP 2070 and the RGQA, the planned Government Quality Assurance has been performed.

(the GQAR Statement of GQA above and the GQAR signature below do not mean acceptance on behalf of the Acquirer and/or Delegator of the supplies identified by the Supplier in Part I, do not necessary mean that the individual items have been inspected, nor do they mean that certification have been granted).

Date:	GQAR Information: Name: Phone Number: Email Address:	GQAR Signature:

Example of a Deviation Permit / Concession Form

REQUEST FOR DEVIATION PERMIT / CONCESSION	Supplier's Ref. No. Sub-supplier's Ref. No.

1. The granting of this deviation permit or concession is strictly limited to this specific application and is not to be regarded as a precedent.
2. If a Sub-supplier prepares the application, it must be signed and submitted by the Supplier, unless otherwise agreed.
3. If any variation in cost due to the deviation permit or concession is to be charged or credited to the Government, full allowance is to be made for the disposal of any scrap or redundant materiel.

PART 1 – To be Completed by the Supplier

1. Supplier (Name and Address)	2. Sub-supplier (Name and Address)
3. Contract No.	4. Subcontract No.

5. Identification of Materiel or Component (Including Part Number)

6. Specification/Drawing No.	7. (a) Quantity/Period	(b) Serial No./ Batch No. / Lot No.

8. Description and Impact of Nonconformity (corrective and/or preventive actions) (Continue in block #22)

9. Reference Previous Deviation Permits and/or Concessions	10. Cause of Nonconformity	11. Cost to Acquirer will be: Increased ☐ Decreased ☐ Unchanged ☐
12. Is Nonconformity Considered Major ☐ Minor ☐ Indicate in the product characteristics affected in Block #13.	13. Affected Characteristics Performance ☐ Environment ☐ Safety ☐ Interchangeability ☐ Reliability ☐ Maintainability ☐ Service Life ☐ Appearance ☐ Other (see block 8) ☐	14. Contract Amendment Required ☐

15. Effect on Contractual Delivery date:	16. Identify the Design Authority:

17. Engineering Authority Approval Signature and Date	18. Production Authority Approval Signature and Date	19. Quality Authority Approval Signature and Date

20. Is Supplier the Design Authority: Yes ☐ No ☐ Signature and Date	21. Name of Supplier Representative Submitting the Application: Signature and Date

22. Description and Impact of Nonconformity (Continuation from Block #8)

PART 2: TO BE COMPLETED BY GQAR and/or Sub-Tier GQAR

23. Remarks or Comments

24. GQAR Signature (If Applicable)	Date
25. Delegator Signature (if applicable)	Date

PART 3: Disposition

26.

Date..... Signature ..... Title/Rank .....

Example of a GQA Plan Template

Government Quality Assurance Plan:		Date:	Revision:	Copy to Delegator: Yes ☐ No☐
Contract Number:			GQAR Name:	
RGQA Ref:			GQAR Phone No:	
Facility Wide Approach:	☐			
Supplier:			GQAR Email:	

Risk Statements	Risk Causes	Risk Index			Supplier Processes	Supplier Process Controls to mitigate risks	Type of GQA Activity			Frequency						GQAR Activity Including Planned Dates
		High	Moderate	Low			System	Process	Product	FAI	6 Monthly	Quarterly	Monthly	Each Lot	Other	
		☐	☐	☐			☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐			☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐			☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐			☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐			☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐			☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐			☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐			☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐			☐	☐	☐	☐	☐	☐	☐	☐	☐	

ANNEX C – GQA RISK IDENTIFICATION, ASSESSMENT AND COMMUNICATION

C.1 PURPOSE OF THIS ANNEX

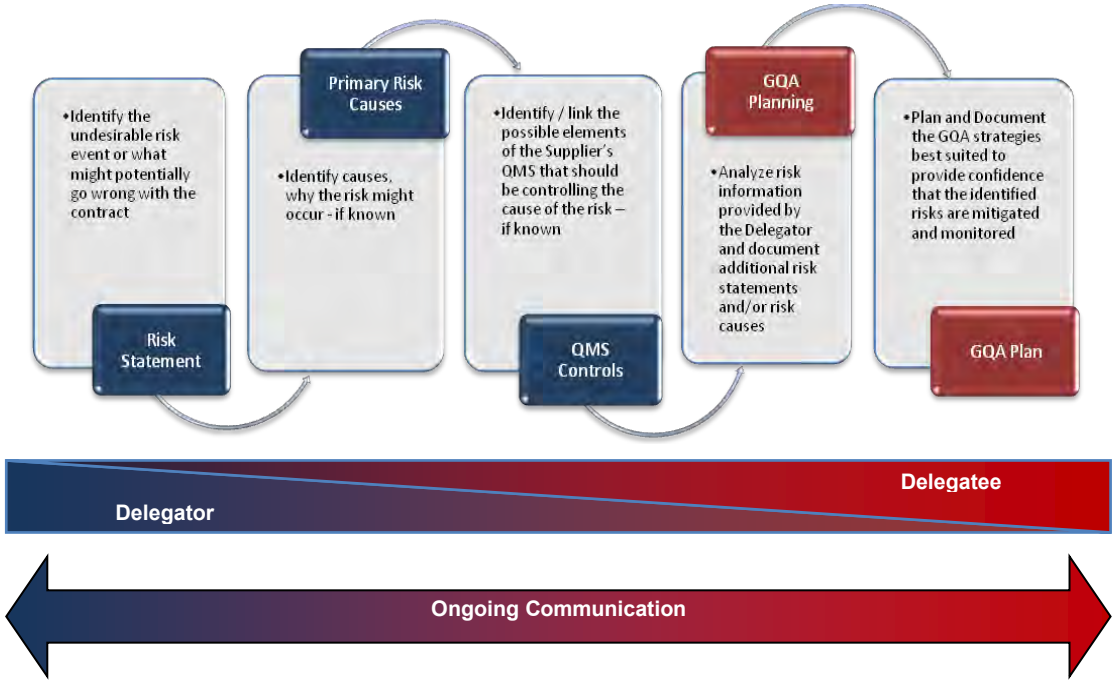
This annex provides additional instruction and guidance designed to assist the Delegator and Delegatee in identifying, assessing and communicating risk in the context of GQA.

C.2 DELEGATOR AND DELEGATEE JOINT RISK IDENTIFICATION AND ASSESSMENT

The Delegator and Delegatee need to communicate to develop as accurate as possible reflection of the risk, based on their joint perspectives.

Figure C-1 Illustrates how the accuracy of risk information can be improved by the input of both the GQAR and the Delegator and used in GQA planning.

Figure C-1 Concept Chart – Delegator & Delegatee Communication



C.3 RISK IDENTIFICATION AND ASSESSMENT

C.3.1 General

The Risk Identification, Assessment and Communication Form (RIAC) at Annex B contains all the necessary fields to effectively record and communicate the results of initial risk assessments and ongoing reviews. The RIAC is to be used to communicate current risk information between the GQA participants and shall be attached to all RQGA Forms.

The information from the RIAC shall be used by the GQA participants to generate and maintain records of risk information throughout the life of the GQA Delegation.

C.3.2 Risk Constituents

In order to plan and perform risk based GQA it is important to understand the constituents of risk; their attributes; controlling processes; influences and interrelationships. The constituents of risk are:

a) Risk Statement
b) Risk Cause
c) Risk Impact
d) Risk Likelihood
e) Risk Index

C.3.3 Risk Identification

C.3.3.1 Sources of Risk Information

Figure C-2 illustrates potential sources of risk information that can be used as a memory jogger to assist in the identification of risk. The information suggested should be readily available and should not require extensive investigation to acquire or analyse. Figure C-2 should not, however, be considered all inclusive.

Figure C-2 Sources of Risk Information

Customer Feedback – Risk Information gained from the customers or users of products previously produced by the Supplier, i.e. customer complaints.

Supplier Past Performance - Systems or processes which, based on the Supplier's performance on previous contracts, are likely to have an adverse impact on the product or on contract performance, schedule, or cost requirements.

Previous Risk Feedback - Risk information and recommendations received from the Delegatee on previously completed RGQA or the current RGQA.

Pre-award Surveys - Risk information (or lack thereof) that may have been identified during contract pre-award QA surveys or QA audits.

System or Process Certification - Risk information associated with 2nd or 3rd party certifications, product or process certification, use of product testing laboratories etc.

Project Office - If the contract is managed by a project office, risk information may be available from the risk manager.

Key or Critical Product Characteristics or Processes – Processes or Product elements or features which, if not properly controlled, can have an adverse impact on the product delivery, cost and performance.

Supplier Inexperience - Systems or processes which, based on the Supplier's inexperience, can have an adverse impact on the product or on product delivery, cost and performance.

Contract Review – Reviewing the contract may identify additional risks that may have an adverse impact on the product or on product delivery, cost and performance. Include reviews of associated documents e.g. Supplier quality, risk, configuration management plans if available.

C.3.3.2 Risk Statement

For the purposes of GQA the risk statement describing 'what might go wrong' should be expressed as an event having a negative effect on the product, delivery schedule, cost and/or performance. The risk statement should reflect concerns with fulfilment of the contractual requirements related to quality. In developing the risk statement, it is often helpful to consider the reasons for specific product specifications or contractual QMS requirements, as they should relate directly to what is important to the product user. This is the primary reason why the Acquirer or Delegator has more insight into the risk impact.

The risk statement may, especially for new programmes or Suppliers, be quite general. As GQA is performed the risk information should mature and the risk knowledge should increase. Risk should be reassessed and the RIAC revised, if appropriate.

C.3.3.3 Risk Causes

Identification of the risk causes 'Why might it go wrong?' is necessary for GQA planning. For GQA purposes the risk causes are expressed in terms of the processes that, if ineffective, could lead to the negative effect on the product delivery schedule, cost and/or performance. The risk causes should be linked to the contractual QMS requirements e.g. AQAP or equivalent. Any pertinent information from previous occurrences should be provided, directly or by reference. There may be numerous processes and sub-processes that contribute to the effective control of product delivery, cost and/or performance and therefore, numerous risk causes.

C.3.4 Risk Assessment

Identified risks require a quantitative assessment to determine whether GQA is necessary and support GQA planning (reference para 5.4). The risk assessment should take account of the impact of the risk and the likelihood of its occurrence. Assessment of each, leading to the risk index, shall take into account three levels for both impact and likelihood. High (9), Medium (4) or Low (1) (reference figure C-5).

C.3.4.1 Risk impact

The risk impact represents how critical the consequence of the risk occurring would be, either high, medium or low. Normally the Delegator has greater insight into the risk impact. It should be noted that GQA can have little or no influence on the risk impact. Table C-3 below shows typical attributes of high, medium and low risk impacts to aid GQA participants to quantify risk impact.

Table C-3 Attributes of Risk Impacts

Risk Impact	Attribute
High (9)	The risk event could reasonably result in loss of human life or serious injury or complete failure of mission. Typically, designators such as critical safety item (CSI), flight safety item, submarine first level. Are used to identify products or characteristics with this attribute. The event would be the result a single point failure.
	Serious or permanent environmental damage, for example radiation leak or widespread chemical contamination.
	The loss of critical assets for example, assets critical to military operations that are not easily replaced or secret information.
	The product would not fulfil the intended purpose and cannot be satisfied by alternative means, e.g. another product or system.
	Product lead time is long, it is single source supply or procuring redundancy is prohibitively expensive.
	Lack of equipment availability would impact current military operations.
Medium (4)	The risk event would result in injury or disruption of the mission, for example, a significant delay, increased cost.
	The product capability would be restricted so that 1 or more key capabilities would be compromised.
	Non critical, but key characteristics or special requirements affected.
	Product lead time is long and procuring redundancy is expensive.
	Lack of equipment availability would impact future military operations and/or Life extensions to existing systems would be necessary.
	Localised or temporary environmental damage.
	Significant increase of the life cycle costs.
Low (1)	Only non critical, non key characteristics or special requirements affected.
	Increased costs, within budgetary constraints
	Manageable project delays, not impacting operations
	Product appearance would be adversely affected, it is not a critical characteristic.
	Easily recoverable localised environmental impact.
	Product is widely availably and not prohibitively expensive so can be replaced easily, for example consumable items, commercially available products and services.

C.3.4.2 Risk Likelihood

Risk by definition is uncertain, so needs to be rationalised by an assessment of the likelihood of its occurrence to provide a balanced criterion for GQA planning. The risk likelihood is a quantitative assessment of the how effectively the Supplier's QMS might control product delivery, cost and/or performance. It is expressed as high, medium or low. The risk cause and the risk likelihood are closely linked by the Supplier's processes.

3.4.2.1 Risk Likelihood Attributes

Table C-4 below shows typical attributes of high, medium and low risk likelihoods. Normally the GQAR, having more knowledge of the Supplier, has a greater insight into the risk likelihood. Table C-4 can be used to aid GQA participants to quantify risk likelihood.

3.4.2.2 Risk Likelihood Supporting Evidence

The assessment of risk likelihood is highly dependent on the knowledge and experience of the assessor and the available evidence. Where there is little or no evidence available, it is reasonable to assume that risk likelihood is high. In these cases GQA can be used to gather sufficient evidence to make an informed assessment.

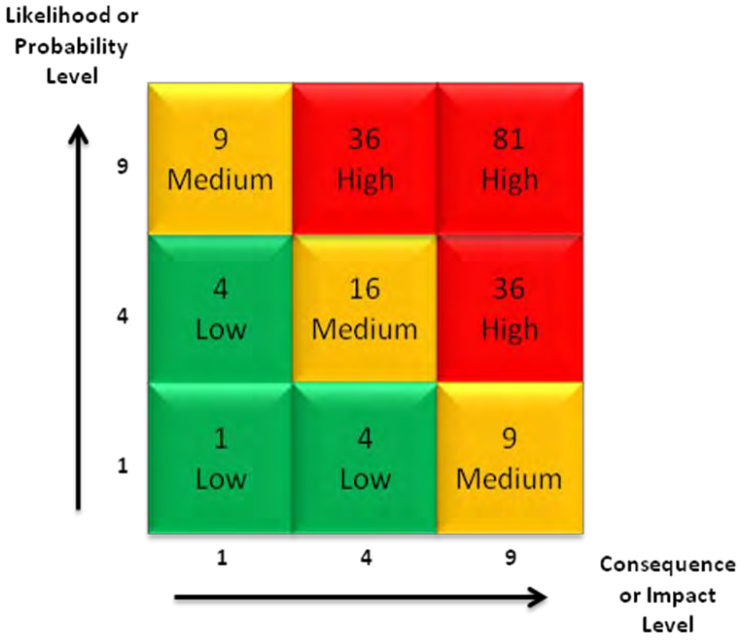
Table C-4 Attributes of Risk Likelihood

Risk Likelihood	Attribute
High (9)	It is highly likely to occur. A system or process is not in control. Performance data for example GQA results, current or recent experience show that the system or process will not fulfil the contractual requirements relating to quality.
	There is no evidence available of the Supplier's capability to perform the required activity.
	The uncontrolled process is used very frequently leading to increase of occurrence of the risk.
	The process is seldom used, so rarely practiced, leading to a lack of control, e.g. a lack of experienced operators.
	The process is either new to the Supplier or very difficult to control. There is little or no evidence of past performance that could provide confidence of the process control.
Medium (4)	It is probable or likely that the risk will occur. A system or process is not in complete control or performance data, for example recent GQA results, recent experience and/or the Supplier, cast doubt on the ability of the system or process to meet the contractual requirements relating to quality.
	The process is either new to the Supplier or difficult to control. There is some evidence of control but it is insufficient to provide confidence of the process control.
Low (1)	It is unlikely that the risk will occur. The system or process is under control or performance data, current or recent GQA results or the Supplier provides evidence that the contractual requirements relating to quality will be met.

C.3.4.3 Risk Index

The risk index is a quantitative measure of how significant a risk is and is used to prioritise GQA effort. The risk index is the product of the risk impact and likelihood. Figure C-5, the Risk Index Matrix, is used to illustrate the different risk indices.

Figure C-5 Risk Index Matrix



C.3.4.3.1 Product Criticality

Referring to the Risk Index Matrix, where the project or contract involves any system part, assembly or equipment where a failure will result in catastrophic or critical failure resulting in loss of life or significant operational capability the risk impact and therefore, the risk index can never be less than 9. Examples include: Critical Safety Items (CSI), Safety to Life, Submarine 1st level, Vital Parts and Flight Safety Items.

C.3.5 Risk Communication

It is essential that the Delegator and Delegatee (GQAR) conduct their own risk identification and assessment to provide a balanced view of the risks and enable the GQAR to plan GQA appropriately. Supporting comments or recommendations on the RIAC will enhance the mutual understanding of the joint risk identification and assessment. Refer to Figure C-6 and C-7 for examples to completed RIAC from both the Delegator and Delegatee perspectives.

C.3.5.1 Information Configuration

Each time the RIAC is revised and exchanged, either from the Delegatee to the Delegator or vice versa, its issue number and date needs to be updated to assure configuration of the information.

Figure C-6 Example of a Delegator Risk

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Risk Identification, Assessment and Communication (RIAC)

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Risk information is considered commercially sensitive and shall be used for GQA purposes only. Risk information shall not be shared outside of the Mutual GQA Participants, unless by prior agreement by the Acquirer, Supplier and GQAR.

RGQA Number:	**DAOQ n°280708**	**Revision Number:**	**0**	**Date:**	**28/07/2008**
RIAC Number:	**RIAC n°250708**	**Revision Number:**	**0**	**Date:**	**25/07/2008**

Risk Statement: The hull integrity – Insufficient strength of the welded joints of the submarine hull.

Risk Cause(s): Uncontrolled supply of welding wire (AQAP 2110 5.4.6 and ISO 9001:2015 8.4)
There is a high turn over staff (welders) at the company has to employ inexperienced and sometimes unqualified welders. (AQAP 2110 – 5.3.3 and ISO 9001:2015 – 7.2)

Risk Assessment:	Impact: **1, 4 or 9**	**9**	Likelihood: **1,4 or 9**	**9**	Risk Index = **I x L**	**81**
On going GQA Risk Status:	Decreasing ☐		Stable ☐		Increasing ☐	

Delegator/Delegatee (GQAR) area for comments and recommendations: 3 customer complaints. 2 concerning incorrect specification of welding wire and 1 concerning a non qualified welder.

Risk Status at Closure:	No Occurrence ☐	Occurred & Controlled ☐	Occurred & Uncontrolled ☐

The risk statement and risk causes can be assessed individually (if the likelihoods are different) or as above, as a consolidated view against the risk statement,

Figure C-7 Example of a Delegatee Risk

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Risk information is considered commercially sensitive and shall be used for GQA purposes only. Risk information shall not be shared outside of the Mutual GQA Participants, unless by prior agreement by the Acquirer, Supplier and GQAR.

RGQA Number:	**DAOQ n°280708**	**Revision Number:**	**0**	**Date:**	**28/07/2008**
RIAC Number:	**RIAC n°250708**	**Revision Number:**	**1**	**Date:**	**25/08/2008**

Risk Statement: The hull integrity – Insufficient strength of the welded joints of the submarine hull.

Risk Cause(s): Uncontrolled supply of welding wire (AQAP 2110 5.4.6 and ISO 9001:2015 8.4)
There is a high turn over staff (welders) at the company has to employ inexperienced and sometimes unqualified welders. (AQAP 2110 – 5.3.3 and ISO 9001:2015 – 7.2)

Risk Assessment:	Impact: **1, 4 or 9**	**9**	Likelihood: **1,4 or 9**	**4**	Risk Index = **I x L**	**36**
On going GQA Risk Status:	Decreasing ☒		Stable ☐		Increasing ☐	

Delegator/Delegatee (GQAR) area for comments and recommendations:
The Supplier has implemented a new process for the control of welding wire. Spools are now colour coded, and duplicate checks are required prior to welding being started.
The company has also recognized the importance of experienced welders and have instated a staff retention system to reward staff in critical roles, the staff turnover issue seems to be resolved but should still be monitored.
The risk likelihood is reduced.

Risk Status at Closure:	No Occurrence ☐	Occurred & Controlled ☐	Occurred & Uncontrolled ☐

ANNEX D - RISK BASED GQA PLANNING AND PERFORMANCE

D.1 PURPOSE OF THIS ANNEX

The purpose of this annex is to provide the GQAR with instruction, guidance and examples of how to plan, perform and review GQA based on risk. Nothing in this annex should be considered to override national practice, or the instructions within this publication. This annex is supplementary to the GQA planning (reference section 11 and 12) and GQA performance (reference section 13 and 14).

D.2 GENERAL

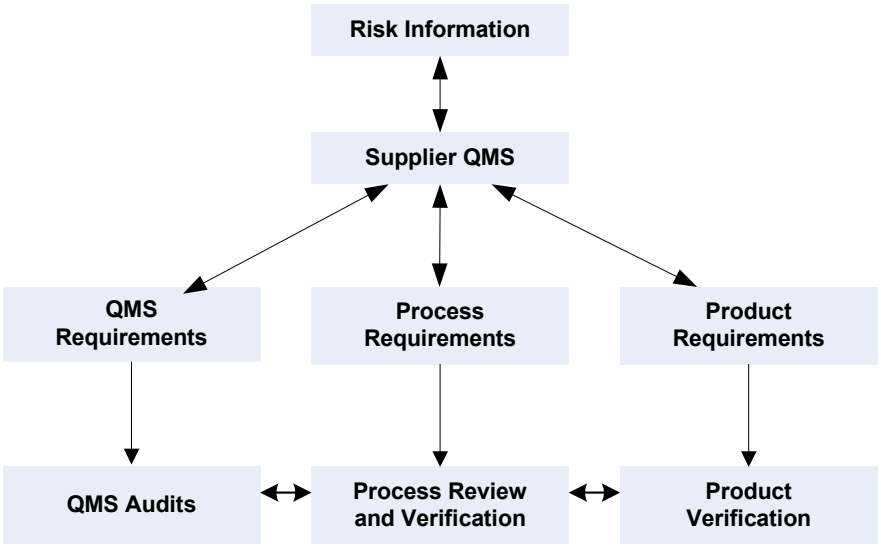
This annex is structured around the RIAC form and first illustrates the general concepts of planning GQA activity based on an initial risk assessment and providing some typical GQA activities. It then provides some guidance and instruction on GQA planning throughout the life of a GQA delegation, including how the evidence gained through GQA should influence the risk status and GQA planning.

Each delegation is different and so this annex cannot address every situation or replace the need for training and experience of GQA participants. Knowledge of the Supplier and the product will have a significant influence on the types of GQA that are appropriate.

D.3 RISK BASED GQA PLANNING

Figure D-1 illustrates how the risk information should be used to focus GQA activity.

Figure D-1 Concepts Relating to Risk Based GQA Planning



ISO 9000 Definitions Apply

D.3.1 Documents Required for GQA Planning

The essential documents for GQA planning are the completed RIAC form, the contract, its referenced standards and processes, Supplier schedules, plans and associated documents. The GQA plan template at Annex B-13 is recommended. An example of a RIAC is at figure D-2 below.

Figure D-2

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Risk Identification, Assessment and Communication (RIAC)

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Risk information is considered commercially sensitive and shall be used for GQA purposes only. Risk information shall not be shared outside of the Mutual GQA Participants, unless by prior agreement by the Acquirer, Supplier and GQAR.

RGQA Number:	**DAOQ n°280708**	**Revision Number:**	**0**	**Date:**	**28/07/2008**
RIAC Number:	**RIAC n°250708**	**Revision Number:**	**1**	**Date:**	**25/08/2008**

Risk Statement: The hull integrity – Insufficient strength of the welded joints of the submarine hull.

Risk Cause(s): Uncontrolled supply of welding wire (AQAP 2110 5.4.6 and ISO 9001:2015 8.4)
There is a high turn over staff (welders) at the company has to employ inexperienced and sometimes unqualified welders. (AQAP 2110 – 5.3.3 and ISO 9001:2015 – 7.2)

Risk Assessment:	Impact: **1, 4 or 9**	**9**	Likelihood: **1,4 or 9**	**4**	Risk Index = I x L	**36**	
On going GQA Risk Status:	Decreasing ☒		Stable ☐		Increasing ☐		

Delegator/Delegatee (GQAR) area for comments and recommendations:
The Supplier has implemented a new process for the control of welding wire. Spools are now colour coded, and duplicate checks are required prior to welding being started.
The company has also recognized the importance of experienced welders and have instated a staff retention system to reward staff in critical roles, the staff turnover issue seems to be resolved but should still be monitored.
The risk likelihood is reduced.

Risk Status at Closure:	No Occurrence ☐	Occurred & Controlled ☐	Occurred & Uncontrolled ☐

D.3.2 Risk Index and GQA Planning

The risk index is the indicator of risk priority used in GQA planning. Any resource spent on GQA shall be addressed to a risk and proportionate to its risk index. Normally, risks with a low index require little or no GQA. There are exceptions and so each case should be considered on its merits. Where GQA is not performed the Acquirer should be informed (reference para. 11.5) The Acquirer should consider monitoring product delivery, cost and performance in order to detect variance that might affect risk status and the need for GQA. Once it is determined that GQA is to be performed, further analysis is necessary to plan GQA.

D.3.2.1 Risk Impact in GQA Planning

Analysis of the risk impact can influence the type of GQA activity, or more specifically, depth of the GQA activity. For low impact risks, QMS reviews to assure that processes are operating in accordance with planned arrangements can be sufficient to provide confidence that contractual requirements relating to quality will be met. For medium impact risks process reviews and verifications should be included. For High impact risks the type of GQA should be expanded to include the monitoring of Supplier's product verification activities, especially for key characteristics.

D.3.2.2 Risk Likelihood in GQA Planning

Closer analysis of the risk likelihood should influence the frequency of GQA activity; the higher the likelihood, the greater the frequency of GQA that has to be considered.

D.3.2.3 The Risk Statement and Risk Causes in GQA Planning

The risk cause(s) drives GQA planning to specific areas of the Supplier's QMS. The details from the risk statement will provide the relationship to the product, contract, or issue of concern, providing the necessary focus on the relevant:

a) Processes/Production lines,
b) Product life cycle stage,
c) Sub-assembly,
d) Departments/Teams,
e) Sub-suppliers.

D.4 OBJECTIVES OF GQA ACTIVITIES AND TECHNIQUES

D. 4.1 GQA Activities

GQA activities should address the Supplier QMS as it is applied to the contract; to appropriate depth and frequency and at the appropriate stage of the project to gather sufficient evidence:

a) To assure that the Supplier QMS, processes and plans are capable of meeting the contractual requirements relating to quality (review),
b) Of the Supplier continuing fulfilment of the contractual requirements relating to quality (verification) or
c) To assure that the Supplier takes appropriate action to correct non-conformities; Prevent their recurrence (review and verification) and
d) Mitigate risks.

D.4.2 GQA Techniques

A variety of techniques can be used by the Delegatee (GQAR) in accordance with national practice. GQA techniques should be selected based on the sources of evidence under review or verification i.e. documents, processes, products, tests etc they include:

a) Formal Audit (reference ISO 19011:2018),
b) Informal audit,
c) Interviews,
d) Document reviews or verifications,
e) Witnessing of any Supplier processes and/or activity,
f) Participation/attendance of meetings.

D.4.2.1 Reviews

Reviews are a proactive approach conducted if confidence in the suitability, adequacy and effectiveness of planned Supplier activities or actions is required; it is the comparison of the 'required' and the 'to be implemented or provided'. The GQAR is typically looking for evidence to influence decision on the acceptability of Supplier plans and proposed actions, examples include:

a) QMS or quality plan reviews;
b) Process reviews;

c) Planned corrective and prevent action reviews.

The parts of the QMS or the processes to be reviewed should be determined by the risk statement and the risk cause. Reviews are normally conducted during the earlier stages of a contract or process; when there is insufficient evidence or knowledge of the Supplier to provide confidence that contractual requirements relating to quality will be met.

D.4.2.2 Verification
Verifications are a reactive approach conducted if confidence that Supplier activities or actions have met the specified requirements is required; it is the comparison of the stated or planned to the actual result. Examples of verification are:

a) Production process verification,
b) Corrective and prevent action verification,
c) Product verification.

Verifications should be considered when reviews have raised concerns; There have been past issues related to the subject of verification or when the subject is considered critical.

D.5 GQA PERFORMANCE

D.5.1 General
As GQA is performed the GQAR should be continually learning more about the risks that are being monitored. It is important that the GQAR uses this knowledge to review the risk status and revise the RIAC as appropriate. Changes in risk status should be supported by brief comments explaining the reason for the change. Figure D-3 shows an example of a revised RIAC during the life of a GQA delegation.

D.5.2 GQA Influence
There is a mutual obligation between the GQAR and the Delegator to continually share information that might influence GQA planning throughout the life of the GQA delegation. GQA is intended to reduce risk likelihood, but greater knowledge might lead the GQAR to conclude that the initial assessment underestimated the risk likelihood so it might increase in the short term. GQA is not expected to influence the risk impact. If, during a GQA delegation, risk likelihood increases, it should be considered as an indicator that the type of planned GQA activity is not appropriate. For example QMS review might indicate that there is a potential issue with a process, simply conducting more frequent QMS reviews is unlikely to have any influence. In these cases the GQAR should consider raising a QDR and/or process and/or product verifications, until confidence is gained and the likelihood is reduced.

Figure D-3 RIAC Updated Throughout the Life of the GQA Delegation

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Risk Identification, Assessment and Communication (RIAC)

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Risk information is considered commercially sensitive and shall be used for GQA purposes only. Risk information shall not be shared outside of the Mutual GQA Participants, unless by prior agreement by the Acquirer, Supplier and GQAR.

RGQA Number:	**DAOQ n°280708**	**Revision Number:**	**0**	**Date:**	**28/07/2008**
RIAC Number:	**RIAC n°250708**	**Revision Number:**	**2**	**Date:**	**18/12/2008**

Risk Statement: The hull integrity – Insufficient strength of the welded joints of the submarine hull.

Risk Cause(s): Uncontrolled supply of welding wire (AQAP 2110 5.4.6 and ISO 9001:2015 8.4)
There is a high turn over staff (welders) at the company has to employ inexperienced and sometimes unqualified welders. (AQAP 2110 – 5.3.3 and ISO 9001:2015 – 7.2)

Risk Assessment:	Impact: **1, 4 or 9**	**9**	Likelihood: **1,4 or 9**	**1**	Risk Index = **I x L**	**9**
On going GQA Risk Status:	Decreasing	☒	Stable	☐	Increasing	☐

Delegator/Delegatee (GQAR) area for comments and recommendations:
Process verification conducted on the hull welding, staff appear happy to remain in the company, records and witnessed activity show. That welding wire cross checks are always undertaken. Welding wire checked and only the correct specification wire was available. Will monitor again in 9 months.
The risk likelihood is reduced.

Risk Status at Closure:	No Occurrence	☐	Occurred & Controlled	☐	Occurred & Uncontrolled	☐

D.5.3 Ongoing GQA Risk Status

Accordingly to the GQA activity results the 'On going risk status' shall reflect the GQAR view on the risk index (normally limited to the risk likelihood):

a) Decreasing,
b) Stable,
c) Increasing.

The comments provided in the dedicated block are necessary to explain the GQAR perception.

D.5.4 Risk Status at Closure

Throughout the life of the GQA delegation and accordingly to the whole GQA results, the 'Risk status at Closure' shall reflect the GQAR balanced view of the risk occurrence and its control by the Supplier:

a) No Occurrence,
b) Occurred & Controlled,
c) Occurred & Uncontrolled.

The comments provided in the dedicated block are necessary to explain the GQAR perception and should be used by the Delagator/Delagatee for future delegations.

D.5.5 RIAC Information Configuration

Each time the RIAC is revised and exchanged, either from the Delegatee to the Delegator or vice versa, its issue number and date needs to be updated to assure configuration of the information.

D.6 Facility Wide Delegations

D.6.1 Application and Use

D.6.1.1: Facility Wide Delegation can be requested where the intention of the Delegator is to have a number of contracts for the same type of equipment at a particular Supplier covered by a single delegation.

D.6.1.2 Facility Wide Approach can be applied by the Delegatee at a particular Supplier, where multiple delegations have been received for the same type of equipment with common risks.

D.6.2 Role of the Delegator

D.6.2.1 The Delegator may request a Facility Wide Delegation where:

- There will be a number of similar contracts for the same Product at a particular Supplier.
- A single contract has been placed with a Supplier that will run for a number of years and involve the issuing of a number of separate purchase orders.

D.6.2.2 The requirement for a Facility Wide Delegation shall be identified on the RGQA form by the Delegator.

D.6.2.3 The Delegator is encouraged to request the use the Facility Wide Delegation to optimise resources. Where a Delegator has an existing Facility Wide Delegation, there is no need to raise additional RGQAs for similar contracts, with the same Supplier. The Delegator may simply provide the contractual information (i.e. purchase orders) and request that this be added to the existing delegation.

D.6.2.4 Additional contracts may be added to an existing Facility Wide Delegation by referencing the initial RGQA. The Delegator is still required to provide all relevant contractual documentation.

D.6.3 Role of the Delegatee

D.6.3.1 To ensure economic and effective use of resources the Delegatee is encouraged to look for opportunities to share the results of GQA across contracts and Delegators. In these circumstances the Delegatee should communicate to the Delegator their intention to use a Facility Wide Approach with the delegation by checking the appropriate box in the RGQAR.

D.6.3.2 For example, the GQAR can conduct specific GQA activities against contracts sharing the same specific risks and record the results of those activities against the GQA delegations sharing those specific risks.

D.6.3.3 The use of a Facility Wide Approach shall be shown on the GQA plan.

D.6.3.4 When reporting on Facility Wide GQA activity the GQAR should take care not to share commercially sensitive or contract specific information across Delegators. The frequency of GQAR reports on Facility Wide Delegations shall be as agreed with the Delegator.

D.6.4 Management of Facility Wide Delegations

D.6.4.1 Facility Wide Delegation should be managed in accordance with national practice.

D.6.4.2 The Delegator and Delegatee shall review the Facility Wide Delegations at regular intervals, at least annually, to ensure that:

- All contracts are reviewed (e.g. list of open; closed; received; late delivery, cancelled contracts and purchase orders.),
- All risks identified on the RIAC are still relevant,
- Reporting activity requested by the Delegator meets the delegation requirements and they are still proportional to the projects or contractual risks,
- Consideration is given to updating and reissuing the RGQA.

D.6.4.3 Communication between the Delegator and GQAR (identified by the Delegatee) is critical in ensuring that any GQA surveillance activities are directed at identified risks and are effective.

D.6.5 Facility Wide Closure

D.6.5.1 The Facility Wide Delegation can be closed by following the GQA closure instructions (see section 15), when all contracts and/or purchase orders for a Facility Wide Delegation are completed. The Delegatee should confirm with the Delegator that no more tasks are forecast within six months.

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AQAP-2070(B)(4)

NATO STANDARD

AQAP-2105

NATO REQUIREMENTS FOR QUALITY PLANS

Edition C Version 1
JANUARY 2019

NORTH ATLANTIC TREATY ORGANIZATION

ALLIED QUALITY ASSURANCE PUBLICATION

Published by the
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NATO LETTER OF PROMULGATION

15 January 2019

1. The enclosed Allied Quality Assurance Publication AQAP-2105, Edition C, Version 1, NATO REQUIREMENTS FOR QUALITY PLANS, which has been approved by the nations in the Life Cycle Management Group (AC/327), is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 4107.

2. AQAP-2105, Edition C, Version 1, is effective upon receipt and supersedes AQAP-2105, Edition 2, which shall be destroyed in accordance with the local procedure for the destruction of documents.

4. It is permissible to distribute copies of this publication to Contractors and Suppliers and such distribution is encouraged and it is permissible for Defence Contractors and Suppliers to store, use and transmit copies of this publication to their external providers if such use is in connection with a NATO nation or agency contract or purchase order.

5. This publication shall be handled in accordance with C-M(2002)60.

Zoltán GULYÁS
Major Brigadier General, HUNAF
Director, NATO Standardization Office

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATION
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Database for the complete list of existing reservations.	

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RECORD OF SPECIFIC RESERVATIONS

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CHAPTER 1 INTRODUCTION

1.1 GENERAL

This publication contains the NATO requirements for Quality Plans to be used in contracts. This publication provides the process and contents of a contractual Quality Plan.

The Suppliers Quality Plan will be evaluated according to these requirements.

Note: This publication can be used for pre-contractual evaluation purposes.

1.2 PURPOSE

This publication defines the NATO requirements for a Quality Plan in accordance with AQAP-2310, AQAP-2110 and AQAP-2210.

The Quality Plan specifies how all contract requirements are fulfilled, including AQAP requirements required in the contract.

The Quality Plan defines the Supplier's activities, processes, responsibilities, resources and describes how they are controlled.

1.3 APPLICABILITY

This publication is intended for use in contracts between an Acquirer and a Supplier, and/or between a Supplier and its external providers. If inconsistencies exist between the contract requirements and this publication, the contract requirements shall prevail.

This publication is intended for use in conjunction with AQAP-2310, AQAP-2110 and AQAP-2210.

1.4 REFERENCES

The documents referenced in this publication are listed below:

AQAP-2310	NATO Quality Assurance Requirements for Aviation, Space and Defence Suppliers
AQAP-2110	NATO Quality Assurance Requirements for Design, Development and Production
AQAP-2210	NATO Supplementary Software Quality Assurance Requirements to AQAP-2110 or AQAP-2310

ISO 9000:2015	Quality Management Systems – Fundamentals and Vocabulary
AS 9145	Requirements for Advanced Product Quality Planning and Production Part Approval Process

1.5 DEFINITIONS

The definitions of ISO 9000:2015, AQAP-2310, AQAP-2110 and AQAP-2210 shall apply to this publication.

1.6 ACRONYMS

The following is a list of acronyms used throughout this AQAP:

AQAP	Allied quality assurance publication
ISO	International Organization for Standardization
GQA	government quality assurance
GQAR	government quality assurance representative
AS	aerospace standard

CHAPTER 2 REQUIREMENTS

2.1 COMPLIANCE

Compliance with this publication is defined as the fulfilment of the requirements in chapters 3, 4 and 5. All requirements are applicable unless agreement otherwise as documented as part of the contract with the Acquirer.

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CHAPTER 3 ESTABLISHMENT PROCESS OF THE QUALITY PLAN

3.1 PREPARATION

3.1.1 As a prerequisite to the preparation of the Quality Plan, the Supplier shall undertake a review of all contract requirements and perform risk identification to determine the necessary management, technical and other necessary activities that need to be planned and implemented. This review and risks identified shall be retained as documented information. Critical characteristics shall be identified and activities, which may not be part of the Supplier's usual business processes, shall be included. The appropriate operations, procedures, processes and techniques must be planned and scheduled. The means of verification and validation shall be identified.

