Ministry of Defence

JSP 940
MOD Policy for Quality

Part 2: Guidance

Foreword

This Part 2 Joint Service Publication (JSP) provides guidance in accordance with the policy set out in Part 1 of this JSP; the guidance is sponsored by the Defence Authority for Technical and Quality Assurance. It provides policy-compliant business practices which should be considered as best practice.

Preface

How to use this JSP

1.   Users of this JSP are not expected to read the document from cover to cover but to refer to the relevant chapters / sections as required. In order to facilitate this, it has been necessary to introduce duplication of some material.

2.   JSP 940 is both policy and guidance and shall be applied across MOD Organisations for the assurance of acquisition, engineering and logistics support in delivery of Defence Capability.

3.   This JSP is structured in two parts:

   a.   Part 1 - Directive, which provides the direction that must be followed in accordance with statute or policy mandated by Defence or on Defence by Central Government.

   b.   Part 2 - Guidance, which provides the guidance and best practice that will assist the user to comply with the Directive(s) detailed in Part 1.

4.   This Part 2 incorporates methods of compliance for the specific application of MOD quality policy where required. These are emphasised as such by the use of:

   a.   'shall' or 'must' indicates a requirement that can only be deviated from with a concession issued by the Defence Authority[1];

   b.   '**should**' indicates a preferred recommendation as the acceptable means of compliance.

Any deviation from these acceptable means of compliance are only to be considered in exceptional circumstances. Delivery Teams are to consult with QCM Policy before applying alternative means of compliance, which are then to be documented, with the supporting rationale for the deviation, within the appropriate quality planning document.

Coherence with other Policy and Guidance

5.   Where applicable, this document contains links to other JSPs, some of which may be published by different business units. Where particular dependencies exist, these other units have been consulted in the formulation of policy and guidance detailed in this publication.

Related JSP	Title
JSP 822	Defence Direction and Guidance for Training and Education
JSP 892	Risk Management
JSP 935	Software Acquisition Management for Defence Equipment
JSP 945	MOD Policy for Configuration Management

---

[1] Instructions can be found on the MOD Defence Authority portal - http://daportal.gateway.isg-r.r.mil.uk/Portal/SitePages/Portal.html#daconcessions.

Further Advice and Feedback – Contacts

6.   The owner of this JSP is the Defence Authority for Technical and Quality Assurance. For further information on any aspect of this guide, or to ask questions not answered within the subsequent sections, or to provide feedback on the content, contact:

Job title / email	Project focus	Phone
DES-QCM-Policy-Helpline@mod.gov.uk	MOD Quality Policy	Civ: +44(0)30679 32681 Mil: 9679 32681

Version History

Date	Version	Summary of Change
March 2017	1.0	Initial issue
August 2018	1.1	General amendment to reflect publication of updated quality standards and correction of minor grammatical errors.
April 2020	2.0	General revision of the JSP content inclusive of: • developed content to complete the JSP; • various amendments to improve guidance and terminology; • 'Avoidance of Counterfeit Materiel' moved into the 'Standard Quality Assurance Contract Requirements' section; • 'Flight Indemnity' amended to reflect that AAR delegation letters are now issued by the DAT&QA.
April 2021	2.1	This JSP has been updated to: • correct minor errors; • amended requirement for Supplier deliverable quality plan evaluation and acceptance, now to be conducted by a competent GQA Practitioner; • requirement for certificates of conformity for aircraft parts moved from Knowledge in Defence to this JSP; • align with MOD Logistic Policy for certificates of conformity retention; • insertion of instruction to ensure consultation with domain GQA SME for contracts containing Safety Critical Products; • various updates to section 4.3.6 Flight Indemnity; • insertion of new section 4.5.8 Amendment to Contracts. JSP content changed by this amendment is shown by the use of red text where a change has been made.

Contents

1 Introduction

Joint Service Publication (JSP) 940 Part 2 provides the guidance on managing and using information effectively, so that Ministry of Defence (MOD) Organisations[2] can meet the Defence Authority for Technical and Quality Assurance (DAT&QA) directives set out in JSP 940 Part 1. The Part 2 guidance follows the policy and principles set out in the Part 1 directive that in attaining Quality, essential processes are required for the delivery of Defence materiel and services in support of Military Capability. This is achieved by ensuring correct standards are maintained by promoting the Governance, Assurance and Improvement (GAI) of acquisition, engineering and logistics support activities, through the consistent management of Quality across Defence.

This JSP documents the controls, assurance and other specific and unique MOD related guidance required to support the Part 1. It is designed to give the Organisation an indication of what good might look like as well as the processes, procedures and techniques that are the MOD's preferred approach; recognising that all teams, sections, Commands and Top-Level Budget Holders (TLBs) have customers and stakeholders [internal and/or external to the Organisation].

The guidance will not stipulate how the Quality Management Systems (QMS) are implemented; as there are many ways in achieving this. It provides the Organisation with the guidance on how to achieve this, in the context of the Organisation's operational framework and it's intent. This guidance identifies key activities for Management System implementation and is intended to enable the Organisation to achieve the outcomes and intent.

This JSP should be used in conjunction with the Managing Quality content within the Knowledge in Defence (KiD) web site, where the KiD will continue to provide more in-depth guidance. This Part 2 guidance will sign post any external guidance to aid Organisations in their understanding of the topic.

Quality Management is well documented in open source literature and this JSP is not intended to provide guidance that is already available. As the MOD is very diverse, it would be difficult to provide overarching guidance to all the MOD TLBs. Where this guidance will give greater direction is in the MOD's unique area of Government Quality Assurance (GQA).

1.1 Scope

The scope of this JSP Part 2 is to guide the reader through:

    a. Chapter 2 - Governance, Assurance and Improvement (GAI), which will provide reasoning for governance and control of the business which will raise performance levels of the Organisation. Ensuring controls are effective, risks are identified and managed, enabling consistent delivery of products and services and contributing to sustainable improvement. As well as ensuring that suitably qualified and experienced personnel are developed across the department to enable effective delivery of Quality Management and GQA.

---

[2] This includes MOD Agencies and bespoke trading entities.

b.   Chapter 3 - Guidance on Quality Management as it is a key element of GAI. It provides maintenance and control of the business to raise performance at all levels of the Organisation.

c.   Chapter 4 - Guidance to the Organisation on GQA covering all the activities that are undertaken by the Organisation to establish confidence that the contractual requirements relating to Quality are met for the acquisition and logistics support of defence materiel and services. As a large part of this topic is unique to MOD, some of the reference material will remain in the KiD and associated documents. Clear guidance and sign posting to this additional information is provided to ensure the topic is fully explained.

d.   Chapter 5 - Guidance on Quality Improvement (QI) Tools and Techniques (T&T) as they assist with evaluating performance and developing ways of working to maximise effectiveness in delivery of required outcomes. QI is part of the GAI approach, where these improvement T&T assist in the assessment of the Organisations performance and Continual Improvement (CI). The guidance covering T&T are no more than examples of the plethora of tools and techniques available in the open source literature.

1.2 Applicability

As directed in Part 1 of this JSP, the application of this Part 2 is applicable to all MOD TLB Organisations. JSP 940 **should** be detailed/referenced in TLB policy:

a.   Chapters 2 and 3 **should** be applied within each TLB's respective QMS.

b.   Chapter 4 **should** be applied when engaged in acquisition and support contracts, supplementing domain specific contractual quality requirements and regulations (as applicable).

1.3 Training/Skills

The Defence Authority for Technical and Quality Assurance is also the Deputy Head of Profession for Quality, with responsibilities for championing the Quality profession across all civilian and military staff in the Defence workforce. These roles also support the development of individuals to ensure capable, suitably qualified and experienced personnel (SQEP) are available across the Department to implement the policies and guidance within this JSP.

The Deputy Head of Profession sponsors the MOD civilian functional competence framework for Quality and maintains a strategic overview of Quality-specific competences and training available across all MOD Top Level Budget areas, including the training courses for Quality delivered by the Defence Academy.

The competences required by a Quality Practitioner within the MOD are contained within Skills Footprint documents that can be found in the Licensing area of the QCM-Policy Website within DEFNET.

The MOD Quality Practitioner Licensing Scheme is the official route for assessment of competence and details can also be found in the Licensing area of the QCM-Policy Website.

Functional competence is supported by a suite of training courses delivered by the Defence Academy Business Skills College that are free of charge for MOD civilian and military staff, and also by a module-based Quality Development Scheme (QDS) administered by QCM-Policy. Further details on training available from Defence Academy or on the QDS can be found on the QCM-Policy Website.

1.4 References

ACMP 2100[3]	The Core Set of Configuration Management Contractual Requirements
AQAP 2070	NATO Mutual Government Quality Assurance Process
AQAP 2105	NATO Requirements for Quality Plans
AQAP 2110	NATO Quality Assurance Requirements for Design, Development and Production
AQAP 2131	NATO Quality Assurance Requirements for Final Inspection and Test
AQAP 2210	NATO Supplementary Software Quality Assurance Requirements to AQAP 2110 or 2310
AQAP 2310	NATO Quality Assurance Requirements for Aviation, Space and Defence Suppliers
AQAP 4107	Mutual Acceptance of Government Quality Assurance and Usage of Allied Quality Assurance Publications (AQAP)
BS EN 9100	Quality Management Systems - Requirements for Aviation, Space and Defence Organisations
Commercial Toolkit	On the Knowledge in Defence (KiD) web site
DEFCON 524A	Counterfeit Materiel
DEFCON 602A	Quality Assurance (With Deliverable Quality Plan)
DEFCON 602B	Quality Assurance (Without Deliverable Quality Plan)
DEFCON 627	Quality Assurance – Requirement for a Certificate of Conformity
DEFCON 638	Flights Liability and Indemnity
DEFSTAN 05 - 057	Configuration Management of Defence Materiel
DEFSTAN 05 - 061 Part 1	Quality Assurance Procedural Requirements - Concessions
DEFSTAN 05 - 061 Part 4	Quality Assurance Procedural Requirements - Contractor Working Parties
DEFSTAN 05 - 061 Part 9	Quality Assurance Procedural Requirements - Independent Inspection Requirements for Safety Critical Items
DEFSTAN 05 - 100	Ministry of Defence Requirements for Aircraft Flight and Ground Running
DEFSTAN 05 - 135	Avoidance of Counterfeit Materiel
DEFSTAN 05 - 138	Cyber Security for Defence Suppliers
Governance, Assurance and Improvement	Chartered Quality Institute - The Quality Profession Challenge - Jul 14

---

[3] Referenced in AQAPs 2110 and 2310, the UK National Policy for Configuration Management is published in JSP 945 - MOD Policy for Configuration Management.

How Defence Works	Corporate Governance
JSP 822	Defence Direction and Guidance for Training and Education
JSP 892	Risk Management
JSP 945	MOD Policy for Configuration Management
ISO 12207	Systems and Software Engineering - Software Life Cycle Processes
ISO 15288	Systems and Software engineering - System Life Cycle Processes
ISO 25051	Software Engineering. Systems and software Quality Requirements and Evaluation (SQuaRE). Requirements for quality of Ready to Use Software Product (RUSP) and instructions for testing.
ISO 9000	Quality Management System - Fundamentals and Vocabulary
ISO 9001	Quality Management System - Requirements
MAP - 01	Manual of Maintenance and Airworthiness Processes (withdrawn 29/11/2019)
Regulatory Article 1164	Transfer of Aircraft and Equipment
STANAG 4107	Mutual Acceptance of Government Quality Assurance and Usage of Allied Quality Assurance Publications (AQAP)

1.5 Terms and Definitions

Unless stated below, the terms and definitions within ISO 9000:2015 apply.

Acquirer*	Government and/or NATO Organisations that enter into contractual relationship with a Supplier, defining the product and quality requirements.
Authorised Quality Assurance Signatory	A MOD Crown Servant who meets one of the following: 1. holds a Full MOD Quality Licence for Government Quality Assurance (GQA). 2. holds a Comprehensive MOD Quality Licence. 3. has completed the Contract Quality Requirements (CQR) course; successfully passed the course examination and holds a Letter of Authority issued by the Quality and Configuration Management Policy Licensing Team.
Competent Quality Practitioner	A Quality Practitioner whose competence is demonstrated (at the appropriate level) against the MOD Quality Competence Set for Quality Management and/or GQA.
Government Quality Assurance Representative*	The Personnel with responsibility for GQA acting on behalf of the Acquirer.

Government Quality Assurance Surveillance	Government Quality Assurance Surveillance (GQAS) is defined as the systematic and regular monitoring of the contractual elements of the Supplier's QMS, processes and products, to provide confidence to the acquiring nation that the Supplier is fulfilling the requirements of the contract.
Government Quality Assurance**	Application of the GQA Framework requirements both internally, within the MOD Acquisition Organisation, and across the contractual boundary for the provision of independent assurance and promoting Continual Improvement within the supply chain.
Licenced Quality Practitioner	A Quality Practitioner holding a MOD Quality Management, Government Quality Assurance or Comprehensive Licence.
MOD Acquisition Organisation	MOD Section, Delivery, Project or sub-Portfolio Team placing a contract. *Also see - Acquirer*
MOD Crown Servant	A member of the MOD Civil Service or Military employed by the Crown.
MOD Organisation	Within the MOD Organisational management structure, this may sit at TLB, Agency, Command, Section, Project or Delivery Team level; whichever is appropriate.
Operational Framework	A guide to how an Organisation delivers value to its customers and stakeholders through policies and processes, to achieve effective and efficient ways of working.
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.
Supplier*	Organisation that acts in a contract as the provider of products to the Acquirer. *Note: The term 'Contractor'⁴ is used within MOD commercial documents.*
Technical Discriminator	Term for a required 'technical characteristic' which is used as part of an assessment criteria where the outcome can only be a Pass/Fail.

* As defined within Allied Quality Assurance Publication (AQAP) 2110.
** GQA within NATO under STANAG 4107 is defined as the process by which National Authorities establish confidence that the contractual requirements relating to quality are met.

---

4 Defined in Defence Condition (DEFCON) 501 Definitions And Interpretations.

1.6 Abbreviations

AAR	Authorities Authorised Representative
ACMP	Allied Configuration Management Publication
AQAP	Allied Quality Assurance Publication
BS	British Standard
CoC	Certificate of Conformity
COTS	Commercial Off The Shelf
CI	Continual Improvement
CP&F	Contract Purchasing and Finance
CR	Contract Requisition
CWP	Contractor Working Parties
DAT&QA	Defence Authority for Technical and Quality Assurance
DEFCON	Defence Condition
Def Stan	Defence Standards
DLF	Defence Logistics Framework
DMADV	Define Measure Analysis Design Verify
DMAIC	Define Measure Analysis Improve Control
DQA	Defence Quality Assurance
DQA FF	Defence Quality Assurance Field Force
DRIVE	Define Review Identify Verify Execute
EN	Euro Norm
EGRC	Engine Ground Running Certificate
FAC	Flight Authorisation Certificate
FLC	Front Line Command
GAI	Governance Assurance Improvement
GFA	Government Furnished Asset
GQA	Government Quality Assurance
GQAP	Government Quality Assurance Plan
GQAR	Government Quality Assurance Representative
GQAS	Government Quality Assurance Surveillance
IAF	International Accreditation Forum
IDA	In Depth Audit
ISO	International Standards Organisation
ITN	Invitation to Negotiate
ITT	Invitation to Tender
JSP	Joint Service Publication
KiD	Knowledge in Defence
KPI	Key Performance Indicator
LFE	Learning From Experience
MAA	Military Aviation Authority
MAP	Manual of Maintenance and Airworthiness Processes
MOD	Ministry of Defence
MPTF	Military Permit To Fly
NAB	National Accreditation Body
NATO	North Atlantic Treaty Organisation
PAIQ	Partnering Approach for Improving Quality
PCAE	Pre-Contract Award Evaluation
PDCA	Plan Do Check Act
PDI	Performance Delivery Improvement

PM	Project Manager
PQMP	Project Quality Management Plan
PQQ	Pre-Qualification Questionnaire
Pt	Part
QA	Quality Assurance
QAG	Quality Assurance Group
QCM Pol	Quality and Configuration Management Policy
QI	Quality Improvement
QM	Quality Management
QMS	Quality Management System
QPI	Quality Performance Indicator
RFQ	Request for Quote
RPAS	Remotely Piloted Air Systems
RTS	Release To Service
SCP	Safety Critical Product
SME	Subject Matter Expert
SoR	Statement of Requirement
SPC	Statistical Process Control
SQEP	Suitably Qualified and Experienced Personnel
SQuaRE	Software Product Quality Requirements and Evaluation
TLB	Top Level Budget [*Holders*]
T&T	Tools and Techniques

2 Governance, Assurance and Improvement

2.1 Introduction

This section of the Joint Service Publication (JSP) is intended to give an introduction to the Governance, Assurance and Improvement (GAI) Model and explain why and how the model should be used in the MOD. This section also covers the benefits that can be realised by implementing the GAI Model.

Forming the basis of all MOD Quality policy, applying the GAI Model will ensure the interests of customers and stakeholders are understood; that appropriate methodologies are established to mitigate risk and protect reputation; and improve ways of working to maximise effectiveness and eliminate unnecessary costs. All MOD Team Leaders have the responsibility for implementing the requirements for GAI.

The GAI Model[5] is described below in Figure 2-1.

Governance
1. Is Intent defined?

Governance
2. Is Intent fit for purpose?

Assurance
3. Is Intent effectively implemented?

Assurance
4. Does Intent produce the desired outcomes?

Improvement
5. Is there a commitment to continual improvement (and redefining intent)?