It is appropriate to adapt the Quality Plan according to:

- the extent of the contract,
- the complexity of the product,
- the applied techniques and processes,
- the experiences of the Supplier from manufacturing of similar products and
- the scope of cooperation with external providers.

3.1.2 The Quality Plan and its related process documentation shall be prepared and submitted prior to the start of any activities relating to the contract.

3.1.3 Unless otherwise specified, the Supplier shall review and update the Quality Plan for the phases identified below in order to ensure the validity of the Quality Plan prior to each phase:

- Planning phase
- Product Design and Development phase
- Process Design and Development phase
- Product and Process Validation phase
- On-going Production, Use, and Post-delivery Service phases.

Note: More information about these phases can be found in AS 9145.

3.1.4 The Quality Plan shall be clearly linked to the contract and the product, and shall be maintained as documented information.

3.1.5 The Quality Plan shall include or refer to all applicable contractual Supplier processes and procedures within the Supplier’s Quality Management System. The Quality Plan shall refer to all applicable contractual documents and plans, such as the contract, Project Management Plan, Configuration Management Plan, Risk Management Plan and their overall precedence.

3.2 APPROVAL/SUBMISSION

3.2.1 Once the Quality Plan has been approved by the Supplier authorized personnel, it shall be submitted to the GQAR and/or Acquirer for evaluation, prior to the start of work, unless otherwise agreed.

3.2.2 The GQAR or the Acquirer reserves the right to reject the Quality Plan and any revisions if not compliant with the contract requirements or this publication.

3.3 IMPLEMENTATION

3.3.1 The Supplier shall ensure that all processes and content within the Quality Plan are:

- Verified as being fit for purpose,
- Available and implemented by all responsible parties,
- Reviewed (as detailed in 3.4) to ensure suitability and compliance.

3.3.2 Records of audit results (as detailed in 4.13.3) shall be maintained for the life of the contract and be made available to the GQAR and/or Acquirer upon request.

3.4 REVIEWS, REVISIONS AND CHANGE CONTROL

3.4.1 The Quality Plan shall be reviewed periodically by the Supplier as a minimum at each development and production phase as detailed in 3.1.3 above through the contract life cycle.

3.4.2 Revisions to the Quality Plan shall be submitted to the GQAR and/or Acquirer in accordance with 3.2 above or according to the Suppliers defined change control procedure and shall be submitted without any un-necessary delay.

3.4.3 The Supplier’s procedure for the amendment and review of the Quality Plan shall be included in the Quality Plan.

3.4.4 The Supplier shall ensure that any changes related to the Quality Plan are controlled, with the identity, approval status, version and date of issue are clearly identified in the Quality Plan.

CHAPTER 4 CONTENT OF THE QUALITY PLAN

4.1 GENERAL

4.1.1 The scope of the Quality Management System shall be documented in the Quality Plan as it applies to the contract.

The content of the Quality Plan shall be precise and detailed enough to reflect the ongoing Supplier contractual activities specific to the contract.

4.1.2 The Quality Plan shall refer to and/or include all procedures, plans and other documents applicable to the contract. The Quality Plan shall specify the activities (managerial and technical) to be implemented, either directly or by reference to procedures and documents.

4.2 PROJECT DESCRIPTION

The purpose and applicability of the project shall be briefly described.

4.3 ACRONYMS, ABBREVIATIONS AND DEFINITIONS

All acronyms and abbreviations used in the Quality Plan shall be listed. All definitions used in the Quality Plan shall be listed except contractual definitions.

4.4 QUALITY MANAGEMENT SYSTEM ACTIVITIES

The planning of quality management activities, as applied to the achievement of contractual requirements, shall be described; inclusive of arrangements where work is conducted at locations external to the Supplier premises. The flow-down of requirements to the places where work is being performed shall be described.

4.4.1 Processes (general requirements)

1. The Quality Plan shall include how processes are identified along with their application, sequence and interaction.

2. Criteria and methods to ensure that processes are effective shall be included, as well as resources to support and monitor their implementation. Emphasis shall be put on processes that are complex or involving significant levels of risk as well as new processes.

3. The Quality Plan shall include how the Supplier will control externally provided products, processes and activities, including the avoidance, detection, mitigation and disposition of counterfeit materiel.

4. The Quality Plan shall include how processes are monitored, measured, analyzed and continually improved. Appropriate performance indicators shall be determined.

4.4.2 Documentation requirements

The Quality Plan shall describe how documentation requirements, including quality policy, quality objectives, scope of quality management system, procedures, records and other documents are maintained and controlled, including retention periods. A document status list shall be available at all times, and shall be formalized during transitions between phases and/or product baselines e.g. prior to design reviews.

4.5 REFERENCED DOCUMENTS

4.5.1 Where applicable, the Quality Plan shall refer to other quality related contractual documents and plans. The interfaces and relationships to these documents shall be described.

4.5.2 The Quality Plan shall list contractual and other related documents that are used by the Supplier to provide assurance of product conformance.

4.5.3 The order of precedence of referenced documents and their relationship to the contract, including the Quality Plan, shall be specified.

4.6 ACCESS TO SUPPLIER AND EXTERNAL PROVIDERS AND SUPPORT FOR GQA ACTIVITIES

The Quality Plan shall describe the provisions and support to be provided to the GQAR and/or Acquirer for access to the Supplier and/or external providers.

4.7 ORGANIZATION ROLE, RESPONSIBILITIES AND AUTHORITIES

4.7.1 The Quality Plan shall include a contract specific description of the organizational structure and identify those responsible for ensuring that the required activities are carried out. The responsibilities and authorities of responsible personnel related to quality, including the Management Representative, shall be described. The independence of personnel designated for contract related quality responsibilities shall be clearly documented. The inter-relationships between those responsible personnel shall be explained.

4.7.2 The relations to the GQAR and/or Acquirer shall be described.

4.8 RISK MANAGEMENT

The Quality Plan shall describe the contract specific activities for Risk Management and/or give reference to the required Risk Management Plan.

4.9 SUPPORT

The Quality Plan shall describe how the Supplier manages resources.

4.9.1 Resource management

The provision of resources, human resources, infrastructure and work environment needed to implement the contract requirements shall be specified in the Quality Plan.

4.9.2 Monitoring and measuring resources

The Quality Plan shall describe the processes used to ensure that measurement processes and measuring equipment meet requirements. The measurement management system shall be described; including the metrological function, measurement processes and the metrological confirmation process. The control of monitoring and measuring equipment in order to provide evidence of product conformity to contract requirements shall be described.

4.10 OPERATION

The planning of activities derived from the requirements and risks shall be defined, but is not limited to the processes below.

4.10.1 Operational planning and control

1. The Quality Plan shall describe the activities related to how the planning process for product realization/operation will be carried out. This shall include, or be referenced to, the requirement and solution compliance matrix. It shall describe how the matrix is maintained and controlled.

2. The Quality Plan shall describe how the contract specific activities for identification, management, traceability, review and validation of requirements is planned. Giving reference to related processes, documents (i.e.: system requirement specification) and test procedures.

4.10.2 Configuration management

The Quality Plan shall describe the contract specific activities for Configuration Management and/or give reference to the required Configuration Management Plan.

4.10.3 Customer communications

The Quality Plan shall describe the arrangements for communication with the GQAR and/or Acquirer.

4.10.4 Determining the requirements related to products

The Quality Plan shall identify and describe the activities associated with determining and reviewing requirements.

4.10.5 Design and development controls

The Quality Plan shall describe how design and development of products are performed, including processes for design and development planning, inputs, controls, reviews, evaluation, acceptance criteria, verification, validation, outputs and changes.

4.10.6 Dependability

The Quality Plan shall describe the contract specific activities for Dependability, if required in the contract.

Note: Further information on NATO Dependability Management is contained within Allied Dependability Management Publications (ADMP).

4.10.7 Control of externally provided processes, products and services

The Quality Plan shall describe how externally provided products are controlled through the supply chain. This shall include the flow down of requirements, the acquisition process, ensuring product conformity, Supplier evaluation and selection, quality auditing and other activities associated with externally provided products through the supply chain. Specific risks related to the supply chain products shall be identified and managed as part of Suppliers Risk Management. See 4.8 Risk Management above.

4.10.8 Control of production and service provision

1. The Quality Plan shall describe how the production and service provisioning is carried out under controlled conditions. The process that includes all operations in sequential order from receipt of purchased products through to the storage and release of products shall be included.

2. The Quality Plan shall identify all special processes implemented for the contract. For special processes not yet validated, the Quality Plan shall describe activities in order to achieve this validation.

4.11 RELEASE OF PRODUCTS

4.11.1 The Quality Plan shall describe how the Supplier will ensure that only acceptable products intended for delivery are released to the Acquirer. The Quality Plan shall refer to the contract specific arrangements for release authority, which may include the use of a Certificate of Conformity.

4.11.2 The Quality Plan shall describe how the contract specific requirements for identification and control of non-conforming products will be carried out.

4.12 IMPROVEMENT

4.12.1 The Quality Plan shall identify the processes/procedures that are required for product/service improvement.

4.12.2 The Quality Plan shall describe how continual improvement and corrective actions will be carried out.

4.13 PERFORMANCE EVALUATION

The planning of applicable improvement activities derived from the requirements and risks shall be defined, but is not limited, to the processes defined below

4.13.1 Customer satisfaction

The Quality Plan shall describe how the Supplier monitors, measures and improves customer satisfaction.

4.13.2 Analysis and evaluation

The Quality Plan shall describe the analysis of data used in order to demonstrate the suitability and effectiveness of planned activities that lead to improvements.

4.13.3 Internal audit

The Quality Plan shall describe how internal audits will be performed in order to determine whether the Quality Plan conforms to the requirements and is effectively implemented and maintained.

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CHAPTER 5 SOFTWARE PROJECT QUALITY PLAN

If a Software Project Quality Plan (Ref AQAP-2210 2.2.2) is required by the contract, the software specific activities shall be covered by the requirements in chapter 4 of this publication.

AQAP-2105(C)(1)

NATO STANDARD

AQAP-2110

NATO QUALITY ASSURANCE REQUIREMENTS FOR DESIGN, DEVELOPMENT AND PRODUCTION

Edition D Version 1
JUNE 2016

NORTH ATLANTIC TREATY ORGANIZATION

ALLIED QUALITY ASSURANCE PUBLICATION

Published by the
NATO STANDARDIZATION OFFICE (NSO)

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

24 June 2016

1. The enclosed Allied Quality Assurance Publication AQAP-2110, NATO QUALITY ASSURANCE REQUIREMENTS FOR DESIGN, DEVELOPMENT AND PRODUCTION, Edition D, Version 1, which has been approved by the nations in the Life Cycle Management Group (AC/327), is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 4107.

2. AQAP-2110, Edition D, Version 1 is effective upon receipt and on completion of a transition, ending 21 September 2018, will supersede AQAP-2110 Edition 3, AQAP-2120 Edition 3 and AQAP-2130 Edition 3 all of which which should be destroyed in accordance with local procedures for the destruction of documents.

3. No part of this publication may be reproduced, stored in a retrieval system, used commercially, adapted, or transmitted in any form or by any means, electronic, mechanical, photo-copying, recording or otherwise, without the prior permission of the publisher. With the exception of commercial sales, this does not apply to member or partner nations, or NATO commands and bodies.

4. This publication shall be handled in accordance with C-M(2002)60.

for

Dieter Schmaglowski
Deputy Director NSO
Branch Head P&C

Edvardas MAŽEIKIS
Major General, LTUAF
Director, NATO Standardization Office

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RESERVED FOR NATIONAL LETTER OF PROMULGATION

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATION

Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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CHAPTER 1 INTRODUCTION

1.1 General

This publication contains the NATO requirements for Quality. A Quality Management System shall be established, documented, applied, maintained, assessed and improved, and evaluated, in accordance with requirements contained in this publication.

1.2 Purpose

This publication contains requirements, which, if applied appropriately, provide confidence in the Supplier's capability to deliver products that conform to Acquirer contract requirements.

1.3 Applicability

1. This publication is primarily intended for use in a contract between two or more parties.

2. When referenced in a contract, this publication shall apply to all of the processes necessary for the Supplier to fulfil the contractual requirements.

3. This publication may also be used internally by a Supplier or a potential Supplier to cover the Quality aspects of the Management System (MS).

4. Where identified by the Acquirer other appropriate standards can be used in conjunction with this publication to identify MS process requirements.

5. If inconsistencies exist between the contract requirements and this publication, the contract requirements shall prevail.

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CHAPTER 2 COMPLIANCE WITH THIS PUBLICATION

2.1 Compliance

Compliance with this publication is defined as the fulfilment of the requirements in chapters 3, 4 and 5. All requirements are applicable unless agreement otherwise is documented as part of the contract with the Acquirer.

2.2 Notes and Guidance

In this publication 'Notes' are not contractual requirements; they are for guidance or clarifying the associated requirement.

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CHAPTER 3 COMPOSITION OF REQUIREMENTS IN AQAP 2110

3.1 Composition

1. A requirement in this publication is composed as follows:

   a. Chapter 4, General QMS Requirements, establishes the applicability of the requirements of ISO 9001:2015.

   b. Chapter 5, NATO Specific QMS Requirements, establishes additional NATO specific requirements for the Supplier.

2. Whenever the ISO 9001 requirement refers to “this international standard” it shall be read as “this publication”.

3.2 References

3.2.1 Normative References

1.	ISO 9001:2015	Quality Management Systems – Requirements
2.	ISO 9000:2015	Quality Management Systems – Fundamentals and Vocabulary
3.	ACMP 2100	Configuration Management Contractual Requirements
4.	ISO 10012:2003	Measurement Management Systems – requirements for measurement processes and measuring equipment
5.	ISO 31000:2009	Risk Management – Principles and Guidelines

3.2.2 Informative References

1.	AQAP 2000	NATO Policy on an Integrated Systems Approach to Quality Through the Life Cycle
2.	AQAP 2009	NATO Guidance on the use of the AQAP 2000 series
3.	AQAP 2105	NATO Requirements for Deliverable Quality Plans
4.	AQAP 2070	NATO Mutual Government Quality Assurance (GQA) Process
5.	ISO 10007:2003	Quality Management Systems – Guidelines for Configuration Management
6.	ADMP	Allied Dependability Management Publications

3.3 Definitions

Unless stated otherwise, ISO 9000:2015 definitions shall apply.

3.3.1 Acquirer

Governmental and/or NATO Organisations, that enter into a contractual relationship with a Supplier, defining the product and quality requirements

3.3.2 Supplier

Organisation that acts in a contract as the provider of products to the Acquirer.

3.3.3 Certificate of Conformity

A document, signed by the Supplier, which states that the product conforms with contractual requirements

3.3.4 Dependability

The ability to perform as and when required.

Notes:

1. Dependability includes availability, reliability, recoverability, maintainability and maintenance support performance, and, in some cases, other characteristics such as durability, safety, and security.

2. Dependability is used as a collective term for the time-related quality characteristic of an item

3.3.5 Government Quality Assurance

The process by which the appropriate National Authorities establish confidence that the contractual requirements relating to quality are met

3.3.6 Government Quality Assurance Representative

The Personnel with responsibility for Government Quality Assurance (GQA), acting on behalf of the Acquirer

3.3.7 GQAR and/or Acquirer

The term “GQAR and/or Acquirer” has been used in this document to enable the Acquirer to be the default in situations in which there is either no GQAR associated with the contract or where the appointed GQAR has not been delegated the authority to conduct particular activities

3.3.8 Product

The result of activities, processes and tasks. A product may include service, hardware, processed materials, software or a combination thereof. A product can be tangible (e.g. assemblies or processed materials) or intangible (e.g. knowledge or concepts), or a combination thereof.

3.3.9 Quality Plan

Supplier's document that specifies which procedures and associated resources shall be applied by whom and when to a specific project, product, process or contract requirement

3.3.10 Root Cause Analysis

A collective term that describes a wide range of approaches, tools and techniques used to identify causes of nonconformity.

3.3.11 Key or Critical Product Characteristics or Processes

Processes or Product elements or features which, if not properly controlled, can have an adverse impact on the product delivery, cost and performance.

3.3.12 Counterfeit Material

Materiel whose origin, age, composition, configuration, certification status or other characteristic (including whether or not the materiel has been used previously) has been falsely represented by:

- A) misleading marking of the materiel, labelling or packaging;

- B) misleading documentation; or

- C) any other means, including failing to disclose information;

- except where it has been demonstrated that the misrepresentation was not the result of dishonesty by a Supplier or External Provider within the supply chain.

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CHAPTER 4 GENERAL QMS REQUIREMENTS

4.1 Applicability of ISO 9001:2015 REQUIREMENTS

The Supplier shall establish, document, implement, assess and improve an effective and economical Quality Management System in accordance with this publication which includes the requirements of ISO 9001:2015 as necessary to satisfy the contract requirements.

4.2 Quality Management System and its Processes

The Acquirer and/or Government Quality Assurance Representative (GQAR) reserve the right to reject the Supplier’s Quality Management System as it applies to the contract. The Supplier's documented Scope of their System, records from internal audit, self-assessments and other objective evidence that this system is compliant with this Publication and is effective, shall be readily available to the GQAR and/or Acquirer.

In instances where the Acquirer and/or GQAR rejects the Quality Management System, the Supplier shall make proposals for corrective actions and revisions within an agreed timescale and contractual penalties will be applied as defined in the contract

4.3 Access to Supplier and External Providers and Support For GQA Activities

The Supplier and/or External Providers shall provide the GQAR and/or Acquirer:

1. The right of access to facilities where the contracted activities are being performed.

2. Information pertaining to the fulfillment of requirements in the contract.

3. Unrestricted opportunity to evaluate Supplier compliance with this Publication.

4. Unrestricted opportunity to evaluate External Providers compliance with this Publication. The Supplier will be informed before the evaluation takes place.

5. Unrestricted opportunity to conduct verification of product conformity with the contract requirements.

6. Required assistance for evaluation, verification, validation, testing, inspection or release of the product for the accomplishment of GQA to contract requirements.

7. Accommodation and facilities for performing GQA.

8. The necessary equipment available for reasonable use for performing GQA.

9. Supplier and/or External Providers personnel for operation of such equipment as required.

10. Access to information and communication facilities.

11. The necessary Supplier documentation to confirm product conformance to specification.

12. Copies of necessary documents, including those on electronic media.

CHAPTER 5 NATO SPECIFIC QMS REQUIREMENTS

Note: The paragraph number of ISO 9001:2015 mentioned in brackets at the end of the paragraph title is only for information purposes.

5.1 Leadership

5.1.1 Organizational roles, responsibilities and authorities [5.3]

1. Top management shall appoint a management representative for GQA issues from the organization's management who, irrespective of other responsibilities shall have the necessary organisational authority and freedom to resolve matters pertaining to quality. The management representative shall report directly to top management.

2. The management representative shall have responsibility and authority that includes ensuring that processes needed for the quality management system are established, implemented and maintained and shall include liaison with the GQAR and/or Acquirer on matters related to quality.

3. The management representative shall have the appropriate competence related to Quality Management.

5.2 Planning

5.2.1 Risk Management [6.1]

1. The Supplier and External Provider shall provide objective evidence that risks, including External Provider risks, are considered during planning, including but not limited to Risk Identification, Risk Analysis, Risk Control and Risk Mitigation. The planning shall start with risk identification during contract review and be updated thereafter in a timely manner.

2. Unless otherwise stated in the contract, the Risk Management applied shall meet the principles and guidelines of ISO 31000:2009. The Risk Management Plan shall be made available to the GQAR and/or Acquirer.

3. The Acquirer and/or GQAR reserve the right to reject Risk Plans and their revisions.

5.3 Support

5.3.1 Infrastructure [7.1.3]

The infrastructure shall include an area to segregate nonconforming product (see paragraph 5.4.12 of this publication).

5.3.2 Monitoring and measuring resources [7.1.5]

1. The measurement and calibration system applied to the contract shall meet the requirement of ISO 10012:2003.

2. When an item of measuring equipment fails calibration the Supplier shall advise the GQAR and/or Acquirer of the impact of the failure on previous measuring results where this affects delivered products or verification, validation and acceptance results. The GQAR and/or Acquirer may request that measurements taken shall be repeated with calibrated equipment.

5.3.3 Competence [7.2]

The Supplier shall establish and maintain a process for identifying training needs and achieving competence of all personnel performing activities affecting product quality.

5.3.4 Awareness [7.3]

Persons involved with the contract, including External Providers, shall be aware of the specific arrangements contained in the quality plan that are applicable to their activities / area of responsibility.

5.3.5 Documented information [7.5]

The Supplier shall provide the GQAR and/or the Acquirer with the necessary access to the documented information pertinent to the contract, in a format agreed with the GQAR and/or Acquirer.

5.4 Operation

5.4.1 Operational planning and control [8.1]

1. The Supplier shall identify the documented information, including acceptance criteria and configuration information that will be used as objective evidence of product conformance with requirements. This information shall be acceptable to the Acquirer and/or GQAR and made available prior to acceptance of the product.

2. The supplier shall maintain and retain documented information for product approval and production process approval. These approvals shall also be applied to External Providers.

5.4.1.1 Quality Plan

1. The Supplier shall submit an acceptable Quality Plan (QP) which addresses the contractual requirements to the GQAR and/or the Acquirer in a mutually agreed

timescale but prior to the start of work which can be defined as a project or contract initiation meeting or as otherwise stated in the contract or purchase order. The QP shall be a clearly identified discrete document or part of another document that is prepared under the contract.

2. The QP shall:

a. Describe and document the quality management system requirements "contract-specific" necessary to satisfy the contract requirements (making reference, where applicable, to the "company-wide" quality management system);

b. Describe and document the planning of the product realisation in terms of quality requirements for the product, needed resources, required control activities (verification, validation, monitoring, inspection, testing), and acceptance criteria. This shall include specific arrangements and communication requirements where work is to be conducted at locations external to the Suppliers premises.

c. Document, and maintain traceability of requirements from the planning process by including a requirement and solution compliance matrix, justifying fulfilment of all contractual requirements (making reference where applicable).

3. The Acquirer and/or GQAR reserve the right to reject QPs and their revisions.

NOTE:

Contractual requirement for the content of the Quality Plan is established in AQAP 2105 “NATO requirements for Deliverable Quality Plans.”

Requirement and solution compliance matrix can be a part of Quality Plan or a separate document as an annex to it. This matrix can be prepared and annexed to the Quality Plan after the initial issue, within a timescale mutually agreed with GQAR and/or Acquirer by taking into account the content of the Contract or Purchase Order.

5.4.1.2 Configuration Management

5.4.1.2.1 Configuration Management (CM) requirements

The Supplier shall manage configuration through the implementation of Configuration Management Planning, Configuration Identification, Change Control, Configuration Status Accounting and Configuration Audit in accordance with the requirements of ACMP 2100 and any additional CM clauses in the contract or a nationally recognised equivalent.

5.4.1.2.2 Configuration Management Plan (CMP)

The Supplier shall prepare a Configuration Management Plan (CMP) which describes the application of CM to the contract in accordance with ACMP 2100 and any additional CM clauses in the contract or nationally recognised equivalent. The CMP may form part of another plan if appropriate.

NOTE:
Further information on NATO Configuration Management Policy and Requirements are contained within Allied Configuration Management Publications (ACMP) ACMP 2000 and ACMP 2009.

5.4.2 Customer communications [8.2.1]

1. If requested by the Acquirer and/or GQAR, the Supplier and/or External Providers shall attend a Post Award GQA meeting focused on the contract arrangements for Quality Assurance of the product and/or GQA practicalities.

2. The Supplier shall ensure that lines of communication are established with the GQAR and/or Acquirer. The designated management representative shall ensure that the adequate level of information is supplied to satisfy the GQAR and/or Acquirer.

3. The Supplier shall notify the GQAR and/or Acquirer of changes to its organisation that affect product quality or the Quality Management System.

5.4.3 Determining the requirements related to products [8.2.2]

The Supplier shall identify product requirements and functions that relate to critical characteristics such as health, safety, performance, and dependability.

5.4.4 Design and development controls [8.3.4]

Unless otherwise stated in the contract, the Supplier shall determine the verification and validation methods required and demonstrate conformity with the corresponding requirements at appropriate stages up to and including the final product.

5.4.5 Dependability

If stated in the contract, the Supplier shall ensure that Dependability issues and related documents, including those from associated External Providers, are controlled.

NOTE:
Further information on NATO Dependability Management is contained within Allied Dependability Management Publications (ADMP).

5.4.6 Control of externally provided processes, products and services [8.4]

The Supplier shall retain documented information of verification and/or validation of purchased products. The documented information shall be made available to the GQAR and/or Acquirer.

5.4.6.1 General

1. Where the Supplier has decided to externally source a critical item, significant work content, design, immature technical solutions or a configuration item then the Supplier shall establish and maintain knowledge of the supply chain and External Provider quality assurance activities.

2. The Supplier shall flow down the applicable contractual requirements to External Providers by referencing the stated contractual requirement, including relevant AQAP(s). The Supplier shall insert the following in all purchasing documents: "All requirements of this contract may be subject to GQA. You will be notified of any GQA activity to be performed."

3. Suppliers shall conduct a formal review of purchasing documents to verify that the correct contractual requirements have been flowed down. The Supplier shall retain documented information of this review.

4. The Supplier shall document their arrangements for these requirements at the planning stage (see paragraph 5.4.1. of this publication) and identify their proposed quality assurance activities for specific sub-contracts or orders that meet the above criteria.

5.4.6.2 Type and extent of control [8.4.2]

1. It is the Supplier's responsibility to ensure that the procedures and processes required to fulfil contract requirements are fully implemented at the External Provider's facilities.

2. The Supplier shall establish and implement a process for the avoidance, detection, mitigation, and disposition of Counterfeit Materiel.

3. Only the Supplier placing the purchasing documents with an External Provider will issue contractual instructions to that External Provider.

4. GQA activities at External Provider's facilities do not relieve the Supplier from any contractual quality responsibilities.

NOTE:
Conduct of GQA and associated GQAR and/or Acquirer access rights, at External Provider's facilities can only be requested by the GQAR and/or Acquirer.

5.4.6.3 Communication

1. The Supplier shall on request provide the GQAR and/or Acquirer with a copy of any subcontracts, orders, related contractual documents and their modifications, for products related to the contract.

2. The Supplier shall notify the GQAR and/or Acquirer if a subcontract or order has been identified involving a critical item, significant work content, design, immature technical solutions or where External Provider performance is unknown or causes concern.

3. The Supplier shall notify the GQAR and/or Acquirer if an externally provided product is rejected, reworked, or repaired which has been identified as involving risk or supplied by an External Provider whose selection or subsequent performance has been identified as involving risk.

5.4.7 Control of Production and Service Provision [8.5.1]

1. The Supplier shall develop and maintain instructions for the conduct of activities related to the control of production of material, part, component, subsystem and system level for the product supplied to ensure that the specified requirements are met.

2. The Supplier shall establish and maintain criteria for workmanship in the clearest practical manner (e.g. written standards, representative samples or illustrations).

5.4.8 Identification and traceability [8.5.2]

Where the failure of an item or component could lead to the loss of equipment, performance or life then it is mandatory to maintain traceability.

5.4.9 Property belonging to customers or External Providers [8.5.3]

1. If products provided by the Acquirer are lost, damaged or otherwise found to be unsuitable for their intended use in accordance with the contract, the Supplier shall immediately inform the Acquirer and GQAR and retain documented information.

2. When the Supplier establishes that an acquirer supplied product is unsuitable for its intended use, they shall immediately report to and coordinate with the Acquirer the remedial actions to be taken. The Supplier shall also inform the GQAR.

5.4.10 Preservation [8.5.4]

1. Products with limited shelf life shall be subject to control of their expiry dates.

2. If applicable, the control of expiry date/shelf life shall be applied during maintenance, servicing, storage or when fitted.

3. Remaining shelf-life shall be identified and communicated to the GQAR and/or Acquirer prior to delivery.

5.4.11 Release of products [8.6]

1. The Supplier shall ensure that only acceptable products, intended for delivery, are released. The GQAR and/or Acquirer reserve the right to reject nonconforming products.

2. The Supplier shall provide a Certificate of Conformity at release of product to the GQAR and/or Acquirer unless otherwise instructed.

3. The Supplier is solely responsible for the conformance to requirements, of products provided to the Acquirer.

4. Where the GQAR/and or Acquirer is required to perform any final inspection or formal acceptance activities, the Supplier shall provide the GQAR/and or Acquirer with a minimum of 10 working days notification of the event unless otherwise stated in the contract.

5.4.12 Control of nonconforming products [8.7]

1. The Supplier shall issue and implement documented procedures which identify, control and segregate all nonconforming products. Product with unidentified or unknown status shall be classified as nonconforming product.

2. Documented procedures for the identification, control, and segregation of nonconforming product are subject to disapproval by the GQAR and/or Acquirer when it can be shown that they do not provide the necessary controls.

3. The Supplier shall notify the GQAR and/or Acquirer of non-conformities and corrective actions required, unless otherwise agreed with the GQAR and/or Acquirer. The GQAR and/or Acquirer reserve the right to reject all rework, repair and use as is dispositions.

4. Where the Supplier proposes to raise a concession for the use, release or acceptance of a nonconforming product appropriate authorisations shall be obtained from the GQAR and/or Acquirer unless otherwise agreed.

5. The Acquirer requirements for concessions apply equally to outsourced processes or purchased products. The Supplier shall review any request from External Providers before submission to the GQAR and/or Acquirer.

6. The Supplier shall retain documented information of quantity authorized and/or expiration date for concessions or deviation permits. The Supplier shall ensure compliance with the contract requirements when the authorization expires.

7. The Supplier shall notify the GQAR and/or the Acquirer of nonconforming product received from an External Provider that has been subject to Government Quality Assurance.

5.5 Performance Evaluation

5.5.1 Customer satisfaction [9.1.2]

1. Any complaints or deficiencies relevant to the contract, reported by the GQAR and/or Acquirer, shall be recorded as customer complaints.

2. The Supplier shall provide a response to the originator of the complaint or deficiency that shall include information on root cause analysis and corrective action.

Note: Customer complaints could be in the form of quality non-conformance, deficiency or occurrence reports or another format but regardless will be identified by the GQAR and/or Acquirer as 'customer complaints'.

5.5.2 Internal audit [9.2]

1. During the planning of internal audits the Supplier shall ensure that their audit programme covers all contract related critical processes and activities on an annual basis and includes contractual requirements and NATO supplements. The Supplier shall also consider the output from the actions to address risk and opportunities assessment.

2. Unless otherwise agreed, the Supplier shall inform the GQAR and/or Acquirer of deficiencies or findings identified during internal audit.

3. The Supplier shall retain documented information that demonstrates auditor training and experience.

5.5.3 Management review [9.3]

5.5.3.1 Management Review Input [9.3.2]

Documented information of review input, related to the contract, shall be available to the GQAR and/or Acquirer.

5.5.3.2 Management Review Output [9.3.3]

1. Documented information of the review output, related to the contract, shall be available to the GQAR and/or Acquirer.

2. The Supplier shall notify the GQAR and/or Acquirer of proposed action, resulting from Review Output that will affect compliance with contractual requirements. Review output shall, where action item(s) are identified, specify the responsible person/function and due date of the action item(s).

5.6 Improvement

5.6.1 Nonconformity and corrective action [10.2]

The Supplier shall define their process, including tools and techniques, used to support root cause analysis for nonconformities.

AQAP-2110 (D)(1)

NATO STANDARD

AQAP-2210

NATO SUPPLEMENTARY SOFTWARE QUALITY ASSURANCE REQUIREMENTS TO AQAP-2110 OR AQAP-2310

Edition A Version 2

September 2015

NORTH ATLANTIC TREATY ORGANIZATION

ALLIED QUALITY ASSURANCE PUBLICATION

Published by the
NATO STANDARDIZATION OFFICE (NSO)

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

4 September 2015

1. The enclosed Allied Quality Assurance Publication AQAP-2210, Edition A, Version 2 "NATO Supplementary Software Quality Assurance Requirements to AQAP-2110 or AQAP-2310", which has been approved by the nations in the Life Cycle Management Group (AC/327), is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 4107.

2. AQAP-2210, Edition A, Version 2 is effective upon receipt and supersedes AQAP-2210 Edition 1, which shall be destroyed in accordance with the local procedure for the destruction of documents.

4. This publication shall be handled in accordance with C-M(2002)60.

Edvardas MAŽEIKIS
Major General, LTUAF
Director, NATO Standardization Office

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RESERVED FOR NATIONAL LETTER OF PROMULGATION

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]

Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.

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FOREWORD

The Acquirer's quality assurance requirements stated in this document, are based on the experience that quality management of the entire software development process is the key to achieving software quality in complex and mission critical computer systems such as weapon systems, communication systems, and command and control systems. To ensure the quality of the software development process, such processes must be planned, controlled and improved, with the aim of reducing, eliminating and, most importantly, preventing software quality deficiencies.

In accordance with international standardization, functional rather than organizational definitions for software quality management are used to avoid problems introduced by traditional quality concepts and their organizational boundaries. This publication, therefore, is not specifically addressed to software quality organizations, but rather to the overall organizational structure and the different management levels involved in a software project.

This publication is designed for use in contracts, and defines the requirements for the Software Quality Management Activities as related to the Project to be documented in a Software Project Quality Plan. These activities are based on the Supplier's Software Quality System. The publication also requires the evaluation of the Software Quality Management Activities to ensure their effectiveness.

The application of this publication is not restricted to any particular type or form of software. This publication does not specify any particular software development model, nor does it stipulate which software development methods should be used. This publication allows flexibility in adapting the required documentation and procedures to the specific development and procurement processes of the project.

This publication supersedes AQAP 2210 Edition 1, and is intended for use with AQAP 2110 or AQAP 2310 as a software specific and project oriented supplement.

CHAPTER 1 INTRODUCTION

1.1. PURPOSE

This publication specifies the project oriented requirements to manage the quality of the software development process. Both managerial and technical processes must be addressed in order to:

a. establish visibility of the software development process;

b. detect software quality problems as early as possible in the software life cycle;

c. provide quality control data for the timely implementation of effective corrective action;

d. confirm that quality is engineered in during the software development process;

e. provide assurance that the software produced conforms to contractual requirements;

f. ensure that appropriate software support is provided to activities at the system engineering level, if required by the contract; and

g. ensure that the safety and security conditions of the project are addressed.

1.2. APPLICABILITY

1. When referenced in a contract this AQAP shall apply to:

a. all cases where software development is undertaken;

b. all cases where non-deliverable software is developed or employed under the contract (to the extent specified in paragraph 2.2.4.8);

c. all cases where software maintenance is part of the contract, in order to avoid uncontrolled, hidden development activities, which could have unforeseeable or detrimental consequences on the quality of the software product;

d. all cases where off-the-shelf software is to be delivered (to the extent specified in paragraph 2.2.4.7); and

e. all cases relating to the development of the software element of firmware.

2. If the contract addresses only "partial" software development or maintenance activities, then the related requirements of this publication shall also apply (e.g. software replication activities, software activities during system integration, software requirements definition, software archiving and storage services, Sub-supplier management activities etc.).

3. This publication is intended for use with AQAP 2110 or AQAP 2310 as a software specific and project oriented supplement. Where there is any conflict between the requirements of AQAP 2110 (or AQAP 2310) and this publication for software, the requirements of this publication shall prevail.

4. If any inconsistency exists between the Contract requirements and this publication, the Contract requirements shall prevail.

5. For competitive software acquisition this publication can also be used for the specification of requests for proposals and the evaluation of proposals. The provisions of this publication can also apply to Government Agencies performing software development or maintenance.

1.3. REFERENCED DOCUMENTS

1. AQAP 2110 Edition 3 "NATO Quality Assurance Requirements for Design, Development and Production".

2. AQAP 2310 Edition A Version 1 "NATO Quality Management System Requirements for Aviation, Space and Defence Suppliers".

3. ISO 9000: 2005 "Quality management systems – Fundamentals and Vocabulary".

4. ISO/IEC 25010: 2011 “Systems and software engineering -- Systems and software Quality Requirements and Evaluation (SQuaRE) -- System and software quality models”.

1.4. DEFINITIONS AND ACRONYMS

1.4.1. Definitions

The applicable definitions of ISO 9000 or AQAP 2110 (or AQAP 2310) apply to terminology used in this publication. Where definitions in ISO 9000 or AQAP 2110 (or AQAP 2310) and this publication differ, the definitions in this publication shall apply.

1. Control

The activity to detect differences between an actual and planned result/process, and to cause changes in a process or a product which reduce the detected differences to a defined level.

2. Evaluation

A systematic determination of the extent to which an entity meets its specified criteria.

***Notes**:*

a. The term "entity" includes product, activity, process, organization or person;

b. Evaluation of the activity or process may occur in parallel with development, or may be deduced as the result of verification of the software product;

c. Evaluation of the activity or process can be performed by monitoring, auditing, process qualification or by establishing and documenting whether or not they conform to specified criteria.

3. Firmware

The combination of a hardware device and computer instructions or computer data that reside as read-only software on the hardware device.

4. Method

A set of rules for solving a problem.

5. Non-deliverable Software

Software that is not required to be delivered under the contract but may be used in the development of software.

6. Off-the-shelf Software

Deliverable software that is already developed and usable as is, or with modification. Off-the-shelf software may be referred to as reusable software, Government furnished software, or commercially available software depending on its source.

7. Process

The interaction of personnel, equipment, material and procedures aimed at providing a specified service or producing a specified product.

Each process is a defined set of one or more activities or tasks which can be accomplished in a finite period of time. Each process can be broken down into activities which are characterized by quantifiable inputs and outputs which can be measured, controlled and improved.

8. Software Development Model

A simplified, abstract representation of the software development process (process behaviour and results) used for planning and control purposes.

9. Software Development Process

The process by which user needs/requirements are translated into a software product.

10. Software Life Cycle
A framework containing the processes, activities and tasks involved in the development, operation and maintenance of a software product, spanning the life of the system from the definition of its requirements to the termination of its use.

11. Software Quality Characteristics
A set of attributes of a software product by which its quality is described, verified and validated. A software quality characteristic may be refined into multiple levels of sub-characteristics.
***Note**: According to the International Standard ISO/IEC 25010: 2011, software quality may be evaluated using the following eight characteristics: Functional suitability, Performance efficiency, Compatibility, Usability, Reliability, Security, Maintainability, and Portability.*

12. Software/Software Product
Computer programs, procedures, rules, associated documentation and data pertaining to the operation of a computer system.

13. Software Tool
A computer program used to help develop, analyze, evaluate, verify, validate or maintain another computer program or its documentation.

14. Validation
Confirmation by examination and provision of objective evidence that the particular requirements for a specific intended use are fulfilled.
***Notes**:*
a. Validation is normally performed on the final product under defined operating conditions;
b. Multiple validations may be carried out if there are different intended uses.

15. Verification
The process of determining and obtaining objective evidence whether or not the products of a given phase of the software development process fulfil the requirements established during the previous phases.
***Notes**:*
a. Verification can be performed by reviewing, inspecting, testing, checking, auditing or otherwise establishing and documenting whether or not products conform to specified requirements;
b. A phase in this context does not imply a period of time in the development of a software product.

1.4.2. Acronyms

The following acronyms appear in this document:

CI	Configuration Item
SCI	Software Configuration Item

EVV	Evaluation, Verification and Validation
SCM	Software Configuration Management
SPQP	Software Project Quality Plan
SQS	Software Quality System

CHAPTER 2 REQUIREMENTS

2.1. SOFTWARE QUALITY SYSTEM (SQS)

1. The Supplier shall apply a documented, effective and efficient SQS to the project. The SQS can be an integrated part of a general quality system, but shall be comprised of a comprehensive, integrated quality management process. This process shall be applied throughout the contract, ensuring that quality is designed in as the software development progresses.

2. By correlation of budget and schedule deviations with quality information, the SQS shall also provide for the timely detection and correction of any negative influence on quality, thus minimizing technical risk.

3. Provision shall be made for the periodic and systematic review of the SQS by, or on behalf of, Supplier's top management to ensure its effectiveness.

2.2. PROJECT SOFTWARE QUALITY MANAGEMENT ACTIVITIES

2.2.1. General

1. To achieve visibility and control of the software development project the Supplier shall plan and implement effective software quality management activities.

2. The Supplier shall undertake a formal contract review to ensure all the contractual requirements are defined and to determine the necessary management and technical processes which need to be planned and implemented.

3. Based on contract requirements, the rules and procedures of the SQS and the specific project requirements, the software quality management activities shall:

a. establish/identify, refine and allocate requirements to software products and configuration items (CIs). See para 2.2.3.

b. establish and implement managerial and technical processes to develop, and build quality into the software. See paras 2.2.4/2.2.5.

c. establish and implement procedures to verify and validate the quality of the software products and to evaluate processes and activities, including non-deliverable software, that impact the quality of the software products. See para 2.2.6.

d. establish and implement procedures for risk management. The Supplier shall identify, analyze, prioritize and monitor the areas of the project that involve potential technical, cost or programme risk. The aim of risk management shall be to eliminate or minimise risk.

4. The software quality management activities shall call upon existing standards and procedures in the organization's SQS. When this is not the case a justification shall be provided to the Acquirer.

5. The software quality management activities shall be documented in the Software Project Quality Plan (SPQP). See para 2.2.2.

6. Provision shall also be made for the evaluation of the software quality management activities by the Acquirer, who may disapprove them.

2.2.2. Software Project Quality Plan (SPQP)

1. The Supplier shall document the software quality management activities as related to the Project in a SPQP. The SPQP may be a discrete document, or part of another plan that is prepared under the contract. The SPQP shall carry the signature of approval of those organisational elements having responsibilities identified in the SPQP, and be placed under configuration control.

2. If stipulated in the Contract, the SPQP shall be offered to the Acquirer for agreement. Once agreed by the Acquirer the SPQP shall form part of the Contract. Any subsequent amendment to the agreed plan shall be subjected to the defined change control procedures agreed with the Acquirer and detailed in the SPQP.

3. The SPQP shall address all the requirements of, and include or reference all procedures necessary for the fulfilment of the requirements of this Standard. If not specifically requested the information may be presented in the Plan in any sequence and format.

4. The SPQP shall be used by the Supplier as a current baseline to define the activities to monitor and control the quality of the software project. The SPQP shall be reviewed and updated at pre-defined milestones during the project as new definitions and development details become known.

2.2.3. Identification and Review of Software Requirements

1. The Supplier shall identify the software requirements and development constraints.

2. If a software requirement review has not been performed as part of system development, it shall be an initial step in the software development process and be prescribed in the SPQP.

3. The review shall verify that software requirements are complete, consistent, unambiguous, traceable, feasible and can be validated.

4. After the completion of the software requirements review, the software requirements specifications shall be formally approved by responsible authorities and shall be subject to configuration management.

5. If software requirement specifications are developed by the Supplier as part of a system contract, the software requirements shall be offered to the Acquirer, who may disapprove them, subject to the conditions of the contract.

6. The software requirements specifications shall include a clear and precise definition of the design constraints and of the essential software quality characteristics.

7. The SPQP shall identify what standards or guides apply to the format and content of the software requirements specifications.

8. Any uncertainty with the interpretation of the contractual software requirements shall be brought to the immediate attention of the Acquirer.

2.2.4. Management

2.2.4.1. Software Development Process

1. The Supplier shall apply a development model which breaks down the development process into partial processes, and which satisfies the following quality related criteria:

a. reduces the complexity of the development process to ensure visibility and control;

b. describes software and system integration;

c. describes the software system architecture;

d. makes use of recognized software engineering practices;

e. utilizes data feedback from previous designs;

f. describes the activities and their expected results clearly;

g. identifies tasks which are critical to quality and project success;

h. defines and chronologically assigns control points at which the correct course of the process and the correct transfer of results can be verified;

i. describes how unplanned activities will be controlled;

j. provides unambiguous start and end criteria for all processes;

k. provides clear identification and allocation of all quality functions within the project specific organizational structures;

l. uses proven and qualified constructive and analytical quality measures;

m. provides quality data for the effective management of the development process;

n. relates planning, monitoring and release activities to software engineering activities; and

o. reduces the risk by using computer resources to free people involved in the software development process from error prone, repetitive activities.

2. Any changes to development models, adopted during the project, need to be recorded in the project plan.

2.2.4.2. Organization

1. The Supplier shall define and implement the organizational structure, responsibilities, authorities and the inter-relationship of organizational elements and groups that plan, direct, perform and control activities affecting software quality.

2. Personnel performing software quality evaluations, verifications and validations shall have the resources, responsibility, authority, and technical expertise. They shall also have an appropriate level of independence from the person(s) who developed the software product or performed the activity being evaluated/verified/validated, to permit objectivity and to cause the initiation of corrective action.

3. A representative shall be appointed with the necessary authority to ensure all the requirements of this publication are met.

2.2.4.3. Non-conforming Software

The Supplier shall:

a. establish and maintain control of any software that does not conform to specified requirements, to ensure that unintended use or delivery is prevented;

b. notify the Acquirer of any non-conforming products received from Sub-suppliers that have been subject to Government Quality Assurance (see para 2.2.4.5);

c. provide controls, agreed by the Acquirer, for the identification and segregation of non-conforming software;

d. comprehensively document the nature of the non-conformances and the functions affected;

e. document the procedures for the disposition of non-conforming products; and

f. notify the Acquirer of any intention to deliver non-conforming software.

2.2.4.4. Corrective Action

1. The Supplier shall define and implement a corrective action process to ensure that:

   a. all problems detected in processes and products are documented, assessed for their validity, and analyzed to identify trends;

   b. problems are reported to a level of management which has the necessary authority to ensure timely corrective action is taken;

   c. prompt and effective action is taken to resolve problems and correct adverse trends, and status is tracked and reported;

   d. feedback is provided to the Acquirer as required by the contract or the SPQP;

   e. data for measuring and predicting the quality of the software development process is provided; and

   f. records are maintained and made available to the Acquirer for the life of the contract or as specified within the contract.

2. The corrective action process shall address both technical problems and managerial problems encountered, with the aim of preventing recurrence.

2.2.4.5. Sub-supplier Management

1. For sub-contracted software specifically developed for the contract (deliverable or non-deliverable) the main Supplier shall:

   a. apply effective Sub-supplier selection procedures;

   b. define the software product/service and quality management requirements, including the requirements for a Sub-supplier's SPQP;

   c. conduct verifications/validations/evaluations of sub-contracted items / processes, including the Sub-supplier's SPQP;

   d. define how changes are to be processed, including the Sub-supplier's participation; and

   e. define the actions available to the Supplier should the Sub-supplier not be in conformance with the contract or SPQP.

2. Provision shall be made for Government Quality Assurance at the Sub-suppliers facilities when requested by the Acquirer. When the Acquirer determines that Acquirer verification/validation/evaluation of the Sub-suppliers items/processes is

necessary, the Supplier shall provide for this in the purchasing document. Copies of the purchasing document together with the relevant technical data shall be provided to the Acquirer on request.

2.2.4.6. Software Configuration Management (SCM)

1. The Supplier shall define and implement a SCM process to maintain integrity and traceability of the software product(s) during development. The SCM activities and procedures shall ensure that uncontrolled changes are prevented, and shall provide planned and released baselines as a reference and prerequisite for verification, tracing and controlling software quality.
Specifically, the Supplier shall define and implement:

a. procedures to identify, name and record the physical, functional and quality characteristics of intermediate and final items to be controlled (e.g. documentation, executable code, source code, program listings, data bases, specifications, test cases, plans) and their structures at each project control point. Elements of the development and support environment (compilers, development tools, operating systems, test beds) shall also be part of the Software Configuration Item (SCI) structure;

b. procedures to request, evaluate, approve/disapprove and implement changes (error correction and enhancement) to baselined SCIs; (The practice of software patching shall be restricted to very exceptional and temporary situations. It shall not be done, without the knowledge and agreement of the Acquirer. Configuration control of patches shall be prescribed in a specific procedure.)

c. procedures to record and report the status of project SCIs;

d. audits and reviews for the determination to what extent the SCIs reflect the required physical, functional, and quality characteristics (see also 2.2.6), and for establishing a baseline;

e. procedures to control interfaces of project SCIs with items outside the direct scope of software development (system, hardware, human, support software); and

f. procedures to coordinate changes to externally developed software items (see also 2.2.4.5) and to incorporate those changes into the project.

2. Changes to the software requirement specifications shall be evaluated for cost, technical and schedule impact, and be communicated to all affected parties. Changes that will affect functional performance shall only be implemented with acquirer approval.

3. The Supplier shall also identify the software tools, techniques and equipment which are necessary to implement SCM activities (see also 2.2.5), and allocate responsibilities and authorities for SCM activities to organizations and individuals within the project structure.

2.2.4.7. Off-the-shelf Software

1. If the Supplier employs deliverable off-the-shelf software, he shall ensure that:

   a. its usability is unaffected by any existing data protection rights;

   b. objective evidence exists, prior to its use, that the software will perform the required functions;

   c. the software is placed under configuration management; and

   d. the software is documented in accordance with the requirements of the contract and this publication.

2. If deliverable off-the-shelf software is modified during the development process, such software shall then be treated as software under development and shall be subject to the requirements of this publication.

3. If the Supplier establishes that off-the-shelf software supplied by the Acquirer is not acceptable for use, he shall promptly report the reasons for its unacceptability to the Acquirer and negotiate with him the remedial actions to be taken.

4. The Supplier shall advise the Acquirer when off-the-shelf software is to be incorporated into the software product.

2.2.4.8. Non-deliverable Software

If the Supplier employs non-deliverable software in the development of the deliverable software, then he shall ensure that:

   a. objective evidence exists, prior to its use, that the software will perform the required functions; and

   b. the software is placed under configuration management.

2.2.4.9. Quality Records

All records that demonstrate the achievement of quality shall be made available to the Acquirer.

Quality records shall:

a. provide objective evidence that the software development process was performed in conformance with Acquirer requirements and recognized software engineering practice as detailed in the SPQP;

b. provide historical or reference data that may be used to detect long term trends and quality deficiencies in the development process; and

c. be traceable to their controlling procedures.

2.2.4.10. Documentation

1. The Supplier shall identify the software documentation, including Quality Records to be retained together with a recommendation for the retention period. The Supplier shall state the methods and facilities to be used to assemble, safeguard and maintain this documentation.

2. Applicable software licenses shall cover the intended use of the software product.

2.2.4.11. Handling and Storage of Software Media

The Supplier shall ensure that:

a. software is stored so that retrieval is assured;

b. a system is in place that allows access to software only through an authorization process and which makes software accessible only to those with a demonstrable need to know of, or use such software;

c. the environment is controlled so that the physical media on which the software is stored do not degrade;

d. secondary secure storage and retrieval are provided for critical software and copies of baselined software.

2.2.4.12. Replication and Delivery

The Supplier shall ensure that:

a. the replication process to generate multiple customized versions of software is under control;

b. the process of software release including the method of issuing multiple customized versions of software, is documented, reproducible and under control;

c. procedures are implemented for marking, handling, storing, preserving and packing software, such that its integrity is assured until it is delivered to the destination specified in the contract;

d. procedures are implemented for the certification of the conformity of the software to the contract requirements;

e. procedures are implemented for the keeping of records relating to the distribution of deliverable items.

2.2.5. Software Engineering

1. For the software development and/or maintenance activities the Supplier shall employ recognized software engineering methods, tools, resources and procedures. The Supplier shall also identify and standardize specific conventions for any graphical or formal linguistic notations. The methods, tools, standards and procedures used shall support the software lifecycle to:

a. express software requirements including quality characteristics;

b. translate the Acquirer/user oriented software quality requirements into software engineering oriented characteristics and allocate these to the appropriate level of design;

c. ensure traceability at all design and implementation levels;

d. minimize errors; and

e. support evaluation/verification/validation during software development and/or maintenance.

2. The methods and procedures used shall be evaluated and documented, and shall support the recognized principles and concepts of software engineering that influence software quality. Software tools shall be validated to confirm their performance and integrity by a defined method.

2.2.6. Evaluation, Verification and Validation (EVV)

1. The Supplier shall plan, define and implement:

a. a process for evaluation of software methods, techniques, procedures, tools and activities;

b. a process for verification and validation of software items and software products;

c. a process for the provision of follow-up action to ensure that necessary changes are made; and

d. a process to determine the required level of reverification in the case of error correction or change to the requirement/design.

2. The EVV process shall define:

e. EVV activities and their sequence in relation to phases, milestones and time schedule;

f. the organizational roles, responsibilities and authorities for the execution of EVV activities (see also 2.2.4.2);

g. EVV objects (e.g. requirements/development documents, software products, development processes, methods, procedures, source code, object code);

h. the criteria to perform EVV;

i. specific EVV methods, standards, techniques, tools and facilities;

j. the type of EVV methods to be used e.g. test, review, audit; and

k. the EVV documentation to be produced (specific plans and procedures, EVV records and reports).

3. As an integral part of the EVV process the Supplier shall develop/select and implement quantitative and/or qualitative measures to evaluate/verify/validate the software quality characteristics specified in requirements specifications.

4. Quantitative/qualitative measures (metrics) shall also be applied to manage and control the software development process for the software product under contract. Such measures shall enable identification of the current level of performance, the taking of remedial action and the establishment of improvement goals.

2.2.6.1. Testing

1. As an integral part of the EVV process the Supplier shall plan, define and implement a test programme. Consideration shall be given to:

a. software item, integration, system and acceptance testing;

b. test environment, tools and test software;

c. user documentation; and

d. personnel required and associated training.

2. The Supplier shall undertake a review of test requirements and criteria for adequacy, feasibility, traceability and ambiguity. Test specifications shall be prepared which define test cases, required test data and expected results.

3. The Supplier shall define and implement measures to control test activities which include:

a. the establishment, documentation and verification, as necessary, of the configuration of the software to be tested, together with any associated hardware;

b. the maintenance of test related documentation to allow test repeatability;

c. confirmation that tests are conducted in accordance with approved plans, specifications and procedures;

d. provision for certification that test results are actual and valid; and

e. provision for review and certification of test reports.

4. The Supplier shall report unusual difficulties found during test to the Acquirer.

2.2.6.2. Reviews

1. The Supplier shall define and implement review procedures to verify that contractual software requirements are being met.

2. Reviews shall be identified in, and form an integral part of the overall software development process. Reviews shall be planned, conducted systematically and be critical of the item under review.

3. Review procedures shall include provisions for:

a. describing the objectives of each review;

b. identifying the functions, authorities and responsibilities of personnel involved in the reviews;

c. recording review findings; and

d. ensuring that actions resulting from reviews are monitored to ensure timely completion.

4. All software documentation generated under the contract shall be reviewed and approved for adequacy by authorized personnel prior to issue.

2.2.7. Maintenance

1. When, after initial delivery and installation, software maintenance is a specified requirement, the Supplier shall define and implement procedures for performing this activity. The procedures shall include provision for verifying and reporting that the maintenance carried out meets specified requirements.

2. Consideration shall be given to:

   a. the work to be done;

   b. the procedures to be employed;

   c. the records and reports to be produced;

   d. the responsibilities of the Supplier and his interface with the Acquirer;

   e. the configuration management activities, including the identification of the initial status of the product to be maintained;

   f. the methods for dealing with the reporting, analysis and resolution of problems; and

   g. testing and acceptance of modifications.

2.3. HUMAN RESOURCES

1. Personnel performing specific assigned tasks (Outsourced labour or company employees) shall be qualified on the basis of appropriate education, training and/or experience as required.

2. Appropriate records shall be maintained. (See para 2.2.4.10).

2.4. ACQUIRER ACCESS AND INVOLVEMENT

1. The Supplier shall provide the Acquirer with the accommodation and facilities required for the proper accomplishment of his work and with all necessary assistance for the evaluation of the software quality program and the verification and validation of products.

2. The Acquirer shall have right of access to any of the Supplier's or Sub-supplier's facilities where any part of the contracted work is being performed. The Acquirer shall be afforded unrestricted opportunity to verify conformance of the supplies with contract requirements. The support tools necessary for evaluation, verification and validation purposes shall be made available for reasonable use by the Acquirer.

3. The Supplier shall be aware that Acquirer evaluation, verification and validation shall not constitute acceptance, nor shall it in any way replace EVV activities by the Supplier or otherwise relieve the Supplier of his contractual responsibilities.

ANNEX A INDEX

The index below is aimed to help, when searching for a specific subject in AQAP 2210. Only a limited number of words are chosen and this should not be interpreted as a list of priority. The words are referenced to the paragraph in which they appear. They may appear more than once. The "main requirement paragraph" is underlined.

Paragraph 1.4 is Definitions and Acronyms.

WORD	**PARAGRAPH**
Corrective Action	1.1, 2.2.4.2, 2.2.4.4.
Evaluation (see EVV too)	1.2.5, 1.3, 1.4.1.2, 1.4.2, 2.2.1, 2.2.4.2, 2.2.4.5, 2.2.5, 2.2.6, 2.4.
EVV	1.4.2, 2.2.6, 2.4.
Firmware	1.2.1, 1.4.1.3
Handling and Storage	1.2.2, 2.2.4.11, 2.2.4.12
Non-conforming software	2.2.4.3
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Quality management	2.1, 2.2, 2.2.1, 2.2.2, 2.2.4.5
Records	2.2.4.4, 2.2.4.9, 2.2.4.10, 2.2.4.12, 2.2.6, 2.2.7, 2.3
Risk management	2.1, 2.2.1, 2.2.4.1
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Software development process	1.1, 1.4.1.9, 1.4.1.10, 2.2.3, 2.2.4.1, 2.2.4.4, 2.2.4.7, 2.2.4.9, 2.2.6, 2.2.6.2.

Software engineering	2.2.4.1, 2.2.4.9, 2.2.5
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Verification (see EVV too)	1.4.1.2, 1.4.1.15, 1.4.2, 2.2.4.2, 2.2.4.5, 2.2.4.6, 2.2.5, 2.2.6, 2.2.6.1, 2.4

AQAP-2210(A)(2)

NATO STANDARD

AQAP-4107

MUTUAL ACCEPTANCE OF GOVERNMENT QUALITY ASSURANCE AND USAGE OF THE ALLIED QUALITY ASSURANCE PUBLICATIONS (AQAP)

Edition A Version 2

NOVEMBER 2018

NORTH ATLANTIC TREATY ORGANIZATION

ALLIED QUALITY ASSURANCE PUBLICATION

Published by the
NATO STANDARDIZATION OFFICE (NSO)

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

9 November 2018

1. The enclosed Allied Quality Assurance Publication AQAP-4107, Edition A, Version 2, MUTUAL ACCEPTANCE OF GOVERNMENT QUALITY ASSURANCE AND USAGE OF THE ALLIED QUALITY ASSURANCE PUBLICATIONS (AQAP) which has been approved by the nations in the CNAD Life Cycle Management Group AC/327, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 4107.

2. AQAP-4107, Edition A, Version 2, retains the agreement for mutual acceptance of Government Quality Assurance and use of AQAPs as outlined in previous versions but has been updated to reflect the cancellation of a number of AQAPs and to incorporate minor editorial changes, specifically:

2.1 Editorial change at paragraph 2.2.1.b.: Reference to “SRD” has been modified to refer to “SRD.1”.

2.2 Editorial change at paragraph 3.1 1.c.(1): deletion of superfluous “and” at end of sentence.

2.3 Paragraph 4.1.d. has been changed to read: “the selection of AQAP should be in accordance with the published guidance: AQAP-4107-SRD.2.”

2.4 The diagram at Annex A has been modified to reflect the cancellation of AQAP-2009, -2120 and -2130 and to remove reference to specific standard-related documents.

3. AQAP-4107, Edition A, Version 2, is effective upon receipt and supersedes AQAP-4107, Edition A, Version 1, which shall be destroyed in accordance with the local procedure for the destruction of documents.

4. No part of this publication may be reproduced, stored in a retrieval system, used commercially, adapted, or transmitted in any form or by any means, electronic, mechanical, photo-copying, recording or otherwise, without the prior permission of the publisher. With the exception of commercial sales, this does not apply to member or partner nations, or NATO commands and bodies.

5. This publication shall be handled in accordance with C-M(2002)60.

Zoltán GULYÁS
Major Brigadier General, HUNAF
Director, NATO Standardization Office

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]

Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.

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CHAPTER 1 INTRODUCTION

1.1. AIM

1. The aim of this publication is:

   a. to set forth the process, procedures, terms and conditions under which Mutual Government Quality Assurance of defence products is to be performed by the appropriate National Authority of one NATO member nation, at the request of another NATO member nation or NATO Organization; and

   b. to standardize the development, updating and application of AQAP on the basis of the concept of quality assurance in the procurement of defence products.

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CHAPTER 2 GENERAL

2.1 INTRODUCTION

1. Participating nations acknowledge that:

   a. the appropriate National Authority in a supplying country will provide in its country, upon request by the appropriate National Authority in an acquiring country or NATO organization, a Government Quality Assurance (GQA) service to orders in all areas of defence products and subject to the conditions contained in this publication and the documents quoted in Annex A;

   b. nothing contained in this publication shall be construed as a limitation to bilateral or multilateral agreements between NATO countries or between NATO countries and NATO organizations, which further and extend the reciprocal utilization of the services of the National Authorities beyond the minima specified in this publication;

   c. appropriate NATO quality requirements (AQAP) will be incorporated into contracts where GQA is requested under the terms of this publication and the documents quoted in Annex A;

   d. appropriate Policy and Guidance Type AQAP will be used when evaluating a Supplier's compliance with the requirements of the Contractual Type AQAP; and

   e. this publication is considered as the basis for the issue and revision of AQAP by the NATO Life Cycle Management Group (AC/327), subject to the unanimous approval of its members.

2.2 APPLICATION

1. It is agreed that:

   a. requests for GQA in the supplying country will be restricted to those cases where quality cannot be satisfactorily verified after receipt and GQA at source is considered essential to reduce or eliminate risk areas that have been identified for the product or the Supplier; and

   b. requests for GQA shall be forwarded in sufficient time, by the appropriate National Authority in the acquiring country or NATO organization (hereinafter called the Delegator) to the appropriate National Authority in the supplying country (hereinafter called the Delegatee), a list of which is contained in the Standard Related Document (SRD.1) to this AQAP-4107.

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CHAPTER 3 DEFINITIONS

3.1 DEFINITIONS

1. The following terms and definitions are used for the purpose of this publication:

   a. **Government Quality Assurance** is the process by which the appropriate National Authorities establish confidence that the contractual requirements relating to quality are met.

   b. **Order** is the contract placed by the organization or Government or, the subcontract arising there from placed by a company on a supplier.

   c. **Types of AQAP**. Currently there are four distinct types of AQAP documents as follows:

      (1) **Contractual Type** - These documents are in a "Technical Specification" format intended for contractual use;

      (2) **Policy and Guidance Type** - These documents provide direction and general guidance in the application of Contractual and Procedure Type AQAP. They are not intended for contractual use.

      (3) **Procedure Type** – These documents provide standardised procedural guidance for GQA. They are not intended for contractual use.

      (4) **Agreement Type** – These documents define the agreement that the STANAG refers to.

2. A diagram illustrating the current AQAPs can be found at Annex A.

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CHAPTER 4 PROCEDURES

4.1 PROCEDURES FOR REQUESTING GOVERNMENT QUALITY ASSURANCE AND THE SELECTION OF AN APPROPRIATE AQAP

1. The procedures for requesting GQA and selecting an appropriate AQAP are as follows:

a. GQA shall be requested in accordance with AQAP-2070;

b. this request shall contain all necessary information and as a minimum, the references of the delegating National Authority to whom questions regarding the technical requirements shall be addressed, the contract references, the requirements relative to GQA and defining, in particular, the applicable contractual AQAP and the nature of the risks justifying the requirements;

c. the Delegator shall ensure that the Delegatee receives a copy of the contract and the references for the supporting documents; and

d. the selection of AQAP should be in accordance with the published guidance: AQAP-4107-SRD.2.

4.2 PROCEDURE FOR IMPLEMENTATION OF GOVERNMENT QUALITY ASSURANCE

1. GQA shall be implemented according to agreements between the Delegator and the Delegatee based on the guidance given in AQAP 2070. GQA shall address the following topics, unless otherwise agreed:

a. **NOTIFICATION OF UNSATISFACTORY CONDITIONS** - If the Delegatee finds that, at any time during the course of the order, GQA cannot proceed because of deficiencies in the Supplier's quality system or product and such deficiencies are of major importance or will be a cause of excessive delay, the Delegatee will immediately advise the Delegator;

b. **CERTIFICATE OF CONFORMITY (C of C)** - C of C shall be used and notified by the Delegatee to the Delegator as requested by the Delegator on the RGQA;

c. **RELEASE FOR DELIVERY** - Release for delivery of product subjected to GQA shall be as requested by the Delegator on the RGQA;

d. **DEVIATION PERMITS AND CONCESSIONS** - Delegatee's participation in the supplier's processing of Deviation permits and concessions will be in accordance with the contract and as requested on the RGQA.

e. **DELEGATOR'S PARTICIPATION** - The Delegator shall have the right to visit the supplier concerned during the course of the performance of the contract/sub-contract. Any such visits shall be arranged through the Delegatee who shall have the right to accompany the Delegator.

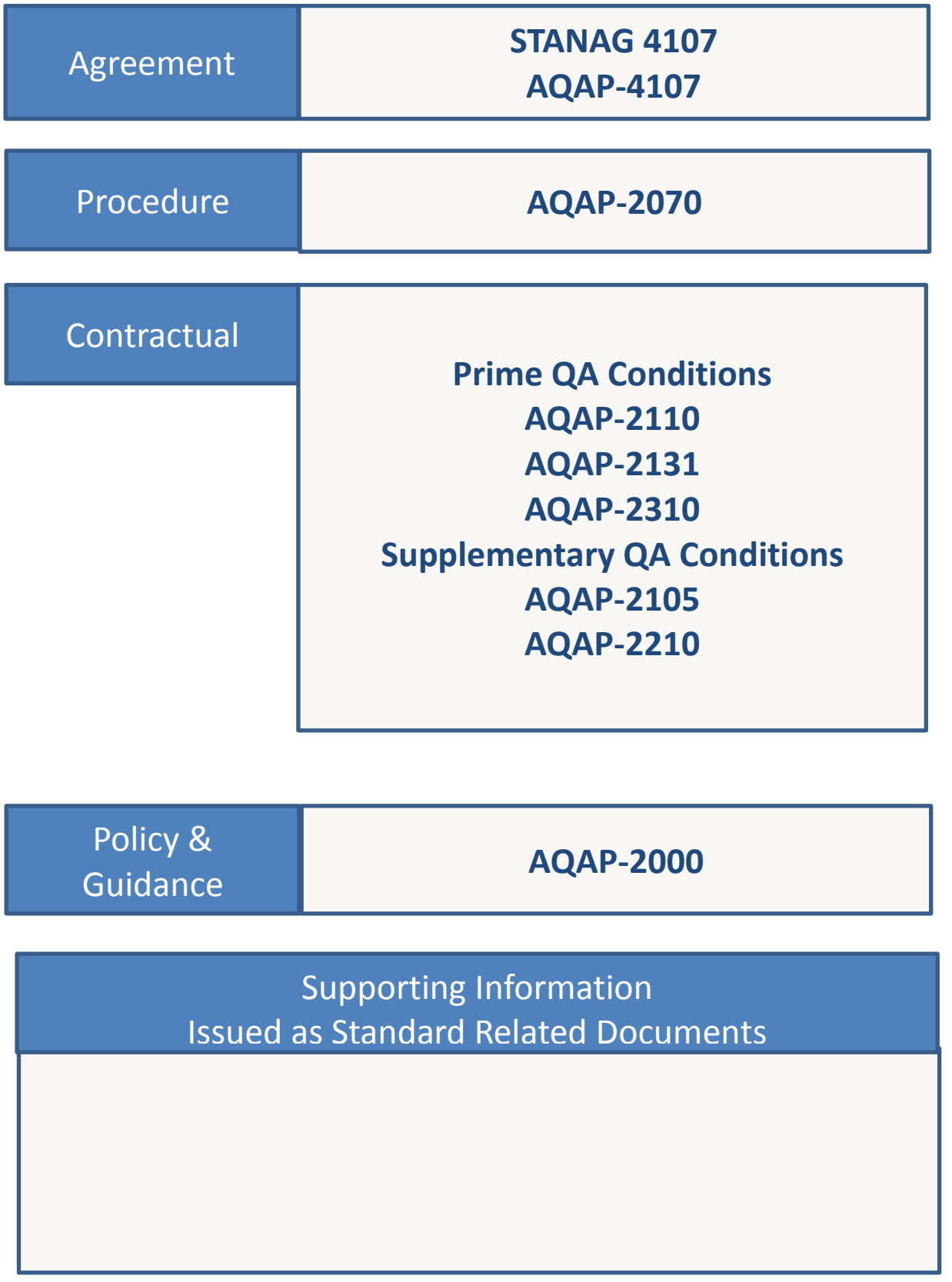
4.3 CHARGES

1. Unless otherwise agreed, GQA shall be performed without charge to the Delegator. In the event of unusually heavy GQA costs being incurred appropriate charges may be negotiated. The expenses for product expended in GQA will be borne by the contracting parties.

4.4 LIABILITY

1. The fact that the Delegatee has signed a Certificate of Conformity will not relieve the Supplier from the responsibility for furnishing supplies that meet all specifications of the contract. In the event that defects are discovered on or subsequent to delivery of product, no liability shall be attached to the Delegatee. The Delegatee shall, however, assist the Delegator in the investigation of such defects. The Delegator shall notify the supplier of the defects and will provide the Delegatee with a full description of the defects with supporting evidence, and if possible, samples of the defective parts.

ANNEX A DIAGRAM TO ILLUSTRATE AQAPs



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NCI Academy Standard Operating Procedure

ASOP 07.01.25

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NCI Academy Grading and Assessment Policy

1 REFERENCES

A. Bi-SC Education and Training Directive 75-2, dated 6 Sept 2016
B. Bi-SC Education and Individual Training Directive 75-7, dated 15 Sept 2015
C. A-P9-050-000/PT-007, Manual of Individual Training and Education, Volume 7, Evaluation of Learners

2 PURPOSE & OBJECTIVES

The purpose of this ASOP is to establish the policy and procedures for student grading and assessment. It establishes the principles and mechanisms to help ensure all students that attend NATO Approved courses at the NCI Academy are appropriately assessed. This ASOP outlines the procedures to be put in place to confirm that the required level of performance has been attained. It provides guidance on the awarding of NCI Academy certificates based on the assessment strategy used and student performance.

3 SCOPE

This document applies to all personnel within NCI Academy either directly involved in or supporting the development, conduct, and assessment of education and training activities. This policy is intended for use by NCI Academy training providers, administrators, managers, internal assessors, and internal or external verifiers of the assessment and instruction processes. This policy covers basic and general principles in order to achieve, develop, and maintain quality standards and performance at the NCI Academy with special emphasis in the area of grading and the assessing of the student.

4 INTENDED AUDIENCE

This ASOP applies to all NCI Academy Staff, External Lecturers, and Students.

5 BACKGROUND

Student assessment is an essential component of NCI Academy QMS as it provides vital information on both the achievement of learning objectives by students and critical information that can be used to review the effectiveness of the course design and delivery. The NCI Academy primarily uses two types of assessment:

a) Performance-Based. A performance-based assessment is a test that closely replicates a job context potentially using the same equipment, resources, setting, or circumstances that the individual would encounter. Performance based testing tends to increase the transfer of learning. Limitations of time, staff, and resources often constrain the degree of realism in practical, performance-based, and testing. Normally, a performance checklist is used to record the level of achievement. The test will require specific instructions for both the instructor and the student. Presentations, demonstrations, a written assessment and/or report which reflect the job context are examples of a performance-based test.

b) Knowledge (Theory) Based. Knowledge-based assessment can be in an oral or written form. This method of assessment does not necessarily evaluate an individual's ability to perform the required job skills; however, it does provide an indication if the individual has the required foundation, the know-how, to perform. Although the emphasis is on practical testing, theory tests may be effective supplements to the performance based approach. The advantage of knowledge-based tests is the potential for a high degree of objectivity in scoring and the capability of measuring a large number of facts, concepts and principles in a relatively short time.

Regardless of the type of assessment instrument used, the NCI Academy strives to produces assessment instruments that are both valid and reliable.

c) Validity is arguably the most important criterion for the quality of a test. The term validity refers to whether or not the test measures what it claims to measure. On a test with high validity the items will be closely linked to the test's intended focus. If a test has poor validity then it does not measure the job-related content and competencies it ought to.

d) Reliability is one of the most important elements of test quality. It has to do with the consistency, or reproducibility, of an examinee's performance on the test. For example, if you were to administer a test with high reliability to an examinee on two occasions, you would be very likely to reach the same conclusions about the examinee's performance both times. A test with poor reliability, on the other hand, might result in very different scores for the examinee across the two test administrations.

The end-of-course grades assigned by instructors are intended to convey the level of achievement of each student in the class. This ASOP outlines the accepted policies and practices in assigning grades to NCI Academy Students to provide consistency across the NATO approved curriculum delivered by the NCI Academy.

6 ASSESSMENT PROCEDURES

Assessment is the process of making a judgment or measurement of worth of an entity (e.g. person, process, or programme). Educational assessment involves gathering and evaluating data evolving from planned learning activities or programs. This form of assessment is often referred to as evaluation. For courses within the NCI Academy we use two basic types of assessment to support the evaluation of our students:

a) Formative assessment: For the vast majority of the listed courses at NCI Academy instructors utilize formal and informal assessment procedures during the teaching and learning process in order to modify teaching and learning activities and to improve student achievement. This process typically involves qualitative feedback as both the student and the teacher are primarily focused on the details of content and immediate student performance. The on-going observation of student progress through purposeful formative assessment activities such as end of lesson Q & A, quizzes or individual exercises are included in all NCI Academy courses with few exceptions. Based on instructor observations, of student engagement collected during the conduct of the course, students will be provided with group or individual feedback. Exceptionally, students

experiencing greater difficulties will be provided with dedicated feedback and remedial assistance.

b) Summative assessment: For the majority of approved courses the NCI Academy employs summative assessment to evaluate student learning by comparing it to more rigorously defined standards or benchmarks. The supporting information for these assessments are described in the course documents and is disseminated to the students during the course. NCI Academy courses that are aimed at preparing soldiers, sailors and air personnel for the NATO Command Structure, NATO Force Structure or related assignments strive to provide performance based assessments that reflect the work environment.

The formative and summative aspects of assessment are key to the development of an overall assessment plan which outlines the strategy for the evaluation of students.

A carefully developed assessment plan will:

i. provide an overview of the sorts of tests to be used, when they will occur, and how the results will be interpreted and used;
ii. record the approach to assessment, to guide the development of individual test instruments and procedures;
iii. ensure that tests match the performance requirements, and that adequate resources for testing are identified and obtained; and
iv. Influence instruction (teach and test the same thing).

As a minimum, the assessment plan must provide:

i. a concept for the summative testing of each performance objective;
ii. a concept for the formative testing of learner progress;
iii. guidance for the assignment and interpretation of grades;
iv. the action to be taken upon learner failure of a test because appropriate action will depend upon many variables such as:
    - resources required to repeat the test, without compromising test conditions and assessment standard.
    - time available for remedial instruction and practice, and
    - the likelihood of learner success during a re-test;
v. the standard for determining course pass or failure, such as, “to pass this course, learners must achieve all performance objectives”. Such a statement provides a focus for testing and prevents misunderstanding or grievance later on; and
vi. guidance on the maintenance of test records that states a requirement for:
vii. a record for each learner which includes a summary of all test results (formative and summative), and a record of formative action taken, such as counselling notes or copies of written warnings.

- a consolidated tabular record of summative test results. This record, accumulated over several repetitions of a course, provides valuable information for evaluation of the programme in general and tests.

The Team Leader using the standards developed in conjunction with the requirements owner is responsible for constructing an assessment plan for each NCI Academy course. Each NCI Academy course should strive to develop a minimum of two different versions of exercises or scenarios for student evaluation with the accompanying assessment guides and marking schedules.

At the end of each course the instructional team should review the testing strategy to identify if there are any areas of the training where a trend identifies specific areas of the course requiring review to ascertain if the questions used were vague/ambiguous or if the way the subject taught needs improving.

7 GRADING

For NCI Academy courses that use norm referenced vice criterion referenced assessments, a grade for each student will be provided. To this end a students' grade will be based on the knowledge and skills they possess at the end of the course and/or instructional module.

Team leaders will review the assessment plan and the syllabus of the course outline to ensure students are provided with correct material, guidelines, grading methods, assignments and resources that will be used during the course to remove any subjectivity or confusion of student expectations.

Students are informed about:

- The course activities that will be considered in the computation of their final grade.
- The importance or weight of exams, quizzes, and practical exercises in the computation of their final grade.
- The weight distribution by topics.
- The method that will be used to assign their course grade.
- The kind of comparison the course grade will represent.