6. Is there a culture of objective evaluation?
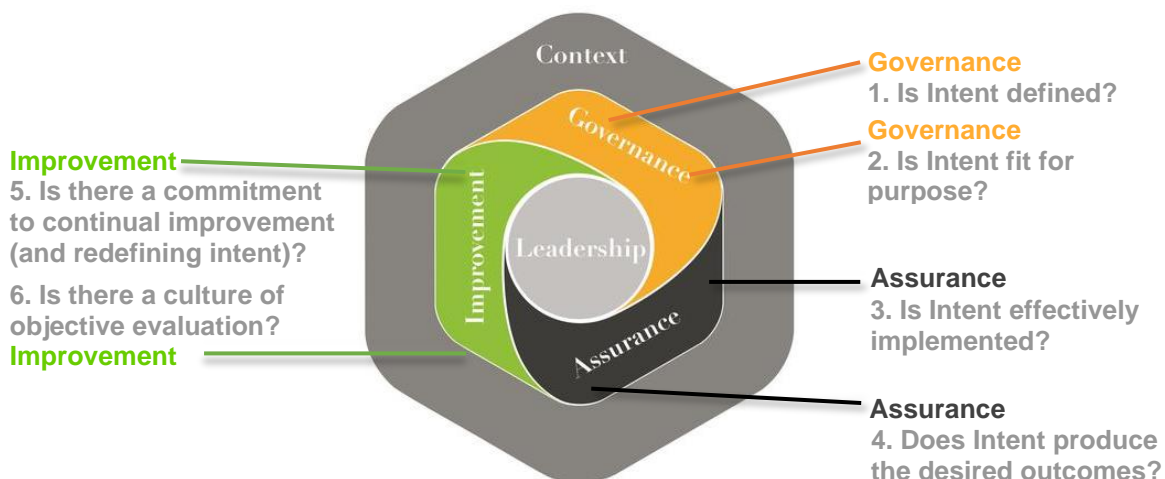
Improvement

Figure 2-1: Governance, Assurance and Improvement Model

2.2 Governance

2.2.1 Introduction

The Governance section of the GAI Model ensures all Organisation requirements are reflected in operational frameworks, policies, processes and plans, and that these meet all stakeholder requirements. Governance also needs to answer the following two questions:

    a.   **Is Management intent defined?**
    Top Management are key to enabling successful delivery of services or products that meet the criteria of Time, Cost and Quality, by setting appropriate intent at the highest levels. In the MOD, top management are individuals at Chief Executive

---

[5] Chartered Quality Institute - Governance, Assurance and Improvement - The Quality Profession Challenge - Jul 14.

Officer/TLB Holder or equivalent level. This can also be broken down into Directorates at 2* level to focus on specific local level activities.

Top management should be using appropriate methods to establish its stakeholder needs, expectations and views. In other words, determining the interests of relevant interested parties. A mechanism should be in place to periodically monitor performance.

Top management should also be ensuring their policies, processes and plans have been produced with consideration of interests of relevant interested parties. Any objectives the Organisation sets must[6] be consistent with policy, evidence should exist that demonstrates that the Organisation is continually evaluating its risks and opportunities; resetting policy, process and plans when necessary to remain effective.

b.   **Is Management intent fit for purpose?**
Top management need to consider whether the outcomes it intends to deliver are what its stakeholders really want.

The Organisation's policies, processes and plans should be effective in meeting stakeholder expectations, removing variation, minimising risks and maximising opportunities. Top Management need to ensure that the Organisations management systems are being continually assessed and improved.

Top management should be displaying the values they prescribe through their behaviour and actively developing the capacity and capability of the Organisation to become effective. This enables individuals to perform effectively in defined roles with clear accountabilities.

2.2.2 Types of Governance

There are four types of Governance within this JSP: Corporate, Operational, Acquisition and Business Governance. These are explained below.

2.2.2.1 Corporate Governance

Corporate Governance is a system that instils policies and rules for maintaining the cohesiveness of an Organisation. Corporate Governance is designed to hold an Organisation to account whilst helping it steer clear of financial, legal and ethical pitfalls. From a MOD perspective, Corporate Governance is set by the UK Government[7].

2.2.2.2 Operational Governance

Operational Governance enables the Organisation to predictably, consistently and efficiently deliver the top management strategic intent. It should dovetail into Corporate Governance so the Organisation's ability to maximise performance improvement is not compromised by failures that are routinely delivering low value for money. These failures can also have a negative effect on the reputation of the Organisation and most importantly, cost lives.

---

[6] ISO9001:2015 clause 6.2.
[7] How Defence Works - Corporate Governance - The Defence Operating Model.

2.2.2.3 Acquisition Governance

Acquisition Governance ensures the Organisation's acquisition planning strategy addresses stakeholder requirements, for example Statutory, Regulatory, Customer, Society and Workforce. It ensures the identification and articulation of the acquisition requirements, inclusive of quality in MOD contracts. It defines how the management system processes for acquisition will be applied to particular projects or activities and prioritises the Organisation's quality activities based on risk and opportunity.

The quality activities within Acquisition Governance are covered in more detail in the **Government Quality Assurance** Chapter 4 within this JSP.

2.2.2.4 Business Governance

Business Governance develops process management capability (ownership, definition, implementation and improvement) across the Organisation to deliver consistent results. It defines the Organisation's quality policies, plans and processes and ensures that roles, responsibilities, authorities and accountabilities are defined in the governance arrangements within the management system.

It ensures the Organisation's policies, processes and plans are effective in meeting stakeholder expectations, removing variation, minimising operational risk and maximising efficiency. It also supports the senior management team in ensuring that the operational approach and system of business management is continually assessed and improved.

The activities within Business Governance are covered in more detail in the **Quality Management** Chapter 3 within this JSP.
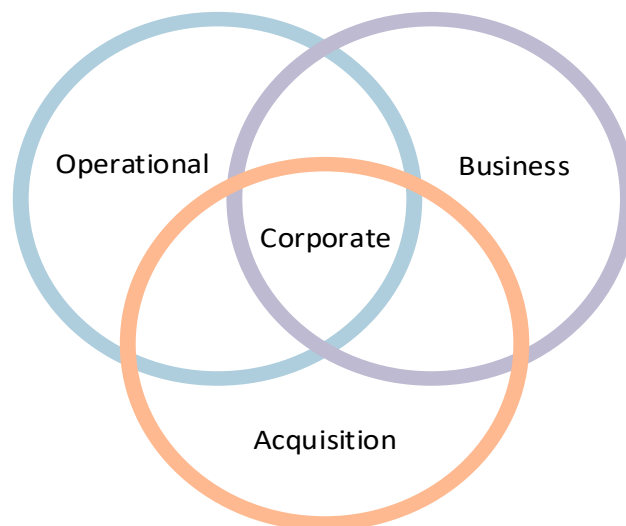

Figure 2-2: Governance Relationship

2.3 Assurance

2.3.1 Introduction

Embedding a culture of assurance ensures that policies, processes and plans are effectively implemented, and that all outputs are consistent with requirements.

Assurance in the GAI Model provides an assessment as to whether the user requirements have been satisfied and are operating effectively. In itself, assurance does not deliver a project, but it can identify and help mitigate any risks to successful delivery present in a project's sponsorship, business case and benefits plan, governance and reporting arrangements, contracting and supply chain strategies, commercial and delivery skills, funding and resourcing and overall project management approach.

Assurance provides information to those that Sponsor, govern and manage a project to help them make better informed decisions which reduce the causes of project failure. It is intended to promote the conditions for success and increase the chance of delivering the required outcome cost effectively whilst remaining safe.

Assurance can highlight a breach of time, cost and quality control limits as agreed at approval of the business case and trigger appropriate intervention. Improved visibility of project performance, tracked at the portfolio level, should lead to decisions across projects and Organisations. Assurance is also a key enabler for managing improvement opportunities across the Organisation.

When thinking about Assurance, you need to go back to the answers given to the first two Governance questions (is intent defined and is it fit for purpose) and ask yourself:

a. **Is Management intent effectively implemented?**
The fact that management intent has been defined and is fit for purpose counts for little if the intent is not subsequently translated into practice.

(1) are the actions taken to address risks and realise opportunities observable?

(2) are plans established to achieve the Organisation's quality objectives being operated?

(3) is top management displaying the leadership that the International Standards Organization (ISO) 9001:2015 standard dictates?

In short, it is all about ensuring that the Organisation is actually doing what it has said it will do – practising what it has preached.

b. **Does it produce the intended outcomes?**
In order to determine whether the products and/or services are producing the desired outcomes, evidence will need to be sought that verification has been performed at prescribed points in the production or service provision process to confirm defined acceptance criteria have been met. Evidence should also be sought of validation to ensure that the product or service is fit for its intended use.

2.3.2 Types of Assurance

There are two types of Assurance within this JSP; **Acquisition Assurance** which looks at the deliverable focus and **Business Process Assurance** which looks at internal focus.

2.3.2.1 Acquisition Assurance (deliverable)
Through the application of the Organisation's Quality Management System.

Acquisition Assurance ensures appropriate methods/processes are used to select suppliers and to ensure flow-down of customer and stakeholder requirements to the supply chain. It uses appropriate methods/processes to assess supplier capability, performance and to identify and analyse risk, failures and non-conformances. It also supports the Organisation in evaluating any issues, concerns, risks and development of appropriate mitigation and solutions to ensure effective resolution.

In practical terms, it provides assurance to top management that the performance of suppliers and supply chains continue to meet the Organisation's and stakeholders' requirements. It ensures that supply chain design and supplier selection processes include an objective assessment of the capability of suppliers to fulfil all the requirements of the Organisation and its stakeholders.

It can also help identify risks and opportunities associated with the Organisation's supply chain and procurement strategies, co-ordinate appropriate mitigation activities and deploy an appropriate assurance regime.

Acquisition Assurance also helps to identify relevant standards and appropriate contractual arrangements to ensure effective flow down of customer and stakeholder requirements throughout the Organisation's supply chains. It also identifies and uses appropriate measurement techniques including risk-based surveillance to assess and report on levels of conformance and improvement in the Organisation's supply chains.

The activities within Acquisition Assurance will directly contribute to the **Government Quality Assurance** Chapter 4.

2.3.2.2 Business Process Assurance (internal)

Business Process Assurance ensures the flow-down of customer and stakeholder requirements across the Organisation. It uses requirements management, process implementation and tailoring principles, risk management and performance measurement to ensure effective planning and internal controls are in place. It uses appropriate methods to ensure an effective balance between internal confidence and independent assurance.

It helps ensure management intent, as reflected in its policies, processes and plans, through its effective implementation. It can identify risks, failures and non-conformances associated with customer and stakeholder requirements; also ensures effective action is taken to identify root causes and resolve issues.

In practical terms, it bases quality activities on identified risks and opportunities associated with the Organisation's processes. Using Business Process Assurance, you can plan and implement an appropriate regime of independent assurance and internal confidence activities for the Organisation, project or product/service delivery stream, based on the identified risks and opportunities.

It can also measure and monitor levels of customer and stakeholder satisfaction with respect to the Organisation's processes and plans, using the findings of independent assurance activities to assess and report on achievement of the Organisation's planned performance and the levels of compliance being achieved.

Independent audits of the Organisation's management system processes may be conducted to determine compliance to planned requirements. This also provides assurance that legal, regulatory, process control and safety requirements remain effective, particularly during periods of change.

Below are a number of processes, groups and organisations that can assist in the assurance of delivered products and/or services (this list is not exhaustive):

- Assurance of Quality in Defence Acquisition.
- Government Quality Assurance Surveillance.
- Quality Assurance Groups.
- Pre-Contract Award Evaluation.
- Partnering Audit Arrangements within the Military Air Environment.
- MOD Government Quality Assurance Representative Organisations.

More information about these processes, groups and Organisations is explained in **Government Quality Assurance** Chapter 4.

2.4 Improvement

2.4.1 Introduction

The Improvement Chapter of the GAI Model facilitates a culture of evaluation, learning and improvement which drives more effective, efficient and agile ways of working to support business strategy, to enhance reputation and increase value for money.

The final two questions you need to answer are:

a. **Is there a culture of objective evaluation?**
The objective evaluation of any Organisations management system should be first and foremost built around a robust internal audit programme. This should utilise risk-based thinking to direct audit resource to where it can add the most value, either through mitigation of business risk or realisation of business opportunities.

Where a culture of objective evaluation is well embedded, clear evidence will be available that the outcomes from audits and reviews are acted on quickly and with purpose.

b. **Is there a commitment to continually improve?**
Continual Improvement (CI) can be seen as 'reoccurring activity to enhance performance', where performance can relate to the management of activities, processes, products, services, systems or Organisations.

Some questions to ask to see if loops have been closed could be:

a. are nonconformities and their associated corrective action processed in a timely manner?

b.   has the action taken to address risks and opportunities been evaluated, and is context being periodically revisited?

c.   is top management using its performance data to keep the business moving forwards?

Such questions are essential for establishing whether there is a commitment to CI.

There are three main benefits of using Improvement techniques.

a.   **Gathering Insight** - uses appropriate methods to understand all stakeholder needs and to identify any changes to the Organisations context including changes to the market, customer requirements and other factors impacting on the Organisation. It uses benchmarking and other appropriate tools and techniques to evaluate performance and improvement priorities.

b.   **Evaluating Measures/Results** - facilitates the development and use of appropriate measures of operational performance and product/service quality across the Organisation to ensure fact-based decision making. It also helps to establish priorities for change.

c.   **Implementing Change** - evaluates the nature and magnitude of change required (incremental, step change, transformational) and how to achieve the required changes through the development of the Organisation's people, processes, plans, tools, technologies and/or infrastructure. It also identifies any issues associated with the Organisation's culture with respect to achieving and sustaining the desired levels of operational performance and product/service quality.

The activities within Improvement will directly contribute to the **Quality Improvement** Chapter 5.

3 Quality Management

3.1 Introduction

This chapter provides the guidance on the implementation of MOD requirements and their application to achieve the directive(s) within Joint Service Publication (JSP) 940, Part 1, section 1.3. It is intended to enable the Competent Quality Practitioner to develop and maintain a Quality Management System (QMS). Further supporting advice and guidance can be found within the relevant sections in Managing Quality on the Knowledge in Defence (KiD) web site.

3.2 What is Quality Management?

Quality Management is the process of ensuring that all the activities necessary to deliver organisational outputs meet customer and stakeholder requirements; that they are planned and carried out, efficiently and effectively. Quality Management needs to be governed, assured and improved ensuring the delivery of high standard products, services and outcomes critical to MOD Organisations.

JSP 940 Part 1 contains the directive and requirements for the management of quality and states that:

> *In meeting the MOD policy requirements for Quality Management, all top management within MOD Organisations* ***shall****:*
>
> *a.   take responsibility for the quality of the products, services, capabilities or information they are managing, and for controlling the internal MOD processes required to deliver them.*
>
> *b.   develop and implement a Quality Management System using the principles defined in the ISO9000 standard as follows: Customer Focus; Leadership; Engagement of People; Process Approach; Improvement; Evidence Based Decision Making; and Relationship Management.*
>
> *(JSP 940 Part 1 Section 1.3)*

The development and implementation of a management system that at least meets the principles of International Standards Organization (ISO) 9001 will:

a.   improve management of risk through risk based thinking[8].

b.   enhance reputation and confidence in the Organisation.

c.   demonstrate control of processes through consistent and planned ways of working.

d.   achieve more efficient use of resources.

---

[8] JSP 892 - Risk Management.

e.   allow a greater visibility of the Organisation's performance.

f.   identify improvement opportunities.

g.   increase customer satisfaction through the effective delivery of organisational outputs.

h.   promote personnel involvement and improvement.

3.3 The Management System and its Development

A management system is a framework of policies, processes and procedures used by an Organisation to ensure that it can fulfil all the tasks required to achieve its objectives[9]. It can also be interpreted as an Operational Framework, providing an integrated and coherent approach to an Organisation in performing its mission responsibilities and achieving strategic direction through Leadership[10].

Quality Management introduces a number of important management principles to guide an Organisation towards improved performance; refer to Figure 3-1 below:

| Customer Focus |
| Leadership |
| Engagement of People |
| Process Approach |
| Improvement |
| Evidence Based Decision Making |
| Relationship Management |

Figure 3-1: The Seven Quality Management Principles

NOTE: Further information on the Quality Management Principles can be found in Managing Quality on the KiD.

In order to establish a management system, the MOD has considered the following key elements which are all centralised around Leadership; refer to Figure 3-2 and Table 3-1 below.

---

[9] International Organization for Standardization (2001) Guidelines for the justification and development of management system standards. International Standard ISO Guide 72, Geneva, Switzerland.
[10] ISO 9000:2015 Quality Management Systems - Fundamentals and Vocabulary.

Figure 3-2: The Model for a Management System or Operational Framework

Key Topics	Benefits
The Context of the Organisation	A greater understanding of the Business with the associated risks and opportunities.
The Needs and Expectations of Interested Parties	The Organisation's activity will be performed to the highest standards with the reduction of unnecessary cost.
Key Responsibilities of the Organisation	Clarity of responsibilities and accountabilities to individuals at all levels.
Key Activities of the Organisation	Defined, consistent policies and processes across the Organisation with the breakdown of silo working.
Allocation of Activities to Personnel	A greater understanding of other activities and resources required to achieve the Organisational Objectives with increased Organisational performance, morale and motivation.
Management Organisation and Operating Approach	Establishment of Organisation Structures and Committees, defining the flow of communication, aiding top management to identify the talent and resource requirement.
Evaluation of Compliance	Assess and confirm the effectiveness of the management system meeting the needs and expectations of interested parties.

Table 3-1: Benefits of Considering the 7 Key Steps to Establish a Management System

3.3.1 The Context of the MOD Organisation

The context of the MOD Organisation is about understanding the business by gathering Organisational knowledge[11] and identifying all of the internal and external issues, risks and stakeholder requirements that are relevant and may affect the strategic direction of the Organisation and management system[12]. Organisational knowledge is required for competence, awareness and communication of the management system.

In order to understand the context of the business, consider the following steps:

    a.   establish the interested parties / stakeholders who effect or could be affected by the management system; for example:

        (1)   customers.
        (2)   end users.
        (3)   employees.
        (4)   external providers or suppliers.
        (5)   regulators.
        (6)   other MOD Organisation or Agencies.
        (7)   the Government.
        (8)   the public.
        (9)   taxpayers.

    b.   monitor all interested parties relevant to the management system on a regular basis, as the context will change through time.

    c.   through risk-based thinking[13], identify the risk and opportunities that need to be managed. This should involve contingency planning and preventive action[14].

3.3.2 Needs and Expectations of Interested Parties

Needs and expectations are satisfied by considering all aspects valued by interested parties during the delivery of strategic, tactical and operational processes. Engagement with key interested parties at the earliest availability will provide the opportunity to ensure the Organisation's activity is performed to the highest standards with the management of efficiency and costs.

    a.   define top management's intent through the scope of the management system by considering the context of the Organisation and interested parties.

    b.   approve a Quality Policy and Strategy relevant to the scope of the Organisation, considering risks, opportunities, requirements of the interested parties and improvement.

    c.   agree and approve specific criteria with the relevant interested parties to inform measurable business metrics, Key Performance Indicators (KPIs) and milestones that will be consistent with the Quality Policy and strategic direction.

---

[11] ISO 9001:2015 - Quality Management Systems - Requirements.
[12] How Defence Works - Corporate Governance - The Defence Operating Model.
[13] ISO 9001:2015 - Quality Management Systems - Requirements, Clause 6.1 Risks and Opportunities.
[14] JSP 892 - Risk Management.

d.   understand the aspirations of the interested parties to exceed their needs and expectations, in particular the customers of the Organisation.

e.   ensure continual and optimal alignment with the evolving needs and aspirations of interested parties through periodic reviews and making the best use of resources.

f.   encourage continual Improvement (refer to Chapter 5) and the enhancement of customer satisfaction.

g.   ensure any property belonging to customers and external providers are treated with adequate care[15].

3.3.3 Key Responsibilities of the Organisation

It is necessary to define clearly the responsibility, authority and interactions of all personnel whose work affects the quality of products and services, as well as the governed approaches, assurances and improvements that are needed for effective operation within the MOD Organisation. This provides clarity of responsibilities and accountabilities to individuals at all levels.

There is a primary emphasis on the key responsibilities of Leadership and top management to:

a.   demonstrate commitment to the management system by initiating, planning and resourcing its direction to fulfil its mission and purpose.

b.   express the mission and vision of the Organisation's future in Policies or Strategies[16].

c.   ensure the Quality Policy and Quality Objectives are compatible with the strategic direction of the Organisation.

d.   ensure the management system requirements are integrated into the Organisation's processes.

e.   understand the Organisation's risks and opportunities[17] and the impact on the delivery of products or services[18].

f.   consider establishing a committee to monitor and review the overall effectiveness and efficiency of management systems.

g.   consider the availability of resources required to fulfil responsibilities.

h.   define and assign relevant responsibilities and authorities to the committee, process owners and suitably qualified and experienced personnel for promoting a culture of risk based thinking[19], enhancing customer focus and improvement, whilst remaining accountable for the overall effectiveness.

---

[15] ISO 9001:2015 - Quality Management Systems - Requirements.
[16] https://www.gov.uk/government/organisations/ministry-of-defence/about.
[17] ISO 9001:2015 - Quality Management Systems - Requirements.
[18] JSP 892 - Risk Management.
[19] ISO 9001:2015 - Quality Management Systems - Requirements.

3.3.4 Key Activities of the Organisation

A framework of interrelated processes (refer to Figure 3-3 below) through the adoption of a 'Process Approach'[20] will enable an Organisation to deliver outputs to satisfy objectives and meet the needs of the interested parties, preventing silo working and encouraging cross-departmental or matrix management working.
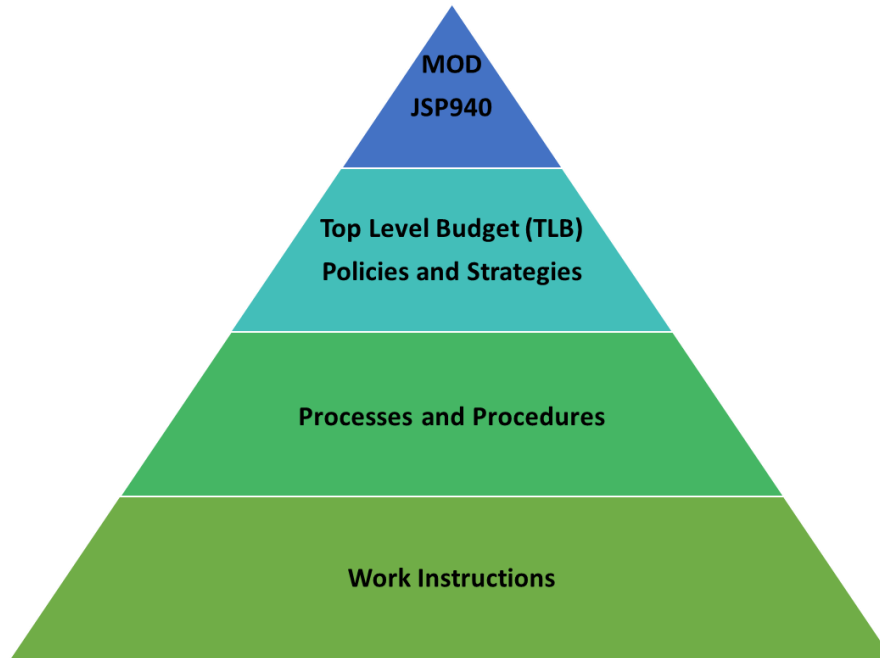
Figure 3-3: A Typical Framework of a Management System in the MOD

When developing a management system, the following activities should be considered:

a.   identify the key processes required to fulfil the core activities in the Organisation.

b.   perform a gap analysis against the ISO 9001 standard.

c.   establish resources to support the development and implementation of the processes, including the process owners, authors, peers and user reviewers.

d.   agree and develop the hosting of the management system that is easy to use and accessible by all employees, considering software or web-based options.

e.   ensure effective and appropriate controls to manage the processes are in place, with appropriate permissions to view and authority to change.

f.   ensure templates, process sequences and interactions have been agreed through appropriate working groups with process owners.

g.   ensure internal audits or assessments are delivered through a risk-based programme with suitably qualified Internal Auditors.

---

[20] ISO 9000:2015 - Quality Management Systems - Fundamentals and Vocabulary.

h.   raise awareness and encourage understanding of the application of the Quality Policy, processes and management system requirements through both internal and external communication to all areas of the MOD Organisation.

i.   ensure individuals are aware of their own contributions to the effectiveness of the management system, including the benefits of continual improved performance.

The management system needs to be maintained once it has been developed and implemented, to ensure continual compliance.

3.3.5 Allocation of Activities to Personnel

The allocation of activities to personnel across the Organisation is a critical success factor and issuing responsibilities to perform these activities allows individuals to become invested in the Organisation, thereby empowering them and improving their effectiveness and efficiency.

The appropriate co-ordination of activities to personnel will result in better Organisational performance, enhance productivity with increased morale, motivation and participation. Additionally, it allows personnel within the Organisation to gain a greater understanding of other activities and resources required to achieve the Organisation's objectives.

When allocating activities to personnel, the following should be considered:

a.   consider the risks and priority of the activity based on the Organisation's objectives.

b.   assign activities closely aligned with strengths of individuals by evaluating the competency and skill set required to fulfil the activity and ensure these are met and maintained, whilst retaining documented evidence.

c.   consider the development opportunities that the activities may present for the personnel.

d.   encourage individuals to take responsibility for their activities, ensuring they are appropriately empowered and treated fairly.

e.   recognise, value and reward individuals for successful completion of activities.

f.   encourage employee involvement at all levels to enable all competencies and skills to be utilised effectively.

3.3.6 Management Organisation & Operating Approach

Management Organisation improves operational efficiency by defining the flow of communication and reporting requirements which are essential to an Organisation's success. It can also assist top management to identify the talent and resource requirement, and:

a.   ensure frequent and effective communication throughout the Organisation.

b.   ensure reporting relationships are clear, concise and known (Organisation Charts).

c.   make employees aware of the customer's requirements through the Organisation's quality policy, business metrics, objectives, KPIs or milestones that are relevant to them.

d.   consider how knowledge has been determined for the processes and activities of the Organisation for the delivery of products and services.

e.   identify the information that is needed and consider how knowledge can be updated and maintained within the Organisation, for example by addressing succession planning.

3.3.7 Evaluation of Compliance

The evaluation of the MOD Organisation's progress against business metrics, objectives, KPIs or milestones are vital to confirm the effectiveness of the management system, meeting the needs and expectations of interested parties.

In order to evaluate the compliance of the MOD Organisation, consider the following steps:

a.   review, update and agree key business metrics, objectives and KPIs with interested parties to aid improvement activity, considering the purpose of change, the potential consequences, risks and opportunities[21], the resource and allocation of responsibilities whilst maintaining the integrity of the management system.

b.   review, update and agree the context of the Organisation at least annually with top management.

c.   review any management system trends.

d.   action and close audit findings, including nonconformities, corrective actions, whilst being mindful of occurring trends with regular reviews.

e.   review customer, interested parties and stakeholder feedback, including both satisfaction and dissatisfaction.

f.   develop and complete action plans to address poor results, trends or feedback taking into consideration the importance of the processes concerned and the requirement to meet external regulatory conditions.

g.   agree reporting methods at least annually through board meetings.

h.   consider lessons learnt from experiences to facilitate improved ways of working for the future.

i.   benchmark good practices both internally and externally.

j.   share best practice both internally and externally.

---

[21] JSP 892 - Risk Management.

4 Government Quality Assurance

4.1 Introduction

Government Quality Assurance (GQA) consists of multiple activities which **should** be applied across both the Procurement and Support elements of the Ministry of Defence (MOD) Acquisition process. As part of an applied Quality Management System (QMS), its primary role is to deliver technical assurance to the MOD for the management of risk. This is done both internally and, where applicable, across the contractual boundary in order to achieve the requirements of the Defence Lines of Development (DLOD).

GQA **should** be applied to all MOD contracts and tailored by Competent Quality Practitioners to deliver the appropriate contractual quality conditions and quality assurance across the supply chain.

This chapter provides the MOD requirements and the guidance for their application to achieve the directive(s) within Joint Service Publication (JSP) 940, Part 1, section 1.4 for acquisition. It has been aligned with the GQA Framework[22] (see Figure 4-1) to provide a consistent approach to the application of GQA for all defence acquisition. Further supporting advice and guidance can be found within the relevant sections in Managing Quality on the Knowledge in Defence (KiD) web site.
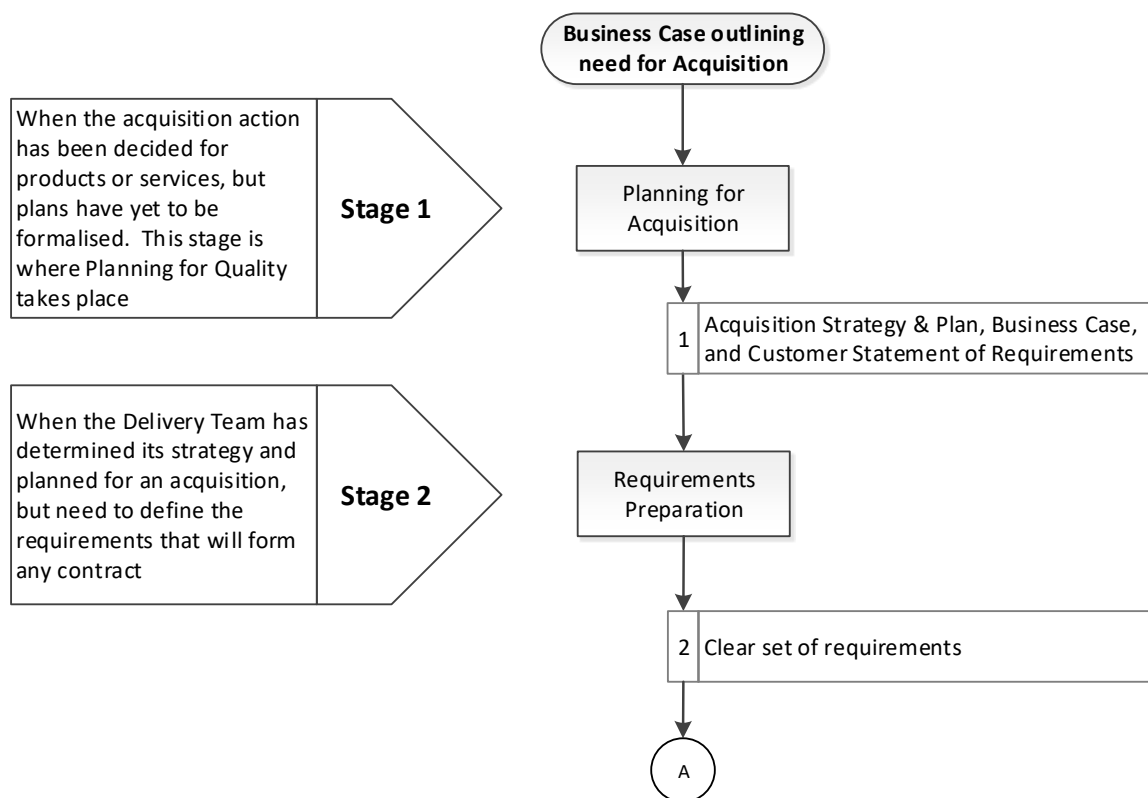
Figure 4-1a: GQA Framework Stages

---

[22] Government Quality Assurance – A Functional Framework for Acquisition. Refer to Managing Quality on the KiD.
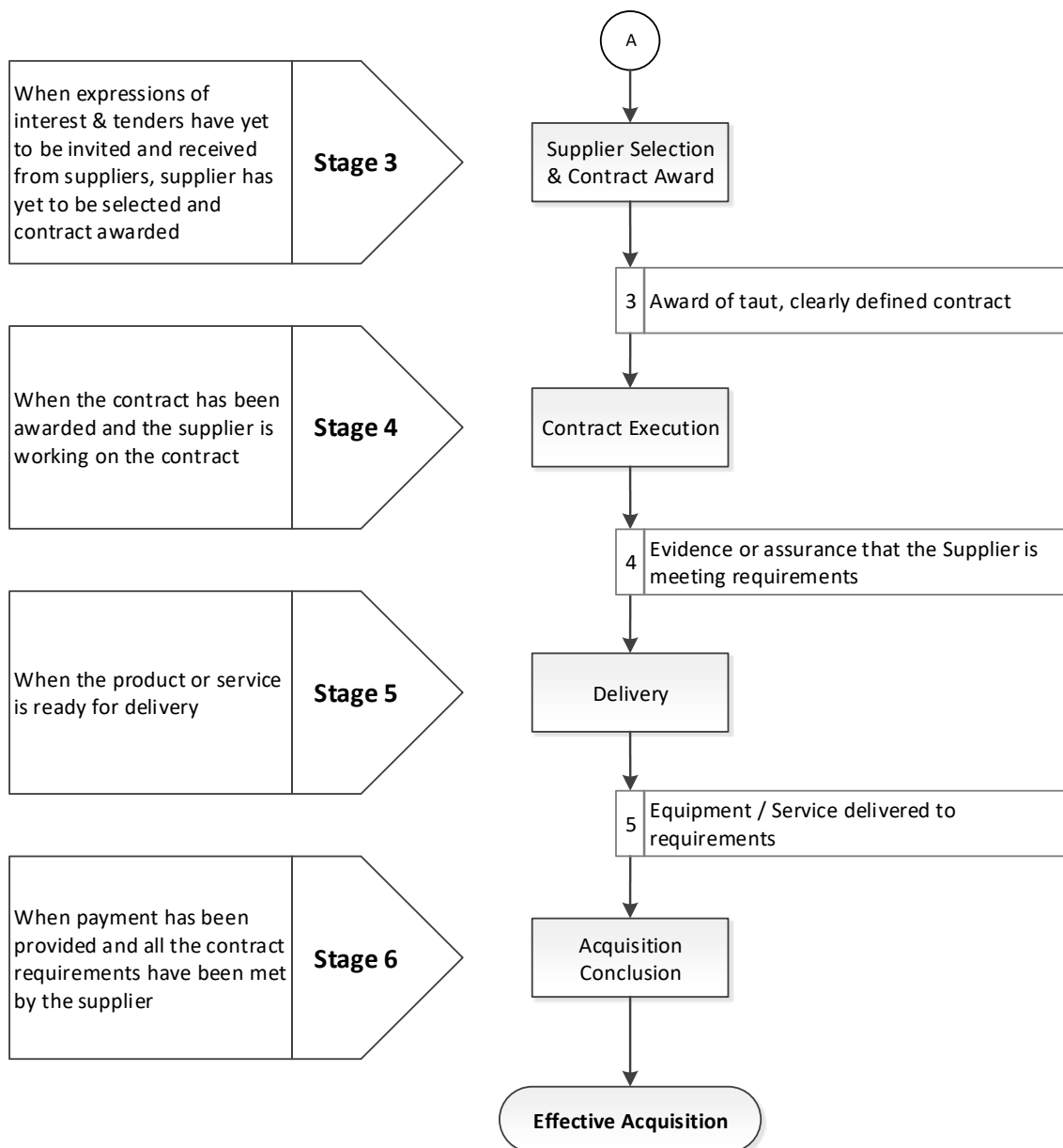
Figure 4-1b: GQA Framework Stages

4.2 Planning for Quality

4.2.1 Introduction

Planning for quality is a process where stakeholder (customer, project and business) quality requirements are captured, planned, embedded, measured, and continually improved upon throughout the life of the project. This is achieved through the application of approved and accepted quality planning using a Plan-Do-Check-Act philosophy and the principles of Through Life Management.

Quality planning is an integral element within the wider project planning activity and is intended to incorporate all project quality activities; referring to other functional elements within the Organisation's planning hierarchy (see Figure 4-3).

Note: Acquisition and/or contractual support contracts for the provision of training to the MOD apply the requirements of JSP 822 (Defence Direction and Guidance for Training and Education) and those detailed within Chapter 4 of this JSP.

4.2.2 Requirement

This section provides the MOD Requirements and their application to achieve the directive within JSP 940, Part 1, Section 1.4 'a' and 'b'.

In meeting the MOD policy requirements for GQA, all Top Management within MOD Organisations **shall** *as a minimum:*

a. develop a strategy and plan for achieving quality, including stated and measurable acceptance criteria, whilst taking account of previous learning from experience.

b. formalise any delegation of authority for undertaking GQA activities, only to suitably competent staff with the necessary resources.

(JSP 940 Part 1 Section 1.4)

Effective quality planning in the MOD **should** be conducted and documented for the procurement and support of all products supplied to the MOD.

Quality planning **should** be conducted by a Competent Quality Practitioner within a structured process as part of a MOD Organisation's adherence to their QMS.

Quality planning is to follow the MOD Planning for Quality Model[23], adopting the eight Planning for Quality Principles (Figure 4-2). The results of any quality planning **should** be detailed within the Quality Management Plan, to be developed from the early stages of Capability Requirements Identification.

The level of planning required can be tailored to meet the needs of the acquisition / in-service support activities to be conducted.

4.2.3 Acquisition Planning for Quality Principles

Eight principles have been identified for use by the MOD in order to facilitate effective planning for quality and improved project performance.

---

[23] Planning for Quality – Guidance Document. See Managing Quality on the KiD.

QUALITY PLANNING IS TO BE INITIATED AT THE OUTSET OF A PROJECT

Planning for Quality must be agreed and initiated as early as possible. Inputs from all stakeholders must be considered and developed into an agreed project quality planning document and updated as the project progresses. 'Lessons Learned' should be addressed as part of the iterative process.

QUALITY PLANNING IS TO INVOLVE ALL STAKEHOLDERS

Consideration must be given to ensure that all relevant stakeholders are aware of their role in planning for quality. Stakeholders will agree ownership (jointly or otherwise) for each planning for quality activity.

QUALITY PLANNING IS TO BE APPROPRIATE TO THE SIZE AND SCOPE OF THE PROJECT AND THE ASSOCIATED RISKS

Consideration must be made of the quality planning activities to be performed for the project and the resources required to perform those activities. This will ensure the most efficient use of the available resources.