By informing students early in the course about course priorities and grading methods, the instructor encourages students to study the critical topics required to be successful in the course. All of this information can be communicated effectively as a part of the overview of the course outline or syllabus provided at the start of the course.

Once it has been decided what weight each grading component should have, the instructor will ensure that the desired weights are consistently applied. Instructors will submit their grade computation sheets to the Quality Assurance Group (QAG) in conjunction with the QAG Quad chart and any other Team Leader Comments for the specific course.

As a standard operating principle, students who carry out testing and achieve a 70% overall grading or higher on an NCI Academy course, will be assessed as having achieved a “pass” and receive a Certificate of Qualification (Annex A)[1]. Those students who achieve 69% or lower will be classed as having “failed” and will have issued a Certificate of Attendance (Annex B). In the remarks section comments there will be an explanation stating why the student did not achieve proficiency in the subject area. If the course

[1] The % applied to each course will be consistent with the assessment strategy and reflective of the degree of proficiency required to perform the required tasks for each NCI Academy course consistent with the assessment plan. See Ref (c) for a more detailed explanation.

being taught has no formal testing, practical or theoretical, then a Certificate of Completion will be issued at the end of the course (Annex C).

8 CONTROL OF ASSESSMENT AND EXAMINATIONS PAPERS

When developed, all theoretical and practical assessments in use within the Academy the testing materials should located in the NCI Academy testing repository which will be provided with controlled access to ensure the integrity of the material.

On completion of the course testing, the instructional team are to compile all of the students' test papers, scan them and place them into the specified area within the repository. They are also to include a copy of any testing/assessing results along with the QUAD chart submitted to QAG on completion of the course. They are also to inform Training Coordination and Control Group (TCCG) of the final status of each student to ensure they receive the correct type of certificate at graduation.

9 END OF COURSE CERTIFICATES

The courses offered at the Academy fall into three categories:

a) Courses where students are formally tested with Practical Exams and/or Written Exams.
b) Courses that do not formally test students (individual grades not assigned).
c) Courses that are three days or less in duration and contain no formal testing procedures (sometimes referred to as "Workshops" or Tailored Training Activities).

Students attending NCI Academy courses that do not formally assess students receive a "Certificate of Completion" at the end of the course.

Students attending courses that have an assessment plan that formally evaluates student performance will receive a "Certificates of Qualification" upon the successful completion.

Students that do not successfully complete a course will receive a "Certificate of Attendance". In the remarks section, reasons will be included as to why the student did not achieve proficiency in the correct subject area. Also any remedial actions will be included required before the student can become competent.

10 RESPONSIBILITIES

The Training Knowledge Centre Head (TKCH) will:

- Ensure that all Knowledge Centre personnel and External Lecturers will comply with this ASOP by ensuring that all Team Leaders/Instructors are briefed.
- Ensure that all external lecturers are briefed upon arrival about the content of this ASOP.
- Approve any changes in the methods of testing utilized by instructors prior to implementation.
- Perform periodic review of the methods of testing utilized by instructors.

The Team Leader/Instructor will:

- Ensure that all personnel in their team will comply with this ASOP.
- In conjunction with the QAG, will create grade computation sheets for all courses in their section where grades are issued.

- Submit grade computation sheets for all courses, in their section where grades are issued, to the QAG upon the completion of the course.
- Perform an annual review of all methods of student evaluation and testing for the courses within their areas of responsibility.

The QAG will:

- Establish, in conjunction with the Team Leader/Instructors, a standard grade computation sheet for each course where students are tested. These grade computation sheets will be used to track student progress.
- Collect the grade computation sheets from Team Leaders/Instructors upon the completion of each course where students are tested and ensure they are placed into the Academic store.
- Ensure that the grade computation sheets are included as part of the QAG QUAD management reports that are stored in the NCI Academy supporting SharePoint repository.
- Track course grades to detect any trends that might have a negative effect on training and will convey its findings to the Academy Dean, TKCH and Director if required.

ANNEX A: COURSE CERTIFICATES – CERTIFICATE OF QUALIFICATION

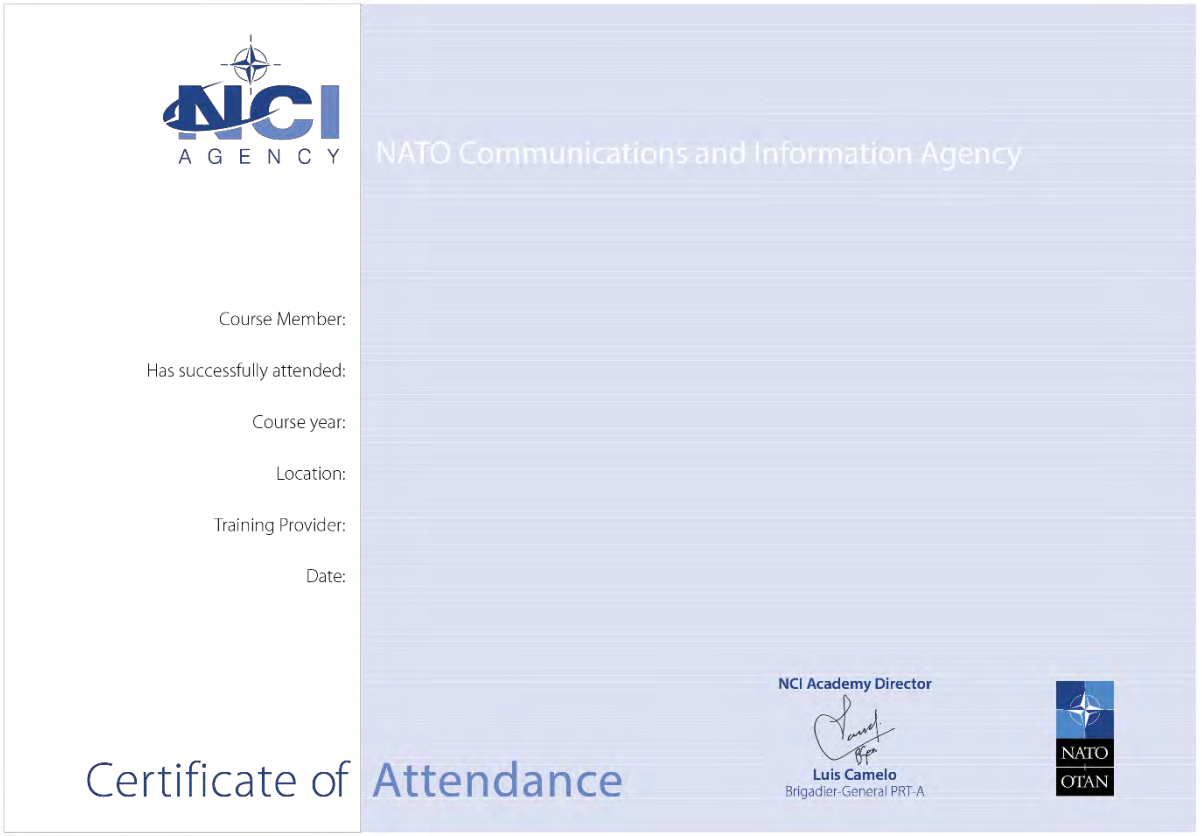
Certificate of Qualification

ANNEX B: COURSE CERTIFICATES – CERTIFICATE OF COMPLETION

Certificate of Completion

ANNEX C: COURSE CERTIFICATES – CERTIFICATE OF ATTENDANCE

Certificate of Attendance



ANNEX D: DEFINITIONS

Term	Definition
Assessment	The process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences.
Formative assessment	Activities that help the learner and the instructor recognize progress or lapses in learning, so that confirmation or corrective action (such as additional practice or remedial instruction) can be provided. They also reinforce learning, so that it will be better retained for longer periods. Formative tests are used during a phase of instruction.
Grade	A grade is any label that represents an assessment; however, grades should clearly reflect the type of assessment standard. Various labels may be applied, but certain conventions have developed through common practice. For example, letter grading (A, B, C, F) normally would be taken to represent norm-referenced assessment, while Pass/Fail would imply criterion-referencing.
Enabling/Learning Objective	An outcome statement that captures specifically what knowledge, skills, and attitudes students should be able to exhibit following instruction.
Proficiency	The demonstration of a degree of skill or expertise.
Reliability	Refers to the consistency of assessment results.
Rubric	A document that articulates the expectations for an assignment by listing the criteria, or what counts, and describing levels of quality from excellent to poor.
Subjectivity	The judgment based on individual personal impressions and feelings and opinions rather than external facts.
Summative assessment	Refers to the assessment that happens at the end of a unit or cycle of learning.
Validity	The term validity refers to whether or not the test measures what it claims to measure.
Weighted system	A system where different levels of “weight” are given to particular assignments within a course.

ANNEX E: ACRONYMS

ACO	Allied Command Operations
ASOP	Standard Operating Procedure
BH	Branch Head
BP	Best Practices
BPG	Business Planning Group
CCD	Course Control Documents
CIP	Continuous Improvement Process
CIS	Communications Information Systems
CP	Capability Package
DA	Dean of Academics
LL	Lessons Learned
MTT	Mobile Training Team
NATO	North Atlantic Treaty Organization
NCIA	NATO Communications and Information Agency
NCI-A	NATO Communications and Information Academy
NCS	NATO Command Structure
NFS	NATO Force Structure
OPR	Officer of Primary Responsibility
PfP	Partnership for Peace
PM	Project Manager
QA	Quality Assurance
QMS	Quality Management System
SAT	Systems Approach to Training
SACT	Supreme Allied Commander Transformation
SB	Support Branch
SBH	Support Branch Head
SM	System Manager
SME	Subject Matter Expert
TCCG	Training Coordination and Control Group
TKCH	Training Knowledge Centre Head

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SH/PLANS/J7/PLL/JC/15-309689/1

5000/TPX- 0210/TT-150592/Ser: NU0058

Bi-SC EDUCATION AND INDIVIDUAL TRAINING DIRECTIVE (E&ITD) 075-007

10 September 2015

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* Turkey recognizes the Republic of Macedonia with its constitutional name.

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BI-STRATEGIC COMMAND DIRECTIVE 075-007

EDUCATION AND INDIVIDUAL TRAINING DIRECTIVE

REFERENCES:
A. MC 0458/3 (Final), NATO Education, Training, Exercise and Evaluation (ETEE) Policy, dated 03 September 2014.
B. SHJ7/TTX/PF-206310, Bi-SCD 75-7, NATO Education and Individual Training Directive, dated 27 May 2009.
C. 5000/TSC TPX 0140/Ser: NU0450, Amendments to Bi SC Dir 75-2 and Dir 75-7, dated 29 July 2010.
D. 5000/TSC TXX 0040/Ser: NU0225, Alignment of NATO's Education and Training with International Educational Standards, dated 03 May 2012.
E. 5000/TSC TPX0310/Ser: NU0427, NATO Education and Individual Training Directive, dated 13 September 2012.
F. SACT 5000/TPX0310/Ser: NU0119, Education and Individual Training Direction and Guidance No 1, dated 08 March 2012.
G. 5000/TCS 0150/TT-10234/Ser: NU, Education and Training Programme Management - Courses Accreditation - Direction and Guidance No 2, dated January 2014 (DRAFT).

1. **Status.** This directive is produced in response to Reference A and supersedes Bi-Strategic Command Directive 075-007, dated 27 May 2009 (Reference B). This directive also replaces other draft versions released as interim measures and the related direction and guidance provided within References C to G.

2. **Purpose.** This directive details the responsibilities, planning and procedures supporting the definition, delivery and related management of NATO E&IT.

3. **Applicability.** This directive is applicable to all Education and Training Facilities (ETFs) operated by, and all E&IT activities conducted by, NATO, Allied and partner nations supporting the preparation of the NCS, the NFS and individuals assigned to current and future NATO-led operations, including the NATO Response Force (NRF), to meet the NATO LOA.

4. **Publication Updates.** Updates will be approved by COS SHAPE and COS HQ SACT.

5. **Proponent**. The lead proponent for this directive is HQ SACT, DCOS Joint Force Trainer.

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DISTRIBUTION:

External –

Action:

List VIII NATO Accredited Centres of Excellence
List IX Partnership Training and Education Centres
List X NATO Command Structure – Operational Structure
List XI NATO Education and Training Facilities

Information:

List III National Liaison Representatives/others
List V PFP Staff Element
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Action:

List II ACT Commands/Other Agencies
List XII Other Entities

Information:

List I HQ SACT Staff

RECOMMENDATIONS FOR CHANGES TO THE BI-SCD 075-007 EDUCATION AND INDIVIDUAL TRAINING DIRECTIVE (E&ITD)

The comment format below is used to record and report any recommendations/changes to this E&ITD. Users are requested to submit recommendations/comments to the appropriate POC: ACO users to SHAPE J7 and all other users to HQ SACT/JFT.

(Enter HQs/Office/Name/Contact details)

Comments Provided by: **Date:**

Serial	Chapter/ Annex	Para	Comment	Rationale
001				
002				
003				
004				
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006				
007				
008				
009				
010				
011				
012				

Record of Changes and Updates

Date	Chapter/ Annex	Para	Change	Remarks

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CHAPTER 1 - INTRODUCTION

BACKGROUND

1-1. NATO Education and Training (E&T) activities are core functions for preparing the NATO Command Structure (NCS) and NATO Force Structure (NFS) for current and future missions in accordance with the Alliance's level of ambition (LOA)[1]. NATO conducts E&T to ensure headquarters and forces are ready, effective and interoperable. NATO E&T also strengthens relations with Partner nations and non-NATO entities (NNEs)[2] and this fortifies cooperative security. NATO E&T activities provide a visible deterrence and can be an effective assurance measure. NATO E&T ultimately demonstrates the strength and resolve of the Alliance.

1-2. Within NATO, preparing individuals, headquarters and forces is a continuum with the responsibilities shared between the alliance and each nation. The preparation of the individual contributes directly to collective effectiveness. Within NATO there is a holistic approach to E&T and this is illustrated in the NATO Training Spectrum, Figure 1-1. The individual focus within the NATO Training Spectrum consists of two elements[3]:

a. Education.

b. Individual Training.

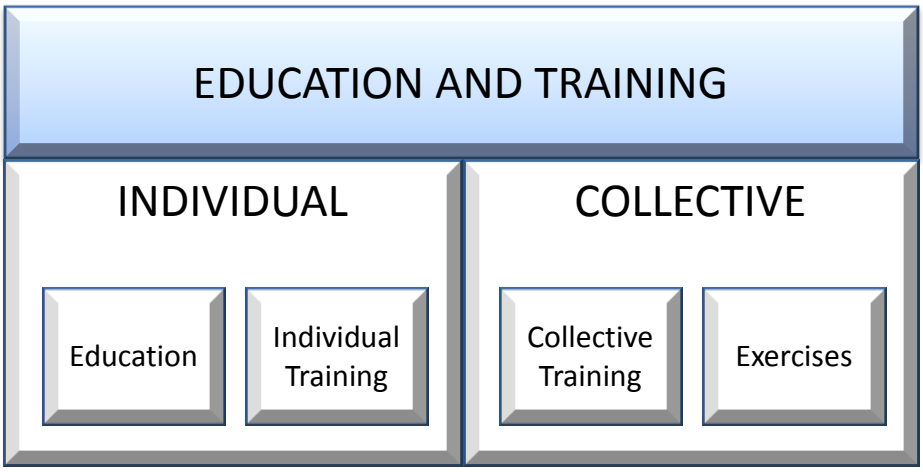

Figure 1-1 *NATO Training Spectrum*

1-3. Together, Education and Individual Training (E&IT) within NATO is comprised of the activities that develop the skills, knowledge and other attributes required in the performance of

[1] As per MC 0458/3 (para 23), nations are responsible for the education and training of their personnel and forces allocated to NATO. The use of common funding for E&IT is addressed further beginning in Chapter 2, para 2-11.

[2] As defined in MC 0458/3 (footnote 3), NNE includes International Organizations (IO), Governmental Organizations (GO) of non-NATO nations, Non-Governmental Organizations (NGO), Non-NATO Multinational forces, Host Nations (when the Host Nation is not a NATO nation), Contractors on operations, exercises and transformational activities as well as Non-NATO countries that do not meet the definition for "NATO partner".

[3] The terms "Education" and "Individual Training" were defined within MC 0458/3. A glossary is provided in Annex B.

assigned duties and upon which information can be correctly interpreted and sound judgement applied [4,5].

POLICY FOUNDATION

1-4. The Military Committee (MC) establishes the policy framework which governs NATO E&T. The Bi-Strategic Commands (Bi-SCs) subsequently interpret the policy and produce unified direction. The hierarchy of the E&T policy and directives within NATO which have influenced this directive are illustrated in Figure 1-2.

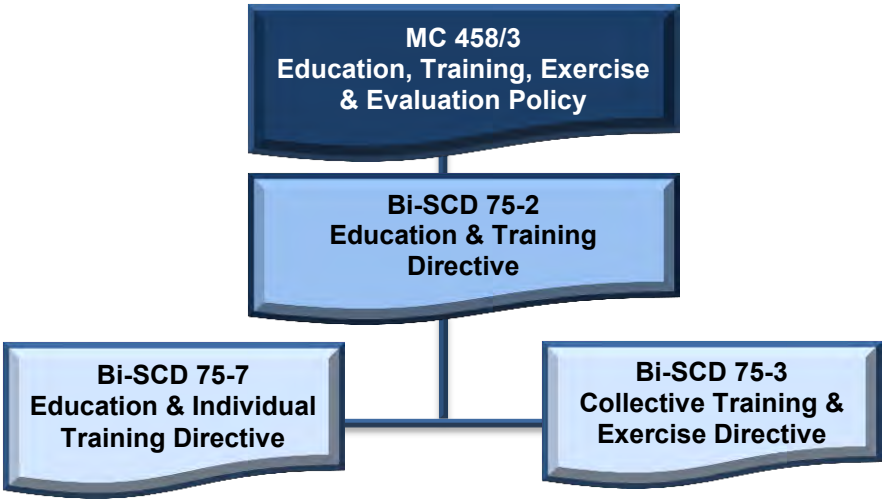

Figure 1-2 *NATO's E&T Policy and Directives*

AIM

1-5. The aim of this directive is to define the processes and products supporting NATO E&IT and situate this within NATO Global Programming as described in MC 0458/3.

SCOPE

1-6. This directive details the processes and products supporting the development, implementation, maintenance and overall management of NATO E&IT solutions[6].

APPLICATION

1-7. This directive is applicable to all Education and Training Facilities (ETFs) operated by, and all E&IT activities conducted by, NATO, Allied and partner nations supporting the preparation of the NCS, the NFS and individuals assigned to current and future NATO-led operations, including the NATO Response Force (NRF), to meet the NATO LOA[7]. ETFs primarily include NATO Education and Training Facilities (NETFs) and applicable NATO-Accredited Centres of Excellence (COEs) as well as recognized Partnership Training and

[4] NATO Glossary of Individual Training and Education Terms (Version 7), NATO Training Group - Task Group on Individual Training & Education Task Group, October 2013.
[5] Within Chapter 4, beginning in para 4-15, the rationale for combining E&IT and the related delineation of responsibilities between the alliance and each nation is explained.
[6] To support the complete implementation of Global Programming and this directive, several courses have been developed and details are provided in Annex C.
[7] The ETF scope is defined in MC 0458/3 para 7. ETFs are controlled by, or otherwise report to, NATO, a NATO nation, a NATO recognized partner nation or any combination thereof.

Education Centres (PTECs). In addition, and as necessary, ETFs may also include Multinational/National Training Institutions (NTIs) from NATO nations and other education and training facilities from partner nations and NNEs that are in compliance with NATO procedures and standards, and serve as complementary assets that also offer direct support to NATO through the delivery of NATO recognized E&IT solutions.[8]

[8] MC 0458/3 (Annex B) provides a list of NETFs, NATO Accredited COEs and recognized PTECs; however, HQ SACT/ Joint Force Trainer maintains the most current list of ETFs supporting NATO E&T.

CHAPTER 2 - EDUCATION & INDIVIDUAL TRAINING MANAGEMENT

GLOBAL PROGRAMMING

2-1. NATO E&IT is managed through Global Programming. The aim of Global Programming, as it relates to E&IT, is to ensure the right E&IT is provided to the right personnel at the right time and in the right location in the most economical manner possible.

DISCIPLINES

2-2. Global Programming relies upon disciplines to categorize, capture and manage the requirements that become the basis for E&T solutions. A discipline is a NATO approved body of knowledge and skills that outlines an existing or evolving E&T requirement. The NATO discipline structure is relatively stable while the requirements captured within the individual disciplines evolve and change over time to meet NATO's political and military needs. The list of disciplines is approved annually by the MC.

GOVERNANCE

2-3. HQ SACT, through the Joint Force Trainer (JFT), manages Global Programming and the associated discipline structure. For each discipline there will be a Requirement Authority (RA) and a Department Head (DH) supporting the centralized coordination and decentralized execution of related activities. This governance structure is detailed in MC 0458/3 and the RA/DH roles are summarized within Annex B. NATO will rely on a variety of ETFs, as specified in para 1-7, to provide NATO E&IT solutions. Control of these organizations rests with different authorities, but the responsibility for seeking a NATO-unified effort is HQ SACT.

REQUIREMENTS

2-4. NATO E&IT solutions are determined through a requirements-driven approach. The following determine an E&IT requirement:

a. **Performance Requirements.** Performance requirements are used to define what an individual will be prepared to do and to what level. An individual NATO-specific performance requirement is the expression of the gap between an individual working in a NATO environment and an individual educated and trained to work in a similar national environment. Performance requirements are derived from the tasks performed by individuals as part of their principle duties during operations or while occupying specific NFS/NCS positions. NATO Job Descriptions (JDs) generally capture performance requirements and this contributes to defining E&IT solutions. Performance requirements may also stem from SACEUR's Annual Guidance on Education, Training, Exercise and Evaluation (SAGE). Training Needs Analysis (TNA) within the Global Programming - Development Methodology converts NATO performance requirements, which are consolidated within a Training Requirements Analysis (TRA) Report, into E&IT solutions. The detailed procedural guidance to support this activity is provided in Chapters 5 through 9 of this directive.

b. **Production Requirements.** A Production Requirement concerns quantity, it is the number of personnel to be trained to meet specific performance requirements within a defined time period. Production requirements are essential to determine the priority of effort as well as the timeframe and location for conducting E&IT. The Individual Training and Education Programme (ITEP) consists of planning and coordination forums as well

as a Training Management Support system, the electronic-ITEP (e-ITEP), to manage production requirements as part of the Global Programming - Production Planning Process. The ITEP also provides tools to ensure E&IT solutions are in place to address the NATO E&IT requirements that have been identified across the whole NATO discipline structure.

NATO Training Management System

2-5. The e-ITEP is a web-based platform that provides the E&IT component of NATO's Training Management System[9]. The e-ITEP is primarily intended to support E&IT production management. The e-ITEP is constructed to manage in-year production, project future year E&IT production requirements and also provide trend analysis data based on activity from previous years. The e-ITEP shares data with NATO's Automated Personnel Management System (APMS). The intent for the e-ITEP is to capture NATO's E&IT production requirements, through the APMS links, and compare this with E&IT opportunities scheduled within the e-ITEP. The result is that the e-ITEP can project and match the demand for E&IT with the available solutions. The e-ITEP production plan is premised on valid and reliable NATO Peacetime Establishment/Crisis Establishment (PE/CE) management data and this is enabled through the APMS[10]. The e-ITEP also includes broader functionality to support the management of NATO E&IT, including:

a. **Education and Training Opportunity Catalogue (ETOC).** The ETOC is NATO's E&IT solution management system; it is a repository of course information including the essential documents that support NATO certified courses. The ETOC is the system which permits courses offered to NATO to be aligned with a discipline and subsequently certified. The ETOC is an open system which permits ETFs covered within the scope of this directive to offer their courses to ETOC users, providing insight into available opportunities.

b. **Individual Training Plan (ITP).** The e-ITEP supports an ITP by aligning E&IT solutions with associated JDs through PE/CE position numbers. Within the e-ITEP, individuals enter their NATO position number and the ITP will generate the essential and desirable qualifications for the associated billet/post.

c. **Advanced Distributed Learning (ADL).** The e-ITEP contains a Learning Management System (LMS) to support the delivery e-Learning courses. The system is integrated with the courses identified in the ITP.

d. **Course Schedules.** Leveraging the information entered into the ETOC, details of planned courses can be reviewed.

[9] The e-ITEP is accessible at: https://e-itep.act.nato.int. Technical support is available at: eitephelp@act.nato.int.
[10] The NATO Defence Manpower Committee oversees the APMS. The APMS pulls course data from e-ITEP. The e-ITEP relies on individuals to use the APMS to select courses and update PE/CE JDs. The JDs provide the e-ITEP with the overall notional demand for NATO courses.

CERTIFICATION OF COURSES[11]

2-6. Courses uploaded into the ETOC by ETFs are eligible for NATO certification. The certification of courses by NATO is dependent on HQ SACT/JFT institutional accreditation and the alignment of a course with NATO's E&IT requirements. HQ SACT/JFT assigns the course certification category and relies upon the advice of a DH to determine if a proposed course is a match with NATO E&IT requirements[12]. The DH assessment is essential to categorizing courses and is used, in part, to determine if a proposed E&IT solution is eligible for common funding as a NATO-provided course.

2-7. There are three categories of course certification:

a. **Approved.** The proposed course meets a NATO E&IT requirement and the ETF providing the solution is an institution accredited by HQ SACT/JFT.

b. **Selected.** The proposed course meets a NATO E&IT requirement; however, the ETF providing the solution is not institutionally accredited by HQ SACT/JFT.

c. **Listed.** The proposed course does not necessarily align with a NATO E&IT requirement[13].

2-8. The approved, selected and listed courses are published within the ETOC. Exceptions to the certification of courses are administered and adjudicated by DCOS JFT based on the best interests of NATO.

2-9. Course certification is a continuous process. Courses are initially assessed during a TRA to determine whether their content aligns, and potentially satisfies, a NATO E&IT performance requirement. The results of the TRA are captured in the TRA report. Courses may also be reviewed following TRA activity and an update is provided during the proceedings of an Annual Discipline Conference (ADC). Courses will be assessed using appropriate control documents which have been uploaded within the ETOC and contain the required course information[14]. Approved and Selected courses must remain responsive to NATO E&IT requirements and the Course Control Documents (CCDs) must also remain accessible in the NATO ETOC. Approved and Selected courses are reviewed during the ADC to confirm their continued relevance. The results of the reviews are captured within a Discipline Alignment Plan (DAP).

2-10. Course certification is awarded based on an E&IT solution being delivered by a specific ETF. The certification of a course is not transferable between institutions unless endorsed by the DH and the ETFs involved are unconditionally accredited by HQ SACT/JFT.

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[11] HQ SACT is responsible for the content and certification of courses as per MC 0458/3, para 25 a. vii.

[12] The DH is expected to use the documentation produced during the TNA to assess the fit between a NATO E&IT requirement and the proposed E&IT solution and thereby avoid visits to individual ETFs. Visits to ETFs that are institutionally accredited by HQ SACT should only occur in exceptional circumstances. Engagement and coordination with HQ SACT is required for visits to ETFs outside the DHs command and control when the visit involves assessing the solution/requirement fit or other similar quality assurance activity.

[13] Listed courses may meet national E&IT requirements and often support broader capacity building objectives.

[14] Chapters 5 and 6 identify the detailed course information required in order to assess the alignment between a proposed/existing E&IT solution (a course) and a NATO E&IT requirement. Technical support is available at: eitephelp@act.nato.int.

FUNDING AND RESOURCES

2-11. **Overarching Principles.** The NATO Resource Policy and Planning Board (RPPB) provides direction which impacts how common funding may be used to support NATO E&IT activities and this includes funding for NATO-provided courses. The following overarching principles guide RPPB decision making concerning the use of common funding for E&IT[15]:

a. "Over & Above". NATO common funding eligibility will focus on the fulfilment of requirements which are over and above those which can reasonably be expected to be made available from national resources[16].

b. Separate requirements from resourcing. There is a need to maintain a clear separation between requirement identification, eligibility, and affordability. Resourcing should not limit the identification and definition of new requirements. Where there is a genuine need, E&IT solutions will be sought.

c. Justification of military requirements in line with Alliance objectives and priorities. For E&IT, a clear link must be established which connects E&IT requirements with NATO objectives and priorities[17].

d. Each nation is responsible for filling military posts that it has accepted with fully qualified and trained personnel who meet the requirements detailed within the NATO JDs. Consequently, nations agree that the training related to essential qualifications detailed in the JD should be nationally funded.

e. NATO-specific E&IT required by military personnel provided to NATO bodies is a NATO responsibility. NATO common funding will provided funds to cover such training costs for military and civilian personnel. This can include investment requirements from the NATO Security Investment Programme (NSIP), generally for facilities and equipment identified as a military requirement in a capability package.

2-12. **Course Fees and Exceptions.** With only a few exceptions, the institutions supporting NATO E&IT are largely customer-funded and further resourced through established recurring national and multinational funding contributions[18,19]. In the area of E&IT, ETFs may rely on course fees provided by the requesting/sponsoring organization to resource the design, development, delivery and maintenance of existing E&IT solutions. Exceptions may be made in support of NATO Partnership programmes and to address immediate operational requirements (IOR), in particular E&IT for pre-deployment and in-theatre needs.

[15] Reference: PO(2014)0805. Education, Training, Exercises and Evaluation Overarching Policy for NATO Common Funding, dated 15 December 2014. NOTE: Resource Policy and Planning Board direction is subject to periodic revision.
[16] As per reference at footnote 15: NATO-specific E&IT required by military personnel provided to NATO bodies is a NATO responsibility.
[17] The link between E&T requirements and the objectives and priorities of the Alliance are established through a North Atlantic Council (NAC) approved Strategic Training Plan (STP).
[18] NATO Defence College has an allocation of NATO PE positions and support funding and is responsive to the MC.
[19] Within the NCS, resources are allocated towards orientation and initial staff indoctrination programmes. These programmes are unit specific and are not generally captured as part of broader NATO E&IT requirements.

2-13. **New Capabilities.** In situations where new capabilities are being introduced initial funding for related equipment as well as initial development of the required E&IT, solutions may be provided through NATO common funding. These initiatives primarily stem from the new capabilities developed through capability packages and the NATO Defence Planning Process (NDPP). Once introduced the steady-state E&IT resourcing will remain consistent with the overarching funding principles outlined above. A Voluntary National Contribution Fund (VNCF) may also be used to initially build NATO capabilities.

2-14. **Subject Matter Experts (SMEs) for Course Delivery.** Travel costs for NATO nation SMEs originating from outside the NCS required for the delivery of NATO-provided courses are eligible for common funding. This is limited to a total of two individuals per scheduled course iteration. HQ SACT oversees the approval process in accordance with the criteria the RPPB provides. The approval of the funding remains subject to NATO affordability.

NATO-PROVIDED COURSE

2-15. A NATO-provided course is an E&IT solution that is programmed and delivered to meet the specific needs of NATO and is certified by HQ SACT/JFT as ***approved*** within the ETOC[20]. To be certified as an ***approved*** NATO course within the ETOC, the course must:

a. Satisfy a NATO E&IT requirement that is identified by a SACEUR appointed RA.

b. Be delivered by an ETF that has successfully completed the HQ SACT/JFT Quality Assurance institutional accreditation.

EDUCATION AND INDIVIDUAL TRAINING WITH PARTNERS AND NON-NATO ENTITIES

2-16. E&IT is a key element of NATO's military cooperation with partners and with selected NNEs[21]. Partners and appropriate NNEs are therefore encouraged to participate in, observe or otherwise contribute to relevant NATO E&IT activities. Partner and NNE involvement in NATO ***selected*** and ***approved*** courses may be subject to MC endorsement and NAC approval. Courses delivered by ETFs which are not considered to be provided for NATO do not require MC endorsement and NAC approval.[22]

2-17. For Partners specifically, E&IT activities are normally embedded in Country Specific Plans and Roadmaps. These documents contain NATO's partner-specific cooperation objectives and priorities. Many courses that are published in the ETOC support NATO's area of cooperation Partners. Partner nation participation in a NATO E&IT activity is administered through the Partnership Cooperation Menu (PCM) and is supported by the Partnership Real-time Information, Management and Exchange (ePRIME) system. Subject to Bi-SC Military Partnership Directorate (MPD) coordinator approval, the ***selected*** and ***approved*** courses in the ETOC, including those offered by partners, are eligible for an ACT reference number in ePRIME. The MPD also determines the eligibility of the ETOC ***listed*** courses for an ACT

[20] In order to prevent misinterpretations a NATO-provided course refers to a specific course iteration that is programmed by an ETF at a specific place and time for NATO. A NATO-provided course should be clearly distinguished from similar activities and the NATO-provided course should be explicit within in planning documents and programmes of work.
[21] As defined previously in footnote 2, NNE includes Non-NATO countries that do not otherwise meet the definition for "NATO partner".
[22] It is expected that such courses would adhere to the proper use of NATO/SACT Recognition as outlined in para 3-18 and 3-19.

reference number. Eligibility is based on NATO's partnership objectives and priorities. MPD may also seek support from HQ SACT/JFT, to provide MPD with an assessment of the individual course in the ETOC. Bi-SC Commanders' Guidance – Military Co-operation (Bi-SCD 087-002) provides further details supporting the use of the PCM and ePRIME.

2-18. Certain NATO E&IT activities may be of interest and opened to appropriate NNEs. This will require an ePRIME Proposing Body,[23] or any involved (or sponsoring) Allied nation, to submit a timely and justified request through their respective chain of command in order to keep HQ SACT/JFT informed and, when necessary, in order to seek MC endorsement and NAC approval[24]. All requests for NNEs to participate in a NATO-provided course must include a clear rationale for NNE involvement. Requests should be received at least 120 days prior to the start of the event in order for a proper review and the necessary approvals to be obtained.

[23] NNEs are not subject to, or captured within, the PCM process. The reference to ePRIME Proposing Body is intended to capture a NATO body or agency which is likely to nominate an NNE to participate in an E&IT activity.
[24] MC endorsement and NAC approval is NOT required for NNE participation in activities conducted by a NATO Accredited COE, as per clarifications provided in DGMIS-BUS-0095-2015 dated 02 July 2015 and IMSTAM (C&RS)-0020-2015 dated 17 March 2015. Endorsement/approval is also NOT required for NNE participation in recognized Partnership Training and Education Centre (PTEC) activities (as per DGIMS-BUS-0115-2105 dated 10 August 2015); however, HQ SACT/JFT is to remain informed of all potential NNE involvement with NATO-provided courses at a NATO Accredited COE or recognized PTEC.

CHAPTER 3 - QUALITY MANAGEMENT

INTRODUCTION

3-1. A wide variety of ETFs offer E&IT solutions to NATO[25]. The intent of this chapter is to detail the mechanisms and processes implemented by NATO to assure the quality of E&IT provided by ETFs that offer solutions which align with the NATO E&IT requirements identified by a SACEUR appointed RA[26].

3-2. It is important to ensure that the planned and systemic approach to building, maintaining and improving the execution of E&IT activities is in alignment with required standards[27]. Compliance with these standards provides confidence that the definition and delivery of E&IT continues to be aligned to support NATO requirements[28]. HQ SACT/JFT conducts institutional accreditation in order to provide confidence to the Alliance that recognized ETFs supporting NATO utilize an effective Quality Management System (QMS). Institutional accreditation is also harmonized with the certification of individual courses, as described in the chapter 2.

QUALITY MANAGEMENT SYSTEM (QMS)

3-3. An established QMS within an ETF provides confidence in the definition and delivery of quality E&IT solutions. A QMS incorporates the required continuous improvement mechanisms to address change and emerging challenges. A QMS has four dimensions each with its own purpose, depth and scope derived from quality related practice. The quality dimensions and their specific application in NATO E&IT are illustrated in Figure 3-1. In broader terms, the four dimensions of a QMS are as follows:

a. **Inspection.** Inspection is implemented mainly for identifying and correcting errors before they may cause problems.

b. **Quality Control (QC).** QC is a systematic approach to identifying and rectifying problems at each step of the process.

c. **Quality Assurance (QA).** QA widens the responsibility for quality to include other functions beyond the main/direct activities (e.g., the impact of support functions). The focus is the overall quality of the output and is aimed at preventing errors, mistakes and defects.

d. **Quality Management (QM).** QM is a way of thinking and working with emphasis on:

(1) Meeting the needs and expectations of customers.

[25] The scope of ETFs to be considered is provided in para 1-7 with further detail provided in footnote 7.
[26] For NATO, quality E&IT is effective, efficient and affordable. This chapter addresses the E&IT standards and mechanisms identified in MC 458/3, in particular paragraphs 14, 25 a. iii. and 38.
[27] The standards presented here are influenced by the 3rd edition of the International Education Standards which were produced by the European Network for Quality Assurance in Higher Education in 2009; however, they are adapted to suit NATO's needs by HQ SACT/JFT.
[28] The planned and systemic approach to managing NATO E&IT is achieved through a two stage approach guiding the definition and delivery of E&IT solutions. Within this directive the two stages are subsequently broken out as the Analysis, Design, Development, Implementation and Evaluation phases of the NATO Systems Approach to Training. Details are provided in chapters 4-9.

(2) Covering all parts of an organization.

(3) Involving every person in the organization.

(4) Examining all aspects related to quality.

(5) Aiming at “right the first time” by designing-in quality rather than inspecting for it afterwards.

(6) Developing systems and procedures which support quality and continuous improvement.