QUALITY PLANNING IS TO INCLUDE THE WHOLE SUPPLY CHAIN

Planning for Quality must consider the whole supply chain including project stakeholders, to ensure objectives are understood and there is a consistent flow-down of requirements throughout the supply chain.

QUALITY PLANNING IS AN ITERATIVE PROCESS THROUGHOUT THE PROJECT LIFECYCLE

Consideration must be given to the relevant phases of the project lifecycle. The identified phases of the project lifecycle shall determine the assurance tasks and responsibilities.

QUALITY PLANNING IS TO FACILITATE THE ACHIEVEMENT OF PROJECT/CONTRACT REQUIREMENTS
Planning must focus on meeting the intended outcome based on inputs from all stakeholders including suppliers and end users. It should focus on areas of risks that could affect the planned outcome and put in place mitigation action to ensure that those risks are managed to reduce the likelihood and impact of occurrence.

QUALITY PLANNING IS TO BUILD UPON A PRINCIPLE OF CONTINUAL IMPROVEMENT

Planning for Quality must be based on measurement, analysis and improvement through the Plan-Do-Check-Act (PDCA) cycle.

QUALITY PLANNING PROMOTES A RIGHT FIRST TIME, ON TIME' CULTURE

Lives and wellbeing of people depend on a project's ability to deliver 'right first time on time'. Rework and resource wastage are also reduced leading to schedule adherence, cost savings, improved reputation and customer satisfaction.

Figure 4-2: Acquisition and Support Planning for Quality Principles

4.2.4 Planning for Acquisition and Support

Planning for quality in defence will be required at all levels within the acquisition and support document hierarchy structure (see figure 4-3). From high-level planning at the Acquisition Programme level, intrinsically linked to the application of QMS and policy requirements in delivering the capability, through to low level planning, detailing how quality is to be ensured and assured for a specific project/acquisition activity.

Figure 4-3: Example Quality Planning Hierarchy

4.2.4.1 Programme Planning
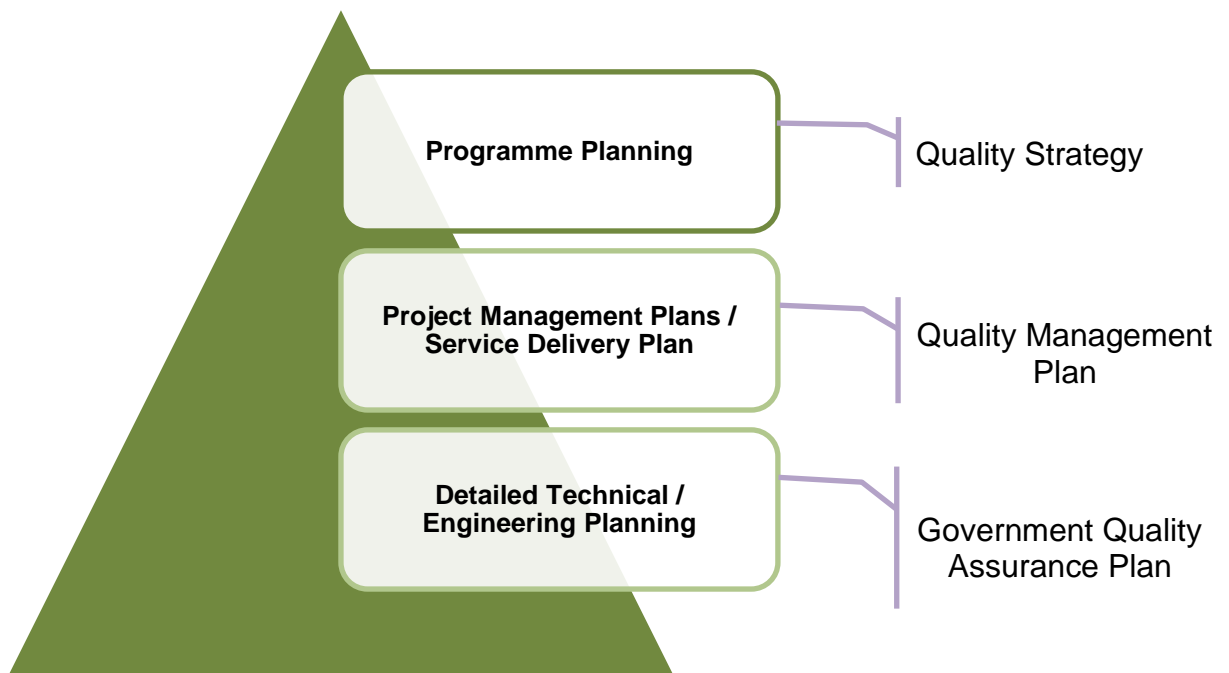
Quality planning at the Programme level will consist of the development of the Quality Strategy. This is developed at the earliest possible stage and will provide the Strategy for the application of all Programme Quality activities as required by the Organisational QMS.

The Quality Strategy is a 'high-level' document, defining the roles and responsibilities for the management of quality from a through-life perspective. It is intended to document:

      a.   effective and efficient Organisational business management controls.

      b.   the allocation of roles, responsibilities and competence of acquisition Organisation staff with all aspects of Quality.

      c.   methods of communication and reporting requirements.

      d.   the quality-related activities the acquisition Organisation expect other Organisations (including Suppliers) to do.

      e.   the application of LFE activities.

The Quality Strategy will lay the foundation for the acquisition Organisation's quality planning.

Further guidance on the content of a Quality Strategy can be found in Managing Quality on the KiD.

4.2.4.2 Project Management Plans / Service Delivery Plan

The Quality Management Plan is intended to detail the management of quality for acquisition and support. It is intended to be an element of the Project Management Plan

and / or Service Delivery Plan. It needs to capture the application of the Organisation's processes for quality and quality assurance as it applies to the specific project / support activities. It will detail:

     a.   the achievement of the Quality Strategy requirements;

     b.   the application of the Organisation's QMS processes;

     c.   applicable review stages/milestones;

     d.   the internal assurance and audit activities; and

     e.   references to applicable GQA planning.

4.2.4.3 GQA Planning

GQA planning is a detailed project/acquisition specific planning activity. Project specific assurance activities will be defined and executed as a result of GQA Planning. This will include planning for process and product assurance both internally, with the acquisition organisation management of quality and externally for the Supplier assurance requirements. Effective planning for quality will also provide levels of assurance, commensurate with the phase of the project, not only for quality but also for Engineering, Procurement, Supply Chain and In-Service Support Assurance.

GQA planning is required to effectively identify and manage the associated risks and issues to quality. It needs to advise on where and when the projects assurance activities and GQA resources are required. Effective planning will consider internal and external dependencies over all phases of the Lifecycle; from Concept through In-Service and on to the termination of the capability and its Disposal.

GQA planning **should** be conducted by a Competent Quality Practitioner and **should** be formally documented, co-ordinated and controlled within a GQA Plan or Engineering Management Plan as detailed within the Defence Authority for Technical and Quality Assurance (DAT&QA) Guide to Engineering Activity and Review (GEAR) Tool.

Project Assurance and Acceptance requirements will be captured from:

     a.   stakeholder identification and engagement (i.e. Customer / User (Front Line Commands (FLCs)), Domain Regulators and equipment / platform Support Teams).

     b.   project plans (i.e. Project / Engineering Management Plans, Acceptance Plans, Work Breakdown Structures and Service Delivery Plans).

     c.   supply chain assessment (i.e. Supplier risks, supply chain risks, Supplier Organisation and Work Breakdown Structures).

     d.   product/service requirements.

4.2.4.4 Project Quality Management Plan

The Project Quality Management Plan[24] (PQMP) is developed to capture the Planning for Quality requirements, incorporating the hierarchical planning elements in a single document; this will include the Quality Strategy, the Quality Management Plan and the GQA Plan. To ensure that internal MOD acquisition quality activities are appropriate and implemented, the MOD Acquisition Organisation is expected to apply a tailored planning approach to the achievement of quality for an acquisition and/or support contractual activity.

The PQMP, developed in consultation with the relevant specialist stakeholders, is intended to provide an auditable record for the application of the Organisations QMS processes in the achievement of contractual requirements.

Further guidance on the content of a PQMP can be found in Managing Quality on the KiD.

4.3 Requirements Preparation

4.3.1 Introduction

This section provides guidance for the identification and application of GQA requirements and activities in defence acquisition. The purpose of the Requirements Preparation stage is to establish clear requirements for the products or services to be acquired. The capture of acquisition quality requirements is facilitated through the identification and management of potential risks to quality and needs to include the identification of stakeholder requirements.

NOTE: The quality requirements detailed within this chapter refer only to the MOD 'Standard' quality requirements that are applicable to all acquisition. This section does not include domain [Land, Sea, Air, Cyber and Space] specific quality requirements which need to be defined by Competent Quality Practitioners within those domains.

NOTE: Guidance on quality requirements for international acquisition through the Organisation Conjointe de Coopration en Matire d'Armement or Foreign Military Sales is not included in this JSP. Refer to Managing Quality[25] in the KiD.

Contact the Quality and Configuration Management Policy (QCM Pol) Helpline[26] if clarification is required.

4.3.2 Requirement

The Requirements Preparation stage **should** be implemented during the development of a contractual Statement of Requirements (SoR) through the review of the Business Case and relevant project documentation in discussion with project Subject Matter Experts (SMEs) as required. The output of this review will feed into the Contract Requisition (CR).

The identification of specific GQA activities should be incorporated within the quality planning and resource documentation.

---

[24] See Planning for Quality in Managing Quality on the KiD.
[25] Refer to the 'Overseas Quality Assurance (QA)' topic in Managing Quality.
[26] Email: DES-QCM-Policy-Helpline@mod.gov.uk.

4.3.3 Appropriate Certification

It is essential to the overall effectiveness of the Armed Forces that product and services procured conform to MOD's contractual requirements. Selecting competent suppliers with the capability to meet contract requirements provides a level of assurance that this can be achieved. QMS certification is one method by which the MOD can make an evaluation of the supplier. It enables an objective assessment of a Supplier's competence to feed into the Supplier Selection process before they are invited to tender for work.

A Supplier holding appropriate QMS certification provides evidence that they have applied and controlled systems in place to manage quality. The scope of their certification demonstrates that the systems and associated processes are aimed at delivering specific products and / or services.

Appropriate Certification is defined as:

a. **The Right Standard** – a recognised Euro Norm (EN) QMS standard.

b. **The Right Scope** – registered scope of work on the certificate covers intended acquisition.

c. **The Right Issuing Body** – certification was issued by a Certification Body holding suitable accreditation, with the right scope, from a National Accreditation Body (NAB) who is a signatory to the International Accreditation Forum (IAF) or IAF Accredited Regional Multi-Lateral Agreements (MLA).

British Standard (BS) EN International Standards Organization (ISO) 9001 'Quality Management Systems - Requirements' is the MOD's preferred baseline standard, although recognised suitable sector scheme standards may be accepted where justified (see below).

Further guidance on Appropriate Certification can be found in Managing Quality on the KiD.

4.3.3.1 Requirement

This section provides the MOD Requirements and their application to achieve the directive within JSP 940, Part 1, Section 1.4 'c'.

> *In meeting the MOD policy requirements for GQA, all top management within MOD Organisations **shall** as a minimum:*
>
> *c. Only place MOD contracts with Suppliers who can demonstrate that they have a Quality Management System appropriate for the products or services being acquired.*
>
> *(JSP 940 Part 1 Section 1.4)*

The requirement for a Supplier to have an appropriately certified QMS is mandated where:

a. regulatory requirements for Supplier QMS certification exists (i.e. domain specific Supplier certification).

b.   a Very High / High risk project has been identified.

The application of this policy shall be in accordance with the Appropriate Certification Process at Annex A to this chapter.

The following sector scheme QMS standards may also be considered as a 'Technical Discriminator' for use in the Supplier Selection Process[27]:

a.   BS EN 9100*, Quality Management Systems - Requirements for Aviation, Space and Defence Organisations.

b.   BS EN 9110*, Aerospace series- Quality Management Systems - Requirements for Aviation Maintenance Organisations.

c.   BS EN 9120*, Aerospace Series - Quality Management Systems - Requirements for Aviation, Space and Defence Distributors.

d.   BS EN ISO 13485*, Medical Devices - Quality Management Systems - Requirements for Regulatory Purposes.

*_The MOD Acquisition Organisation needs to ensure the correct issue date of the standard used._

Other QMS standards accepted by MOD, but may not be used as a 'Technical Discriminator':

a.   ISO 16949 Quality Management Systems Certification, issued by an International Automotive Task Force (IATF) approved certification body, is acceptable if the scope of work under the contract is within the automotive sector. **This is not a NAB accredited process**.

b.   TickITplus (UKAS and SWEDAC (NAB for Sweden) only) - provides ISO 9001 accredited certification with a capability grading for Information Technology Organisations. **This is not a recognised EN standard**.

Calibration: where recognition of calibration services is required the contracted provider shall be accredited to BS EN ISO / IEC 17025 - 'General requirements for the competence of testing and calibration laboratories'. Verification of the appropriate scope of the accreditation **should** be conducted. Refer to the Defence Logistics Framework (DLF) for calibration policy, advice and guidance.

Second and Third-Party certification to NATO contractual standards (NATO Allied Quality Assurance Publication's (AQAP)) **are not accepted** by the MOD as a means of Supplier QMS certification and are not to be requested as such in MOD contractual activity.

4.3.3.2 Application

The application of the Appropriate Certification for a specific contract is dependent upon any applicable regulatory requirements and the severity of risk associated with the acquisition contractual requirements; from both a technical and complexity perspective.

---

[27] Refer to the Commercial Toolkit on the KiD.

In some instances, it may be necessary or appropriate to place contracts with Suppliers who do not hold appropriate certification where the assessed risks are low or very low. The decision to proceed **should** be subject to a risk assessment and endorsed by a Competent Quality Practitioner with the outcome recorded in the project file and minuted on Contract Purchasing and Finance (CP&F) as a record.

As an initial estimator (until verified by the project risk management activity), a Very High or High risk project should be assumed where:

> a.   the project or contract involves any system part, assembly or equipment where a failure is likely to have a Critical or Severe impact and the likelihood of occurrence is likely to be Medium to Very High (product or service risk); or

> b.   where the product or service is considered complex or involves a complex supply chain (risk to the achievement of quality requirements).

4.3.4 Standard Quality Assurance Contract Requirements

4.3.4.1 Introduction

Standard QA Requirements are categorised as either **Primary** - the main requirements for QMS systems, or **Supplementary** - those that supplement the QMS for a specific purpose.

Annexes B and C to this chapter provide selection flowcharts and a table of the 'standard' QA contract conditions to assist in the selection process.

4.3.4.2 Requirement

This section provides the MOD Quality Requirements and their application to achieve the directive within JSP 940, Part 1, Section 1.4 'd and e'.

---

*In meeting the MOD policy requirements for GQA, all top management within MOD Organisations **shall** as a minimum:*

d.   ensure all MOD contracts include a section entitled Quality Assurance Requirements, and that all Contract Requisitions have had the Standard Quality Assurance Contractual Requirements endorsed by a MOD Crown Servant who is an Authorised Quality Assurance Signatory.

e.   ensure that all appropriate actions are taken to establish the processes required for the avoidance of counterfeit materiel, including the necessary contractual arrangements for the prevention of entry into the Supply Chain.

(JSP 940 Part 1 Section 1.4)

See Flowcharts at Annex B and the 'Table of Standard Contractual Quality Conditions' at Annex C aid the selection of Primary and Supplementary Standard Quality Assurance Contract Requirements.

Note: Assistance on the identification of an Authorised Quality Assurance Signatory can be obtained from the QCM Pol Helpline[28].

4.3.4.3 Primary Quality Standards

Primary Standard QA Contractual Requirements are expressed in the NATO Allied Quality Assurance Publications (AQAPs). These AQAPs are implemented under NATO Standardization Agreement (STANAG) 4107[29] as part of the NATO Interoperability requirement through standardising the development and application of QA in the procurement of Defence products[30].

A list of the Primary Standard QA Contractual Conditions is provided in the Table of Standard Contractual Quality Conditions at Annex C.

Primary AQAPs are requirements to be applied to the provision of products or services. They do not mandate that a Supplier needs to have a 'certificated' QMS. AQAPs 2110 and 2310 are, however, aligned to the requirements contained in the QMS certification standards. They contain generic requirements which are complementary to other contractual requirements and **should** be considered for all Suppliers to the MOD regardless of type, size and product:

> a.   AQAP 2110 contractually invokes compliance with ISO 9001 QMS standard, with additional NATO requirements.

> b.   AQAP 2131 is for final inspection and test; where 'test' is the requirements that relate to production test processes. This standard is not directly linked to the Supplier's QMS.

> c.   AQAP 2310 contractually invokes compliance with BS EN 9100 QMS standard, with additional NATO requirements.

Supplier contractual QMS requirements for ISO 9001 are no longer supplemented by the application of differing AQAPs, aimed at omitting elements of QMS which would not apply to the achievement of contractual requirements. This is because adherence of a QMS to ISO 9001 does not require a Supplier to document QMS requirement exclusions within their Management System. A Supplier's QMS is therefore to cover the work that they perform, which is captured by AQAP 2110. The only exception to this is where a contract only requires final inspection and test; which is covered by AQAP 2131.

Where the need for a primary AQAP has been identified, one **and only one**, of the primary AQAPs is included in the SoR and CR.

For subcontracting, only the applicable Standard QA Contractual Requirements, not necessarily the full AQAP, need to be flowed down. The Supplier's Quality Plan **should** provide details of how this will be accomplished.

Where contracts are considered low risk, it may be decided not to include a primary AQAP

---

[28] Email: DES-QCM-Policy-Helpline@mod.gov.uk.
[29] STANAG 4107 - Mutual Acceptance of Government Quality Assurance and usage of the Allied Quality Assurance Publications (AQAP).
[30] The term 'Product' as defined within the NATO AQAPs, see Section 1.5 of this JSP 'Terms and Definitions'.

in the contract. This decision **should** only be taken after consultation with an Authorised Quality Assurance Signatory. If no AQAP is included, but Certificates of Conformity (CoC), traceability and design provenance are required, appropriate Defence Conditions (DEFCONs) can be used; refer to Supplementary QA Requirements (below).

4.3.4.4 Supplementary Quality Standards

Supplementary QA requirements are provided to communicate MOD requirements related to the following specific activities.

a. **Software**. For MOD contracts that include development or maintenance of either deliverable or non-deliverable software; AQAP 2210 - NATO Supplementary Software Quality Assurance Requirements to AQAP 2110 or AQAP 2310 needs to be included. AQAP 2210 **shall** be invoked in **addition** to AQAP 2110 or AQAP 2310 (refer to the Standard QA Contractual Requirements Selection Flowchart at Annex B to this chapter).