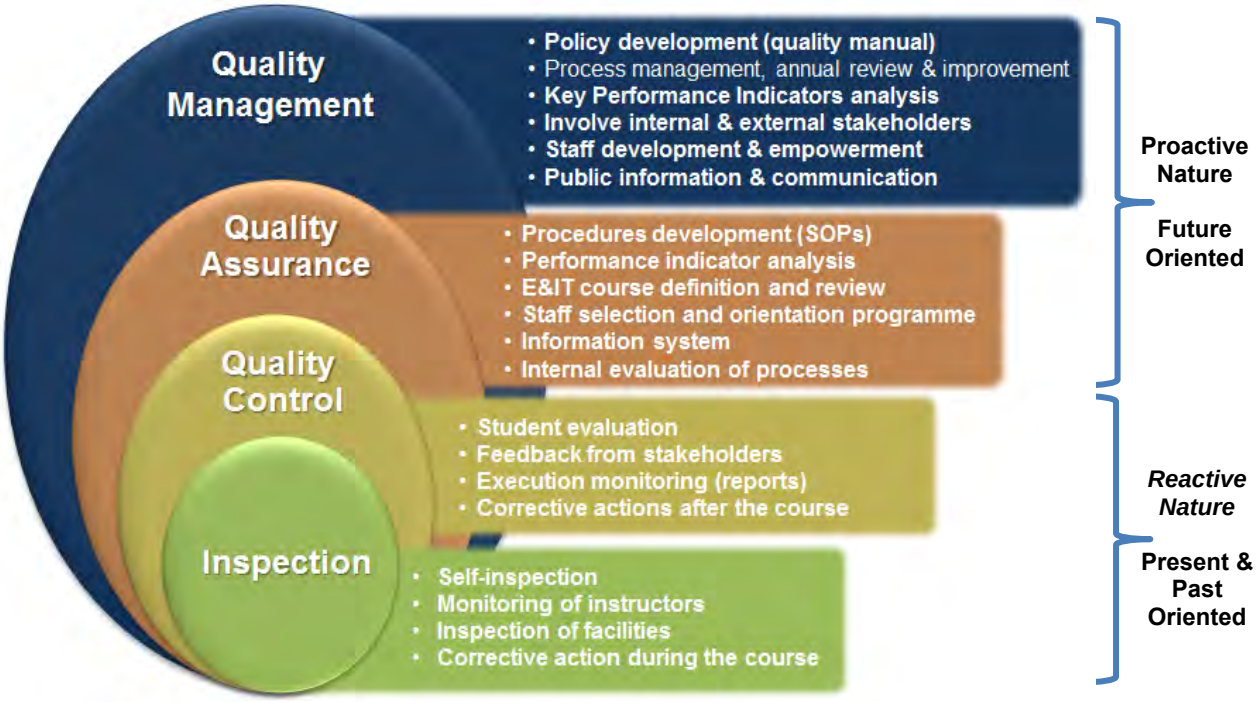

Figure 3-1 *Quality Dimensions Applied to NATO E&IT*

3-4. A QMS is a complete set of quality standards, procedures and responsibilities. The QMS within an ETF defines and covers all facets of the operation, from identifying and meeting the needs of the stakeholders to planning, implementing, monitoring and reviewing the E&IT, together with all the relevant activities regarding these functions. The QMS regulates the organizational structure, the responsibilities, the processes, the procedures and the resources of the institution. The documentation that usually comes with a QMS describes the quality policy, the system, the objectives, the organizational structure, the responsibilities, the jobs/functions and outlines procedures in detail.

CONTINUOUS IMPROVEMENT PROCESS

3-5. A Continuous Improvement Process (CIP) is an essential element of QM and is embedded within a QMS. A CIP has to be in place within an ETF to assure that it will consistently address NATO E&IT requirements. HQ SACT/JFT conducts ETF institutional accreditation to complement an ETF’s CIP.

3-6. For ETFs subject to NATO institutional accreditation, the CIP consists of internal and external loops, as illustrated in Figure 3-2. Both loops are executed continuously. The frequency of the internal loop depends on the ETFs normal planning and execution cycle. ETFs are expected to gather relevant information, analyse it, make judgements concerning results and in the final step, if necessary, make changes to improve their processes and procedures. The external Continuous Improvement (CI) loop includes an initial ETF institutional accreditation and this leads to an evaluation report which provides an ETF with recommendations to improve internal processes and procedures, as required. There is an additional external feedback loop which is provided through an annual QA Report produced by the ETF. HQ SACT/JFT compiles the annual returns from accredited ETFs and generates a consolidated QA Summary. The summary highlights findings and best practices and this is distributed annually to ETFs.

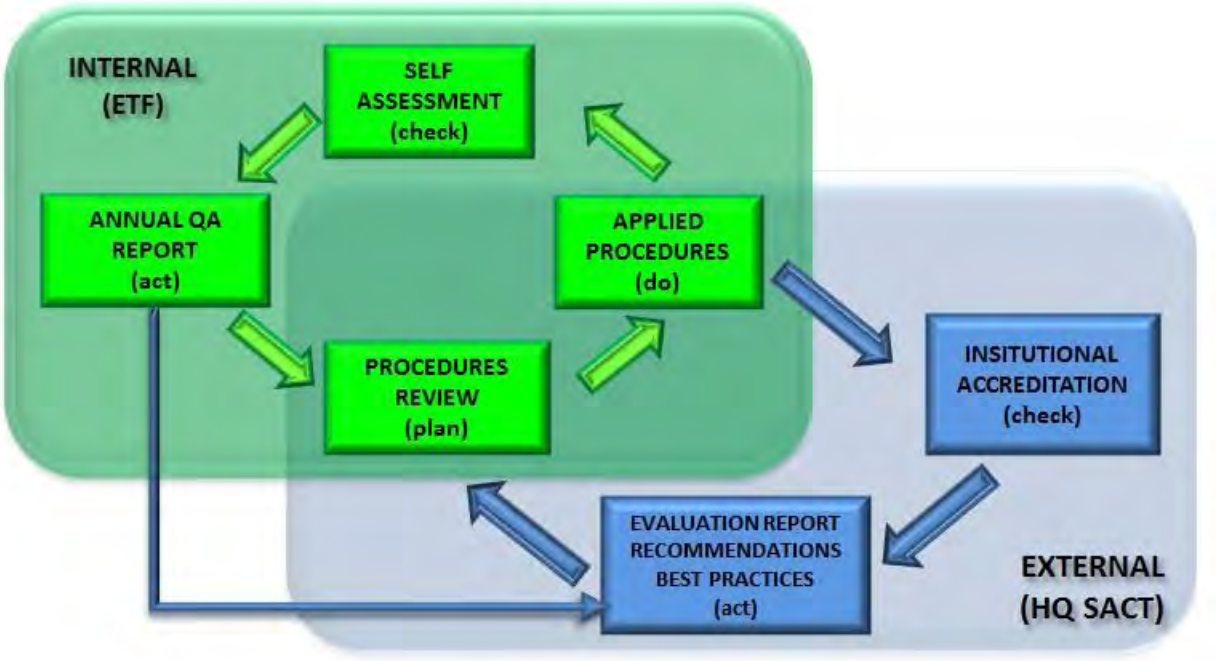

Figure 3-2 *Process of Continuous Improvement*

RESPONSIBILITIES IN QUALITY MANAGEMENT

3-7. The primary responsibility for providing quality E&IT for NATO rests with the commanders/commandants/directors of the respective ETFs supporting NATO. It is important to acknowledge and emphasize there are valuable contributions made by other major stakeholders that can influence the ETFs QMS. Operational Commanders contribute by providing updates on evolving requirements based on the latest developments in the operational environment as well as by providing feedback to ETFs concerning the graduates they receive. Each individual involved with providing E&IT (the trainers) along with those receiving it (the trainees) contributes to the quality and continuous improvement of E&IT.

3-8. HQ SACT is responsible for:

a. The management, execution and accreditation of E&IT.

b. Developing and maintaining Doctrine and Quality Standards for NATO E&IT.

c. Ensuring that the E&IT in support of NATO is in compliance with NATO standards.

d. The certification of courses.

3-9. Accredited ETFs are responsible for:

a. Establishing, maintaining and reviewing their QMS and adhering to the standards described in Annex D.

b. Submitting to HQ SACT/JFT an annual QA Report.

INSTITUTIONAL ACCREDITATION

3-10. Institutional accreditation requires an ETF to demonstrate the existence of an effective QMS as well as to provide evidence of their contribution to NATO. HQ SACT/JFT assembles and leads a QA Team of Experts (ToE) and relies on their recommendations to accredit ETFs. The institutional accreditation process is based on NATO Quality Standards which are focused on three broad areas, as detailed in Annex E. The QMS is based on a set of seven standards detailed in Annex D.

INSTITUTIONAL ACCREDITATION PROCESS

3-11. The main steps for the institutional accreditation process are identified in Figure 3-3 and the steps are:

Figure 3-3 *Institutional Accreditation process*

a. **Application.** Participation in the accreditation process is on a voluntary basis. ETFs providing NATO E&IT should apply for accreditation when they have developed and effectively implemented their QMS. HQ SACT/JFT will provide an application template on request. The application will be formally submitted to HQ SACT/JFT and to the QA ToE (jftqa@act.nato.int).

b. **Self-assessment**. **Report.** After the acknowledgement of the formal application, the ETF submits to HQ SACT/JFT an evidence-based self-assessment report which provides qualitative and quantitative information and further analysis concerning the ETF's activities. HQ SACT/JFT will provide additional guidance to an ETF for preparing the report, if requested. The self-assessment report is to be submitted to HQ SACT/JFT a minimum of one month prior to the on-site visit. HQ SACT/JFT will ask for additional documentation, as necessary, in order to complete the evaluation.

c. **On-site Visit.** The actual time for the visit will be coordinated and agreed between the ETF and HQ SACT/JFT, and it is based on ETF readiness and availability. During the visit, the QA ToEs will assess the QMS and the internal CIP as well as

associated activities contributing to the provision of efficient, effective and affordable E&IT solutions. This assessment is completed through open discussions and interviews with relevant staff members as well as by reviewing relevant documents and examining the facilities. The on-site visit will be tailored to the uniqueness of each ETF. The schedule of events will be coordinated and agreed at least one month before the on-site visit.

d. **Evaluation Report.** The QA ToE will prepare a draft report based on the on-site evaluation. The report is intended to support the ETFs further development through external feedback and expert advice[29]. The evaluation will be based on conformity analysis of each criterion against the pre-established NATO quality standards. There will be three possible ratings; however, where outstanding results are identified a "best practice" will be acknowledged. The ETF will have the opportunity to comment on the findings within the draft evaluation report before it is finalized. The three possible results are as follows:

(1) **Meets the Standard.**

(2) **Partially Meets the Standard.**

(3) **Does not Meet the Standard.** In this case the ETF will be provided with recommendations to resolve and improve.

e. **DCOS JFT Accreditation Decision**. DCOS JFT will base the final decision on the QA ToE recommendation and evaluation report. The following decisions are possible:

(1) **Unconditional Accreditation.** An accreditation remains valid for six years[30].

(2) **Conditional Accreditation.** An accreditation which is valid for one year. A valid conditional accreditation can be converted to unconditional at any point six months after the release of the DCOS JFT decision, provided the ETF can demonstrate that the areas requiring improvement are resolved and appropriate evidence is provided.

(3) **Not Accredited.** The ETF will be provided with guidance to resolve and improve specific areas. Resolving the concerns permits the ETF to achieve an accreditation.

MONITORING AND INFORMING

3-12. Following successful institutional accreditation, HQ SACT/JFT monitors each accredited ETF throughout the validity period through an annual QA Report. The annual QA Report is

[29] An evaluation report provides an ETF with recommendations to improve internal processes and procedures. The costs incurred to accomplish these recommendations must be borne by the ETF and not NATO.
[30] An accreditation remains valid as long as the Institution continues to conduct NATO-provided courses in support of NATO requirements. HQ SACT JFT retains the right to withdraw accreditation if an institution no longer continues to make a contribution to NATO and satisfy the NATO Quality Standards provided at Annex E.

based on a template structure provided by HQ SACT/JFT and it is due the end of January each year. The annual QA Report demonstrates a continuing commitment to quality and is essential to sustaining the ETF institutional accreditation status.

3-13. Based on the annual QA Reports provided by accredited ETFs, DCOS JFT will issue an annual QA Summary which includes best practices collected from ETFs, common problems and proposed solutions. The summary will be distributed to the community of interest.

INSTITUTIONAL RE-ACCREDITATION

3-14. Re-accreditation will be conducted following the same steps described earlier in para 3-11.

ACCREDITATION OF COMMERCIAL ENTITIES

3-15. NATO institutional accreditation is intended for ETFs, as defined in para 1-7. Commercial entities and industry in general, including privately operated firms, consulting companies, professional and academic institutions and "for-profit" entities, are not within the scope of NATO institutional accreditation unless authorized by the appropriate framework. Entities which enter into services contracts with NATO will have the terms and conditions of these arrangements explicitly detailed in the contract and, where appropriate, this will include E&IT quality management considerations.

THIRD PARTY ACCREDITATION AND CREDIT RECOGNITION

3-16. ETFs that are institutionally accredited by an external organization or another third party, other than HQ SACT/JFT, are still required to apply and go through the NATO accreditation process in order to achieve NATO ETF institutional accreditation. ETFs are not mandated to go through the NATO ETF institutional accreditation process - it is voluntary.

3-17. NATO E&IT courses may receive recognition and potentially transfer credits towards an alternative qualification or credential which is conveyed by a body outside of NATO, including: a professional certification, a certificate, a diploma and/or a degree. This additional credit recognition through professional and academic institutions is a desirable secondary effect for NATO E&IT which can provide a valuable incentive to encourage further learning and personal development. ETFs that have completed institutional accreditation are encouraged to summarize their academic partnership activities and achievements within their annual QA Report.

SACT RECOGNITION

3-18. In recognition of achieving and continuing to maintain ETF institutional accreditation, ETFs are permitted to promote their achievements and may, combined with their own logo/letterhead, use the following notation: "***NATO Accredited Education and Training Facility***". The ACT logo can be used on ETF products, related to NATO-provided courses, but only in a combination with the logo of the accredited ETF. It is understood that the notation and/or use of the ACT logo does not imply any authority to represent NATO or ACT.

3-19. HQ SACT recognition is authorized for NATO-provided courses and the associated course completion certificates for NATO-provided courses may bear an electronic facsimile endorsement (signature) of the SACT. While other courses may be similar, and may even be based on NATO doctrine, only NATO-provided courses are to be associated with SACT

recognition. SACT recognition must not be associated with education related seminars, workshops or other similar forums. Exceptions to the use of SACT recognition for E&IT are resolved through the DCOS JFT. Accredited ETFs are expected to be vigilant and avoid ambiguity or confusion between NATO-provided courses and those which are national or are for other purposes. ETFs are expected to summarize their use of SACT Recognition within their annual QA Report.

CHAPTER 4 - FROM E&IT REQUIREMENTs TO E&IT SOLUTIONS

INTRODUCTION

4-1. HQ SACT/JFT is responsible for the overall implementation and management of Global Programming and this includes the Development Methodology which is used to transition from requirements to solutions. HQ SACT/JFT relies upon various stakeholders, both within the NCS and externally to it, to ensure essential NATO E&IT solutions are defined and delivered to satisfy NATO requirements. This chapter is focused on E&IT solutions and introduces NATO TNA as part of the Global Programming - Development Methodology. Through TNA there is a transition from E&IT requirements to the definition and delivery of E&IT solutions. This chapter describes the stakeholder relationships involved with TNA and in particular the roles and responsibilities of the appointed RA and DH for a discipline as well as the relationship with ETF E&IT solution providers.

4-2. TNA activity within Global Programming follows the approval of a discipline based STP and the production of a TRA Report. Within NATO, TNA concerns the provision of individual and collective E&T solutions. For E&IT this encompasses the application of the NATO Systems Approach to Training (SAT)[31]. The focus of the NATO SAT is E&IT, in particular what an individual is trained to do and the level of proficiency that is to be achieved. The NATO SAT constitutes a cycle and evaluation is a fundamental element that brings about the reassessment of initial requirements and the continuous improvement and refinement of E&IT solutions. The Exercise Process, as detailed in Bi-SCD 075-003, is used during TNA to address solutions for Collective Training and Exercises. The NATO SAT and the NATO Exercise Process are nested within TNA of the Global Programming – Development Methodology, as illustrated in Figure 4-1.

[31] The NATO Systems Approach to Training (SAT) is as an iterative and interactive sequence of activity leading from the definition of a need for education and individual training through to defining, developing and implementing effective and efficient learning solutions to satisfy the need.

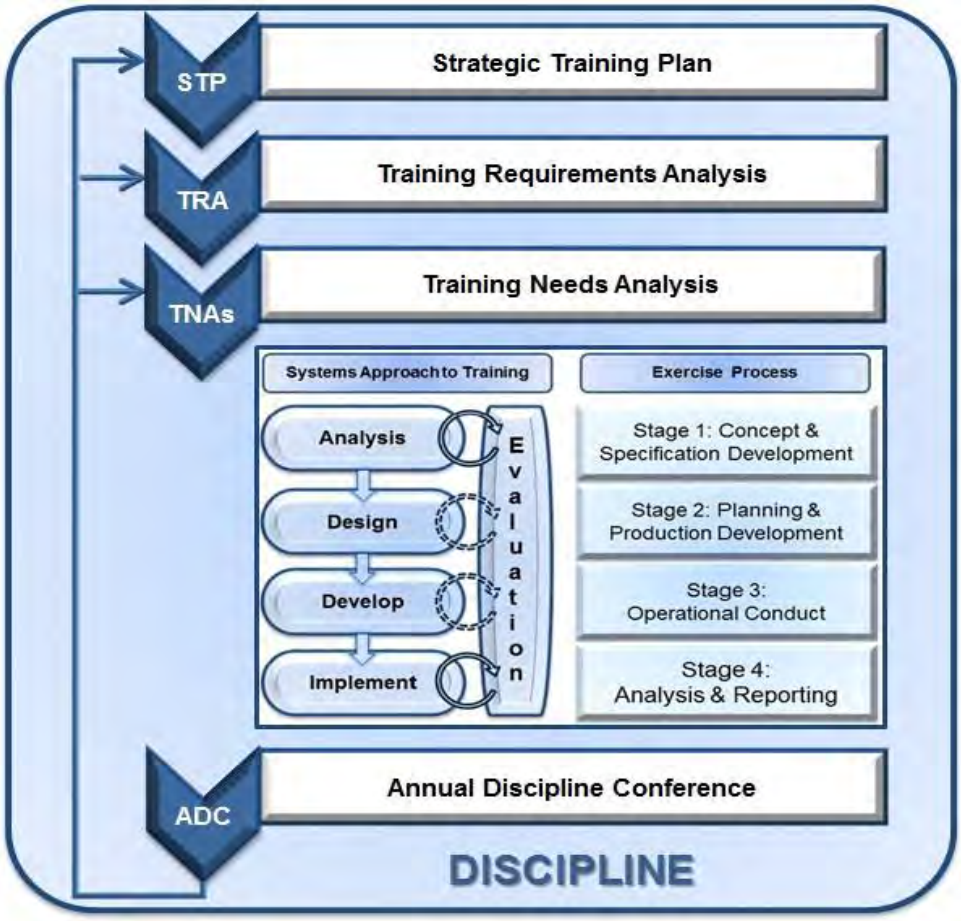

Figure 4-1 *Global Programming - Development Methodology*

SITUATING THE SYSTEMS APPROACH TO TRAINING

4-3. The STP and the TRA Report verify performance gaps and scope the initial E&T requirement. The result forms a discipline based requirements package[32]. A TRA Report may result with several TNA Working Groups (WGs) to formulate the solutions to address the E&IT gaps. TNA WGs focus on the solutions to address the E&IT gaps unique to a discipline. E&IT solutions are achieved through the SAT and new solutions are defined (through SAT) when a TRA Report identifies a gap and no suitable solutions appear to currently exist. E&IT solutions that support NATO operations or serve areas of common interests with NATO partners may also be generated through SAT[33].

4-4. TNA and the SAT processes are integrated within the broader Development Methodology supporting Global Programming. This integrated approach ensures the overall need for E&T is aligned with Alliance objectives and that prior to developing E&IT solutions there is a clear link established with the principle duties and tasks within NFS/NCS JDs and, where feasible, with collective tasks and exercise objectives[34]. The STP and the TRA Report

[32] A Performance Gap is the difference between actual and desired/required performance.
[33] Mission specific E&IT requirements, based on potential performance gaps are identified by mission commanders. When Immediate Operational Requirements are identified the SAT process is initiated.
[34] ACO Force Standards and the NATO Task List (Bi-SCD 080-090, dated 16 November 2007) provide a basis for collective tasks and activities.

serve as the initial scoping activity intended to first assess, and then capture, an overall need for E&T and this leads to the definition and delivery of individual and collective E&T solutions.

4-5. The ADC is an opportunity to review all E&T activities associated with a discipline to ensure E&T solutions remain aligned with E&T requirements[35]. The review is led by the DH and involves the ETFs, the RA as well as HQ SACT/JFT representation. The timing of the ADC is based on the needs of the RA and the assigned DH. One DAP is generated annually, as a minimum, for HQ SACT approval summarizing the status of the E&T for each discipline[36]. The DAPs provide HQ SACT with the detail necessary to provide proper management oversight of NATO E&T.

APPLYING THE NATO SYSTEMS APPROACH TO TRAINING

4-6. Defining and delivering effective, efficient and affordable E&IT solutions to satisfy NATO performance gaps is achieved through the NATO SAT. The NATO SAT consists of five distinct phases and includes a feedback loop at the conclusion of each phase, as per Figure 4-2. The NATO SAT is normally engaged when an E&IT requirement is identified through a TRA and no suitable solutions are in place to address the requirement. Each of the SAT phases is supported with a discrete series of steps and activities. An overview of the NATO SAT steps and activities is provided in Annex F. The DH defines NATO E&IT solutions and the results must be approved by HQ SACT/JFT in order to become recognized and NATO certified. ETFs serve a vital role supporting the DH and are responsible for the actual delivery of NATO E&IT solutions. Recognizing the uniqueness of NATOs E&T governance structure and, in particular, the reliance on numerous entities outside the NCS, the NATO SAT is intended to be flexible and adaptive. The five phases of NATO SAT are summarized here and detailed guidance is provided in the subsequent chapters[37]:

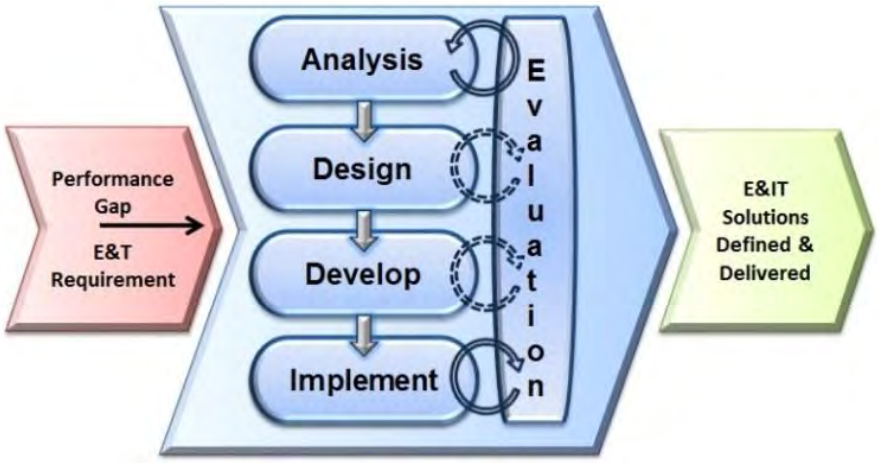

Figure 4-2 *NATO Systems Approach to Training*

a. **Analysis Phase.** The purpose of the Analysis Phase is to generate clear and precise Performance Objectives (POs). POs capture the intended outcome of NATO

[35] An ADC may also include a review of the integration of discipline related requirements as part of Collective Training and Exercises.
[36] The details of the ADC, the DAP as well as STP and TRA are in Bi-SCD 075-002.
[37] The NATO SAT process will identify the expected contents of the products defining NATO E&IT solutions. A process to develop E&IT solutions is outlined in Chapters 5-9. This is a logical and systematic approach to achieve the required products and it is offered as guidance. In many situations suitable E&IT solutions for NATO requirements already exist.

E&IT and this is ideally expressed in terms of essential on-job performance consistent with the Principle Duties for NCS/NFS positions as well as NATO operations and the performance requirements which stem from SAGE. The Analysis Phase results with the production of a CCD which outlines a broad training strategy and the intent for a proposed E&IT solution[38]. The Analysis Phase is described in detail in Chapter 5.

b. **Design Phase.** The purpose of the Design Phase is to create, or otherwise select, an E&IT solution which will enable individuals to achieve specified POs. The Design Phase results with the production of a further CCD which defines in detail the instructional strategy supporting an E&IT solution. The instructional strategy includes what content will be delivered, how the content will be delivered and, most important, how learning will be monitored and assessed. The Design Phase is described in detail in Chapter 6.

c. **Development (Develop) Phase.** The purpose of the Development Phase is to produce, or otherwise procure, the materials or services that are essential to support the delivery of an E&IT solution. The Development Phase results with the production of courseware which is defined during the Design Phase and is described in the CCDs. Details concerning the Development Phase are described in Chapter 7.

d. **Implementation (Implement) Phase.** The purpose of the Implementation Phase is to put into operation the management, support and administrative functions necessary to successfully conduct E&IT solutions. Conducting E&IT solutions requires planning, preparation, execution as well as the close out of the activities which are specific for a course. The Implementation Phase results with the production of qualified graduates. The Implementation Phase is described in Chapter 8.

e. **Evaluation Phase.** The purpose of the Evaluation Phase is to assess the efficiency, effectiveness and affordability of an E&IT solution once it is implemented and determine how it can be improved in the future. The Evaluation Phase formally closes the NATO SAT feedback loop and determines whether a specific E&IT solution has satisfied the POs which were defined during the Analysis Phase. The Evaluation Phase results with improved E&IT solutions and provides an important input to a discipline related ADC. ETFs that are institutionally accredited by HQ SACT/JFT embed a CIP, which includes post course and institutional reviews as part of a QMS. The Evaluation Phase is described in Chapter 9.

ROLES AND RESPONSIBILITIES WITHIN THE SYSTEMS APPROACH TO TRAINING

4-7. HQ SACT/JFT formalizes the specifics of the RA and DH relationships taking into consideration the unique intricacies of the associated discipline; details concerning these relationships begin to form within a STP. NATO is responsible for satisfying the E&IT

[38] This directive refers to Course Control Documents (CCD) as output products that are used to define NATO E&IT solutions. CCDs are generated through the NATO SAT processes. Equivalent output products for the NATO SAT Analysis and Design Phases may already exist in alternative formats within ETFs. The products may be referred to by various names, including: Training Plan, Programme of Learning, Course Curriculum, Programme of Instruction, and Course Syllabus among other names. The alternative formats and names may be desired (or required) in accordance with local or national preferences. This directive provides templates (in Annexes K, L and R) and also identifies the elements to be included in the documents in the chapters (5 and 6) that follow.

requirements that are unique or otherwise specific to NATO, however, the Alliance relies heavily upon ETFs outside of the NCS to deliver the E&IT solutions. HQ SACT/JFT conducts institutional accreditation in order to provide confidence to the Alliance that recognized ETFs supporting NATO utilize an effective QMS. The NATO SAT model is a central element to the accredited ETFs overall approach to quality management.

4-8. Through the NATO SAT the RA, the DH and ETFs harmonize efforts and contribute to the definition and delivery of effective, efficient, and affordable E&IT solutions to meet NATO's specific E&IT requirements. Specific assignments within each of the phases of the NATO SAT are summarized in Table 4-1 and this takes into consideration the autonomy of ETFs supporting NATO E&IT as well as the role of the RA and DH.

NATO
Systems Approach to Training (SAT)
Assignments Matrix

Stage	SAT Phases	Stakeholders				SAT Products[2]	Approval
		RA	DH	ETF	OPR[1]		
Definition	**Analysis**	C	A & R	C	C	Course Control Document I & II	**JFT**
	Design	C	A	R	R	Course Control Document III	**JFT**
Delivery	**Development**	I	A	R / C	C / R	Courseware	**ETF**
	Implement	I	I	A & R	R	Qualified Graduates	**ETF**
	Evaluation	I	I	A & R	R	Improved E&IT Solutions	**ETF**

Assignments:

Responsible: Executes the task/activity in support of NATO.
Accountable: Ensures the task and related work is completed for NATO.
Consulted: Input is sought during the activity before it reaches final approval.
Informed: Receives updates as activities progress.

[1.] An external Course Officer of Primary Responsibility (OPR) is required when an ETF does not have internal expertise or the capacity to dedicate to the delivery of a specific NATO E&IT solution. An external Course OPR may support several of the responsibilities within SAT depending on the capacity of the ETF and the level of available DH support. The level of Course OPR support is determined prior to activating a course within the ETOC.

[2.] Course Control Documents (CCDs), detailed in Chapters 5 and 6, are products that define NATO E&IT solutions. ETFs may have already generated output products to address CCD II and III.

Table 4-1 *NATO Systems Approach to Training (SAT) Assignments Matrix*

4-9. The appointed DH supports HQ SACT/JFT in translating NATO requirements into E&IT solutions. The DH, coordinates with ETFs, and supports HQ SACT/JFT through the definition and development of E&IT solutions. The DH relies on ETFs and the level of effort to coordinate will vary depending on the complexity of the discipline. The DH is not necessarily responsible for the conduct or delivery of E&IT solutions. ETFs are responsible for E&IT delivery. The DH is accountable for the definition and development of E&IT solutions and these responsibilities are captured within an official appointment letter which is negotiated with HQ SACT/JFT.

4-10. As an E&IT solution is defined and formalized the DH may seek HQ SACT/JFT support to identify and appoint a Course Officer of Primary Responsibility (OPR). Course OPRs are external to the ETF and normally come from within the NCS. Course OPRs support E&IT definition and delivery, in cases where the DH does not have the capacity to support an ETF. The Course OPR must have sufficient expertise to ensure the assigned E&IT solution continues to reflect NATO policies, concepts, doctrine and procedures and thereby remains up-to-date and relevant. The Course OPR assignment is a principle duty and is to be captured within the applicable NATO NCS/NFS JD.

4-11. A DH may need to coordinate with several ETFs in order to satisfy the full scope of E&IT requirements supporting a discipline. The DH remains accountable to HQ SACT; however, in some situations a designated ETF may initiate TNA activity, in particular the production of CCDs defining an E&IT solution, with the support of the DH. Ultimately, the DH must endorse any proposed E&IT solution and reconcile this with the TRA Report.

4-12. HQ SACT will support DH coordination efforts by ensuring the associated tasks and the added work to support NATO's E&IT is appropriately documented and tasked, be it through a specific Programme of Work or, when necessary, through another recognized planning and tasking framework[39]. HQ SACT/JFT also assigns a Discipline POC to support the maintenance and day-to-day oversight of a discipline and may become further engaged, as required, in order to ensure a DH has the required support to effectively coordinate with ETFs.

SUPPORT TO CURRENT OPERATIONS - RAPID ANALYSIS AND DESIGN

4-13. Current operations have the highest priority with regard to support from NATO's E&T resources. Emerging security threats as well as the advent of new concepts and doctrine may have an impact on NATO operations and readiness. NATO may also be required to train host nation or local forces in support of operations. Responsive and agile E&IT is required to meet these challenges and solutions must be developed in rapid fashion. HQ SACT will lead this effort in close coordination with SHAPE.

4-14. Rapid Analysis and Design (RAD) responds to the urgent need to address operational performance gaps. RAD will accelerate the Global Programming - Development Methodology and compresses the TNA – NATO SAT process resulting in the swift production of E&IT solutions. RAD will be implemented by HQ SACT in order to address immediate operational requirements identified by SACEUR. Once this need is identified the first step to RAD is led by HQ SACT, with SHAPE support. The initial step involves a clear identification and definition of the performance gap. RAD requires the identification of the area of deficiency and specifying the tasks to be performed. The direct input of the requesting agency is essential. Identified tasks are immediately translated into POs. Once the POs are defined, the E&T expertise within the Global Programming – Governance Structure, the DH, is leveraged. If DHs do not have adequate solutions in place, a Team of Experts is formed and the activities within the SAT Design Phase commence.

[39] Depending on the institution there will be different planning frameworks, e.g., MCM 236-03, MC Concept for NATO Centres of Excellence, 04 Dec 2003.

EDUCATION, INDIVIDUAL TRAINING AND THE SYSTEMS APPROACH TO TRAINING

4-15. The NATO SAT applies to education as well as individual training. These are not mutually exclusive events or constructs. Elements of education and individual training are often blended in application to create a solution that will achieve desired learning objectives and specific performance outcomes. A NATO course is the descriptor commonly used to identify a solution to a NATO E&IT requirement. A NATO course involves planned, sequenced and structured learning activities based on pre-defined objectives for a clearly identified (target) audience. Depending on application and context, E&IT solutions may be further categorized for ease of management. Examples include: Functional Systems Training, Pre-Deployment Training, In-Theatre Training, Contractor Provided Training as well as Foundation Training among other descriptors. Regardless of the category, the attributes for a NATO course remain consistent with the description provided. The context of the event along with the related objectives and activities will determine if E&IT is a NATO or national responsibility.

4-16. Key Leader Training (KLT) is a specific category of E&T events which prepares leaders to respond appropriately within a specific context, such as within a NATO Exercise or operation. Leaders are required to interpret information, often provided by experts within a specific functional area (or discipline), in order to make decisions and determine an appropriate course of action. KLT consists of specific learning objectives which define the context specific base of knowledge that may be necessary to make decisions during a NATO Exercise or operation. In this context, KLT is a NATO responsibility.

4-17. Unlike KLT, Professional Military Education (PME) has a longer term time horizon and a career focus as opposed to a concentration on the near term context (1-3 years) or specific duties and job requirements. PME cultivates military leadership by conveying a broad body of professional knowledge and developing the habits of mind along a career continuum. The focal point is intellectual agility including: critical thinking, rational thought and ethical decision making. PME is based on learning objectives which may be formulated through SAT to prepare military service members to lead and to manoeuvre within uncertain situations and resolve ill-defined problems. With only a few exceptions, which generally stem from political guidance, PME and related career development programmes are a national responsibility.

4-18. PME generally increases in intensity and depth of knowledge and skill with career progression and increasing rank. Encouraging specific development programmes for Officer and NCOs from within the Alliance and Partner nations supports achievement of a common standard. In so doing, this prepares military service members to face the challenges of operating in a multi-national, interoperable, NATO environment. NATO has endorsed requirements supporting PME programmes. Nations are expected to contribute personnel for PE/CE posts who have the necessary PME commensurate with the responsibilities and expectations of the rank, as identified on the applicable PE/CE JD, and this includes the required language proficiency.

4-19. Key Leader Engagement events, conferences, professional seminars and related forums are frequently conducted within NATO to keep a broad audience aware of evolving issues and their implications. These forums are important and educational in nature; however, they often fall outside the definition for a NATO course.

CHAPTER 5 - SAT: ANALYSIS PHASE

INTRODUCTION

5-1. **Purpose.** The purpose of the Analysis Phase is to generate clear and precise Performance Objectives (POs). POs capture a performance gap and identify the intended outcome of NATO E&IT. POs are expressed in terms of the required job performance proficiency to be achieved[40]. During the process of capturing a performance gap the Analysis Phase results with answers to the following:

a. Why train?

b. Who must be trained?

c. What must be trained, to what level and under what conditions?

5-2. **Product.** CCDs are produced at the conclusion of the Analysis Phase. These documents are uploaded into the ETOC and guide the design, development, implementation and evaluation of an E&IT solution. The documents establish the agreement among stakeholders concerning the intent of an E&IT solution and provide the justification, background and detail concerning the need for the E&IT solution.

5-3. **Methodology.** The Analysis Phase relies on a TNA Working Group (WG) to systematically analyse the performance statements in a TRA in order to identify, select and organize the specific tasks that require E&IT[41]. The WG requires inputs from a community of interest including command staffs (in particular the RA), end-users, subject matter experts (SMEs), and E&T specialists. Expertise from outside the NCS may also be required. The success of the TNA WG relies upon the discretion, experience and expertise of the assembled members and their respective abilities to make reasoned judgements throughout the Analysis Phase. The TNA WG provides the required guidance to design an E&IT solution during the next phase of the NATO SAT.

5-4. **Process.** The following steps are undertaken during the Analysis Phase:

a. Step 1: Establish a TNA WG.

b. Step 2: Analyse Tasks.

c. Step 3: Write Performance Objectives.

d. Step 4: Refine Target Audience.

e. Step 5: Formulate Guidance.

[40] POs may also be referred to as Behavioural or Terminal Objectives. The content is similar to Training Objectives for an NATO exercise. POs focus on individual performance while exercise Training Objectives are focused on collective (team) performance.

[41] The TRA Report provides the basis for Performance Objectives. The TRA Report provides a list of tasks and these are expressed as Performance Statements. During the TNA WG these statements are examined and developed further in order to ensure precision, provide clarity and proper scope primarily related to the Principle Duties for specific NCS/NFS jobs.

f. Step 6: Document Results.

STEP 1: ESTABLISH A TNA WG

5-5. The TNA WG is normally formed by the DH after the approved TRA Report is released. A TRA Report should provide a complete picture of the performance requirement. Following the initial review, the TNA WG will reach a decision point and select the appropriate way forward. During Step 1 the TNA WG will:

a. **Confirm the Target Audience.** The intent is to identify rank levels and the PE positions, including the organizational/command level for the positions within the NATO structure (Political/Strategic, Operational and Tactical), that may require E&IT. This step provides an initial description and should be documented as a point of reference for the follow on TNA WG activities. The description is refined as the E&IT requirement becomes more clearly understood and will be particularly useful during the SAT Design Phase. Consider:

(1) What is the expected level of experience as well as prior E&T of the target audience?

(2) Is the intended target audience drawn from a similar military branch, occupation background or area of specialization (e.g., Medical, Logistics, Combat Arms, Communications and Information Systems, Finance)?

(3) What are the expectations of Commander's regarding the proficiency of graduates?

(4) What level of autonomy is expected on the job (e.g., function with minimal guidance or supervision)?

(5) How many NATO personnel require this E&IT on an annual basis?[42]

b. **Confirm the TRA Performance/Task Statements.** The TRA Report should capture all the performance/task statements requiring E&IT. The intent is to review the TRA Report and verify this is the case. Where necessary the list of statements may be modified or further supported with additional performance/task statements and related sub-tasks. The TNA WG considers:

(1) Does the list of performance/task statements within the TRA Report capture the complete performance requirement for the previously identified target audience?

(2) Does each task statement capture a job performance action (a verb) and a clear result?

(3) Is the intended level of proficiency identified and understood[43]?

[42] The e-ITEP links to job description data in an effort to provide an estimate of the potential demand for E&IT; however, a systematic process for associating and linking the essential and desirable E&T with NCS/NFS JDs continues to evolve.
[43] Proficiency levels and key word indicators are provided in Annex G.

c. **Select a Course of Action.** At this point, the TNA WG determines if a Task Analysis is required. If the TRA appears to have captured the complete E&IT requirement it is possible to move to Step 3. If further analysis is required, the TRA performance/task statements should be documented and the proficiency level for each statement identified and coded using a Tracking Matrix. Documenting the performance/task statements will assist the DH in maintaining discipline alignment. Documenting the statements also provides an audit trail confirming the source of the task and this ensures the TRA Report performance/task statements remain linked, and accounted for, relative to other E&IT solutions. If new task statements are required, they should also identify the command level (Political/Strategic, Operational and Tactical) and the desired proficiency[44]. A description of the proficiency levels to support the development of task statements is provided in Annex G. The Task Statement Tracking Matrix is a locally generated form, an example is provided in Annex H. Ideally, all statements will:

(1) State a specific action using a key word and an object. A list of key words is provided in Annex G.

(2) Have a definite beginning and end.

(3) Be clearly definable, ideally observable and measurable.

(4) Have a specific purpose.

(5) Be an action that is performed in a relatively short period of time.

d. **Refine the Task List.** Ensure all the essential performance statements are identified and that they accurately define the expectations of the target audience in terms of what they are expected to do. Any new task statements that are added to this list should be assigned a distinct tracking number in order to capture them later as part of a list of proposed TRA amendments. TRA changes are also reviewed by the DH and RA and may be an item for discussion during the ADC.

[44] Similar tasks may be performed at the political, strategic, operational and tactical levels. During task analysis distinguishing the difference between the tasks performed at the different levels (Political, Strategic, Operational and Tactical) will be essential. When documenting the performance statements the use of colour is one method to distinguish the statements across the different levels.

STEP 2: ANALYSE TASKS

5-6. At this point, the performance/task statements developed during the previous step are examined and organized to illustrate relationships relative to a job and a broad duty area. A task analysis provides a structured and sequenced diagram of performance statements including specific tasks, subtasks and supporting task elements. Additional performance statements may be added in order to continue to provide clarity and illustrate the dependency and, if necessary, interdependencies of elements. The resulting diagram clearly illustrates the performance statements and this consists of tasks, sub-tasks and task elements (discrete actions) which most likely require some form of E&IT in order to be able to achieve desired performance. The result of a task analysis is illustrated in Figure 5-1. The task analysis process consists of the following steps:

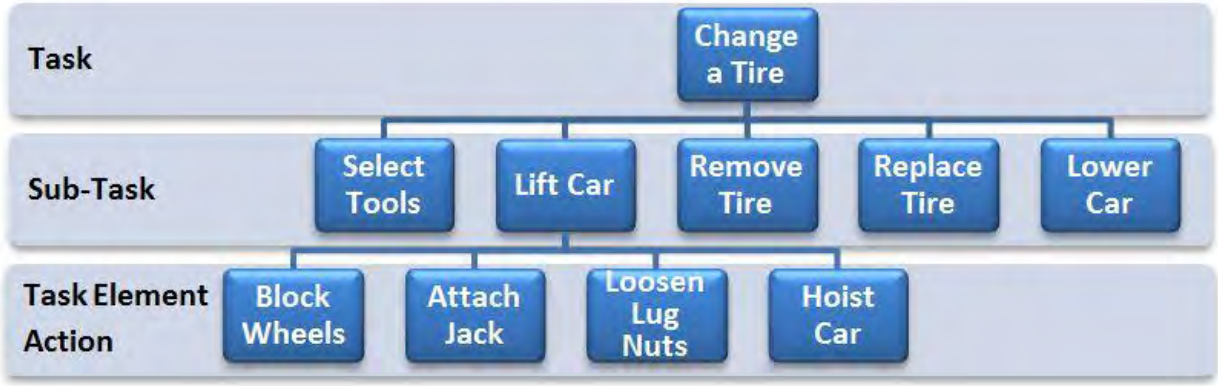

Figure 5-1 *Simplified Task Analysis*

a. **Select the Tasks that Require E&IT.** Some task statements generated to capture the complete picture of the performance requirement may not require E&IT in order to achieve the desired level of competence. Many tasks are often best learned on the job. At this point the acknowledged SMEs will review each statement generated and determine if formalized instruction is necessary. At the end of this process there will be a list of tasks which will likely require E&IT in some form. The “no train” statements may still be beneficial in the next step; however, at this point those which do not require E&IT can be identified. When selecting tasks to be included in E&IT, the complexity and the associated underlying cognitive activity should be considered. A decision guide to assist with selecting tasks for E&IT is provided in Figure 5-2. These considerations are based on the difficulty, importance and frequency of task performance (DIF Analysis). Ultimately, judgement will still be required and the following should be considered:

Figure 5-2 *DIF Analysis*

(1) Is the target audience already able to perform the task?

(2) What is the consequence or impact of an error?

(3) What is the consequence from not training this task?

(4) Could the task be better covered by pre-requisite instruction (via e-Learning)?

(5) What is the time between completion of E&IT and task performance? The longer the timeframe the more likely that there will be a decay of skills?

(6) Could a job performance aid or self-study packet be used in place of a course?

(7) Is the task better suited to On-Job-Training (OJT)?

b. **Structure Tasks.** This is the process of organizing tasks and sub-tasks in an order and sequence based on a relationship that captures performance. The performance may in turn be an action which is physical (overt and observable) or more cognitive in nature. The task analysis process is dynamic. A task analysis should highlight and identify dependency and a logical sequence. In some cases an interdependency of common skills may become apparent. There are automated support tools to assist with the activity and there are alternative forms to a task analysis. Regardless of approach, SME input is essential. The task analysis is intended to provide the structure to guide the writing of POs. A diagram of structured task statements may illustrate hierarchical and procedural relationships, such as Figure 5-3

or it may be more overlapping with interconnected dependencies such as in a concept map, illustrated in Figure 5-4. With procedures there is a definite start and end. There may also be decision points and subordinate processes that illustrate a critical path. Task analysis examples are provided in Annex I.

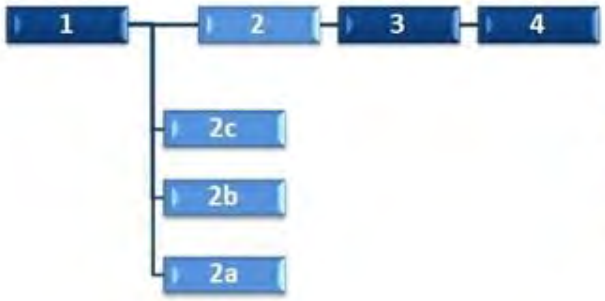

Figure 5-3 *Hierarchical and procedural*

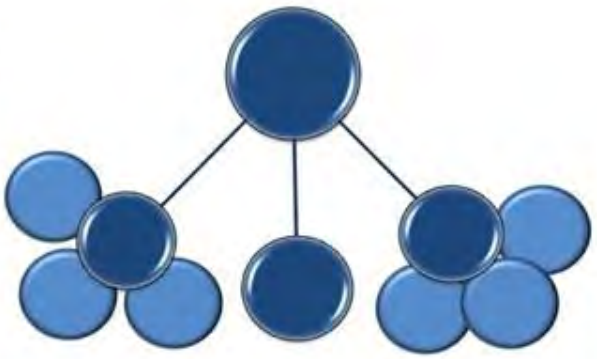

Figure 5-4 *Concept Map/Web Diagram*

STEP 3: WRITE PERFORMANCE OBJECTIVES (PO)[45]

5-7. POs specify, in precise terms, what an individual must be able to do in terms of job performance. Once the performance/task statements are refined, structured and sequenced, including the additional tasks, sub-tasks and other supporting elements (or discrete actions), they are logically grouped and consolidated into POs. A PO often represents a broad duty area and the PO includes a clear performance statement to represent this consolidation. In addition, a PO includes the conditions under which the performance is to be carried out and a standard which defines the proficiency level to which individuals are expected to achieve. Not all tasks, sub-tasks and task elements identified during the previous step will necessarily appear in the POs but they can help formulate the conditions and standards statements. Specific standards of performance may already be defined within existing documentation. PO standard statements should be linked to the references when possible. POs become the basis for RA and DH agreement regarding the specific outcome to be achieved as a result of an E&IT solution. Further guidance for writing POs, including example POs, is provided in Annex J. The elements of a PO are as follows:

a. **Performance Statement.** A clear, concise and precise statement representing a logical and complete part of the job function which is observable and measurable. The performance statement forms the first element of the PO. Performance statements are derived from the task statements identified during task analysis. A PO performance statement often represents a group of related tasks and activity. For example: “write a memorandum”, “write a military letter”, and “document minutes of a meeting” are all tasks which could be combined into: “prepare military correspondence”. The determining factors in grouping and combining tasks are the similarity and complexity of the skills required to perform each task.

[45] POs become the basis for external evaluation and determine if what was learned during a course has transferred to the job context. Additional detail concerning the link with external evaluation is provided in Chapter 9.

b. **Conditions.** Conditions provide context and describe the situation, under which the performance must be completed. Conditions affect how the job or function is done. These are based on the actual workplace or other presumed area of operation. This answers: when, where, and with what the tasks will be performed.

c. **Standards.** Standards describe how and how well the performance must be completed. The greater the specificity provided, the more valuable the contribution to the development of E&IT solutions. Clear, detailed and specific standard statements provide the scope and focus for E&IT; they also facilitate accurate assessment. In all instances, the proficiency level required is based on actual job performance requirements. Standards generally specify a product, a process or a combination of the two and include measures of completeness, soundness of judgement, accuracy, and/or speed.

STEP 4: REFINE TARGET AUDIENCE

5-8. This step also provides an opportunity for a quality check and is a verification of the intended audience. At this point, the intent is to ensure the POs, as defined, address the needs at the differing levels of the NATO organizational structure (Political, Strategic, Operational and Tactical). The ***performance statement***, the first element of a PO, may apply at the different levels; however, the conditions and standards may differentiate the performance based on the required proficiency and context. This review will determine if it is necessary to capture different POs based on the level within the NATO organizational/command structure and this will determine if there is a need for multiple E&IT solutions to address the needs of the different target audiences. In most cases training individuals together across the different organizational levels leads to a unity of effort. Finally, this step confirms required language proficiency, pre-requisite assumptions (education and/or specific occupation background/experience required) and anticipated rank levels.

STEP 5: FORMULATE GUIDANCE

5-9. With a clear picture of what the result of an E&IT solution is expected to achieve and the intended audience, it is now possible to provide additional guidance for the Design Phase activities which will follow. During this step the TNA WG will review Training Strategy options and provide a preliminary estimate concerning how the E&IT requirement will likely be resolved. This includes:

a. An identification of the proposed learning environment.

b. An estimate of the duration for a course.

c. Potential for alternative interventions including use of OJT, seminars and/or job aids.

d. An annual production estimate – the anticipated annual demand based on an estimate of the number of personnel to be trained.

e. Funding options. An identification of potential funding sources for developing new E&IT solutions, especially for emerging requirements, including common funding as well as other periodic Voluntary National Contribution Funding opportunities.

5-10. For most situations the learning environment falls into one of three delivery options:

a. **Residential Delivery.** This is mainly instructor led instruction and involves bringing students to a centralized location. A specific ETF may possess purpose-built facilities such as classrooms, labs and training areas.

b. **Distributed Delivery[46].** This involves taking a course to the students. Distributed delivery may be categorized as:

(1) E-Learning/Advanced Distributed Learning (ADL). This means of delivery infers that the instruction uses electronic and/or information technologies combined with methods of instruction which do not require the student to be present at a specific site and as a result the learning occurs at a distance. The E&IT solutions can involve the use of an array of communications and collaboration tools as well as virtual/online environments; they maybe self-directed (individual) programmed instructional packages or utilize real-time instructor collaboration and support.

(2) Mobile Education and Training Teams (METT). E&IT solutions which involve delivering courses in the workplace or at another alternative to the residential location.

c. **Blended Delivery.** A combination of the residential and distributed instruction options. The potential to reach large numbers seemingly anytime and anywhere while still leveraging the benefits of residential delivery makes the blended approach attractive.

5-11. Delivery tends to fall within the options listed; however, there are other political/strategic or practical factors which may influence the selection of an optimal Training Strategy, such as[47]:

a. Outsource delivery to a nation, a public/private institution (e.g., civilian university); or

b. Contract in expertise. Augment instructor capacity by hiring specialized instructional services for a specified period of time.

STEP 6: DOCUMENT THE RESULTS

5-12. This step is used to capture the results of the Analysis Phase. A record of proceedings is suggested in order to document the TNA WG decisions and methodology. The record of decisions may be included as part of the package which contains the two documents described below. Alternative formats for the Analysis Phase deliverables are acceptable. The intent is to ensure specific elements are addressed within the products. The two products are:

[46] Correspondence courses are another form of distributed delivery; however, technology enabled on-line or distance learning delivery, which is captured within ADL/e-Learning, has for the most part superseded “low-tech” delivery.
[47] OJT, internships and apprenticeships are alternative and highly effective experiential strategies for developing competence; however, these approaches have limited application in support of NATO E&T.

a. **Course Control Document I - Control Form.** The Control Form is a coversheet to a proposal for a new (or pre-existing) NATO E&IT solution. The coversheet is specific to a course. The Control Form serves as the basis of agreement for moving forward and formalizing an E&IT solution with a specific ETF. ***All NATO selected and approved E&IT solutions, including those which are already developed and in place, require a Control Form.*** The Control Form will identify the specific stakeholders concerned with managing a discipline and concerned with the definition and delivery of E&IT solutions. The sign offs acknowledge work is being undertaken and in some situations it infers obligations which should be annotated in respective NATO JDs (example: an External Course OPR appointment). The Control Form may also include various sign offs internal to the ETF. An example Control Form is provided in Annex K:

(1) **ETF Course OPR.** Identifies who is responsible for an existing or proposed E&IT solution within the ETF. The Course OPR could be the TNA WG Chair or have a different title (e.g., Course Director).

(2) **Quality Control.** The internal controls and sign offs within the chain of command of the ETF which will lead to institutionalising an E&IT solution.

(3) **Command.** ETF leadership. Formalizes the intent and commitment of the institution to move forward with a proposed NATO E&IT solution.

(4) **Other – External Course OPR.** The External Course OPR is included if the ETF delivering the E&IT solution required NCS support. HQ SACT/JFT will coordinate with the RA if the External Course OPR is not known.

(5) **Department Head.** Acknowledges the proposed E&IT solution is in alignment with a discipline TRA Report[48].

b. **Course Control Document II - Course Proposal.** The Course Proposal provides the foundation for a new E&IT solution and includes enough detail to identify where and how the solution fits within the discipline landscape. The Course Proposal form is in Annex L. The Course Proposal includes the following:

(1) **Requirement for a Course.** The rationale for a specific E&IT solution and this includes the background and history which served as the basis for creating a course.

(2) **Aim.** Provides the overall intent of the E&IT.

(3) **Performance Objectives.** Details the intended job performance outcomes to be addressed through an E&IT solution. Each PO includes a performance statement, the conditions and standard to be achieved. POs also specify the proficiency level and may include other additional details to support the design of E&IT solutions.

[48] The DH is in the lead for the TNA; however, a specific ETF may execute the task on behalf of a DH. Once the Control Form is uploaded within the ETOC HQ SACT staff will verify with the DH if the DH endorsement is not provided.

(4) **Target Audience.** This is a confirmation of the intended audience specifying who is eligible to enrol on the course, including the rank level, language proficiency and security clearance. The description may also include experience level, military occupation(s) or possibly a military specific branch affiliation which the E&IT solution is intended for.

(5) **Training Strategy.** A brief description concerning how the E&IT requirement will likely be resolved, including an estimate of the duration for a course or other alternative intervention.

5-13. The Analysis Phase concludes with a clear definition of the E&IT requirements and provides guidance for designing E&IT solutions. The Designated ETF submits the DH endorsed CCDs to HQ SACT/JFT through the ETOC to initiate the course certification process[49].

[49] Step 6 captures the essential and specific elements required for the certification of courses. See Certification of Courses (Chapter 2) for details pertaining to the review of existing courses which are uploaded into the ETOC. Additional support with ETOC is available through: eitephelp@act.nato.int

CHAPTER 6 - SAT: DESIGN PHASE

INTRODUCTION

6-1. **Purpose.** The purpose of the Design Phase is to create or, if a current solution exists, select an E&IT solution which will enable individuals to achieve the POs constructed in the Analysis Phase.

6-2. **Product.** At the conclusion of the Design Phase, an instructional strategy is generated which includes what content will be delivered, how the content will be delivered and, most important, how learning will be monitored and assessed. For new courses this strategy is outlined in the Course Control Document III - Programme of Classes and this is to be uploaded into the ETOC[50].

6-3. **Methodology.** The ETF generates the Course Control Document III - Programme of Classes and relies upon the support, creativity and expertise of a Design Team. The Design Team includes instructional staff (course director and faculty) and other content area experts as well as the support of an instructional design specialist to complete the NATO SAT definition stage. The final structure of content as well as the selection of methods and media is heavily influenced by the philosophical views of the Design Team and in particular beliefs concerning instruction and how individuals learn.

6-4. **Process.** The following steps are undertaken during the Design Phase and this builds upon the six steps which were started during the Analysis Phase. While the provision of specific steps appears prescriptive, the SAT within NATO is intended to be flexible and adaptive. The process described below is a logical and systematic means to generate Course Control Document III - Programme of Classes:

a. Step 7: Define Learner Characteristics.

b. Step 8: Conduct Instructional Analysis.

c. Step 9: Write Enabling/Learning Objectives[51].

d. Step 10: Prepare an Assessment Plan.

e. Step 11: Define Instructional Strategies.

f. Step 12: Specify Content and Guidance.

[50] See Footnote 38 for additional guidance concerning format and structures for courses and solutions which already exist and which may serve as a suitable alternative to CCD III.

[51] The term Enabling/Learning Objectives (ELOs) acknowledges the subtle difference which may be in place within national E&IT systems. Enabling/Learning Objectives may be referred to as, “Enabling Objectives” or “Learning Objectives”. They are considered synonymous and serve the purpose of providing the incremental steps which enable the essential learning required to achieve a broader, job focused, Performance Objective.

STEP 7: DEFINE LEARNER CHARACTERISTICS

6-5. For an E&IT solution to be effective and efficient, it must build upon what the prospective students can already do and what they know as well as provide a meaningful learning experience which motivates. In this step the target audience, defined earlier in the Analysis Phase, is revisited; however, the focus is now towards how the generalized characteristics of the target audience may affect learning. Considerations such as the size and location of the target audience may affect decisions concerning how the E&IT solution is delivered. The focus is usually on the following three areas:

a. **Subject-matter Competence.** Examining current subject-matter competence assists with identifying the start point for learning and it also identifies potential prior experience which could be leveraged during the conduct of E&IT.

b. **Preferred Training Strategy.** The demographic data, including the prospective student location(s), can influence the selection of the instructional environment. Is the target audience spread over a wide area? Consider the target audience age group and education level as well as the general attitude towards the use of computers and online learning options.

c. **Student Motivation, Attitudes and Aptitudes.** These are characteristics that can influence the selection of instructional strategies. The answers to the following questions will influence whether a more direct or controlled approach is required:

(1) What is the motivation level of the students?

(2) Is this E&IT required and does it have career implications?

(3) What is the general attitude towards learning?

(4) Does the target audience have common interests?

(5) What is their attitude towards the subject matter being taught?

(6) What is their language ability?

(7) What is their reading and writing ability (e.g., residential instruction) or if an indirect approach is appropriate (e.g., ADL/e-learning)?

STEP 8: CONDUCT INSTRUCTIONAL ANALYSIS

6-6. Instructional Analysis begins with an examination of the POs in order to identify all components and sub-components of the tasks that make up the PO, including supporting skills and knowledge elements as well as other attributes, such as attitudes. The components and the other elements may also be considered as individual nodes which will ultimately be connected to create a representative picture of the course content. The aim is to determine everything a student needs to learn. The components, sub-components and supporting elements will in turn be grouped into supporting objectives, and these will be place in a sequence suitable for learning. The Design Team generates the elements through discussion and brainstorming and they may also be extrapolated from reference material, including: doctrine, procedural manuals, directives, lessons learned and personal experience. Indicators of attitudes that affect a PO include safety and security considerations and dimensions of

character and leadership (i.e. elements of judgement, ethical decision making and the care/concern for others).

6-7. During the Instructional Analysis, the skills and knowledge elements are broken out into their sub-components when it is anticipated that separate demonstrations (of skills and attitudes) or explanations (of knowledge or attitudes) will be useful. This deconstruction process follows along similar processes to that of a Task Analysis and stops when the identified elements are at the level of the target audience's entry level abilities (baseline skill/knowledge/attitudes). The intent is to identify the core content that students will need to internalize and master in order to achieve the POs identified during the Analysis Phase. An example of an Instructional Analysis is outlined in Figure 6-1.

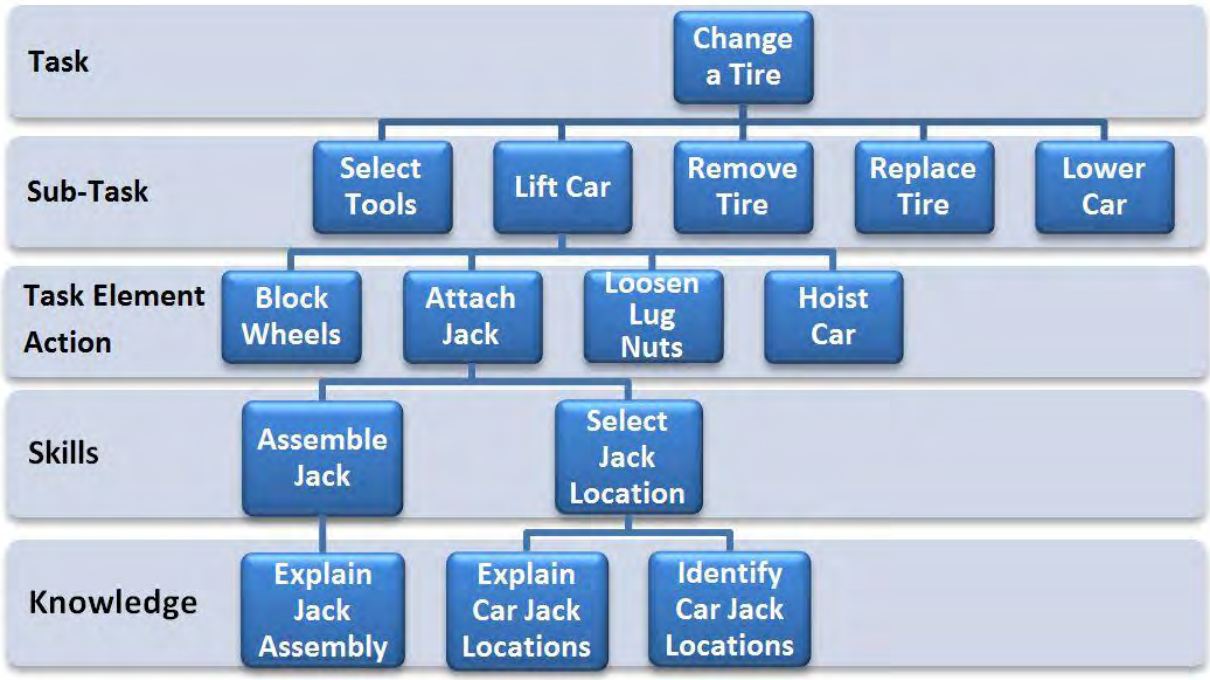

Figure 6-1 *Instructional Analysis*

6-8. The Instructional Analysis is complete once the main points (the teaching points) associated with the supporting (enabling) elements have been identified. Teaching points are the discrete steps, facts or concepts that will require a separate demonstration or explanation.

STEP 9: WRITE ENABLING/LEARNING OBJECTIVES (ELO)[52]

6-9. ELOs identify a segment of instruction which constitutes a major step to enable PO achievement. ELOs define what the individual will learn and are the basis for providing evidence of student progress. In addition to writing the ELOs, this step also includes grouping and sequencing the supporting teaching points.[53]

6-10. ELOs often correspond to the major components (tasks and sub-tasks) identified when deconstructing POs during Step 8 – Instructional Analysis; however, an ELO may also be structured based on the supporting knowledge, skills, and attitude (KSA) elements. A well written ELO provides the basis for student assessment and this is generally the basis for the decision to develop an ELO. The ELOs will also guide the sequencing of instruction and other decisions which follow concerning an instructional strategy. The KSA elements, which support tasks, are categorized into specific learning domains and structured to reflect different levels of learning required during a course. KSA descriptors are summarized in Table 6-1 and additional detail concerning the application of the levels within the related learning domains is provided in Annex M.

Supporting Element (Domain)	Definition	Examples
Knowledge (Cognitive)	The theoretical and practical understanding of subject matter required to perform work. It is the information required to effectively accomplish a step, task, or job. This involves the cognitive processing of information (storing, recalling and interpreting) and its subsequent application,	• explain the format of the operations order; and • describe the steps for clearing a building.
Skill (Psychomotor)	An organized and coordinated pattern of mental and/or physical activity that becomes refined through repetition and practice.	• clear a building. • organize inventory. • refinish furniture.
Attitude (Affective)	An opinion or conviction which underlies or motivates behaviour. A pre-disposition to behave in certain ways and generally believed to be developed over time and largely shaped by an environment. Attitude is composed of cognitive (belief), affective (emotional), and behavioural (action) components.	• safety consciousness. • cultural sensitivity. • ethical conduct.

Table 6-1 *Abilities: skills, knowledge and attitude*

6-11. ELOs may also take shape as a result of clustering related supporting skill and knowledge components which are common across a PO or POs. This most commonly occurs when it is necessary to create a base of shared knowledge or foundational skills which would otherwise be common across several ELOs. It may be necessary to go through several iterations during the Instructional Analysis to establish a satisfactory structure and ultimately define the ELOs and content for the E&IT solution.

6-12. ELOs, like POs, are composed of three essential parts: a performance statement, conditions statement, and a standard. The difference between the two types of objectives is the focus; the PO is intended to articulate job performance whereas ELOs are situated within

[52] An Enabling/Learning Objective may also be referred to as a "Learning Objectives" or "Enabling Objectives".
[53] Teaching points become the content for an E&IT solution. Given the iterative nature of this activity capturing the teaching points during this step will provide greater clarity and assist with the grouping and sequencing ELOs.

the learning context and describe what an individual will have learned following instruction. An example of an ELO is provided in Annex N. The elements of an ELO are as follows:

a. **Performance Statement.** A clear, concise and precise statement representing a logical and complete segment of what is to be learned in order to achieve a PO. This statement provides an indication of the learning domain and the level of learning to be achieved.

b. **Conditions.** Conditions statements describe the context in which learning will occur. This answers: when, where, and with what the learning will occur.

c. **Standards.** Standards define the criteria for acceptable performance by a student within the E&IT environment. Standards may be stated in terms of a performance sequence, completeness, accuracy, time and/or other qualitative characteristics. The standard identifies the depth and level of learning the students must achieve when they perform under the specified conditions. Without a standard, it is difficult to determine when students have achieved the required level of learning. When appropriate, the standards may also include the criteria for attitudinal indicators/traits (e.g., safety consciousness) given it is rare for an ELO to be constructed which specifically addresses attitudes without some element of skill and knowledge.

6-13. Once the ELOs have been identified and defined the supporting teaching points can be grouped and sequenced with the ELOs. The ELOs and the teaching points guide the remaining Design Phase activity, including the identification of the activities required to achieve the intended levels of learning. Teaching points become the core content for the E&IT solution. The teaching points generally fall within one of five content categories and the categories affect the sequencing of the teaching points and the selection of an instructional method. The five content categories are:

a. **Facts.** Specific and unique data or information. This includes the basic elements students must know in order to be acquainted with a discipline and this includes definitions and terminology.

b. **Concepts.** A classification of items, words, or ideas. The interrelationship among the basic elements within a larger structure enables them to function together.

c. **Processes.** A flow of events, actions or activities that detail how things work as opposed to how to do things. There are normally two types: business processes (or work flows) and technical processes that describe how things work in equipment or nature.

d. **Procedures.** A series of step-by-step actions and decisions that range in levels of complexity and result in the achievement of a task. There are two types of procedural actions and these are linear and branched.

e. **Principles.** Guidelines, rules, and parameters that govern outcomes, decisions. This includes what should be done as well as what should not be done. Principles allow one to make predictions and draw implications. Given an effect, one can infer the cause of phenomena. Principles are the basic building blocks of causal and theoretical models.

6-14. Instructional Analysis provided a visual representation to support the grouping and associating of the teaching points. Once the ELOs are defined linking the teaching points becomes fairly straightforward. The teaching points should be structured into logical units and organized into a sequence that will guide learning. A complete picture of the hierarchy of objectives and teaching points is provided in Figure 6-2. The following are suggested teaching point structures:

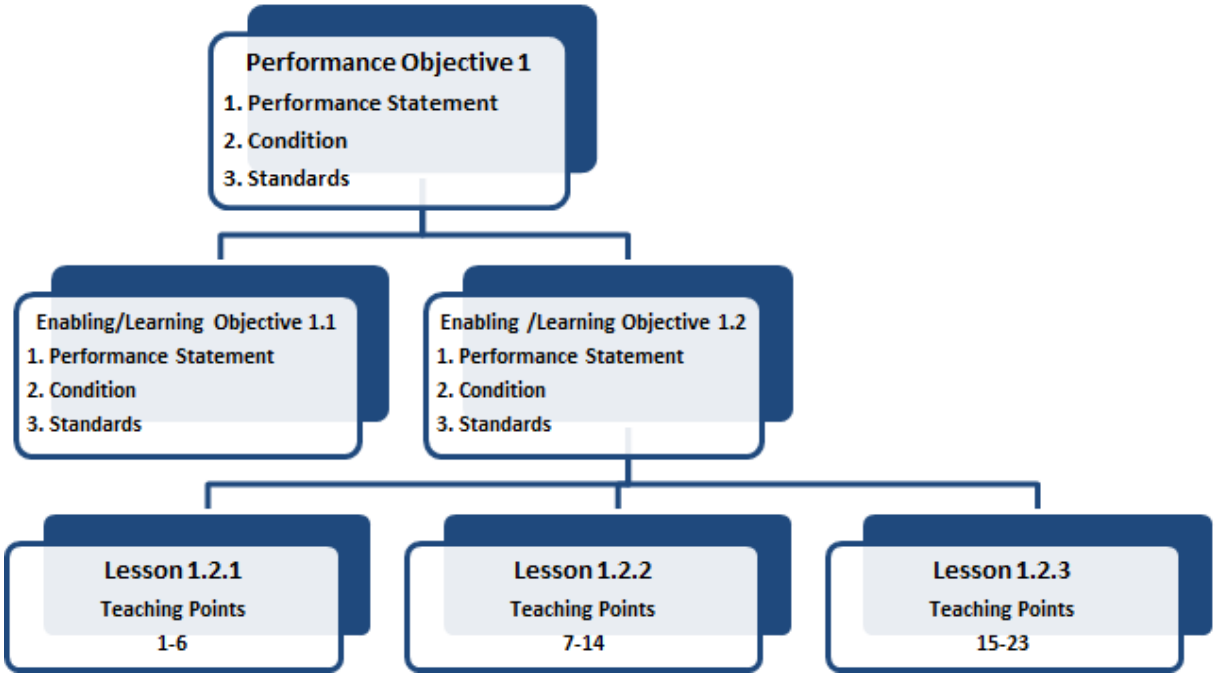

Figure 6-2 *Hierarchy of objectives*

a. **Whole to Part.** Present the result or product first, and then present the process for each step.

b. **Part to Whole.** Present the process or steps first, then the final result or product.

c. **Simple-to-Complex.** Present concepts that the target audience may be familiar with or that are less complicated, then build on these concepts by presenting newer or more difficult ones.

d. **Complex-to-Simple.** Actions are sequenced in terms of decreasing complexity; each associated with the larger complex structure of which it is a part.

e. **Chronological.** Present concepts or ideas in the order they occur over time, such as with historical events.

f. **Sequential.** Present procedures or steps in the order they are performed on the job.

g. **Cause and Effect.** Actions are sequenced to demonstrate cause and affect relationships. This sequencing is appropriate for relationships that individuals must commit to long-term memory.

h. **Critical Order.** Actions are sequenced in the order of relative importance, whether from the least important to the most or vice versa. Teaching points favouring this technique are those that generally require important actions. Example: "*Clear the weapon*" would be sequenced prior to: "*Disassemble the weapon*".

6-15. A complete ELO will identify a type of learning (e.g., skill versus knowledge) and define the level of learning to be achieved through an E&IT solution. Levels of learning are expressed in terms of a Depth of Knowledge (DoK) and skill[54]. DoK is aligned with the job performance proficiency levels that were outlined previously in Annex G. A matrix illustrating the alignment of DoK and job performance proficiency levels is provided in Annex O. This matrix is used during future steps to make design decisions and may also be useful when assessing the fit between an NATO E&IT requirement and existing E&IT solutions.

STEP 10: PREPARE AN ASSESSMENT PLAN

6-16. The Assessment Plan builds from the ELOs and establishes the overall strategy for student evaluation. The Assessment Plan specifies how achievement of the POs will be assessed and how the student progress will be monitored. Student progress is based on the assessment of the ELOs. The Assessment Plan for a specific E&IT solution will also take into consideration broader Standard Operating Procedures (SOPs) and related instructions within the ETF (e.g. policies for plagiarism, attendance, progress review/appeals, and personal conduct).

6-17. The Assessment Plan should be performance oriented and, to the maximum extent possible, emphasize practical testing in order to determine achievement. Practical tests require the student to apply skills and knowledge and perform in realistic settings. Theory tests can be an effective supplement to practical tests. Theory tests are generally in written form (e.g., short answer) and employ sampling; Sampling involves selecting representative elements from a larger field of knowledge. Oral interaction/examination may also be an effective means of student assessment.

6-18. An Assessment Plan provides a guide for the construction of assessment instruments during the Development Phase. The considerations for the Assessment Plan are captured and explained in Table 6-2.

[54] Depth of Knowledge (DoK) refers to the level of skill and knowledge to be learned as a result of an E&IT solution. DoK is intended to be an inclusive term covering all three learning domains. The DoK levels are aligned with job performance proficiency levels.

Element	Purpose	How	When	Resources	Coordination Instructions
Identifies what is to be assessed relative to the PO /ELO structures.	What is being assessed in terms of content and the level of proficiency? Is this formative or summative assessment?	How will this be assessed: practical test, group project or a syndicate exercise, assignment, a theory/written test, and/or student presentation?	When in the sequence of ELOs and the overall schedule should this happen?	Identify the specific resources required?	Determines what is considered success and the impact of not being successful.

Table 6-2 *Assessment Plan Template*

STEP 11: DEFINE INSTRUCTIONAL STRATEGIES

6-19. **Overview.** The instructional strategy is the combination of instructional methods, media and the environment within which they are used to conduct instruction; the interconnections are illustrated in Figure 6-3. During this step the three elements are examined in order to determine how the content will be delivered and how the optimal conditions for learning are created[55]. One of the more familiar examples of an instructional strategy is a lecture (method), led by an instructor with supporting material (the medium/media) in a classroom (environment). The key to good design comes in the form of meaningful activities more so than content, and in particular:

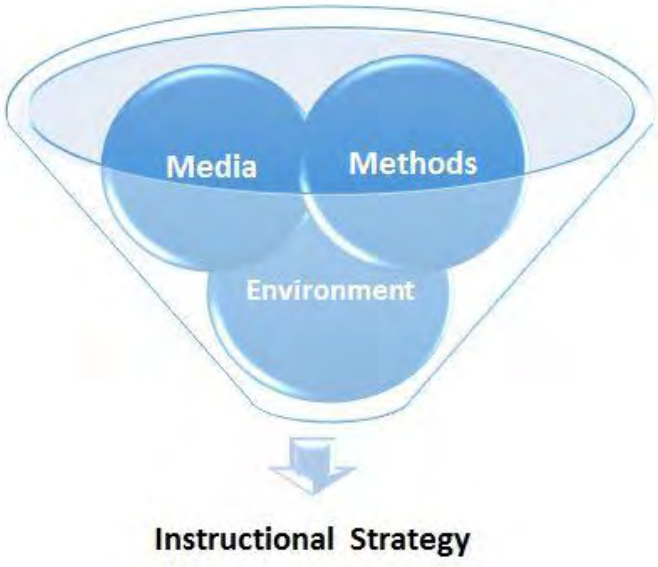

Figure 6-3 *Instructional Strategy Elements*

[55] Clarification: Instructional strategy vice learning strategy. Instructional strategy is a preferred term given it defines the environment where learning takes place including the activities, events and media; these are the conditions external to the learner. Learning, on the other hand, is dependent on individuals and learning is an outcome, the result of instruction. A Design Team creates the conditions for learning through the structure, sequence and the planning of events; however, it doesn't "design learning" given this is an internal, individual process.

a. Ensuring the instructional experience is realistic, relevant and ideally problem-centred.

b. Embedding opportunities for interaction, participation and active engagement during the learning process.

6-20. **Verify the Environment.** At the conclusion of the Analysis Phase, a broad Training Strategy is outlined within Course Control Document II. The Training Strategy proposes the environment and overall approach to achieve the POs. The Training Strategy is an expression of intent. At this point, the proposed environment is reviewed and the feasibility assessed[56]. When an ADL/e-Learning environment is proposed the selection of methods and media can often require greater sophistication, examination and planning. The ELOs and the assessment strategy defined earlier in the Design Phase (Steps 9 and 10) will remain integral to guiding instructional strategy decisions regardless of instruction being delivered on-line or through a more traditional residential course. HQ SACT/JFT provides further guidance to support the governance, development and use of ADL/e-Learning[57,58].

6-21. **Identify and Select Methods.** The term method refers to a type of learning activity or instructional event, such as a practical demonstration, case study or guided discussion. There are a wide variety of instructional methods and many factors influence decision making. A description of suggested instructional methods and their application guidelines is provided in Annex P. The aim is to identify methods that have a high probability of promoting learning and that support the transfer of what is learned back to the work/operational environment. Method selection is primarily influenced by the ELO. Other considerations include the course content and structure as well as the assessment plan and the philosophical considerations regarding the learning process. The philosophical considerations will influence the social dynamics and the level of control over the learning environment[59]. The grouping of teaching points as well as suitability for, and size of, the intended audience also influence method selection. A method selection matrix based on the ELO, and in particular the type and the intended level of learning to be achieved, is provided in Annex Q. The following considerations should be factored into the overall instructional strategy and method selection:

a. What will interest, engage and motivate students?