AQAP 2210 requires the Supplier to apply additional controls to assure software quality; For more information refer to section 4.3.7 Software Quality Management.

NOTE: For Commercial Off The Shelf (COTS) software, ISO 25051 Software engineering. Systems and software Quality Requirements and Evaluation (SQuaRE). Requirements for quality of Ready to Use Software Product (RUSP) and instructions for testing is recommended as an **informative** standard.

b. **Supplier Quality Plans**. AQAPs 2110 and 2310 require the Supplier to submit a quality plan. The inclusion of AQAP 2110 or 2310 in a contract always needs to be accompanied by either DEFCON 602A or DEFCON 602B, selected as applicable to define MOD requirements in respect of a 'deliverable' quality plan.

Where risks warrant a deliverable quality plan the contract needs to include DEFCON 602A, which requires a deliverable quality plan from the Supplier. DEFCON 602A needs to be accompanied by AQAP 2105.

Where the contract includes developmental software, AQAP 2210 will also be included as a contractual requirement and a deliverable software quality plan will be required.

Where a deliverable quality plan / deliverable software quality plan is required, consideration needs to be made for, and included within the tender requirements if applicable, the provision of a Draft Quality Plan from the Supplier(s) during the Supplier Selection Process. Consideration should also be made for linking Authority acceptance of the deliverable quality plan to a contractual milestone.

Recognising that the contractual risks may not warrant the submission of a quality plan by the Supplier, the Authorised Quality Signatory may override the AQAP requirement with DEFCON 602B that requires the Supplier to plan for quality but not submit a quality plan to the Authority.

MOD review and acceptance of a Supplier's deliverable quality plan / deliverable software quality plan shall be conducted by a competent GQA Practitioner, who

should hold a valid GQA Practitioner licence, in consultation with appropriate SMEs as necessary.

For more information refer to the 'Supplier Quality Plans' and 'Software Quality Management' topics in Managing Quality on the KiD.

c.   **Certificate of Conformity (CoC)**. A CoC provides a method of formal assurance from the Supplier that the product(s) conform to contractual requirements. This is recognised within all the Primary AQAPs, which require the Supplier to provide a CoC, but they do not define the CoC content. Therefore, DEFCON 627 (MOD requirements for CoC) is used to contractually invoke CoC requirements for all Primary AQAPs.

The ability to trace the history, distribution, use or location of materials or parts following delivery is an important aspect of any product within the defence inventory. This is especially relevant where products are critical to safety or subject to regulatory requirements.

For example, where products are procured as part of an aircraft, including standard consumable spares which might have applications other than aircraft use, DEFCON 627 shall be invoked in these contracts.

Retention of CoCs is to be in line with 'Retention of Materiel Accounting Records'[31] as detailed in the Defence Logistic Framework (DLF) and comply with the organisation's records retention policy.

DEFCON 627 is also to be used where risks do not warrant the inclusion of a Primary AQAP, but design provenance or traceability is determined as a requirement.

For more information refer to the 'Certificate of Conformity' and 'Traceability and Design Provenance' topics in Managing Quality on the KiD.

d.   **Managing Concessions**. The process for a Supplier to request, and the Authority (MOD) to approve, concessions is set out in Defence Standard (Def Stan) 05-061 Part 1 - Quality Assurance Procedural Requirements – Concessions. Whenever there is a likelihood that the Supplier may need to request a concession, and they are considered technically competent to categorise non-conforming products and hold the appropriate design authorisation, privileges or approvals where required by applicable regulations, the process for the Management of Non-conforming products (detailed at Annex D to this chapter and referenced in section 4.5.3 Management of Non-conforming Products) **should** be applied.

NOTE: There are instances where alternative MOD processes exist to manage concessions; specifically where maintenance support activity is contracted out to industry. In cases where mandated in-service procedures already exist, the use of the appropriate concession's procedure needs to be considered when placing the contract.

---

[31] See DLF - Retention of Materiel Accounting Records.

Refer to the 'Managing Concessions' topic within Managing Quality on the KiD for further guidance.

e. **Contractor Working Parties**. A Contractor Working Party (CWP) is comprised of one or more Supplier's representatives contracted to undertake specific tasks outside of their own facility, usually at MOD premises. CWP activities are typically concerned with installation, repairs, modifications, and the provision of services.

It is important that all CWP contracted activities are planned for and conducted by competent personnel through the application of controlled processes. This is recognised within AQAP 2110 or AQAP 2310 (which include the requirement for Suppliers to plan for specific arrangements and communication where work is to be conducted at locations external to their premises[32]).

When determining the contractual requirements, where there is likelihood that CWPs will be required to operate under a contract, the contract **should** include Def Stan 05-061 - Part 4 - Quality Assurance Procedural Requirements - Contractor Working Parties where AQAP 2110 and AQAP 2310 are not included in the contract.

Refer to the 'Contractor Working Parties' topic within Managing Quality on the KiD for further guidance.

f. **Independent Inspection for Safety Critical Items**. Many military platforms contain equipment or systems which are considered safety critical. During the production or maintenance of this equipment or these systems there may be stages of assembly, installation and / or test that would induce an unacceptable risk should an error occur. Independent or Duplicate inspection may therefore be considered as an appropriate method of risk mitigation.

Defence Standard (Def Stan) 05-061 Part 9 - Quality Assurance Procedural Requirements – Independent Inspection Requirements for Safety Critical Items, shall be included in contracts whenever there is a likelihood that the Supplier will need to conduct independent inspections on equipment, systems or tests identified as being safety critical or where the contract includes 'one shot' escape and survival systems.

NOTE: 'one shot' – equipment or systems, the integrity of which cannot be verified by functional tests after final installation.

Refer to the 'Independent Inspection for Safety Critical Items' topic within Managing Quality on the KiD for further guidance.

g. **Avoidance of Counterfeit Materiel**. The spread of counterfeit materiel has increased across all industries and the globalisation of the supply chain has resulted in an increased risk that counterfeit materiel may enter the defence supply chain. In addition to seriously impacting the performance of defence equipment in

---

[32] AQAP 2110 NATO Quality Assurance Requirements for Design, Development and Production and AQAP 2310 NATO Quality Assurance Requirements for Aviation, Space and Defence Suppliers section 5.4.1.1 (2) b.

terms of safety and reliability, it may also expose military equipment and operations to increased vulnerability to cyber attacks[33].

At the contract planning stage, the MOD Acquisition Organisation **should** review the supply chain and assess the risk for the potential for counterfeit materiel and the associated impact on the safety and performance of the equipment procured by the MOD.

Where it is considered there is a risk of counterfeit materiel in the supply chain, Def Stan 05-135 'Avoidance of Counterfeit Materiel' shall be invoked.

To carry out these responsibilities, relevant personnel need to understand the supply chain relating to the acquisition.

Note: DEFCON 524A - Counterfeit Materiel, will be included in a contract by the commercial officer. This DEFCON provides the contractual means for the authority to isolate and dispose of identified counterfeit materiel appropriately.

The process to be followed for avoidance and, if the need arises, handling of counterfeit materiel within the military supply chain is detailed at Annex F to this chapter; supported by the Counterfeit Avoidance Guidance topic in Managing Quality on the KiD.

Also to be considered for inclusion within the SoR/CR when required:

- Flight Indemnity and the use of Def Stan 05-100[34] with DEFCON 638.

See Section 4.3.6 below.

4.3.5 Contracts Involving Safety Critical / Safety Related Products

There is an intrinsic link between Quality and Safety. Quality assurance and safety management approaches are both risk-based. There is expectation that a system conforms to the required specifications and this underlying assumption may be used for hazard analysis or risk assessment. Safety, as an attribute of the quality of a system, describes the ability of this system to prevent harm.

Safety Critical Products (SCP) are not defined within this JSP; readers **should** consult with appropriate Technical, Safety and GQA SMEs who will need to refer to domain specific standards/regulations to define what is 'Safety Critical'.

NOTE: The term SCP used here is intended to include Safety Critical equipment / systems / services / software etc.

GQA actions required for contracts involving SCP are detailed at Annex E to this chapter, supported by the 'Contracts Involving SCP' topic in Managing Quality on the KiD.

---

[33] DEFSTAN 05-138 - Cyber Security for Defence Suppliers.
[34] Defence Standard 05-100 - Ministry of Defence Requirements for Aircraft Flight and Ground Running.

4.3.6 Flight Indemnity

4.3.6.1 Introduction

DEFCON 638[35] provides 1st and 3rd party indemnity for Contractor (referred to as the 'Supplier' in this JSP) aircraft flights, taxiing and engine ground runs.

Def Stan 05-100[36] provides the process to activate the indemnity requirements for an Authorised Flight and Engine Ground Running in compliance with DEFCON 638.

This section provides guidance for MOD and Supplier Personnel who are involved in the implementation of DEFCON 638, and consequently, Defence Standard 05-100 in contracts in accordance with the Commercial requirements[37].

4.3.6.2 Requirement

When the contract requires a Supplier to undertake flight and engine ground running of military registered aircraft allotted or allocated to the Supplier, the MOD Acquisition Organisation Team Leader will need to ensure that the Supplier accepts liability for the aircraft. Alternatively, the Team Leader may, on a value for money basis, agree to the provision of MOD indemnity in accordance with DEFCON 638 and Def Stan 05-100 in the contract.

In some cases, older contracts may still invoke issue 3 of Def Stan 05-100. In these cases, QCM Policy require MOD Acquisition Organisations to invoke Def Stan 05-100 [latest issue] at the next contract review. This should be at nil cost to the MOD Acquisition Organisation. Any concerns raised by the Supplier **should** be reported to QCM Policy.

4.3.6.3 Supplier Responsibilities

The Supplier working under a MOD contract and operating MOD aircraft is responsible for:

    a.   all safety, airworthiness and quality aspects of aircraft construction, overhaul, repair, modification or servicing throughout all stages and phases of manufacture.

    b.   ensuring that the aircraft satisfies the design standard laid down in the Certificate of Design, the Military Permit to Fly (MPTF) or the existing Release to Service (RTS).

    c.   ensuring the aircraft is allotted or allocated to them in accordance with the requirements for 'Transfer of Aircraft and Equipment', published in Regulatory Article 1164[38].

    d.   appointing a competent Representative to be responsible for preparing and signing Part 1 of the Engine Ground Running Certificate (EGRC) or Flight Authorisation Certificate (FAC); this Representative certifies that the aircraft has been prepared and is fit for the intended engine ground run or flight and requests

---

[35] DEFCON 638 - Flights Liability and Indemnity.
[36] Defence Standard 05-100 - Ministry of Defence Requirements for Aircraft Flight and Ground Running.
[37] Commercial Toolkit - Limitation of a Contractors Liability and Indemnities.
[38] Regulatory Article 1164 - Transfer of UK Military Registered Air Systems.

permission for the engine ground run or flight to proceed in accordance with Def Stan 05-100.

e.   submitting the EGRC or FAC to the Authorities Authorised Representative (AAR) with supporting documentation.

f.   flowing down contractual requirements if the flight testing or engine ground running is to be completed by a Sub-Supplier.

g.   approving the EGRC or FAC signatures at the Sub-Supplier.

4.3.6.4 The Authority's Authorised Representative

The AAR may be:

a.   a member of a Registered GQAR Organisation.

b.   a Crown Servant authorised by the MOD DAT&QA[39].

The MOD DAT&QA may authorise a Crown Servant (civilian or military) to be the AAR; the MOD DAT&QA will ensure the Crown Servant is competent to:

a.   ensure that the MOD Form 700 Series documentation or equivalent, where applicable, is complete and reflects the build standard of the aircraft;

b.   ensure that the requirements of Def Stan 05-100 have been met;

c.   understand the liability and indemnity requirements of DEFCON 638 and Def Stan 05-100.

The MOD DAT&QA will only authorise responsibility to a Crown Servant where the declared configured standard of the aircraft is 'within' the existing RTS and fit for the purpose of the intended flight or engine ground running as detailed in the EGRC or FAC.

The FAC part 2 signatory for Aircraft flown outside the existing RTS (in accordance with the MPTF) shall be an authorised member of an authorised GQAR Organisation.

Where the MOD DAT&QA authorises a Crown Servant to be the AAR with responsibility to sign an EGRC or FAC; the authorisation will be recorded within a formal Letter of Authority[40].

The AAR is responsible for:

a.   reviewing the documentation submitted to support the FAC;

b.   determining and completing verification activities to confirm that they are satisfied that the intended Flight or Engine Ground Run conforms to the requirements of Def Stan 05-100; and

---

[39] For information on obtaining AAR authorisation refer to the Flight Indemnity topic in Managing Quality on the KiD.

[40] Letter of Authority: 'Approval Letter - Authority For Certification of Flight Authorisation and Installed Engine Ground Running Certificates'.

c. endorsing the part 2 of the EGRC / FAC on satisfactory review of the documentation and any verification activities.

NOTE: There is no mandated requirement for the AAR to inspect an aircraft. In certain cases, to support the document review and in response to risk based tasking, inspection of the aircraft may be carried out to provide confidence in the Supplier's processes that the aircraft has been prepared in accordance with Def Stan 05-100.

4.3.6.5 Flight Authorisation Certificates for Supplier Ferry Flights[41]

A Supplier ferry flight may occur when a Supplier is required to collect an aircraft from a location remote from their premises to fly the aircraft to the Supplier's site. Providing DEFCON 638 has been invoked in the contract in accordance with the Commercial Toolkit, the MOD AAR may sign Part 2 of the FAC.

Where the MOD DAT&QA authorises a Crown Servant to be the AAR with responsibility to sign the FAC for Ferry Flights the requirement will be recorded within the Letter of Authority.

4.3.6.6 Additional Information

An aircraft operating on a number of contracts for the flight test may have more than one FAC. To avoid confusion in relation to any possible claims under the indemnity cover afforded by DEFCON 638 it shall be made clear in accordance with Def Stan 05-100:

a. which FAC is in operation for any particular activity;

b. which contract the aircraft is operating under.

DEFCON 638 and Def Stan 05-100 may be included in overseas contracts where the Supplier will be required to fly the aircraft. The requirements are the same as for those in UK contracts. Overseas Suppliers are required to meet the required Military Aviation Authority (MAA) Regulatory requirements. Further information can be sought from the QCM Policy Helpdesk and the MAA website.

At the time of going to publication Remotely Piloted Air Systems (RPAS) are currently not indemnified under the terms of DEFCON 638. For further information see Commercial Toolkit[42]. RPAS are currently reviewed for indemnity on a case by case basis. Advice **should** be sought from Commercial Policy, MOD Central Legal Services and QCM Policy.

4.3.7 Software Management

Software is a product and as such the mandated requirements for quality [JSP 940 Part 1] apply. The application of specific quality assurance activities, tools and techniques need to be modified to address the differing needs of a software life cycle. Software Quality Contractual Standards exist to cover the essential aspects of Software Quality Assurance.

The **Appropriate Certification** policy **should** be applied when selecting Suppliers. In the field of software there are a number of options for QMS certification schemes. The most prominent schemes in the UK are TickITplus and ISO 9001 (with a specific software

---

[41] 'Ferry Flight' is defined in Defence Standard 05-100.
[42] Commercial Toolkit - Limitation of a Contractors Liability and Indemnities.

scope). The scope of the certification is the important aspect as it identifies the specific capabilities of the Supplier. It is vital that the scope of the Supplier's certification covers all the activities needed to fulfil the contract.

For MOD contracts that include development or maintenance of either deliverable or non-deliverable software. **AQAP 2210**[43] is considered appropriate.

NOTE: Emerging guidance from NATO for Software Quality Assurance includes the adoption of software specific life cycle processes in line with ISO 12207[44]. The intent will be that this should be utilised in the Supplier Selection Process (Invitation To Tender (ITT)) for requirements upon the Supplier to ensure Quality coverage in both the Engineering and Management frameworks. This will be captured in more detail when the NATO policy is published.

For COTS software, **ISO 25051**[45] is a recommended standard containing requirements that may be suitable for use. This standard is **not suitable for inclusion within a contract**.

COTS software products are ready-made packages bought off-the-shelf by the MOD either directly or through the supply chain. Selecting high quality COTS software products is of prime importance, because COTS software products may have to be operational in various environments and selected without the opportunity to compare performance among similar products.

For all software acquisition, consult JSP 935 - Software Acquisition Management for Defence Equipment.

4.3.8 Non-Contractual Standards

Routinely documents are published by UK MOD, NATO or Governments to promulgate quality policy or record inter-governmental quality processes or agreements. These types of documents are **not suitable** for contracting purposes with Suppliers. The following examples **should not** be included as requirements in contracts:

a.   Defence Logistics Framework.

b.   STANAG 4107 - Mutual Acceptance of Government Quality Assurance and Usage of the Allied Quality Assurance Publications.

c.   AQAP 2000 (NATO Policy on an Integrated Systems Approach to Quality Through the Life Cycle).

d.   AQAP 2070 (NATO Mutual Government Quality Assurance (GQA) Process).

e.   AQAP 4107 (Mutual Acceptance of Government Quality Assurance and Usage of the Allied Quality Assurance Publications).

f.   Memoranda of Understanding / Implementing Arrangements.

---

[43] AQAP 2210 - NATO Supplementary Software Quality Assurance Requirements to AQAP 2110 and AQAP 2310.
[44] ISO 12207 Systems and software engineering - Software life cycle processes.
[45] ISO 25051 Software engineering - Software Product Quality Requirements and Evaluation (SQuaRE) - Requirements for quality of Commercial Off-The-Self (COTS) software product and instructions for testing.

The Quality Management Standards ISO 9001 and BS EN 9100 are **not suitable** as a contractual standard and **should not** to be used on their own. The appropriate requirements of ISO 9001 and BS EN 9100 are included in the Primary AQAPs.

4.3.9 Quality Performance Indicators

Measurement, analysis and improvement relies on objective evidence and understanding of how the quality of products and/or services delivered to the front line is changing, and how well the associated quality processes are working.

For all contracts, Quality Performance Indicators (QPIs) should be considered for use in the contract, in addition to the other performance measurements agreed by the MOD Acquisition Organisation and Supplier.

These QPIs should be jointly reviewed by the respective MOD and Supplier quality focal points. The reviews should take place within an agreed timescale and as appropriate to the contract. Actions arising from these reviews will need to be documented and addressed.

Further guidance on QPIs can be found in Managing Quality on the KiD.

4.4 Supplier Selection and Contract Award

4.4.1 Introduction

This section provides guidance on the GQA activities during the MOD Commercial tendering process.