[56] Feasibility is confirmed by the institution providing the E&IT solution. There are several factors which determine feasibility. The importance and relevance of the considerations are determined by the institution supporting the E&IT solution and the associated chain of command. The considerations include organizational and student readiness, the business case as well as the appropriateness and suitability of the content.
[57] Guidelines for the procurement, development, implementation and evaluation of Advanced Distributed Learning. Version 1.0. NATO Training Group - Task Group for Individual Training and Education Developments (IT& ED), December 2014. Additional training supporting the design, development and evaluation of ADL/e-Learning courseware is available through NSO.
[58] See: ACT Directive 075-011 and the e-Learning Concept (Release 4) dated 28 January 2014. Prepared, maintained and distributed by HQ SACT/DCOS JFT. For technical advice: adl@act.nato.int
[59] Depending on the ELO it may be appropriate to provide students with opportunities to assume greater control and influence within the learning environment and provide opportunities for individuals to learn from each other. The characteristics of the target audience will determine the degree to which a learner centred approach would be appropriate. The characteristics of the target audience, reviewed at the start of the Design Phase (Step 7), capture subject matter competence and experience levels which could be leveraged during instruction. Leveraging student experiences encourages active engagement and assists with overcoming potential resistance and can have a positive effect for student motivation.

b. Does the target audience have previously acquired skills/knowledge and/or other experiences which could be leveraged?

c. Are there opportunities for reflection embedded in the course overall? A well designed course provides opportunities for reflection, such as allocating time for a post exercise debrief. Reflection in the context of learning can be described as linking ideas and constructing meaning from experiences be they personal or otherwise. Individuals do not learn from direct experiences on their own. The learning results from reflecting on the experiences.

d. Are there operational scenarios, lessons learned, incident reports or stories which could be leveraged and used to promote higher levels of learning through more active engagement? This in turn could influence decisions to use specific imagery and video.

6-22. **Identify and Select Media.** Media are the delivery vehicles (the means, instrument, or material) used to provide the sensory stimulus to a student to heighten the potential for learning. Although the selection of instructional methods and media is discussed individually, they cannot be considered separately. Proper media ensures that information is presented to the students by the most effective and cost-efficient means possible. In an instructional situation, there is a message to be communicated. Video, web pages, diagrams and graphics, electronic slides and printed material are examples of media used to directly communicate or otherwise support the message to be delivered.

6-23. To be instructionally effective, a medium – or combination of media – must complement the method and ideally elicit a response. In general, terms the media selected should:

a. Provide a degree of realism and encourage practical application.

b. Provide feedback to the student.

c. Encourage interaction between students and the instructor, or the support system should there be no instructor in the loop.

d. Align with the assessment of students in accordance with the assessment plan.

STEP 12: SPECIFY CONTENT AND GUIDANCE

6-24. A clear description of the instructional strategy completes the Design Phase and concludes the definition stage within the NATO SAT. The details are documented in the Course Control Document III - Programme of Classes. At this point, a security classification can be confirmed. The Course Control Document III details are subsequently uploaded into the ETOC and this will lead to the activation of a NATO recognized E&IT solution. This step will also capture the description of the intended audience, specifying who is eligible to enrol on the course. The results of the previous steps in the Design Phase are documented and the following additional detail is captured:

a. **Time Allocation.** An estimate of the time required to satisfy each of the ELOs based on the methods and media selected as well as the additional administration and support time to be captured in an individual course schedule/timetable.

b. **References.** A list of the reference material in particular NATO doctrine, procedural manuals, directives and documented lessons learned which are applicable to a given ELO.

c. **Resource Requirements.** A list of the facilities, personnel, equipment and materials essential to successfully implement the overall instructional strategy as well as the materials which are required during individual events or lessons.

d. **Limitations.** A description of limitations which prevent the completion of a PO. These limitations often effect student evaluation and are a result of resource constraints or other limiting factors based on conditions and the desired standard to be achieved. Proficiency requires experience hence it is reasonable to assume the standard of a PO will require a period of on-job-experience in order to achieve the desired levels.

e. **Remarks**. Any additional comments that further clarify the intent of the design decisions.

6-25. The results of the Design Phase, and in particular the details in the Course Control Document III, are used by the DH to assess the alignment (the degree of fit) between the proposed E&IT solution and NATO's E&IT requirements[60]. Example formats for the Course Control Document III - Programme of Classes are provided in Annex R. Alternative formats are acceptable. The main concern is the content contained within the document.

[60] See Certification of Courses (Chapter 2) for details pertaining to the review of existing courses which are uploaded into the ETOC.

CHAPTER 7 - SAT: DEVELOPMENT PHASE

INTRODUCTION

7-1. **Purpose.** The purpose of the Development Phase is to produce, or otherwise procure, the materials and/or services that are essential to support the delivery of an E&IT solution and ultimately satisfy the objectives described in the CCDs.

7-2. **Product.** The Development Phase results with the production of courseware which is defined during the Design Phase and is described in the CCDs. The courseware products will vary in their complexity and sophistication based on the instructional strategy. Products can include student hand-outs, electronic presentations and master lesson plans through to more sophisticated programmed ADL/e-learning applications, training devices and simulators.

7-3. **Methodology[61].** The execution of the Development Phase will vary based on the required products and the level of resident expertise. In some situations the Development Phase will require a specific management plan to provide the necessary controls and oversight. A project management plan is essential for Development Phase initiatives involving the procurement of specialized services for courseware production as well as the procurement of training aids, devices and equipment (e.g., procuring simulators, developing ADL solutions).

7-4. **Process.** There are five major milestones to be achieved during the Development Phase. The supporting activity will often occur concurrently, as opposed to a specific sequence of steps as described in earlier SAT phases. The Development Phase should; however, conclude with the conduct of trials. The following are the major milestones to be achieved in the Development Phase:

a. Procure/Produce Instructional Materials.

b. Procure/Produce Assessment Instruments.

c. Develop an Optimum Schedule/Timetable.

d. Prepare Instructional Staff/Faculty Plan.

e. Conduct Trials.

[61] At this point the decisions made concerning the instructional strategy will influence the development methodology. The Development Phase for ADL/e-Learning solutions will rely on a different approach to the path taken for more traditional - residential courseware. E-Learning generally requires specialized design, development as well as programming expertise in order to produce more detailed design treatments and build the products to satisfy the ELOs defined during the NATO SAT Design Phase. The methodology is dynamic (not linear) and often relies on a prototyping approach. The additional considerations and supporting work products can include: style guides and scripted storyboards, which outline course navigation and flow, along with plans for student interaction, possible collaboration and communications. During ADL/e-Learning development visual elements and other embedded multi-media objects to be incorporated into courseware also may be specified. Additional training supporting the design, development and evaluation of ADL/e-Learning courseware is available through NSO.

PROCURE / PRODUCE INSTRUCTIONAL MATERIALS

7-5. Instructional materials for residential delivery include the lesson plans, training aids (including real equipment) and other resources essential to guide and support learning. The materials also include the references as well as potential job aids, templates and checklists that, in addition to supporting the conduct of E&IT, will also facilitate the transfer of learning to the workplace. Appropriate materials may be procured, or may already exist or be available from alternative sources, including other ETFs; however, more often a significant amount of in-house effort will be required to fully develop an E&IT solution. Excluding the procurement of major equipment, training devices and simulators, the main materials to be developed generally include:

a. **Student Manuals and Handouts.** These are the reference handbooks and support materials used and retained by the students, ideally in an electronic format. The contents vary but the intent is to support learning and encourage the transfer of learning to the workplace.

b. **Instructor/Course Director Guides.** These are the procedures and specific instructions for use by the instructor/faculty and Course Directors during the planning, preparation, execution as well as close out of specific E&IT activities. The guide links to relevant institutional guidance, such as unit SOPs. The Instructor Guide may also include instructions for individual learning events and lessons, emphasizing coordinating instructions and potentially the key teaching points. When applicable, guidance concerning guest speakers/lecturers may be included in order to ensure proper coordination and that the objectives of the specific activity are achieved. An Instructor/Course Director Guide is intended to provide the definitive coordinating instructions essential to planning, preparation, execution and closeout of a course but should avoid duplicating existing SOPs. Instructor Guides are even more essential for ADL/e-Learning solutions. The use of electronic formats provides greater flexibility and adaptability.

c. **Master Lesson Plans.** Master lesson plans are generally used to provide detailed guidance and the required supporting materials (e.g., electronic presentations) in order to minimize the preparation time for the instructor cadre. The degree of detail varies based on institutional practices and preferences. Master Lesson Plans serve as detailed guides and, where appropriate, provide the opportunity for individual faculty/instructors to personalize.

PROCURE / PRODUCE ASSESSMENT INSTRUMENTS

7-6. The Assessment Plan, developed during the SAT Design Phase, identifies the assessment instruments to be constructed. The primary purpose for assessment is to determine if learning has occurred and the POs have been satisfied. Assessment also provides insight regarding student progress. These forms of assessment are often framed as formative assessment and summative assessment. The Assessment Plan will identify instruments and these generally fall into two broad categories:

a. **Performance-Based.** A performance-based assessment is a test that closely replicates a job context potentially using the same equipment, resources, setting, or circumstances that the individual would encounter. Performance based testing tends to increase the transfer of learning. Limitations of time, staff, and resources often constrain the degree of realism in practical, performance-based, testing. Normally, a

performance checklist is used to record the level of achievement. The test will require specific instructions for both the instructor and the student. Presentations, demonstrations, a written assessment and/or report which reflect the job context are examples of a performance-based test.

b. **Knowledge (Theory) Based.** Knowledge-based assessment can be in an oral or written form. This method of assessment does not necessarily evaluate an individual's ability to perform the required job skills; however, it does provide an indication if the individual has the required foundation, the know-how, to perform. Although the emphasis is on practical testing, theory tests may be effective supplements to the performance based approach. The advantage of knowledge-based tests is the potential for a high degree of objectivity in scoring and the capability of measuring a large number of facts, concepts and principles in a relatively short time. Knowledge tests are typically constructed of the follow types of items:

(1) Multiple-choice,

(2) Matching,

(3) True-false,

(4) Essay,

(5) Short answer, and

(6) Completion (fill-in-the-blank).

c. There are many variations to knowledge-based tests which can provide authentic assessment, including:

(1) **Out of Class (Take-home) Assignments.** This less formalized form of assessment allows individuals to use references and other resources.

(2) **Open-Book Tests.** This type of assessment can reduce stress, but may decrease the student's motivation to study or internalize information.

(3) **Paired/Group Testing.** This allows students to work in pairs or at a syndicate/group level. This is a collaborative form of assessment.

(4) **Individual Portfolios.** This allows students to demonstrate how they have achieved the objectives through submission of work products.

7-7. Assessment instruments generally consist of three parts:

a. **Administrative Instructions.** The guidance necessary to establish required conditions for assessment to occur and this includes:

(1) **Instructions for an Administrator.** This outlines what is required prior to conducting student assessment (the set-up) and the instructions to be followed during the assessment event as well as the administrative routine afterwards.

(2) **Instructions for the Student.** These instructions set expectations concerning behaviour during the assessment process and inform student of what to expect during the test situation, and what must be done to succeed.

(3) **Instructors for the Proxy or Scorer.** These instructions outline how to score the test, interpret results and make a judgement which will determine the result.

b. **Assessment Instrument.** The actual test or practical checklist which is used to gather data regarding student achievement.

c. **Scoring Guide.** The guidance or instrument (answer key) used to interpret results and make the judgement concerning student achievement and success.

DEVELOP AN OPTIMUM SCHEDULE / TIMETABLE

7-8. The optimum schedule is a plan of instructional activities intended to achieve the best possible learning conditions. The sequence of instruction is important to the success of any E&IT solution. Schedules will also have to factor in administrative requirements and other standard briefings including security briefs as part of the institutional routine. The ADL/e-Learning solutions will also have to factor in student availability across multiple time zones in addition to potential maintenance interruptions which may block access to the online Learning Management System (LMS). A well-planned schedule has the following characteristics:

a. **Progression.** The schedule brings students to the required standard through a logical sequence of events and activities, this requires pre-requisite knowledge prior to skills development and, where it is applicable, a step by step flow based on the performance sequence.

b. **Variety.** Wherever possible, without being at cross-purposes, POs and ELOs should be presented in a variety of sequences and using a variety in instructional methods in order to maintain interest and avoid fatigue.

c. **Tempo.** The tempo of instruction should build through periods of intense activity and be followed by periods of relative relaxation while taking into consideration a balance of the natural energy rhythms impacting **Fatigue and Effectiveness** as well as opportunities for reflection.

d. **Efficiency.** An efficient schedule is one which makes optimum use of facilities, resources and opportunities in both the support and the delivery of an E&IT solution. An example would be leveraging a guest speaker across multiple courses simultaneously as well as having a leading expert address different courses during a single visit to an ETF.

e. **Flexibility.** The provision of spare periods addresses unforeseen circumstances. Without this reserve a course may run into difficulty. The addition of one spare training day for every thirty scheduled training days is reasonable planning estimate.

7-9. There are additional factors to be considered when sequencing activities for optimum effect. The influence of these additional factors will vary depending on the broader intent of the E&IT solution; however, in general, the considerations are as follows:

a. **Saturation.** The point reached when the rate of instruction is such that what is to be learned is neither internalized nor retained.

b. **Fatigue and Effectiveness.** Scheduling activity in accordance with the natural physical, mental and behavioural rhythms which can affect the body. Known as the circadian rhythms, these are changes that generally follow a 24-hour cycle, responding primarily to light and darkness and the influence of energy levels and wakefulness. Suggested guidelines to address fatigue and effectiveness are as follows:

(1) Schedule the more mentally challenging work in the morning.

(2) Schedule the more interesting work, along with opportunities for active engagement, in the afternoon.

PREPARE INSTRUCTIONAL STAFF / FACULTY

7-10. Preparing the instructor staff/faculty addresses organizational readiness and is part of the essential steps for preparing for implementation. Staff will generally need to be familiarized with the necessary coordination and administrative routines (booking accommodations, resource management and funding routine) while instructors must be able to deliver the E&IT solution effectively, be it online or within a more traditional setting once it is developed. While instructor expertise is often dependent upon individual skill level and experience, formalizing an instructor development plan closes the readiness gap and establishes the conditions for success. The following guidance is provided; however, the specifics will need to be adapted to suit each ETF:

a. Confirm instructors have the subject matter expertise.

b. Arrange opportunities to develop individual presentation and instructional skills as well as how to manage the instructional setting.

c. Provide new instructors with initial indoctrination and a transition period in order to understand the administrative functions of an instructor as well as understand how best to function within the instructional environment. Where appropriate, provide opportunities for observing the instructional environment prior to delivering E&IT for the first time.

d. Provide instructors sufficient time to personally prepare their own detailed lesson plans for a course.

e. Encourage reflection by having instructors self-assess their performance and continuing to have opportunities to observe others.

f. Monitor instructors, providing constructive feedback concerning instructor delivery techniques and how to improve learning conditions. Monitoring involves formalized periods of observation.

g. Review other feedback. Encourage instructors to receive feedback from peers and review the responses provided by students during a course.

7-11. Instructor preparation is part of a broader faculty and staff development framework. This process is initiated each time new personnel join an ETF. For the instructor cadre this is an on-going process throughout the period of employment and there are three main elements to support this:

a. **Initial Orientation.** This begins prior to arrival with a welcome package and continues through to a unit specific orientation programme which may potentially include familiarization training to support local procedures, work flow and unique web/software applications.

b. **Initial Skills Development.** This promotes integration within the ETF and includes instructor development courses as well as any additional E&IT that is required in accordance with a job description. During this phase there are opportunities to observe and integrate within the instructor cadre and formalized observation periods – instructor supervisor monitoring sessions.

c. **Continuity Training.** Implementing additional professional development in support of a continuous learning culture and in order to maintain expertise. This is supported by formalized observation periods and potentially the opportunity to conduct peer observations.

CONDUCT TRIALS

7-12. Trials are conducted in order to identify design flaws and other deficiencies or problems with the planned instruction so that revisions and improvements can be made. Trials are conducted prior to institutionalizing a course and making significant investments in major equipment, simulators or other training devices to support an E&IT solution. Trials will also serve to refine further the resource requirements as well as the time required for conducting instruction. Trials consist of repetitive cycles of development, testing, and revision until evidence shows that the E&IT solution is effective. As the trials continue the necessary changes are made until the courseware is complete and ready for implementation. The level and number of reviews will depend on several factors including:

a. Sophistication of the instruction/courseware.

b. Consequence of error resulting from poor or incorrect instruction.

c. The remaining investment necessary to finalize an E&IT solution.

7-13. Trials may be conducted on three levels and this reflects the transition from initial (pre-) production internal testing through to external pilot-testing with members of the target audience. The trials to be considered during the Development Phase are:

a. **Internal Reviews.** The purpose is primarily to identify content inaccuracies, instructional design weaknesses and potential resource shortfalls. Internal reviews are conducted throughout the Development Phase. SMEs make sure the content being provided is technically accurate and the depth of coverage is adequate. Curriculum developers ensure that the material follows sound instructional principles and that the

methods and activities are well defined and appropriate to the content for the specified target audience. During internal review the following can be resolved:

(1) Lack of agreement between the ELOs and course content.

(2) Inaccuracies in content and subject matter. There are many ways to review the subject matter for accuracy, completeness, and quality. The bottom line is to cross-check the content with the data sources and references including NATO technical orders, regulations, directives, and checklists.

(3) Incomplete or weaknesses in materials including the details and instructions supporting scenarios, case studies, practical exercises as well as media elements including visual mock-ups, storyboards and scripts.

(4) Incomplete or weaknesses in assessment instruments including the validity, reliability, objectivity, comprehensiveness of the assessment instruments and the details in the instructions.

b. **Individual and Small-Group Try-outs.** The purpose is to confirm decisions made during the Design Phase and verify the quality of the instructional materials. During the individual and small-group try-outs the curriculum developer tests the materials based on small segments or specific learning “events” as they are developed with a sample of the intended audience. The try-outs serve to confirm assumptions made about the intended audience, in particular the prerequisite knowledge, time allocations and clarity of assignment and instructions.

c. **Pilot Serial (Field Trial).** The purpose is to assess the effectiveness of the developed course and assess the quality of lesson guidance and course material. The pilot serial is conducted like a regular serial/iteration; however, the course is monitored closely by appropriate staff and additional data is gathered; feedback from instructors and students is essential. The number of field trails is based on need and is influenced by the results of an initial trial and the complexity of the instruction. Observations from a field trial can be very broad and include:

(1) Incomplete or weaknesses in the schedule/timetable including a lack of continuity in the transition of instructional events and activity including the accuracy of the time allocations.

(2) Inadequate methods or weaknesses in how content is conveyed.

(3) Inadequate detail in the content.

(4) Clarity of instructions for the instructors as well as supporting course activities/events and student assessment.

(5) Confusion with test items.

(6) Verify the class size is appropriate.

(7) Clarity with the administration procedures and support coordination within the institution.

CHAPTER 8 - SAT: IMPLEMENTATION PHASE

INTRODUCTION

8-1. **Purpose.** The purpose of the Implementation Phase is to put into operation the management, support and administrative functions necessary to successfully conduct E&IT solutions.

8-2. **Product.** The Implementation Phase results with the production of qualified graduates.

8-3. **Methodology.** The Implementation Phase addresses the planning, preparation, execution as well as close out (after action) activities that support a specific course. Prior to conducting E&IT the solution must be integrated into ETF operations and this is captured within the ETF's overall QMS.

8-4. **Process.** The following are the major milestones to be achieved during the Implementation Phase:

a. Integrate an E&IT solution[62].

b. Conduct E&IT.

INTEGRATE AN E&IT SOLUTION

8-5. The specific procedures for integrating an E&IT solution within unit operations will vary from ETF to ETF. The integration of an E&IT solution requires clear policy, procedures and work instructions which establish the routines within the ETF. The policy and procedures should define how a new, or revised, E&IT solution is to be integrated with the core QMS processes within an ETF. This is intended to align and harmonize the management, administration and support functions with the overall main effort: the production of qualified graduates. In situations where an ETF may be multifaceted and have other roles (e.g., NATO COE) the links between E&T and the other functions should be captured and transparent (e.g., links between E&IT delivery and doctrine development and / or lessons learned).

8-6. **Management.** Management, including personnel, resource and general management concerns the practice of directing and controlling all the processes effecting ETF operations. This begins with a well-communicated plan for the institution, which includes a commitment to quality that is based on a mission and vision which is aligned with NATO priorities and the expectations of major stakeholders. Key performance indicators are also identified and captured in order to report progress. Management activities address:

a. Recruiting, supervising, motivating and developing staff and faculty in accordance with clearly defined roles and responsibilities.

b. Controlling expenditures, managing budgets and contract management (as applicable).

[62] Integrating a solution is captured here as part of the NATO SAT Implementation Phase; however, it is likely that many of the considerations and procedures were addressed as part of the Pilot Serial which was run during the Development Phase.

c. Establishing E&IT production targets, allocating resources and monitoring progress against targets.

d. Communicating effectively internally and external with stakeholders including through designated feedback systems.

e. Leveraging information systems and institutional knowledge management. Collect, analyse and efficiently use relevant information for the effective management and conduct of E&IT and related activities.

f. Assessing, projecting and planning for future facility requirements, infrastructure, equipment and related maintenance as well as logistics support.

g. Planning and implementing organizational improvement projects including related initiatives to support staff and students in line with the overall mission.

h. Identifying and solving problems and managing change.

8-7. **Administration.** Administration is a very broad area and integration issues addresses three areas:

a. **Course Administration.** Defining the routine tasks which support personnel, and in particular students, which must be addressed as a course is integrated into operations. This involves policy and processes for student registration, course fee payments, generating student course lists, the arrival in-routine and processing, generating certificates, dispatching graduates (out-clearance) and records management (e.g., managing and archiving student and course related files).

b. **Institutional Administration.** This concerns the administrative instructions and activity which has a broader management impact, including the distribution of information internally as well as the information to be shared publicly, visit protocols and this includes support for guest speakers as well as, depending on the ETF, security and force protection measures.

c. **E&IT Management Administration.** Through these administrative processes the support to unit operations are activated and often the data essential to tracking key performance indicators is generated. Depending on circumstance, E&IT management administration addresses:

(1) **Production Administration**[63]. Ensuring the E&IT solution is assigned appropriate course codes and integrated within the appropriate planning processes and training management systems (e.g., e-ITEP) in order to forecast demand, schedule courses, match bids with the available opportunities (or slots)

[63] As E&IT solutions are integrated and become operationalized it will be essential to ensure applicable NATO PE/CE JDs are updated to reflect the essential and desirable qualifications and, as applicable, the related course codes. The ADC will be one forum to track progress in this area.

and, as required, de-conflict internally with an overall master schedule for the ETF[64].

(2) **Maintaining Documentation and Courseware.** Maintaining a system of record for administering CCDs and course materials, including version controls and, when applicable, copyright permissions. At this point the Course Control Document III, uploaded during the Design Phase, is revised based on Pilot Serial feedback and DH input.

8-8. **Support.** Support addresses the essential functions, activities, and tasks necessary to sustain ETF operations and the conduct of E&IT. The essential infrastructure assets and facilities including a training area, laboratories, classrooms, syndicate rooms, fitness facilities and other infrastructure are most likely in place along with the core logistics support functions including: supply, transportation, lodging and meals. As part of implementing a course the links must be established to the support processes in order to ensure it is in place when it comes time to conduct E&IT. The resource and support requirements are often unique for each course and the materials, supplies, equipment and training aids are initially captured as E&IT solutions are developed through the NATO SAT process.

CONDUCT OF E&IT

8-9. The conduct of E&IT requires a finished product to be in place and the course to be integrated within the management, administration and support functions of the ETFs QMS. Generating graduates through the execution of E&IT is the centre of gravity; however, there are other activities which are part of a systematic approach. A Course Director is generally appointed, in accordance with specific Terms of Reference, to administer and manage a course from planning through to close out[65]. The activities supporting the conduct of E&IT are captured in Figure 8-1, and these form an overall planning timeline which can vary from course to course and are often unique to a particular ETF. The following activities are considered as part of conducting E&IT:

a. Course Planning.

b. Course Preparation.

c. Course Execution.

d. Course Close Out.

[64] Within NATO the administration activity ensures proper course codes and reference numbers are assigned. This permits the integration of information with other systems including the NATO Automated Personnel Management System for NATO job descriptions and with e-PRIME in order to support partner requirements.

[65] The Course Director may be a position or an appointment depending on the ETF and may also be known as a Senior Instructor, Lead Instructor and/or Course Manager.

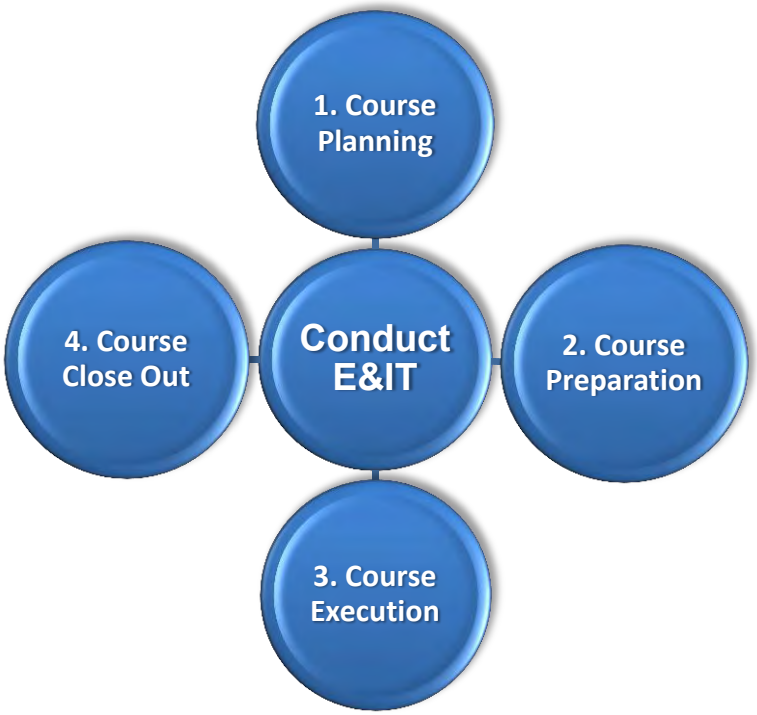

Figure 8-1 *Conducting E&IT*

8-10. **Course Planning.** Course planning generally takes place 4-12 months prior to execution and occurs once the production planning process has defined the ETFs overall master schedule. Many of these considerations are addressed as part of administrative processes (e.g., matching bids with course vacancies); however, course specific issues concern:

a. **Course Readiness.** Ensuring the observations raised during the pilot serial, or a recent review of the course, are addressed.

b. **Feasibility.** Verifying the planned Instructional Strategy is feasibility. A course may be ready; however, other conditions may exist which compromise the planned mode of delivery, be it:

(1) Residential,

(2) Distributed (includes ADL/e-Learning and METT), or

(3) Blended.

c. **Course Information.** Confirm the accuracy of course information packages to be distributed to students and made available publically.

d. I**nstructor Support**

(1) Verify there are adequate instructors to support execution in accordance with the planned schedule.

(2) Initiate contact, invite and confirm guest speakers and other stakeholders (as required).

8-11. **Course Preparation.** Course preparation generally takes place 6-8 weeks prior to course execution and occurs once it is confirmed that a course will go forward as scheduled and that it will be delivered in accordance with mode identified previously during course planning. Course preparation primarily involves internal coordination:

a. Reconciling final bid selection. Confirms the course list and transportation as well as lodging are arranged.

b. Finalizing course supplies and distributing joining instructions and pre-course materials (as required).

c. Scheduling and coordinating course support (e.g., transportation, facility booking).

d. Finalizing the course schedule/timetable including the sequence of events, instructor assignments and programme instructor monitoring.

e. Distribute outlines, potentially previous presentations, to invited Guest Speakers and other SMEs supporting course execution. It is essential that those involved appreciate and understand the specific objectives and topics their contribution is intended to address.

f. For the distributed and blended delivery modes, this can also include shipping courseware to an alternate location (for an METT) as well as setting up a course sessions within an on-line LMS (for ADL/e-Learning).

8-12. **Course Execution.** Course execution concerns the actual running of a course and this begins with pre-course preparation, generally one week prior to the start of a course, and continues through to student graduation and the close out of a course. During execution, instruction is delivered and student assessment is conducted as planned. This activity is completed in accordance with ETF policies, directives and specific work instructions supporting the ETF's QMS. The ETF should have prescribed SOPs to address a wide range of issues and they generally regulate the daily routine (hours of operation), security protocols, student assessment procedures and possibly complaint resolution. The additional considerations for course execution, which may also have separate SOPs, include the following:

a. Collecting course/tuition fees (as applicable).

b. Finalizing set-up and preparation of the environment, be it a physical structure or online.

c. Completing pre-course preparations with instructional staff and ensuring debriefs ("hot washes") are conducted, as necessary, throughout the course in order to monitor course execution and address any concerns which may arise.

d. Preparing and debriefing Guest Speakers and other SMEs supporting course execution. Note: Guest Speakers/SME presentations should be reviewed in advance in

order to ensure continuity and fit with the flow of instruction and adjustments made prior to delivery.

e. Finalizing and administering instructor and student feedback forms.

f. Monitoring instruction. Execute plans for observing and debriefing the instructional events in order to assess delivery techniques, adherence to the intent of the CCDs and lesson plans as well as the effectiveness of course design. Course design issues include time allocation and methods of instruction. The intent is to improve instruction.

8-13. **Course Close Out.** Course close out involves activities which commence at the conclusion of course execution and typically continue for one week afterwards finalizing any outstanding administrative and support issues. Course close out culminates with an immediate after action report (AAR) which summarizes impressions concerning the conduct of the course. Was the course aim achieved? The AAR captures issues that may have an impact on future courses related to course planning, preparation and execution. The issues identified may impact the quality of E&IT solutions including administration and support concerns. The AAR also captures student demographic data and this is used to confirm the course is being delivered to the intended target audience. The AAR becomes an essential input into the Evaluation Phase.

CHAPTER 9 - SAT: EVALUATION PHASE

INTRODUCTION

9-1. **Purpose.** The purpose of the Evaluation Phase is to assess the efficiency, effectiveness and affordability of an E&IT solution and determine how it can be conducted better within an ETF which seeks to continuously improve.

9-2. **Product.** The Evaluation Phase results with improved E&IT solutions.

9-3. **Methodology.** The NATO SAT Evaluation Phase consists of a systematic quality review process and feedback loops which supports continuous improvement[66]. ETFs that are institutionally accredited by HQ SACT/JFT embed end of course assessments along with other institutional review processes as part of a QMS. These processes formalize the Evaluation Phase and ensure that there is an opportunity for continuous improvement and innovation. The results of the Evaluation Phase provide an indication of the fit between E&IT requirements and specific solutions; the results of the Evaluation Phase are a valuable input for the related ADC in order to confirm continuing suitability.

9-4. **Process.** There are two distinct processes supporting the Evaluation Phase and they are:

a. ¨Post course reviews, which focus on judgements pertaining to a specific E&IT solution. It is the process of gathering and analysing data from inside and outside the E&IT environment in order to determine how well E&IT was conducted and how well graduates are prepared for their job.

b. Institutional reviews, which focus on the institution and provides for a periodic review of quality management overall.

CONDUCT POST COURSE REVIEW (PCR)

9-5. The PCR is a structured and systematic process which involves collecting and analysing both quantitative and qualitative data in order to assess the quality (effectiveness, efficiency and affordability) of an E&IT solution and improve results. There are two distinct elements to a PCR, as highlighted in Figure 9-1. The initial PCR involves an internal evaluation and this is a report that builds from the observations outlined in the AAR which is compiled immediately following each course. This report should identify the areas of a course that require improvement along with an action plan to bring about improvements. The results of an internal evaluation may influence the need for an external evaluation. External evaluation is a follow-up process which occurs after graduates have had a period of time to apply acquired skills within the job/operational context. The period of time varies based on the skills/knowledge acquired and the job context; however, it generally occurs within six months. The PCR process is adapted to fit within the QMS of an ETF[67]. The details concerning the two distinct elements are as follows:

[66] The NATO SAT Evaluation Phase includes secondary cycles of review which are integrated within the Design and Development Phases of the NATO SAT model and these are applied as new solutions are defined and delivered. See Figure 4-2.

[67] Example: The AAR and internal evaluation PCR may be combined. Regardless of approach, it is essential that the process is clearly defined.

Figure 9-1 *Post Course Review – Data Sources*

a. **Internal Evaluation.** The internal evaluation PCR concentrates on feedback and E&IT management administration data captured from within the ETF. The primary focus is to assess the reactions and perceptions to a recently conducted course and verification that learning has occurred[68]. There are many data sources which support internal evaluation and a sample is illustrated in Figure 9-2. The scope of internal evaluation can include course monitoring, which can assess overall course alignment as well as include instructor monitoring. Further details supporting course monitoring are provided in Annex S. Instructor feedback, and this can include observations provided by Guest Speakers, is another valuable data source. Instructor feedback can highlight administrative and logistic support issues in addition to other course conduct concerns impacting quality. Internal evaluation is an essential component of an effective ETF QMS and this will normally, at a minimum, address the following elements:

[68] As outlined in the Implementation Phase (Chapter 7), the conduct of E&IT includes: Course Planning, Course Preparation, Course Execution as well as Course Close Out.

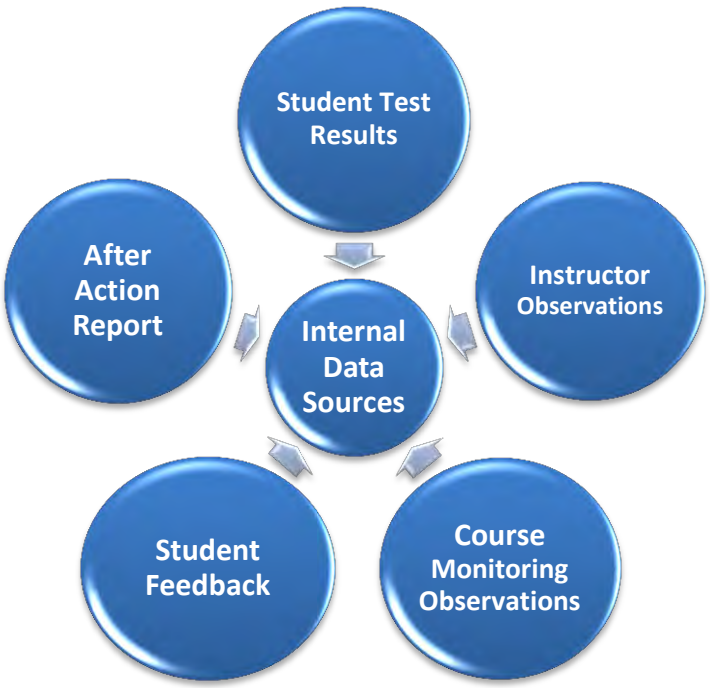

Figure 9-2 *Post Course Review – Internal Data Sources*

(1) **Student Reaction.** The reaction of students during a course can provide an indication of their motivation along with their overall level of satisfaction. This data can be used to make inferences regarding the design and delivery of instruction including the products of the SAT Development Phase. There is not one specific approach to take when gathering student feedback. The approach will depend on what is appropriate for the target audience and their experience level. Feedback can be sought at the conclusion of a course, once students have had the opportunity to reflect on the entire experience, or throughout the execution of a course. Feedback can also be captured using a combination of both approaches. Where appropriate, graduates can offer an assessment of the importance or value a course may contribute to their current or future job. In general, the input is sought during a course and occurs at the conclusion of a meaningful segment of instruction. For ease of analysis, specific quality indicators and a consistent ordinal rating scale is used. Indicators attempt verify if the desirable conditions for learning have been established given this can have an impact on student motivation. Example indicators to consider are:

(a) **Time Allocation.** Indicates if the amount of time allocated to this event was appropriate.

(b) **Relevance.** Indicates the degree to which the content is made applicable to the job.

(c) **Confidence.** Indicates the degree of confidence an individual has in applying what was learned (or presented) back at their job, should the opportunity present itself.

(d) **Adequacy.** Indicates the level of detail and depth that the subject matter was covered.

(e) **Clarity.** Indicates how well and individual understood the subject matter. Were explanations clear?

(f) **Quality of Materials.** Indicates the quality of materials used during the session. Were the materials provided useful?

(g) **Pacing.** Indicates if the tempo and rate of the flow of instruction was appropriate.

b. **Learning.** This documents the quantitative (production) results of the course and confirms that learning has taken place. A course is considered effective to the extent that the students have successfully satisfied the POs. Summative assessments confirm that the POs have been satisfied. The assessment plan for a course is formulated during the NATO SAT Design Phase (Step 10) and this also maps out how learning progress is monitored (formative assessment). Results from both formative and summative assessments may be used to identify potential concerns with course design and development as well as how it was implemented. Results may also identify weaknesses in student selection (e.g., did students meet the pre-requisites?). The priorities for future course monitoring can be influenced by the results from formative and summative assessment. The reliability and validity of tests used during a course provides the foundation for effective evaluation of student performance and learning. Both the reliability and validity of a test should be verified in order to confirm the appropriateness of the test as an accurate measure of instructional effectiveness. Test items should undergo considerable scrutiny during the trials step within the SAT Development Phase. Additional test item analysis techniques can be applied following implementation and details are provided in Annex T.

c. **External Evaluation.** The external - PCR concentrates on observations and feedback from the field of operations. The primary focus is to assess the degree to which what was learned during the course has transferred to on-the-job performance and achieved results. The results of an external evaluation feed back into the NATO SAT Analysis Phase, as highlighted in Figure 9-3. The data gathered is used to determine whether the initial E&IT requirement has been satisfied through the E&IT solution that was conducted during the SAT Implementation Phase. The E&IT requirement is captured in the POs defined during the SAT Analysis Phase. External evaluation is carried out after graduates have completed a course and have had the opportunity to apply what they have learned within the job/operational context. The

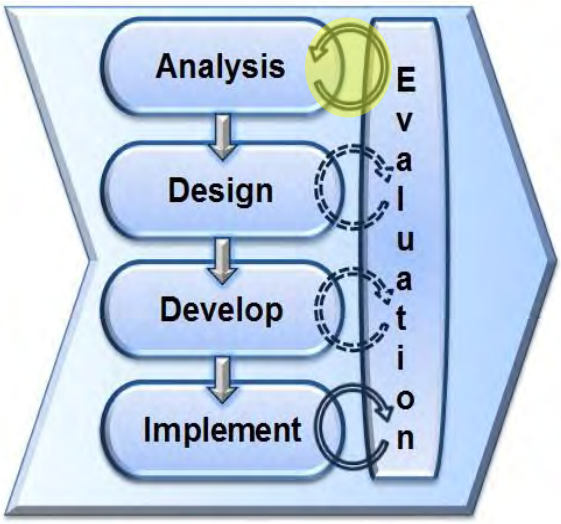

Figure 9-3 *NATO SAT*

Figure 9-4 *Post Course Review – External Data*

subtle but significant nuance for effective external evaluations is to avoid having graduates reflect directly upon their course experiences – this feedback is best gathered during internal evaluations. The focus is on a graduate's ability to perform specific tasks. There are many data sources which may be selected to support external evaluation and a sample is illustrated in Figure 9-4. One of the more common, and efficient, data gathering methods is a survey. Through an external evaluation survey feedback is provided by the graduates and possibly their supervisors directly from the field. For advanced level courses, the feedback generally comes directly from graduates. Effective external evaluation data is based on the performance statements captured within a PO and feedback is provided pertaining to the relevance and application within the job context[69]. Each PO is reviewed by a survey respondent relative to a series of quality indicators. The data gathered is subsequently analysed in order to determine if the right person, is being trained the right things and to the required level[70]. Example indicators include:

(1) I**mportance.** How important is the proper execution of the performance statement to the graduate's success on the job?

[69] It may be necessary to refine and add to the list of performance statements. A lot will depend on how well the POs were defined during the Analysis Phase.
[70] Results are shared internally as well as with the DH and RA at the ADC.

(2) **Relevance.** Is the performance statement applicable to a graduate's job. Is this something they do or could do if the situation presents itself?

(3) **Confidence.** Is the graduate confident in their ability to execute the performance statement, should they be required to?

(4) **Adequacy.** Do graduates feel they are adequately prepared to execute the performance statement?

CONDUCT INSTITUTIONAL REVIEW

9-6. The Institutional Review is a self-assessment of overall organizational performance by leadership. The focus is an analysis of the institutions key performance indicators with the emphasis on the core E&T mission. Institutional Review is an organizational internal check – a quality management instrument supporting a CIP. Depending upon the ETF, an Institutional Review should be conducted annually[71]. The review examines E&IT relying on qualitative and quantitative data as well as, when applicable, financial performance. In general, the intent of the Institutional Review is to ensure institutional processes are aligned and determine the following:

a. Is the organization delivering the right courses to the right people?

b. Are the courses of desired quality (effective, efficient and affordable)?

c. Are courses sustainable and financially viable?

d. Are the results consistent with near term and longer term organizational plans?

9-7. The annual QA Report results from the Institutional Review and is an essential element of an accredited ETF's QMS. A review of courses is central to these proceedings and this will concurrently lead to an assessment of the ETFs:

a. Policy and procedures.

b. Staff/Faculty development.

c. Information systems and knowledge management.

d. Learning resources and student support.

e. Contributions to NATO.

[71] Chapter 3 provides further detail concerning quality management, CIP (internal/external checks) and the related ETF institutional accreditation process.

ANNEX A TO
Bi-SCD 075-007
DATED 10 SEP 15

ABBREVIATIONS

AAR	After Action Report
ACO	Allied Command Operations
ACOS	Assistant Chief of Staff
ACT	Allied Command Transformation
ADC	Annual Discipline Conference
ADL	Advanced Distributed Learning
ADDIE	Analysis, Design, Development, Implementation and Evaluation
APMS	Automated Personnel Management System
Bi-SC	Bi-Strategic Command
Bi-SCD	Bi-Strategic Commands Directive
BRSG	Bi-SC Requirements Steering Group
C2	Command and Control
CCD	Course Control Document
CE	Crisis Establishment
CIP	Continuous Improvement Process
CMC	Chairman of the Military Committee
COE	Centre of Excellence
Course OPR	Course Officer of Primary Responsibility
CT&E	Collective Training & Exercises
DCOS	Deputy Chief of Staff
DAP	Discipline Alignment Plan
DH	Department Head
DIF	Difficulty – Importance – Frequency
DOTMLPFI	Doctrine, Organization, (Education and) Training, Material, Leadership, Personnel, Facilities and Interoperability
E&IT	Education and Individual Training
E&T	Education and Training
e-ITEP	Electronic Individual Training and Education Programme
e-Learning	Electronic Learning
ELO	Enabling/Learning Objective
e-PRIME	electronic Partnership Real-Time Information Management and Exchange System
ETEE	Education, Training, Exercise and Evaluation
ETF	Education and Training Facility
ETOC	Education and Training Opportunities Catalogue
HQ	Headquarters
HQ SACT	Headquarters Supreme Allied Commander Transformation
IMS	International Military Staff
IS	International Staff
ISD	Instructional System Design
ITEP	Individual Training and Education Programme
JD	Job Description
JFC	Joint Force Command

JFT	Joint Force Trainer
KLT	Key Leader Training
LI	Lessons Identified
LIVEX	Live Exercise
LL	Lessons Learned
LMS	Learning Management System
LOA	Level of Ambition
MC	Military Committee
METT	Mobile Education & Training Team
MoU	Memorandum of Understanding
MPD	Military Partnership Directorate
MTEP	Military Training and Exercise Programme
NAC	North Atlantic Council
NCS	NATO Command Structure
NCO	Non-commissioned Officer
NDPP	NATO Defence Planning Process
NETF	NATO Education and Training Facility
NFS	NATO Force Structure
NITEC	NATO Individual Training and Education Conference
NLR	National Liaison Representative (at HQ SACT)
NNE	Non-NATO Entity
NRF	NATO Response Force
NSIP	NATO Security Investment Programme
NTEC	NATO Training and Exercise Conference
NTG TG IT&ED	NATO Training Group – Task Group Individual Training and Education Developments
NTI	(Multi)National Training Institution
OCE	Officer Conducting the Exercise
ODE	Officer Directing the Exercise
OJT	On–Job–Training
OPR	Officer of Primary Responsibility
OSE	Officer Scheduling the Exercise
PCR	Post Course Review
PCM	Partnership Cooperation Menu
PE	Peacetime Establishment
PfP	Partnership for Peace
PNLR	Partner National Liaison Representative at HQ SACT
POC	Point Of Contact
PO	Performance Objective
PTEC	Partnership Training and Education Centre
QA	Quality Assurance
QC	Quality Control
QM	Quality Management
QMS	Quality Management System
RAD	Rapid Analysis and Design
RA	Requirements Authority
RPPB	(NATO) Resource Policy and Planning Board
SACEUR	Supreme Allied Commander Europe
SACT	Supreme Allied Commander Transformation
SAGE	SACEUR’s Annual Guidance on Education, Training,

	Exercise and Evaluation
SAT	Systems Approach to Training
SHAPE	Supreme Headquarters Allied Powers Europe
SME	Subject Matter Expert
SOP	Standard Operating Procedure
SSC	Single Service Command
STP	Strategic Training Plan
TA	Target Audience
TAA	Target Audience Analysis
ToE	Team of Experts
TNA	Training Needs Analysis
TRA	Training Requirements Analysis
TSC	Training Synchronization Conference
WG	Working Group

ANNEX B TO
Bi-SCD 075-007
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GLOSSARY

Abilities – the capacity, or talent to perform skills (the cognitive/practical know how) and to apply knowledge in order to solve problems and fulfil tasks successfully. They are divided into cognitive abilities (logic, intuitive and creative thinking) and practical abilities (coordination and use of methods, material, tools and instruments).

Accreditation – the process resulting in rrecognition that an institution has met standards established by an external body/agency.

Advanced Distributed Learning (ADL) – an interactive, outcomes-focused approach to education, training, and performance-aiding that blends standards-based Distributed Learning. Within NATO, this means of delivery infers that the instruction uses electronic and/or information technologies combined with methods of instruction which do not require the student to be present at a specific site and as a result the learning occurs at a distance.

Affective Domain – a classification system for learning objectives focused on attitudes and values. The Affective Domain taxonomy specifies five levels to include: receive, respond, value, organization and characterization.

Aptitude – a natural ability to acquire and utilize specific skills and/or knowledge.

Aptitude Test – a measure of abilities that are assumed to be relevant to future performance in a specific type of skill or an area of achievement.

Assessment – The process of estimating the capabilities and performance of organizations, individuals, materiel or systems (AAP-06, 2014). Within education and individual training it is the process of measuring and documenting knowledge, skills, attitudes, and beliefs.

Assessment Strategy – defines an overarching approach to assessment for a course/segment and the supporting rationale for the approach. It must also include the consequences of failure of the course/segment.

Asynchronous Learning (Training) – is considered to be any learning event which is delivered after the original live event. Indicates a learning event where the interaction is delayed over time, such as a correspondence course or a threaded discussion, message board, used in online applications. (NTG TG IT&ED)

Attitude – a deeply held opinion or conviction which underlies and motivates human behaviour and performance.

Benchmark – a standard against which an organization can assess its own performance. Such a standard may come from inside or outside the organization. Benchmarks are sometimes considered to represent “best/better practice”. (NTG TG IT&ED)

Blended Learning – is considered to be an appropriate mix of traditional learning and ADL/e-learning methods and media.

Certification – the process of officially recognizing that organizations, individuals, materiel or systems meet defined standards or criteria. (AAP-06, 2014)

Cognitive Domain – a classification system for learning objectives focused on knowledge and thinking skills. The Cognitive Domain taxonomy specifies six levels to include: remembering, understanding/comprehension, application, analysis, synthesis and evaluation.

Collective Training – procedural drills and practical application of doctrine, plans and procedures to acquire and maintain collective tactical, operational and strategic capabilities.

Competence – ability to perform a particular skill or range of skills to a prescribed standard under prescribed conditions. (NTG TG IT&ED)

Competency – a behavioural indicator of competence, this includes the set of knowledge, skills, abilities or other characteristics which may vary among individuals that contributes to effective performance. (NTG TG IT&ED)

Content – the material provided during instructional programmes and this is primarily captured in teaching points, the singular element or step in a procedure for performing a job or task. Content will generally fall into one of five categories: facts, concepts, processes, procedures and principles.

Course – planned, sequenced and structured learning activities based on objectives, which stem from E&IT requirements, for a clearly identified audience. See para 4-15 for further detail.

Course Control Documents (CCDs) – a set of documents used to define a NATO E&IT solution based on an E&IT requirement. Alternative formats include: Programme of Instruction, Qualification Standard, Training Plan, Curriculum and Syllabus.

Courseware – the instructional package/educational material comprising presentation materials, instructional aids, tests, textbooks, software, documentation and other media resources necessary for the student to achieve the course learning objectives supporting an E&IT solution.

Criteria – a property or characteristic by which the quality of something (a product/result or individual/group performance) may be judged. Criteria are indicators of success that are linked to a standard. The development of criteria provides the evaluator with specific measures to indicate whether a standard has been achieved.

Curriculum – the combination of strategies and learning employed in an attempt to fulfil specific learning objectives of an educational institution or training unit. Also see syllabus. (NTG TG IT&ED)

Depth of Knowledge (DoK) – refers to the level of learning to be achieved as a result of an E&IT solution. DoK is an inclusive term addressing the Cognitive Domain

(Knowledge elements) as well as the Psychomotor Domain (Skill elements) and, when appropriate, the Affective Domain (Attitude/Values elements).

Difficulty – Importance – Frequency Analysis (DIF Analysis) – is a method of analysing job information through the Difficulty, Importance and Frequency of tasks within the job, with the aim of enabling decisions to be made regarding the priority and/or necessity of the training. (NTG TG IT&ED)

Distributed Training (DT) – See **Advanced Distributed Learning**.

Department Head (DH) – an appointment within NATOs Global Programming Governance Structure responsible for the translation of E&T requirements into E&T solutions and for the coordination of the solutions. Specific roles and responsibilities can include the following:

a. Collaborating and coordinating the definition and delivery of E&T solutions with ETFs.

b. Leading the TNAs required to fill E&T gaps identified in a TRA report.

c. Compiling an E&T programme to meet E&T requirements.

d. Assisting DCOS JFT with the assessment of proposed E&T solutions.

e. Leading and conducting the ADC.

f. Developing and submitting once a year a DAP.

g. Participating in programming boards in order to align production requirements with programmed E&T solutions.

h. Within means and capabilities, provide an analysis of related Lessons Identified, to include exercises and operations.

i. Within means and capabilities, support individual and collective NATO-led training with SMEs and/or other advice at exercises and pre-deployment training events.

j. Within means and capabilities, support the NATO Officers Conducting the Exercise (OCEs) in the planning and conduct of collective training and exercises.

Discipline – a NATO approved body of knowledge and skills that outlines an existing, or evolving education and training need.

Education – education is the systematic instruction of individuals that will enhance their knowledge and skills, and develop competencies. Education provides a base of knowledge and intellectual skills upon which information can be correctly interpreted and sound judgement exercised. It is the developmental activity enabling individuals to make a reasonable response to an unpredictable situation (mindset).

Education and Individual Training (E&IT) – comprises the structured activities that develop the skills, knowledge and attributes required in the performance of assigned duties and upon which information can be correctly interpreted and sound judgement applied (and exercised).

Education and Individual Training Solution – see **Course**.

Education and Training Activity – see **NATO Education and Training Activity**.

Education and Training Programme – see **NATO Education and Training Programme**.

e-Learning (electronic learning) – refers to training, education, coaching and course content that is delivered digitally. It is normally delivered through a network or the Internet but it may also be delivered via CD-ROM. (NTG TG IT&ED)

Enabling/Learning Objective (ELO) – is a principal unit of learning and constitutes a major step towards achieving the performance objective. Enabling objectives are sub-components or sub-objectives of the performance objectives. They represent suitable scope appropriate for assessing progress.

Equivalency – is the recognition and acceptance by the appropriate NATO authority of non-NATO E&IT and/or experience as a suitable alternative to satisfy a NATO E&IT requirement.

Evaluation – the process of making judgements. A structured process of examining activities, capabilities and/or performances (potentially including related structures and processes) against defined standards or criteria (AAP-06 2014).

Exercises – an exercise is ‘a military manoeuvre or simulated wartime operation involving planning, preparation, and execution. It is carried out for the purpose of training and evaluation. It may be a combined, joint, or single service exercise, depending on participating organizations (AAP-06 2014).

External Evaluation – a validation activity; specific to the NATO SAT Evaluation Phase, this is the process of gathering and analysing objective evidence (data) from outside the E&IT environment in order to determine how well graduates are prepared for their jobs and satisfying job performance requirements.

Formative Evaluation – a range of formal and informal assessment procedures employed during the conduct of E&IT (Course Execution) in order to monitor learning and improve instruction.

Individual Training and Education Programme (ITEP) – the programme and management process to match NATO and partner E&IT requirements and opportunities, and provide E&T solutions to fulfil NATO assigned missions in an effective, efficient and affordable way.

Individual Training – the development of skills and knowledge necessary to perform specific duties and tasks. Individual Training is learned response to predictable situations (skills).

Informal Learning – is learning outside of structured and formalized learning events. This does not typically result in a formal qualification or certification.

Inspection – a Quality Management activity involving a formal examination or review of performance and outputs to determine adherence with regulations, assess effectiveness and to ensure fitness for purpose. Inspection is implemented mainly for screening out defects before they may cause problems and may identify areas for improvement.

Instruction – the process whereby learners are provided with the means to acquire knowledge, skills and attitudes. It provides the conditions to develop skills, knowledge and attitudes.

Instructional Analysis – a deconstruction process by which each Performance Objective is analysed to determine the supporting ELOs. Skills and knowledge elements are broken out into their sub-components when it is anticipated that separate demonstrations (of skills and attitudes) or explanations (of knowledge or attitudes) will be necessary during a course.

Instructional Strategy – the combination of media, methods and environment used in the conduct of E&IT:

a. **Environment** – refers to where learning activities take place, e.g.; classroom, work-place, home.

b. **Method** – refers to the type of learning activity or instructional event.

c. **Media** – refers to the means of delivering instructional activities to the learner.

Internal Evaluation – specific to the SAT Evaluation Phase, uses both qualitative and quantitative data to assess the overall quality (the effectiveness, efficiency and affordability) of a course. Internal evaluation determines if the instruction provided has satisfied the intended objectives in relation to the resources expended. This is an essential activity within an ETF's Quality Management System.

Job Description (JD) – a delineation of the specific duties, responsibilities and qualification pertaining to a specific post. A JD generally includes a statement that defines the principle duties for a position and includes tasks, responsibilities and qualifications required for the job as well how it fits within the organization (AAP-06 2014).

Key Leader Training – aimed to familiarize selected command and staff officers, designated to fill specific HQ positions in a national or multinational environment, with the force mission and organization, updated situation, supporting plans, key reference documents, SOPs and HQ responsibilities in order to provide a common foundation on related issues. It has to focus on specific topics exposing the leaders to challenges they could face during a specific exercise or upcoming military operation. (Bi-SCD 075-003)

Knowledge – facts, concepts, principles and other information acquired through experience or instruction; consists of a theoretical and/or practical understanding of a subject matter.

Knowledge Management – strategies and practices for exploitation and development of insights and experiences by all the individuals of an organization with a view to furthering the organization's objectives.

Learning – learning in the most basic form is the acquisition of knowledge, skills and attitudes and is confirmed through a change in behaviour. Learning is a process by which an individual assimilates and internalizes information, ideas and values thereby acquires knowledge and know-how as well as develop skills and overall abilities. Learning occurs through personal reflection, reconstruction, social interaction and practice. It may take place in formal, non-formal or informal settings. Learning may occur consciously as well as without conscious awareness. Learning is continuous and evolutionary, it does not happen all at once, but rather builds upon and is shaped by an environment and by what is already known and believed to be true.

Learning Management System (LMS) – is an application, running on a server accessible through a network that provides a suite of capabilities designed to deliver, track, report on, and administer digital learning content, student progress, and student interactions. (NTG TG IT&ED)

Method of Instruction – a strategy used for imparting skills, knowledge and attitudes, e.g. interactive lectures, demonstrations and role-play. (NTG TG IT&ED)

Non-NATO Entity – includes International Organizations (IO), Governmental Organizations (GO) of non-NATO nations, Non-Governmental Organizations (NGO), Non-NATO Multinational forces, Host Nations (when the Host Nation is not a NATO nation), Contractors on operations, exercises and transformational activities as well as Non-NATO countries that do not otherwise meet the definition for "NATO Partner". (MC 458/3)

NATO Education and Training (E&T) Activity – refers to the delivery and conduct of specific E&IT solutions (e.g., courses) as well as collective events and activities (e.g., solutions such as Battle Staff Training, a Command Post Exercise, a Live Exercise). E&T activities do not include the supporting or related management events necessary to define, plan, organize, and coordinate E&T activities, such as conferences, meetings, working groups and other proceedings not involving the provision of E&T.

NATO Education and Training (E&T) Programme – a set of E&T activities (individual and collective) assembled to satisfy the requirements captured within a discipline.

NATO Partner – refers to Partnership for Peace (PfP), Mediterranean Dialogue (MD), and Istanbul Cooperation Initiative (ICI) countries as well as those Partners across the Globe (PatG) with a partnership programme with NATO. (MC 458/3)

NATO Systems Approach to Training (SAT) – an iterative and interactive sequence of activity leading from the definition of a need for education and individual training through to defining, developing and implementing effective and efficient E&IT solutions

to satisfy the need. Note: SAT is an Instructional Systems Design model and is often synonymous with the "ADDIE" model.

Performance Gap – the difference between actual performance and potential/desired performance.

Performance Measurement – is the ongoing monitoring and reporting of programme accomplishments, particularly progress toward pre-established goals. It is typically used as a tool for accountability. (NTG TG IT&ED)

Performance Objective (PO) – specifies, in precise terms, what an individual must be able to do in terms of job performance and specifies a level of proficiency. A complete PO captures a performance gap and includes a description, in job/function operational terms, of what the individual must do, the conditions under which the performance must be completed, and the standard to be achieved. PO is synonymous with Behavioural Objective.

Performance Requirements – define what an individual will be prepared to do and to what level. Performance requirements are derived from the tasks performed by individuals as part of their principle duties during operations or while occupying specific NFS/NCS positions. Job Descriptions (JDs) capture performance requirements and are essential to define E&IT solutions.

Performance Statement – a clear, concise and precise statement representing a logical and complete part of the job function which is observable and measurable.

Pilot Course – a trial of an E&IT solution prior to full implementation.

Post Course Review (PCR) – a structured and systematic programme evaluation process within NATO SAT designed to collect data in order to assess (make judgements concerning) the quality of an E&IT solution and improve results in the future.

Professional Military Education (PME) – is the systematic instruction of professionals in subjects enhancing their knowledge of the science and art of war. It provides and develops the skills, knowledge, understanding and appreciation of leaders in the nation's armed forces.

Proficiency Level – a scale which defines a degree of competence required in order to perform principle duties and tasks on the job.

Programme – see **NATO Education & Training Programme**.

Programme Evaluation – assesses the merit or value of a programme. For E&IT, it is a structured and systematic process designed to collect data to assess the quality of a solution. Programme Evaluation is formalized within the Evaluation Phase of the NATO SAT and consists of a Post-Course Review.

Psychomotor Domain – a classification system for learning objectives focused primarily on physical skills addressing coordination, dexterity, manipulation, strength

and speed. The Psychomotor Domain taxonomy consists of multiple levels ranging from observation and imitation through to mastery and adaptation.

Qualification – is a formal result of judgement and validation process. An authorized institution determines that individual learning output comply with defined standards. (NTG TG IT&ED)

Quality Assurance (QA) – the application of checks and audits to ensure quality procedures are being carried out. QA focuses on preventing faults, ensuring processes are performed correctly in the first instance. (NTG TG IT&ED)

Quality Management System (QMS) – a complete set of quality standards, procedures and responsibilities.

Requirements Authority (RA) – an appointment within NATOs Global Programming Governance Structure that reflects responsibility for identifying, collecting and managing the education and training requirements associated with a discipline. The specific role and responsibilities are as follows:

a. Leading the identification of the individual and collective E&T requirements.

b. Providing input concerning changes to NATO concepts, doctrine, policy and procedures and informing the DH accordingly.

c. Supporting the harmonization of the individual E&T requirements with the collective part of the NATO Training Spectrum.

d. De-conflicting E&T requirements with other RAs where overlap or requirements influence each other.

e. Supporting the Global Programming Development Methodology and the production of the Strategic Training Plan and Training Requirements Analysis.

f. Supporting the Annual Discipline Conference.

g. Annually reviewing E&T requirements, based on the Lessons Learned process, operational experience and the analysis of emerging threats.

Simulation – the imitation of the operation of a real-world process or system over time. The act of simulating first requires that a model be developed and the model represents the key characteristics or behaviours/functions of the selected physical or abstract system (process). The model represents the system itself, whereas the simulation represents the operation of the system (NTG TG IT&ED).

Simulator – a training device which captures the significant features of an operational environment to the level of fidelity necessary to maximize the degree of transfer from the training situation to the job.

Skill – a developed aptitude or ability supporting performance. Skills may be described as motor, manual and cognitive/intellectual and are applied according to the

context. A skill is an organized and coordinated pattern of mental and/or physical activity that is often built up over time through repeated training, practice or other experience.

Skill Analysis – a detailed and systematic study of the skills needed to perform a particular task. It can also refer to the determination of the cues, responses, and decision-making functions involved in performing a skill. (NTG TG IT&ED)

Standards – the criterion against which performance is measured; identifies a level of proficiency to be attained.

Strategic Training Plan (STP) – a product of the Global Programming – Development Methodology used to capture the strategic picture and formalize education and training needs through a NATO discipline. The STP provides the foundation and necessary justification for education and training through links to Alliance objectives and priorities.

Summative Evaluation – determines the degree to which the learner has achieved Performance Objectives.

Syllabus – a syllabus is, in its simplest form, a written statement of the subjects included in a course of study. In the field of training, syllabuses are constructed in terms of learning objectives that specify the skills, knowledge and attitudes to be acquired by trainees. Also see curriculum.

Synchronous Learning/Training – are events that occur within the same, real time domain with students who are not necessarily in the same location (NTG TG IT&ED).

Systems Approach to Training (SAT) – see **NATO Systems Approach to Training**.

Target Audience – the individuals/participants, potentially from within a broader Training Audience, which require specific E&IT to resolve a performance gap. Also see Training Audience.

Task – a discrete segment of work with a definite beginning and end. A task defines broader duties and is part of a job. Tasks can be produced, compiled, achieved and/or accomplished on their own.

Task Analysis – the systematic process of identifying how a specific task is completed; and a detailed analysis of each of those tasks. Task analysis involves skills analysis.

Teaching Point – see: **Content**.

Test – is an event during which a learner is asked to demonstrate an aspect of task performance, skill, knowledge or attitude. Tests which measure the extent to which a task, performance, skill, knowledge or attitude has been learned are deemed achievement tests. (NTG TG IT&ED)

Test Reliability – the degree to which a test/test item gives consistent results each time it is used.

Test Validity – the extent to which a test measures what it is designed to measure.

Training Audience – a collective training term referring to the headquarters/ command/participant/ unit identified as the main as well as secondary focus for a training event. Within E&IT, Target Audience refers to the individual/participant component of the Training Audience.

Training Needs Analysis (TNA) – a series of activities within the Global Programming – Development Methodology which results with a set of E&T solutions that satisfy a Requirements Package. This defines the objectives required to eliminate gaps and the necessary plans which result in the delivery of E&T solutions. For E&IT solutions this requires the application of the NATO SAT.

Training Objective (TO) – within NATO used for Collective Training; it is a mission essential task to be performed, under resource conditions, and defined standards (references and criteria of performance). It describes the staff processes, knowledge, skills or attitudes to be achieved during the conduct of training. Note: in some nations a TO is used within Individual Training and is synonymous with Enabling Objective.

Training Requirements Analysis (TRA) – a process supporting the Global Programming – Development Methodology used to capture NATO education and training requirements. The TRA attempts to match NATO education and training requirements with the available solutions.

Training Requirements Analysis Report (TRA Report) – this is the report documenting the results of a TRA. The TRA Report captures existing education and training solutions, potentially available to the Alliance, and is the tool used to eventually match NATO education and training requirements with the available solutions. The TRA Report also attempts to capture the intended target audiences and identifies preliminary performance objectives in the form of broad performance – task statements.

Training Strategy – identifies, in broad terms, an overall approach for delivering a solution to satisfy an education and individual training requirement. Delivery options include residential (traditional) delivery, mobile education and training teams, e-Learning/Advanced Distributed Learning or a combination (blended) of approach.

Transfer of Training – the degree to which skills learned in a training device or simulation will affect advanced training or operational performance. It should be noted that high fidelity does not necessarily imply a high degree of transfer of training (NTG TG IT&ED).

Validation – the confirmation of the capabilities and performance of organizations, individuals, materiel or systems to meet defined standards or criteria, through the provision of objective evidence.

ANNEX C TO
Bi-SCD 075-007
DATED 10 SEP 15

ADDITIONAL SUPPORT TO NATO EDUCATION AND INDIVIDUAL TRAINING NATO SCHOOL OBERAMMERGAU - COURSE LIST

1. **Introduction.** The NATO School Oberammergau (NSO) prepares NATO personnel in their Education and Training roles by providing a series of tailored courses to develop the knowledge, skills and attitudes of educational leaders, instructors, instructional designers and standards/quality assurance personnel. The following courses were developed, based on NATO requirements, to support the implementation of Education and Individual Training (E&IT) related Bi-SC Directives and, where applicable, may be appropriate for personnel from Education and Training Facilities (ETFs) supporting NATO. The courses break out by area and identify the objectives and intended training audience.

2. **M7-135 NATO Global Programming Analysis Course.** The target audience is selected NCS/NFS personnel, Department Heads (DHs) and Requirement Authority's (RAs). The aim of this course is to provide participants with the knowledge required to implement or otherwise support the Bi-SC 075-002 Education and Training (E&T) Directive. This one week course will enable military and civilian personnel in E&T management positions to support Global Programming and emphasizes the following areas:

a. The Global Programming.

b. Strategic Training Plans.

e. Training Requirements Analysis (TRA).

f. Training Needs Analysis (TNA).

g. Course Accreditation.

h. Supporting Systems and Resources for Global Programming.

i. Quality Assurance (QA).

3. **M7-136 NATO Analysis, Design, and Evaluation Course**[72]**.** The target audience is selected NCS/NFS personnel, DHs and ETFs supporting NATO E&IT. The aim of the course is to educate and train those individuals involved in the design and development of training in a standardized process, enabling them to create effective and efficient training solutions. This one week course will enable military and civilian personnel in positions involved with the definition and delivery of E&IT to:

a. Translate NATO E&IT requirements resulting from TRA into NATO E&IT solutions.

[72] Additional training supporting the design, development and evaluation of ADL/e-Learning courseware is also available through NSO.

b. Develop effective Instructional Materials.

4. **M7-137 NATO Quality Assurance Course.** The target audience is selected NCS/NFS personnel, DHs and ETFs supporting NATO E&IT. The aim of this course is to provide participants with the knowledge and skills required to develop and implement a Quality Management System (QMS) at ETFs in order to meet the Quality Standards for NATO ETF institutional accreditation. This one week course will enable military and civilian personnel to do the following:

a. Describe the purpose and framework for QA within NATO Education and Training.

b. Apply the QMS principles, criteria, and standards within their institution.

c. Develop monitoring and reporting tools to support the implementation of a QMS within their Institution.

d. Explain the NATO Quality Standards IAW Bi-SCD 075-007 to institutional leaders and key stakeholders.

e. Develop tools to support the accreditation process of their institution.

5. **Instructor Development.** NSO recognizes that excellence in instruction does not happen by chance. Instructors are the essential ingredient and NSO has developed two instructional programmes to increase the overall skills and abilities of instructors supporting the delivery of NATO E&IT. The courses are as follows:

a. **M7-83 NATO NCO Instructor Course.** The target audience is comprised of instructors selected from the NCS/NFS and ETFs supporting the delivery of NATO E&IT. The aim of this course is to provide Non-Commissioned Officer (NCO) instructors with the skills and knowledge required to effectively instruct on NCO related topics focused in an international setting. This one week course will enable military NCOs in positions involved with the development and implementation of NATO E&IT to:

(1) Develop and present a formal lesson in accordance with NCO instructor standards.

(2) Produce and present a syndicate lesson from a preselected multinational training catalogue in accordance with Bi-SC NCO Strategy and NCO recommended guidelines.

b. **M7-98 NATO Academic Instructor Course**. The aim of this course is to apply effective teaching methods and presentation techniques in delivering academic instruction. It will focus on building lesson plans and presenting lessons. This one week course will enable military and civilian personnel, in positions involved with the development and implementation of NATO E&IT, to develop and present a lesson in accordance with a prepared lesson plan integrating effective instructional techniques.

ANNEX D TO
Bi-SCD 075-007
DATED 10 SEP 15

QUALITY MANAGEMENT SYSTEM STANDARDS

Education and Training Facilities which are Institutionally Accredited by NATO are expected to establish, maintain and review their internal processes and procedures to ensure that the following seven standards and guidelines are implemented.

1. Policy and procedures	
STANDARD:	
	The Institution has a policy and procedures in place for Quality Management including clearly defined responsibilities and authority of all involved. The policy describes the Quality Management System (QMS) and how it involves the major stakeholders (internal and external) and of how they contribute to continuous improvement of an institutions main processes. An appropriate level of internal and external transparency should be guaranteed.
GUIDELINES:	
	The policy is expected to include: • the relationship between main activities depending on Education and Training Facility (ETF) (e.g., relationships and links between teaching, research, doctrine development, lessons learned); • the organization of QMS; • the responsibilities of different departments and individuals for quality management; • key performance indicators; and • the involvement of main internal and external stakeholders in the CIP.

2. Staff/Instructor development	
STANDARD:	
	The institution ensures the staff/Instructors are competent and qualified. Staff development is a continuous process supported by the institution.
GUIDELINES:	
	The Education and Training Facility (ETF) is expected to have: • principles, procedures and selection criteria for the recruitment of staff and external instructors; • procedures and programmes to support the professional development of staff and instructors (including continuously improving instructor abilities); • minimum level of competency and education and training requirements are included in the job descriptions; • the working conditions of the staff encourage a positive environment.

3. Information systems and knowledge management	
STANDARD:	
	The Institution collects, analyses and efficiently uses relevant information for the effective management and conduct of their training and related activities.
GUIDELINES:	
	Information management system is expected to manage: • relevant internal and external stakeholders satisfaction/feedback; • development and version control; • resources (courseware); • lessons learned; • learning/teaching resources; • profiles of students audience; and • tracking key performance indicators.

4. Public information	
STANDARD:	
	The Institution publishes and regularly updates objective information, both qualitative and quantitative about their courses and related activities.
GUIDELINES:	
	The Education and Training Facility (ETF) is expected to: • provide and regularly update adequate information about the courses provided (e.g., course catalogue) on their website and accurately reflected in Education Training Opportunities Catalogue (ETOC); • inform main stakeholders and the Community of Interest (CoI) about intended major changes in Course Control Documents (CCDs) and especially enabling/learning objectives (ELO); and • develop and maintain a communication network with ETFs and CoIs related to the subjects covered by the CCDs,

5. Definition and delivery of instruction	
STANDARD:	
	The Institution has instructions and controls for the analysis, design, development, implementation and evaluation of Education and Individual Training (E&IT) including how the institution plans and schedules courses, monitors course quality and conducts periodic reviews ensuring the continued relevance of the E&IT that is provided.
GUIDELINES:	
	CCDs, or equivalent, exists for each NATO course and they define the E&IT solution. CCDs confirm stakeholder engagement and include: • the background explaining the need for a course and the fit with NATO requirements; • the aim/intent of the course; • details concerning the intended audience; • performance objectives which capture the performance gap to be addressed through E&IT; • ELOs which are part of an overall strategy capturing course content and defining what will be learned, how it will be learned and how long it will take; • a reference list supporting the course content; and • a resource estimate identifying facility, personnel, equipment and materials essential to conduct a course. The planned and systemic approach to address E&IT delivery is documented including the administration activities within the institution supporting the development, implementation and evaluation of courses: • course design takes into account previous training and professional experience of the intended audience; • the number of seats for each course is planned in accordance with NATO and national needs and the capacity and purpose of the institution; • courseware, including instructional materials, student assessment instruments and optimum schedules/timetables are in place for each NATO course; • appropriate planning and coordination instructions exist to support the preparation, execution and close out of a course serial/iteration; and • there are formalized post-course reviews intended monitor quality and improve E&IT.

6. Student assessment	
STANDARD:	
	Students are assessed using published criteria, regulations and procedures which are applied consistently and systematically. Students are aware of what will be expected from them and how their performance will be evaluated.
GUIDELINES:	
	Student assessment procedures are expected to: • be designed to measure the achievement of the intended learning outcomes; • be appropriate for the purpose (e.g., formative/summative/ practical/theory); • be based on clear and published criteria; • be traceable to ensure the accuracy and adequacy of the procedures; • where applicable, should not rely on the judgement of a single evaluator; • have procedures in place for student appeals; and • include rules regarding student attendance.

7. Learning resources and student support	
STANDARD:	
	The Education and Training Facility (ETF) has appropriate resources available to support students throughout the learning process.
GUIDELINES:	
	Learning resources and other support mechanisms should be: • readily accessible to students; • designed according to student's needs; • responsive to feedback from those who use them; and • routinely monitored and improved.

ANNEX E TO
Bi-SCD 075-007
DATED 10 SEP 15

NATO QUALITY STANDARDS

NATO Quality Standards support NATO Education and Training Facility (ETF) Institutional Accreditation. The Quality Standards validate the education and training mission, including overall leadership and management, of an organization and confirms the relevance of the organization to NATO. To become Institutionally Accredited an ETF must demonstrate a contribution to NATO. NATO Quality Standards address three broad areas and are detailed in the tables that follow.

1. LEADERSHIP AND MANAGEMENT

1.1. General management

Standards:

1.1.1. Institution has a long term plan based on its mission and vision, which considers NATO priorities and the expectations of major stakeholders.
1.1.2. The Institution has implemented a Quality Management System (QMS) that is supported by relevant documents that are regularly reviewed and remain up to date.
1.1.3. Internal and external communication of the institution is purposeful and managed.
1.1.4. The institution uses information systems that support its management and the coherent performance of its core functions.

1.2. Personnel management

Standards:

1.2.1. The Institution has principles and procedures for personnel recruitment and development. They arise from the Institutions objectives and ensure training quality and sustainability.
1.2.2. Personnel satisfaction (including working conditions, flow of information) is monitored and practices to support staff motivation are implemented.
1.2.3. Personnel participate in other NATO activities (working groups, projects).
1.2.4. The faculty and staff have the Education and Training (E&T) qualifications as per the job descriptions and course control documents.

1.3. Resources management

Standards

1.3.1. The Institution has a sustainable budget.
1.3.2. The Institution has defined the principles for budgetary decision making.
1.3.3. The allocation of financial resources of an institution is based on the Institution's actual needs and priorities in accordance with its mission and objectives.
1.3.4. The working conditions of the staff and the learning conditions of students (e.g., library, classrooms, and laboratories) meet the needs arising from the learning objectives, specifics of the institution and the expectations of major stakeholders.

2. EDUCATION AND TRAINING

2.1. Define and deliver Instruction

Standards

2.1.1. Each NATO course is defined and delivered in accordance with principles of Global Programming and the NATO Systems Approach to Training.
2.1.2. Student satisfaction with the quality of instruction and graduate feedback is considered in the development of instruction.
2.1.3. Supervisor's/commander's satisfaction with the performance of graduates is considered in the development of instruction.
2.1.4. Instructor feedback concerning course delivery and quality is considered in the development of instruction.

2.2. Student assessment

Standards

2.2.1. Student progress is monitored and supported throughout the course.
2.2.2. Student assessment supports learning and is in line with learning objectives.
2.2.3. Assessment and graduation criteria are predefined and acknowledged before teaching.
2.2.4. The institution has procedures in place for student appeals.

2.3. Support for training and learning

Standards

2.3.1. The resource allocation for courses meets the student needs and fits with the learning objectives.
2.3.2. The institution provides students with guidance in support of their studies (as required).
2.3.3. Up to date resources are used to support training.
2.3.4. Student feedback concerning support is taken into account as part of improvement activities.

3. CONTRIBUTION TO NATO

3.1. Support to NATO requirements

Standards

3.1.1. The institution has identified its role in support of NATO.
3.1.2. The institution offers NATO selected/approved courses.
3.1.3. The Institution exploits operational lessons learned to improve training.
3.1.4. The institution's core activities are coherent in support to NATO.

3.2. Support to discipline management.

Standards

3.2.1. The institution contributes to discipline(s) development.
3.2.2. The institution contributes to maintaining NATOs discipline framework.

3.3. Contributions to other NATO associated activities.

Standards

3.3.1. The institution contributes to the evolvement of NATO in different ways (e.g. doctrine development, R&D, lessons learned, operations and defence planning).