During the commercial Supplier Selection Process quality requirements need to be accounted for and implemented by a competent/licenced GQA Practitioner for the MOD Acquisition Organisation. This includes ensuring that the Contract Initiator and Commercial Officer are aware of the required approach to quality. Discussions need to be held with the Contract Initiator and Commercial Officer to ensure that the quality requirements are appropriately captured and an appropriate method to evaluate supplier responses is included in the Request For Quote (RFQ). This will enable Supplier understanding of the tender requirements and achievement of the contract quality requirements.

Further guidance during Supplier Selection and Contract Award can be found in Managing Quality on the KiD.

4.4.2 Requirement

All GQA activity conducted during the Supplier Selection and Contract Award stage shall be conducted by competent/licenced GQA Practitioners and adhere to the Commercial policy as defined within the Commercial Toolkit on the KiD.

To ensure Supplier compliance to the MOD Appropriate Certification policy, assessment of a submitted QMS certificate, shall be conducted by a competent/licenced Quality Practitioner.

4.4.3 GQA During Supplier Selection

During the Supplier Selection and Contract Award stage the competent/licenced GQA Practitioner will be expected to define the quality assurance award criteria to be used during the Commercial Supplier Selection activities. As the quality assurance Subject Matter Expert (SME), this should be done in consultation with other MOD Acquisition Organisation SMEs to feed into the Contract Requisition (CR) and RFQ processes.

Supplier selection is undertaken using the Dynamic Pre-Qualification Questionnaire (DPQQ) stage and Invitation To Tender / Negotiate (ITT/ITN). Questions and criteria should be appropriate to enable assessment of prospective supplier responses, specific to the contract to be placed and in accordance with the Commercial Officer's instructions.

4.4.3.1 Contract Advert

The Contract Advert provides notification to industry of the MOD's intention to place a contract and specific requirements for competing for that contract. This shall include notification of the application of the MOD's Appropriate Certification policy, where it is to be used as a 'technical discriminator'. Refer to section 4.3.3 for information on Appropriate Certification.

4.4.3.2 GQA during the Dynamic Pre-Qualification Questionnaire (DPQQ)

Identification of Contractual Quality Standards: the DPQQ, if used, looks at the existing capability and capacity of the Supplier.

At the DPQQ stage in the tendering process, the competent/licenced GQA Practitioner, in consultation with the appropriate MOD Acquisition Organisation's Subject Matter Experts (SMEs), is responsible for ensuring that the bidders for a contract have an appropriate Quality Management System (QMS), with the appropriate scope, in place. Where QMS certification is required; that the QMS is appropriately certificated by a Nationally Accredited Certification Body, that the certificate is valid, the scope and the sites appropriate to the contract are covered by the certification.

Should the achievement of contractual requirements not mandate a certified QMS, additional questions (for verification of Supplier processes) can be tailored to the question set for the DPQQ, in consultation with the Commercial Officer.

4.4.3.3 GQA during the ITN/ITT

During the tender evaluation process, the MOD Acquisition Organisations competent/licenced GQA Practitioner, in consultation with the Commercial Officer and appropriate SMEs, is to assist in ensuring that the suppliers are able to demonstrate how they will meet the contract requirements. They are also responsible for ensuring that the contract reflects the requirements for managing Supplier non-conforming product through the application of the Concessions Process (refer to Annex D).

The competent/licenced GQA Practitioner is responsible for ensuring each question is designed to gain the required evidence to demonstrate the bidder's ability to deliver on the contract. Where a draft Supplier's Quality Plan is required (see Managing Quality on the KiD, which provides the risk factors to consider for whether a Supplier Quality Plan is required) it is to provide an overview of how they will meet the requirements.

4.4.4 Pre-Contract Award Evaluation (PCAE)

4.4.4.1 Introduction

Pre-Contract Award Evaluation (PCAE) is one of a number of Tender Assessment[46] (TA) tools that may be used to mitigate or identify risks associated with a specific Tenderer or the associated bid. It is a systematic evaluation of a Tenderer's ability to meet draft contract requirements and is undertaken by the MOD Acquisition Organisation, at the Tenderer's premises, in support of project TA activities.

4.4.4.2 When to use PCAE

Where concerns exist regarding the Tenderer's past performance or the proposed controls detailed in the Tenderer's bid, PCAE may be used to explore the validity of these concerns and establish the level of risk associated with the Tenderer's bid and enable the development of effective risk mitigation activities.

The requirement to undertake PCAE is a decision taken by the MOD Acquisition Organisation and **should** be included in any Special Notices and Instructions[47] raised in support of the draft contract.

PCAE may be applied to a number of functional areas within the Tenderer's organisation. This guidance considers the implementation of PCAE within the Tenderer's Quality Management (QM) function only.

4.4.4.3 The Process

The evaluation process seeks to establish evidence that supports the effective application of QM controls by the Tenderer throughout the Tenderer's organisation and throughout the supply chain that the Tenderer proposes to use. Where evidence cannot be presented by the Tenderer, the MOD Acquisition Organisation need to establish the potential impact on the contract deliverables and ensure the impact is captured and assessed in the tender assessment documentation.

Evaluation of individual Tenderer's QM controls cannot be performed using a 'one-size fits all' process. Evaluation activities need to be tailored to suit concerns or perceived risks with the respective Tenderer's bid.

When planning an evaluation of the Tenderer's QM controls, the MOD Acquisition Organisation should, as a minimum, address the following generic areas:

> a.   the Tenderer's ability to plan for the delivery of a product that conforms to specified requirements, including identification and understanding of contract requirements.

> b.   the Tenderer's proposed application of the QMS to ensure delivery of a product and/or service that fully satisfies contract requirements.

---

[46] Specific requirements associated with conducting PCAE within Tender Assessment in the Commercial Managers Toolkit on the KiD.
[47] Commercial Managers Toolkit on the KiD.

c. the Tenderer's proposed Quality Assurance activities, including the competence and resources to be committed to the contract.

d. the Tenderer's proposed Quality Control activities.

4.4.4.4 Competence

For the PCAE to be effective, the MOD Acquisition Organisation **should** ensure that individuals evaluating the Tenderer's QM controls are, as a minimum, a Competent Quality Practitioner. More information on functional competences can be found in Managing Quality on the KiD.

4.5 Contract Execution

4.5.1 Introduction

The Contract Execution stage is when the Supplier works towards realising the equipment or service to the requirements specified in the contract thus validating the MOD Acquisition Organisation's strategy for the acquisition.

In addition to the activities required of a GQA Practitioner in support of the contractual requirements, this stage will provide an outline of how QA services can assist in gathering evidence that the Supplier has met and continues to meet their commitments. Also, that identified risks are managed and emerging risks or issues are responded to appropriately. This exemplifies a factual-based approach to decision making.

The benefits of GQA activity in the Contract Execution stage provide assurance that the Supplier will meet its commitments and deliver to the requirements of the contract through surveillance against identified risks, as well as provide early warning of emerging risks and issues. This will build up valuable information on the Supplier for future acquisitions that can also be used for measurement and acquisition review purposes during the Acquisition Conclusion phase.

Further guidance on GQA during Contract Execution can be found in Managing Quality on the KiD.

4.5.2 Requirement

This section provides the MOD Requirements and their application to achieve the directive within JSP 940, Part 1, Section 1.4 'f', 'g' and 'h'.

In meeting the MOD policy requirements for GQA, all top management within MOD Organisations **shall** *as a minimum:*

f.   manage supplier and/or product related risk, with consideration given to conducting GQA Surveillance (GQAS) to assist in the risk mitigation process.

g.   only task authorised GQA Representatives (GQARs) to carry out GQAS to assist in the mitigation of risk on contracts or sub-contracts within the UK.

h.   utilise the Overseas Quality Assurance procedures to request GQAS to assist with risk mitigation on contracts or sub-contracts placed outside the UK.

(JSP 940 Part 1 Section 1.4)

4.5.3 Management of Non-conforming Products

4.5.3.1 Introduction

This section provides authoritative guidance for the management of nonconformities arising in Defence Acquisition, specifically in relation to the selection of Def Stan 05-061 Pt.1 in contracts and the management of Supplier concession applications.
When a non-conforming product is identified which is unable to be corrected, or its correction at the time of detection could impact on other contractual requirements, the Supplier may therefore seek permission from the MOD to deliver or use the non-conforming product either:

   a.   for a limited duration during production (known as a Production Permit or Deviation); or

   b.   to deliver or use the non-conformance against the contract (known as a concession).

Where it is in the MOD's interest, acceptance of a nonconformity may be considered.

4.5.3.2 Requirement

Where a Primary AQAP (AQAP 2110 or 2310) is called up in a contract, the MOD Acquisition Organisations are responsible for ensuring that they have the appropriate processes in place to manage Supplier non-conforming product and concession requests.

The contract is to be specific in the application of all concession requirements.

MOD Acquisition Organisations need to maintain records of all concession applications and supporting documentation.

The process to be followed for the Management of Non-conforming products is detailed at Annex D to this chapter.

4.5.4 Government Quality Assurance Surveillance

4.5.4.1 Introduction

Government Quality Assurance Surveillance (GQAS) is defined as the systematic and regular monitoring of the contractual elements of the Supplier's QMS, processes and products, to provide confidence to the acquiring nation that the Supplier is fulfilling the requirements of the contract.

In accordance with the NATO Agreement STANAG 4107[48] each nation is to have a National Quality Assurance Authority[49] who is responsible for the mutual provision of GQA within that nation to other participating nations. The National Quality Assurance Authority in the UK is the DAT&QA.

4.5.4.2 Government Quality Assurance Representatives (GQARs)

GQARs are the Personnel with responsibility for Government Quality Assurance (GQA), within the Supplier environment, acting on behalf of the MOD Acquirer.

For contact details of MOD Organisations or individuals authorised by the DAT&QA to act as a GQAR in MOD contracts, a list is available to download[50] from Managing Quality on the KiD.

4.5.4.3 Risk-Based Government Quality Assurance Surveillance Process

The Risk-Based GQAS Process describes national practice, and the process to be followed by MOD Acquisition Organisation staff and GQARs, it includes:

  a.   formal tasking and considerations.

  b.   planning surveillance activity.

  c.   undertaking surveillance and reporting.

  d.   record retention classification and use.

There may be occasions when existing authorised MOD GQAR Organisations or personnel do not have sufficient resources or the necessary expertise to provide the GQAS required. In these **exceptional** circumstances the MOD Acquisition Organisation's Team Leader **should** seek approval from the DAT&QA before using alternative resources for carrying out GQAS.

The DAT&QA, having taken due regard of all available GQAR resources, will ensure that proposals for alternative resourcing of GQARs are acceptable and in the best interests of the MOD.

---

[48] STANAG 4107 - Mutual Acceptance of Government Quality Assurance and usage of the Allied Quality Assurance Publications (AQAP).
[49] See the National Quality Assurance Authority topic in Managing Quality on the KiD.
[50] Authorised MOD GQAR Organisations.

In such exceptional circumstances the MOD Acquisition Organisation's Team Leader should contact QCM Policy[51] in the first instance for further advice on how to proceed.

The 'Risk-Based GQAS Process' and 'Overseas GQA' can be found within Managing Quality on the KiD.

4.5.5 Quality Assurance Groups

In order to co-ordinate the GQA arrangements and activities, the Competent GQA Practitioner may need to set up a Quality Assurance Group (QAG). The decision on whether to establish a QAG can only be made after consideration of the size, value, complexity of the project and/or contract(s) in addition to the risks that impinge upon quality. Similar factors influence the membership of the group, the scope of its activities, frequency of its meetings and reporting chains. These **should** all be detailed within the MOD Acquisition Organisation's Quality plan.

Consideration of the need for a QAG should also include associated contracts subsidiary to or in support of the overall acquisition requirement. It may be appropriate to establish a sub-portfolio QAG, with other project areas (working with funds delegated from the main project) feeding into this as required. Some of these may justify the formation of a QAG in their own right; others may be incorporated into the business of the main project QAG, whilst others may be dealt with on an informal basis.

The QAG should be formally integrated into the project management structure, with written terms of reference, clearly defined membership, regular meetings and published minutes.

For some contracts, where a significant amount of work is subcontracted, or where several sites of a large organisation are involved, the Prime Supplier's GQAR may set up a co-ordination meeting. It may well be cost-effective to incorporate such a meeting into the QAG, by inviting the appropriate Sub-Supplier GQAR to attend (acting upon the advice of the Prime Supplier GQAR). The Competent Quality Practitioner should make sure that subcontract GQAR or multi-site arrangements are properly considered by the Prime Supplier GQAR concerned. If such meetings are held separately, inputs to the QAG by the Sub-Supplier GQAR should be co-ordinated by the Prime Supplier GQAR.

4.5.6 Partnering Approach for Improving Quality

4.5.6.1 Introduction

The introduction of new contracting arrangements, such as contracting for Capability / Availability / Partnering demand much closer working relationship between the MOD and Industrial Suppliers. This leads to greater interaction and dependency between the MOD Acquisition Organisation's and Supplier staff for the assurance of a quality product. Use of the Partnering Approach for Improving Quality (PAIQ) can help with this; and can allow either the MOD or Supplier to raise issues related to quality. The PAIQ is an enabler for the resolution of significant quality problems during the acquisition process.

---

[51] Email: DES-QCM-Policy-Helpline@mod.gov.uk.

The objective of the PAIQ process is to assure the delivery of Fit for Purpose materiel. This is achieved by ensuring the following critical success factors are met:

a.   responses to quality issues of all stakeholders in the supply chain are effectively managed.

b.   agreed and effective corrective and preventive actions are introduced to ensure quality related contractual requirements and commitments are met.

c.   supplier and customer are fully aware, where appropriate, that they have been considered to be in default of their quality contractual requirements and commitments.

The use of the PAIQ as an escalation process to resolve the root cause of contractual quality issues (using a partnered approach between the MOD Acquisition Organisation and Supplier) is describe in more detail within the Partnering Approach for Improving Quality - Flowchart (Figure 4-4).

Flowchart

START
MOD Project Team / Supplier
CONTRACT

IDENTIFY PERFORMANCE CRITERIA & PLAN — 4.5.5.2
- Contract Programme Meeting – Agree Performance / Quality Metrics

MONITOR & MANAGE — 4.5.5.3
- Monitor Contract Performance Requirements ↔ QAGs
- Contract Performance Requirements Met?
  - Yes → Successful Completion of Contract → **FINISH**
  - No ↓

ESCALATE — 4.5.5.4
- Corrective Actions identified to resolve Deficiency
- Corrective / Preventive Actions Effective?
  - Yes → Recorded by Contract Performance Review → **FINISH**
  - No ↓
- Contract Performance Review
- Escalate to next Management Level
- Performance Deficiency Resolved?
  - Yes → Details recorded within the Contract / Programme Meeting Record → **FINISH**
  - No ↓
- Escalate to Senior Management Level
- Negotiations resolve Deficiency?
  - Yes → Details recorded within the Contract / Programme Meeting Record & QAWG → **FINISH**
  - No ↓

IN DEPTH AUDIT — 4.5.5.5
- MOD and/or Supplier request In Depth Audit (IDA)
- IDA identifies root cause and makes recommendations
- IDA identifies root cause and makes recommendations
- Satisfactory completion of corrective actions?
  - Yes → Details recorded within the Contract / Programme Meeting Record → **FINISH**
  - No ↓

FINAL ESCALATION — 4.5.5.6
- IDA Lead Auditor refers PT / Supplier to QCM(Pol) → Unsatisfactory responses from PT / Supplier copied to SRT and PDI Team → **FINISH**
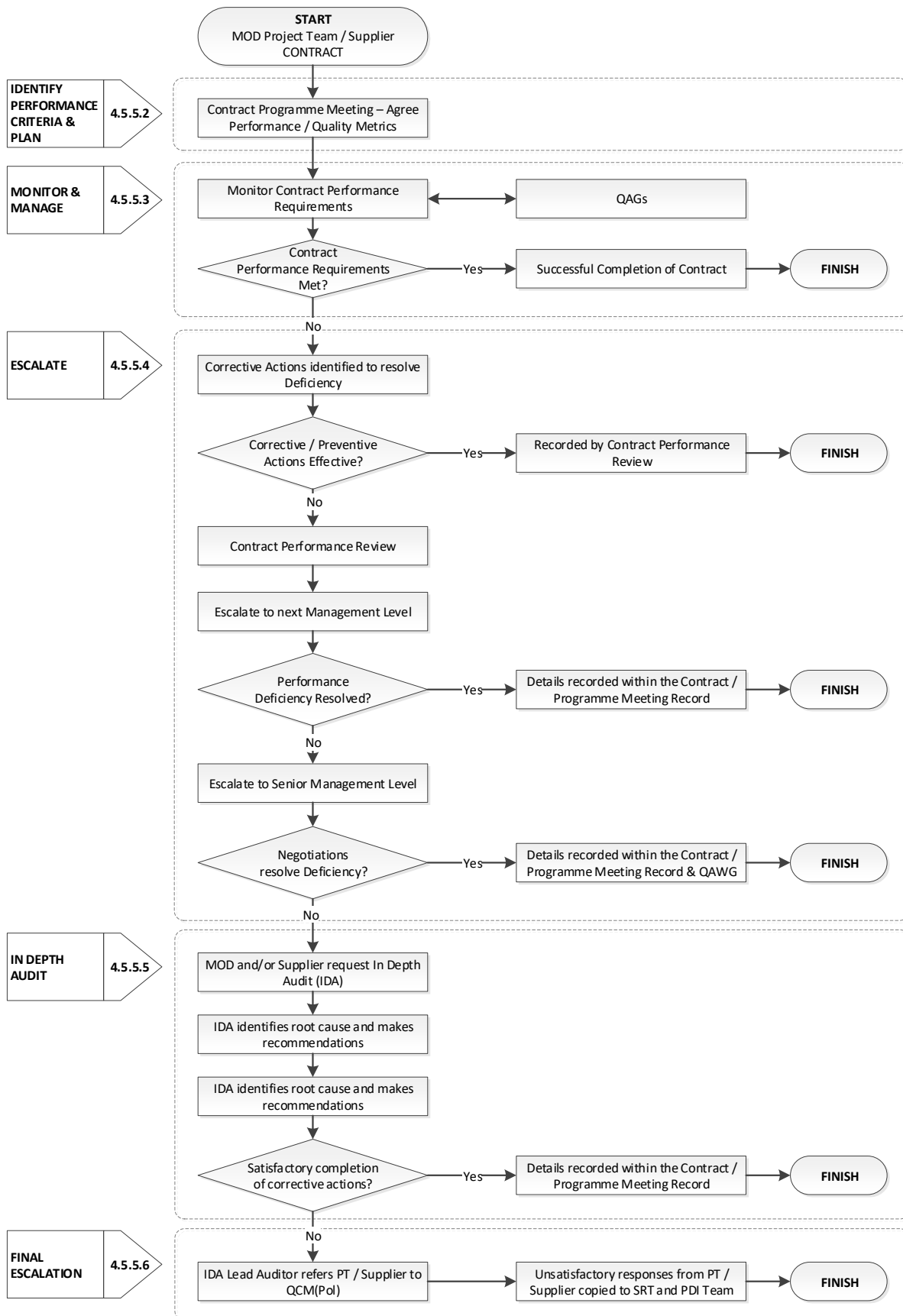
Figure 4-4: Partnering Approach to Improving Quality Flowchart

4.5.6.2 Identify Performance Criteria and Plan

To support the identification of performance criteria the Project Manager and Supplier **should**:

  a. ensure that quality is an agenda item at project review meetings.

  b. agree the required Quality Performance Indicators (QPIs).

  c. maintain records of meetings and supporting evidence.

The selected QPIs should be monitored on a case by case basis by the Project Team and Supplier.

4.5.6.3 Monitor and Manage

The QPIs should be regularly reported and reviewed at the project review meetings or other suitable forum agreed by the MOD Acquisition Organisation and Supplier; details of the review **should** be recorded in the meeting minutes. Such meetings should be commensurate with the reporting timeframe of the individual project.

If the MOD Acquisition Organisation or Supplier considers that the specific quality related requirements have not been met, the deficiency **should** be raised at the project review meeting. If agreed, the respective party will need to generate a corrective and/or preventive action plan detailing the owner(s), proposed corrective and/or preventive actions and timescales, for agreement, to resolve the issues.

The identified deficiencies will need to be monitored via the project review meetings or other suitable forum. All efforts to resolve the deficiency should be taken at this initial level.

4.5.6.4 Escalation

Where both parties are unable to agree, at the lower level, that the corrective and/or preventive actions have been effective; the deficiency will be escalated to the next management level within the Supplier or MOD Acquisition Organisation.

If subsequent negotiations between the MOD Acquisition Organisation and Supplier cannot resolve the deficiency within the agreed timescales at lower management level, the deficiency will be raised through the management chain. Ultimately the matter **should** be brought to the attention of the Director / 2* level or equivalent and the Supplier's Chief Executive Officer or Managing Director, if not resolved at a lower level.

Failure to resolve the actions may result in the MOD Acquisition Organisation's Team Leader or the Supplier to request the Defence Quality Assurance Field Force (DQA FF) to initiate an In-Depth Audit (IDA); this may be done by contacting the Quality and Configuration Management (QCM) Policy helpline[52]. QCM Policy is to be copied with the relevant information.

---

[52] Email: DES-QCM-Policy-Helpline@mod.gov.uk.

4.5.6.5 In-Depth Audit

The scope of the IDA can cover all stakeholders, including the MOD Acquisition Organisation, Supplier, sub-suppliers and other parties as required.

An IDA is undertaken by an independent MOD Lead Auditor from an independent DQA FF Section, supported by subject matter experts and other GQAR Organisations where necessary. The IDA will evaluate the effectiveness of the relevant processes for the management, implementation and governance of the contract with regard to the MOD Acquisition Organisation and Supplier. The outcome will identify root causes and corrective and/or preventive actions necessary to ensure the contract meets its requirements for quality.

The DQA FF Lead Auditor will liaise with the Supplier, MOD Acquisition Organisation and other stakeholders to arrange the IDA. If any party does not agree to the IDA, then a documented record of the meeting will be inserted in the IDA file.

On completion of the IDA, the Lead Auditor will report the outcome of the IDA to the MOD Acquisition Organisation's Team Leader and Supplier Managing Director. The Lead Auditor will determine, based on discussion with the affected party, the best course of action for progressing the level of corrective and/or preventive actions, subsequent quality improvement necessary and agreed time scales.

Provided the recommendations are implemented within the agreed time scales no further action is necessary.

4.5.6.6 Escalate - Final

If a Supplier or Project Team fail to implement the agreed corrective and/or preventive actions within the agreed time scales or respond satisfactorily to the IDA findings; the Lead Auditor will refer the relevant party to QCM Policy.

QCM Policy will provide details of Project Teams and Suppliers who do not respond to the IDA findings to the Strategic Supplier Management Team and the Performance Delivery Improvement (PDI) Team.

4.5.7 MOD GQAR Organisations

It is the DAT&QA policy that only Organisations and/or individuals that have been assessed, registered and duly Authorised, may act as Government Quality Assurance Representatives (GQARs) on behalf of the UK MOD.

Registration of GQARs provides assurance that an Organisation and/or individual is capable, and continues to be capable, of providing Government Quality Assurance Surveillance that meets the DAT&QA requirements.

For further information on GQAR Organisations (including applications for GQAR status) refer to Managing Quality on the KiD. MOD Organisations and / or individuals requiring to be added to the Authorised GQAR list should apply to QCM Policy. See the Managing Quality topic on the KiD 'Applying for Authorised MOD GQAR Organisation Status' for more information.

4.5.8 Amendments to Contracts

When an Amendment Requisition is raised during Contract Execution, the GQA Practitioner should conduct a review of the required change to determine any impact the amendment may have on the contractual quality conditions. A review should also be conducted on the acquisition quality planning and quality assurance activities to ensure that they reflect this change where necessary.

If GQAS is being conducted for the contract, the tasked GQAR is to be made aware of the contract amendment to enable a review of the Surveillance Plan and associated risk.

4.6 Delivery

4.6.1 Introduction

This stage is where the Supplier presents conforming equipment or service to contractual requirements; this allows for the Acquirer to make payments, as agreed within the contract, to the Supplier.

Delivery is not the time when the evidence of conformance is gathered, rather when it is collated and confirmed to meet the requirements of the contract. This will include verification of the product(s) and required documented information (i.e. Certificate of Conformance, required test records and product certifications), to confirm conformance to requirements.

Where specific acceptance and assurance criteria/activities have previously been identified as requiring GQA input, these are to be conducted and recorded in accordance with the acquisition quality and acceptance plans.

The existence of outstanding concessions on delivered products **should** be captured and recorded upon receipt, with the necessary actions taken to ensure traceability and identification of concessed products.

4.6.2 Requirement

All GQA activity conducted during the Delivery stage **should** be conducted by a competent GQA Practitioner and adhere to the contractual requirements; engaging with the Acquisition Organisations engineering, logistics and commercial personnel as required.

The competent GQA Practitioner needs to ensure that the quality planning and acquisition records are maintained and updated as necessary to provide confidence in the quality of delivered products.

For more information on Delivery refer to Managing Quality on the KiD.

4.7 Acquisition Conclusion

4.7.1 Introduction

This stage is where all contract requirements have been met by the Supplier and the Acquirer has provided all payments for conforming the equipment or service. Although this is the end of the acquisition action, it isn't the end of the Acquisition Cycle.

The GQA activities conducted, and supporting documentation, should be completed at the Acquisition Conclusion stage. This should be included within the Project Closure documentation and contribute towards recorded Learning from Experience (refer to section 5.4 Learning from Experience).

In accordance with the Deming Cycle method of promoting continual improvement (refer to section 5.7.5 Plan, Do, Check, Act), it is recommended that a review is conducted at the end of each stage to capture any lessons learnt and allow that learning to be implemented as appropriate at the next stage.

GQA practitioners can provide valuable information on Supplier and Acquirer performance which can be applied to future acquisitions of a similar nature to promote best practice and improve efficiency.

4.7.2 Requirement

The GQA practitioner **should** ensure that all GQA activities are concluded, recorded and reported appropriately.

For more information on Acquisition Conclusion refer to Managing Quality on the KiD.

APPROPRIATE CERTIFICATION PROCESS

Refer to Figure 4-A1.

A1. Acquisition Records

1.1   MOD Acquisition Organisations shall record all activities and decisions related to this process in the Project Record and / or applicable Project Quality Plan, identifying and establishing appropriate management of risks to quality; applying the adopted MOD Risk Management process.

A2. Assessment of Risks

2.1   The Competent Quality Practitioner [in conjunction with the Project Manager and other Subject Matter Experts (SME) where necessary] shall review the project requirements, applicable regulations and associated risks to assess the need for assurance of a prospective Supplier's management of quality.

2.2   This review shall include risks associated with the Supplier's ability to achieve contractual requirements and risks associated with the product / service required to determine the need for Supplier QMS certification.

2.3   The requirement for an appropriately certified QMS as a Technical Discriminator is mandated in the case of:

   a.   regulatory requirements for Supplier QMS certification (i.e. domain specific Supplier certification).

   b.   a Very High / High risk project.

2.4   Should the output of the project risk assessment determine that a prospective Supplier's QMS certification is not mandated, the MOD Acquisition Organisation shall determine whether or not Supplier QMS certification is required as a Technical Discriminator. Where potential risks are considered anything other than Low to Very Low the use of a Technical Discriminator is considered appropriate as a proportionate method of gaining assurance of a prospective Suppliers QMS processes.

2.5   Should the output of the risk assessment above determine that the risks are Medium to Low; Appropriate Certification may be applied as a Weighted Measure within the contract Dynamic Pre-Qualification Questionnaire.

2.6   Where the output of the risk assessment above determines that the risks are Very Low and do not warrant the use of Appropriate Certification within the contract, prospective Suppliers may not be required to have a certified QMS.

2.7   If the MOD Acquisition Organisation justify single source procurement in accordance with the Commercial Toolkit and the Supplier does not have the required certified QMS;

the delivery team shall conduct a risk assessment and manage the identified risks. QCM Policy and the Regulator, where applicable, shall be consulted.

A3. Appropriate Certification as a Technical Discriminator

NOTE: In order to use a Technical Discriminator in MOD contracts the method of discrimination and the required form of evidence must[53] be detailed within the Contract Advert.

3.1   Where a Supplier QMS certification is required as a Technical Discriminator, the Competent Quality Practitioner must determine the standard the QMS needs to be certified to. The certification standard shall be a recognised European standard, be appropriate for the product or service required and, where applicable, meet regulatory requirements. In order to ensure that the selected standard is proportionate and non-discriminatory, the standard to be used shall be BS EN ISO 9001 unless dictated otherwise by applicable regulations or if specific sector scheme standards are commonly used within the relevant prospective Supplier industry sector.

3.2   The Competent Quality Practitioner shall advise the contract Commercial Officer that:

    a.   the contract requires prospective Suppliers to hold appropriate QMS certification.

    b.   forward the text below for insertion in the contract advert.

'Prospective contractors are required to hold Quality Management System certification to [*insert required standard*] or suitable alternative, with the appropriate scope to deliver contract requirements, issued by a Nationally Accredited Certification Body. You will be required to provide a copy of the certificate(s) as directed by any Dynamic Pre-Qualification Questionnaire (DPQQ) or Invitation to Tender (ITT) associated with this Notice, and in any event, the winning supplier will be required to provide it for review prior to contract award.'

Commercial Note: The point in which you may ask for hard evidence (copies) of the certificates proving the standard a supplier holds, varies according to the procedure you are applying to the procurement, the Supplier Selection Policy within the Commercial Toolkit provides guidance on this.

3.3   Assessment of Supplier Responses: on receipt of the Supplier QMS certificate(s), the Competent Quality Practitioner shall review them to ensure:

    a.   the certification is to the standard stated in the contracts notice.

    b.   the certification is in date and valid.

    c.   the Supplier's name and address on the Expressions of Interest match the name and address on the certification.

    d.   the certificate details the Supplier's address where the work is to be managed.

---

[53] As defined within the Public Contracting Regulations and the Defence and Security Public Contracting Regulations.

e.   the scope detailed on the certification covers the requirements of the contract.

f.   the certification is issued by a recognised NAB accredited 3rd party certification body with the appropriate scope.

3.4   If a Supplier fails to provide a copy of their certification when requested, it is to be assumed that such certifications do not exist, and the Supplier assessment conducted accordingly.

3.5   Unacceptable / No Supplier QMS Certification Presented; QMS Certificates which do not meet the above criteria do not provide assurance and there may be additional risks in relation to quality if it is decided to procure from these Supplier's. An assessment of the risks to quality in achieving the contractual requirements shall be carried out and documented. From this assessment the MOD Acquisition Organisation shall either:

a.   where Supplier QMS certification is mandatory:

1)   provide the recommendation to reject the Supplier's application; or

2)   in exceptional cases for single source acquisition, seek dispensation to continue with the Supplier's application from QCM Policy and, if applicable, the relevant Regulatory Authority. Providing documented evidence of proposed risk management and associated costs (for example, increased use of Government Quality Assurance Representative (GQAR) surveillance and / or product verification).

b.   where Supplier QMS certification is not mandatory:

1)   provide the recommendation to reject the Supplier's application; or

2)   in exceptional cases for single source acquisition, where the MOD Acquisition Organisation propose to manage associated risks to quality, provide documented evidence of risk management and associated costs (for example, increased use of GQAR surveillance and / or product verification); this option must be made in discussion with the contract Commercial Officer in order to capture any commercial implications that may exist.

3)   where applicable (if uncertainty exists), consult with QCM Policy.

3.6   The recommendation regarding the Supplier QMS certificate(s) shall be forwarded to the contracts Commercial Officer for inclusion in the Supplier Assessment Process.

A4. Appropriate Certification as a 'Weighted Measure'

Note: A DPQQ model question with evaluation criteria[54] has been developed by QCM Policy, in consultation with Commercial Policy and MOD Legal Services, which should be used where Appropriate Certification is to be used within the DPQQ.

4.1   Where Appropriate Certification is determined to be used as a Weighted Measure, the Competent Quality Practitioner shall identify the relevant standard to which Supplier QMS certification is required.

---

[54] The model questions for the application of Appropriate Certification during the DPQQ is published in the GQA Supplier Selection and Contract Award Aide-memoire within Managing Quality on the KiD.

4.2   The Competent Quality Practitioner, in consultation with the relevant project staff and the responsible Commercial Officer, shall:

    a.   draft the Weighted Measure question to be used.

    b.   agree and document the assessment criteria for the question.

    c.   agree the weighting of the question.

Any questions developed shall be in accordance with the Commercial Supplier Selection Policy.

Commercial Note: The point in which you may ask for hard evidence (copies) of the certificates proving the standard a supplier holds, varies according to the procedure you are applying to the procurement, the Supplier Selection Policy within the Commercial Toolkit provides guidance on this.

4.3   The Competent Quality Practitioner shall conduct an evaluation of Supplier responses; carried out in accordance with commercial instructions for the contract.

4.4   The evaluation results shall be forwarded to the contract Commercial Officer for inclusion in the Supplier Assessment Process.

Appropriate Certification Process

Assessment of Risk	Technical Discriminator	Weighted Measure

Start

2.3 High Risk or Regulatory requirement? — Y → **Certified QMS Mandatory**

N ↓

2.4 Supplier certification as Discriminator? — Y → **3.1 Determine certification standard**

↓ **3.2 Notify Commercial Officer for inclusion in Contract Requisition and insertion in contract advert**

N ↓

2.5 Supplier QMS assurance required? — Y → **4.1 Determine certification standard required**

↓ **3.3 Review Certification against requirement**

N ↓

2.6 Appropriate Certification not required. Manage risks

Supplier Certification Appropriate? — Y / N

4.2 Draft question, agree assessment criteria and weighting

N ↓ **3.5 Conduct risk analysis and determine action with SMEs consulting with QCM Policy and Regulators as required**

3.6 and 4.4 Feed into Supplier Assessment Process

4.3 Conduct assessment of responses

APPROPRIATE CERTIFICATION PROCESS V4

Figure 4-A1: Appropriate Certification Process

SELECTION OF STANDARD QUALITY CONTRACT CONDITIONS

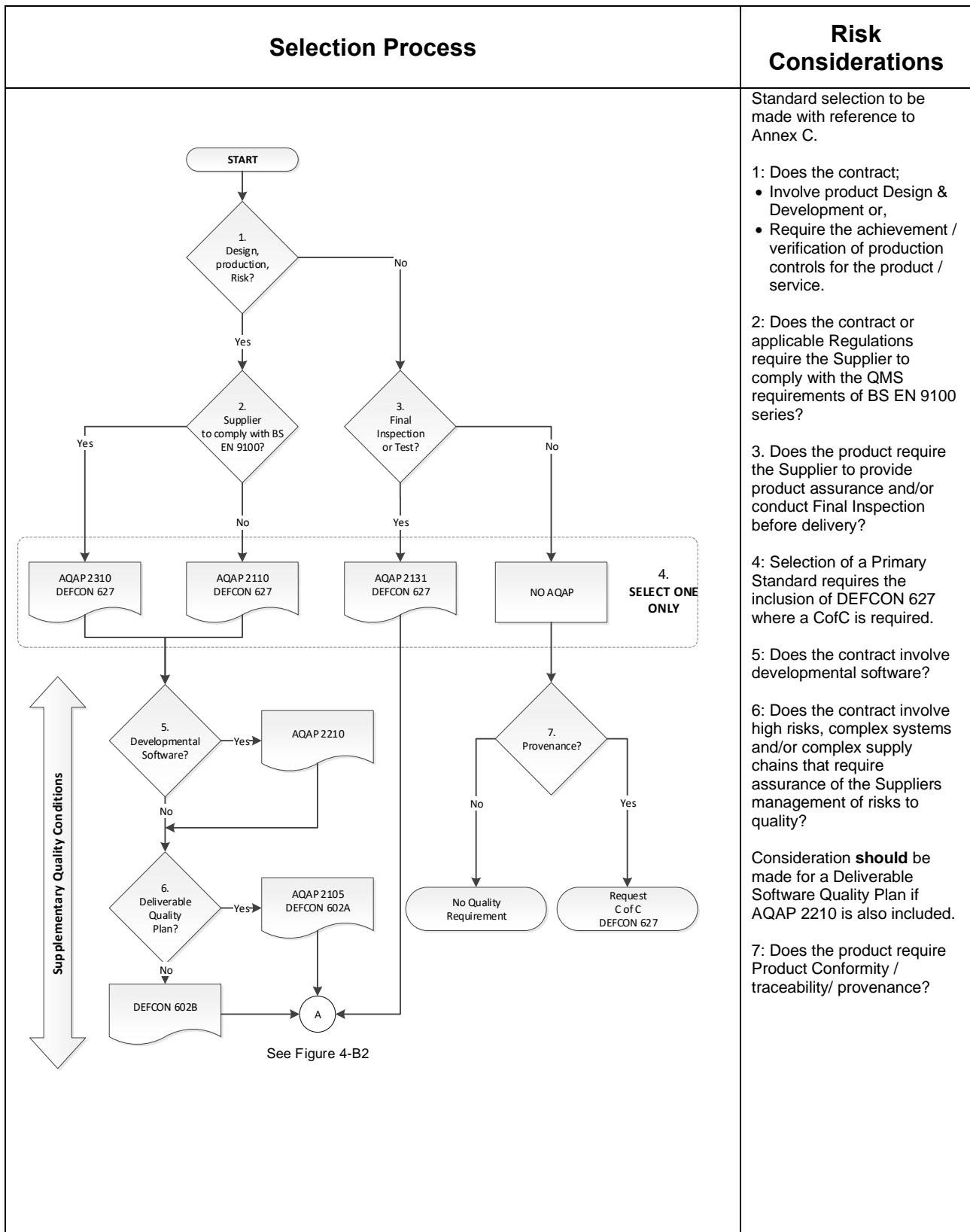| Selection Process	Risk Considerations
	Standard selection to be made with reference to Annex C. 1: Does the contract; • Involve product Design & Development or, • Require the achievement / verification of production controls for the product / service. 2: Does the contract or applicable Regulations require the Supplier to comply with the QMS requirements of BS EN 9100 series? 3. Does the product require the Supplier to provide product assurance and/or conduct Final Inspection before delivery? 4: Selection of a Primary Standard requires the inclusion of DEFCON 627 where a CofC is required. 5: Does the contract involve developmental software? 6: Does the contract involve high risks, complex systems and/or complex supply chains that require assurance of the Suppliers management of risks to quality? Consideration **should** be made for a Deliverable Software Quality Plan if AQAP 2210 is also included. 7: Does the product require Product Conformity / traceability/ provenance?

Figure 4-B1: Selection of NATO Primary and Supplementary Quality Contract Conditions

Selection Process	Risk Considerations

Selection Process

1. From Figure 4-B1

(A)

2. Likelihood of Concessions — Yes → Def Stan 05-061 Pt1

No

3. Potential need for Contractor Working Party? — Yes → Def Stan 05-061 Pt4

← *Note: Not considered necessary with AQAPs 2110 or 2310.*

No

4. Critical Items requiring Independent Inspection? — Yes → Def Stan 05-061 Pt9

No

5. Risk of Counterfeit Materiel? — Yes → Def Stan 05-135

No

6. – – – – – – – – – – –

7. DEFCON 638 For Supplier Flight or Ground Running Indemity? — Yes → Def Stan 05-100

No

8. Additional Domain Standards

Risk Considerations

Standard selection to be made with reference to Annex C.

1: In addition to the standards identified from 4-B1, the following additional Supplementary standards are also to be considered.

2: Does the achievement of contractual requirements require the Supplier to categorise arising non-conforming product (with respects to concessions) and is the Supplier considered technically competent to do so?

3: Does the achievement of contractual requirements require the Supplier to conduct work activities at MOD establishments and/or external premises?

4: Does the achievement of contractual requirements require risk mitigation for activities involving Safety Critical Items?

5: Does the achievement of contractual requirements require the Supplier to manage risk of counterfeit materiel entering the supply chain?

6: In addition to the Standard Contractual Quality Conditions the following is also to be considered for the contract where applicable.

7: Does the achievement of contractual requirements require the Supplier to operate allotted military aircraft under MOD indemnity for conducting flight authorisation and/or engine ground running?

8: In addition to consideration of the Primary and Supplementary standards featured within this JSP, the Authorised Signatory is to include domain quality standards as necessary.

Figure 4-B2: Standard MOD Supplementary Quality Conditions

MOD PRIMARY AND SUPPLEMENTARY QUALITY CONTRACT REQUIREMENTS

TABLE OF STANDARD CONTRACTUAL QUALITY CONDITIONS

STANDARD*	TITLE	COMMENTS/APPLICATION
Primary Quality Standards – **only one**		
AQAP 2110	NATO Quality Assurance Requirements for Design, Development and Production.	To be applied in contracts with the requirement for Design / development and / or achievement / verification of production controls and where the Supplier is expected to meet the requirements of ISO 9001.
AQAP 2131	NATO Quality Assurance Requirements for Final Inspection and Test.	To be applied in contracts where assurance of final inspection and production test processes are required.
AQAP 2310	NATO Quality Assurance Requirements for Aviation, Space and Defence Suppliers.	To be applied in contracts with the requirement for Design and/or Development work; where the Supplier QMS is to meet the requirements of BS EN 9100.
Supplementary Quality Standards – as required		
AQAP 2210	NATO Supplementary Software Quality Assurance Requirements to AQAP 2110 and AQAP 2310	For MOD contracts that include development or maintenance of either deliverable or non-deliverable software; AQAP 2210 shall be included. AQAP 2210 must be invoked in addition to AQAP 2110 or 2310. AQAP 2105 must be included if a Supplier Software Quality Plan is required.
AQAP 2105	NATO Requirements for Quality Plans	Where risks to achieving contract requirements warrant a 'Deliverable' Quality Plan, the contract will need to include AQAP 2105 and DEFCON 602A. *This may be linked to a contractual and or financial milestone.*
DEFCON 602A	Deliverable Quality Plan	

STANDARD*	TITLE	COMMENTS/APPLICATION
DEFCON 602B	Quality Assurance (Without Deliverable Quality Plan)	Where a Primary AQAP is used in a contract but the risks to achieving contract requirements do not warrant a Deliverable Quality Plan, the contract shall include DEFCON 602B.
DEFCON 627	MOD requirements for a Certificate of Conformity	DEFCON 627 shall be included in all contracts which invoke any of the Primary Quality Standards. Where risks do not warrant the inclusion of an AQAP, but design provenance or traceability is a requirement, the contract shall include DEFCON 627.
Def Stan 05-061 Part 1	Quality Assurance Procedural Requirements - Concessions	To be applied in contracts where the Supplier may need to request a concession and is considered technically competent to categorise arising nonconformities.
Def Stan 05-061 Part 4 *Not considered necessary with AQAP 2110 or AQAP 2310*	Quality Assurance Procedural Requirements – Contractor Working Parties	To be applied in contracts where the Supplier may be required to field Contractor Working Parties.
Def Stan 05-061 Part 9	Quality Assurance Procedural Requirements – Independent Inspections Requirements for Safety Critical Items	To be applied in contracts which require Independent Inspections.
Def Stan 05-135	Avoidance of Counterfeit materiel	The MOD Acquisition Organisation shall assess the risk for the potential for counterfeit materiel in the supply chain and the associated impact on the safety and performance of the equipment procured by the MOD. Where it is considered there is a risk of counterfeit materiel in the supply chain, Defence Standard 05-135 Avoidance of Counterfeit Materiel shall be invoked.

STANDARD*	TITLE	COMMENTS/APPLICATION
Also to be considered where applicable		
DEFCON 638 Def Stan 05-100	Flights Liability and Indemnity Ministry of Defence Requirements for Aircraft Flight and Ground Running	DEFCON 638 stipulates that Industry must follow the processes set out in DEFSTAN 05-100 in order to receive the Indemnity. The Indemnity contained in DEFCON 638 is of considerable value and proposals for inclusion of DEFCON 638 in any Tender Documentation must be considered at Band B2 level or above.

Issue state of the standards is not supplied here; refer to QA Checklist[55] / DStan site for latest edition.

---

[55] Standard Quality Assurance Requirements Checklist. Published as a downloadable Checklist in Managing Quality on the KiD.

MANAGEMENT OF NON-CONFORMING PRODUCT AND CONCESSIONS PROCESS

D1. Determining Contractual Requirements

When determining contractual requirements, the Authorised Signatory shall:

a.   determine if a prospective Supplier is required to manage a concession process for non-conforming products to deliver contractual requirements.

b.   determine the appropriate method of contractually managing concessions (if required).

c.   where AQAP 2110 or 2310 is selected, ensure that Defence Standard (Def Stan) 05-061 Part 1 'Quality Assurance Procedural Requirements - Concessions' [the primary method of contractually managing concession applications for MOD contracts] is included in the contract.

D2. During the Tender Stage

During the Tender Stage, and prior to contract award, a Competent Quality Practitioner shall determine if prospective Supplier(s) have the design authorisation / technical competence to categorise[56] and manage non-conforming product.

a.   If the Supplier is considered to have the authorisation / technical competence, ensure the Def Stan 05-061 Pt.1 is included within the contractual conditions.

b.   If the Supplier is not considered to have the authorisation / technical competence, ensure the delivery team and Supplier agree an alternative process for non-conformances against specified technical requirements; ensuring that the appropriate processes are in place to assure domain requirements.

For contracts where the Supplier does not hold design authorisation or delegated design authorisation for the equipment, the Competent Quality Practitioner will need to consider if the Supplier is technically competent to categorise nonconformities. If not considered technically competent, Def Stan 05-061 Pt.1 **should not** be invoked in the contract.

NOTE: The assessment of technical competence is required as, under the requirements of Def Stan 05-061 Pt.1; the initial assessment of the impact of a non-conformance is conducted by the Supplier. The output of this assessment will be the categorisation of the non-conformance as either 'Major' or 'Minor'.

Only 'Major' nonconformities will require the Supplier to raise an MOD concession application.

If the Supplier **is not** considered technically competent to categorise nonconformities, the

---

[56] See Defence Standard 05-061 Part 1 Section 7.1.

MOD Acquisition Organisation and Supplier will need to agree an alternative process for non-conformances against specified technical requirements; ensuring that the appropriate processes are in place to assure domain requirements.

D3. During Contract Execution

During the term of the contract the MOD Acquisition Organisation **should**:

a. implement/have in place an auditable process for the management of all their concession activity.

b. ensure that the Supplier applies the appropriate processes for the control of non-conforming products, inclusive of corrective action, identification and segregation of non-conforming products.

c. monitor and manage any risks associated with non-conforming product (see section D5).

d. maintain auditable records of all MOD concession activity.

e. periodically review the delivery team concession management process.

NOTE: Reviews enable trends to be monitored and aid the measurement of Supplier and MOD Acquisition Organisation performance.

D4. Supplier Concession Applications

The MOD Acquisition Organisation's Team Leader is responsible for approving or rejecting an application for concession. Authority to sign concession requests may be delegated, however, in all cases:

a. the signatory must be Suitably Qualified and Experienced Personnel (SQEP) to assess the application and decide its merits.

b. the signatory must be formally Delegated and/or Authorised to approve concession requests.

c. where a concession application affects safety, the MOD Acquisition Organisation's Team Leader may need to indicate agreement by signing the application, or seek appropriate approval in order to meet regulatory requirements.

NOTE: SQEP requirements are to be detailed in the MOD Acquisition Organisation's documented information.

Upon receipt of Supplier concession applications MOD Acquisition Organisations shall:

a. conduct an assessment of the benefit for acceptance of a concession request to the MOD against the criteria of time, cost and performance.

NOTE: Commercial staff are responsible for negotiation of price adjustments resulting from concession applications.

b.   involve the relevant stakeholders in the decision making process when assessing concession applications.

c.   ensure that the Supplier conducts root cause analysis to identify the cause of the non-conformance and applies effective corrective actions.

d.   establish a thorough understanding of any through life impact of the concession application.

e.   make an assessment of any cumulative effect the concession may have with other granted concessions.

f.   ensure that the appropriate approvals / authorisations exist when granting a concession.

g.   ensure that the Supplier is provided with the appropriate information when providing the 'MOD Decision' on the concession application form.

h.   ensure the Supplier has defined requirements for remedial / rectification work where a limited concession (e.g. against a specific quantity, batch or time) is granted.

i.   liaise with MOD commercial staff to take appropriate contract action when a concession is granted.

NOTE: MOD approval of a Supplier's application for concession will be regarded as an amendment to contract that shall be limited to the extent set out in the concession. All concession applications will need to be examined carefully to ensure that the MOD's contractual rights are maintained and protected.

j.   ensuring that outstanding concessions are subject to periodic review at an appropriate interval; as determined by domain requirements and the nature of the concessions.

NOTE: Figure 4-D1 provides a simplified overview of the concessions process in accordance with Def Stan 05-061 Pt.1.

NOTE: An example 'Concession Approval Checklist' is provided in Managing Quality on the KiD, for MOD use, in support of MOD Acquisition Organisation's records.

D5. Risk Considerations

Where it is determined that a Supplier will be required to manage a concessions process to deliver contract requirements, the Competent GQA Practitioner will need to assess and manage any risk this might pose to the MOD. This might include, but not limited to, the following:

a.   risks that the Supplier may not be competent to assess the effects of the non-conformance or proposed recovery action.

b.   risks where the Supplier may not be aware of, such as adverse impacts on associated systems.

c.   risks in the Supplier's categorisation of a non-conformance.

d.   risks associated with the Supplier's supply chain.

The Competent GQA Practitioner **should** consider Government Quality Assurance Representative (GQAR) tasking in support of their risk management for the concessions process where (to include but not limited to):

a.   the contract requirements are for complex systems.

b.   there is a potential risk with the Supplier's categorisation of nonconformities.

c.   it has been considered that there is risk associated with the Supplier's management of their supply chain.

d.   there is a potential risk within the Supplier's supply chain.

e.   to provide assurance for 'a' to 'd' above.

f.   you are not able to establish that any risk exists and that lack of knowledge creates risk.

If it is determined that the Suppliers concessions process is low risk and not warranting GQAR surveillance, the Competent GQA Practitioner may consider having the Supplier's nonconformities list (sometimes known internally as the companies Concession Register) reviewed periodically, such as at project meetings.

NOTE: It may be possible to either agree a joint nonconformity categorisation process with the Supplier or, with agreement of the Supplier, take part in their nonconformity evaluation and categorisation process.
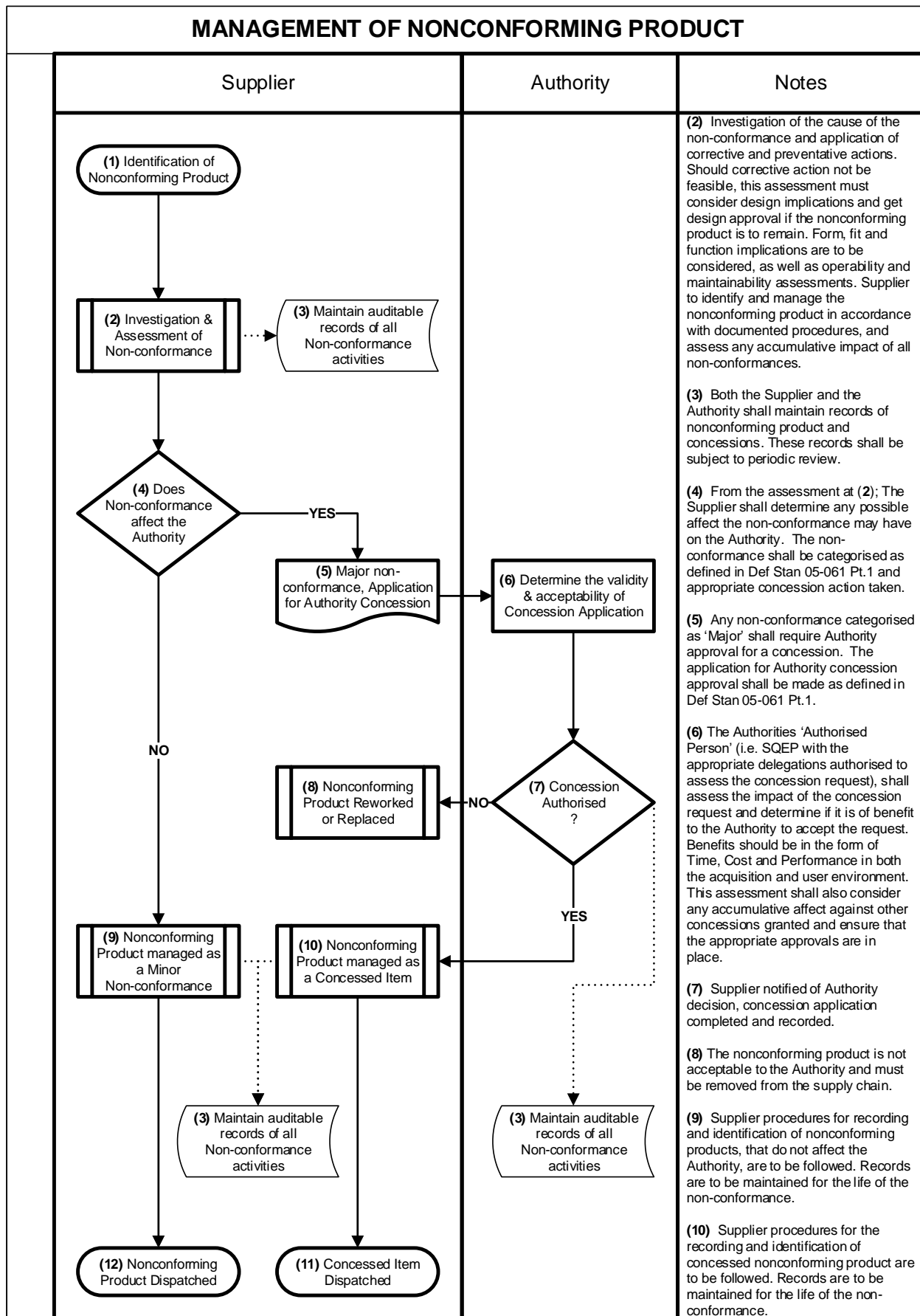
MANAGEMENT OF NONCONFORMING PRODUCT

Supplier	Authority	Notes

Supplier column flowchart:

(1) Identification of Nonconforming Product

(2) Investigation & Assessment of Non-conformance ·····› (3) Maintain auditable records of all Non-conformance activities

(4) Does Non-conformance affect the Authority — **YES** →

NO ↓

(5) Major non-conformance, Application for Authority Concession →

(8) Nonconforming Product Reworked or Replaced ← **NO**

(9) Nonconforming Product managed as a Minor Non-conformance ····· (10) Nonconforming Product managed as a Concessed Item

(3) Maintain auditable records of all Non-conformance activities

(12) Nonconforming Product Dispatched

(11) Concessed Item Dispatched

Authority column flowchart:

(6) Determine the validity & acceptability of Concession Application

(7) Concession Authorised? **YES** ↓

(3) Maintain auditable records of all Non-conformance activities

Notes column:

(2) Investigation of the cause of the non-conformance and application of corrective and preventative actions. Should corrective action not be feasible, this assessment must consider design implications and get design approval if the nonconforming product is to remain. Form, fit and function implications are to be considered, as well as operability and maintainability assessments. Supplier to identify and manage the nonconforming product in accordance with documented procedures, and assess any accumulative impact of all non-conformances.

(3) Both the Supplier and the Authority shall maintain records of nonconforming product and concessions. These records shall be subject to periodic review.

(4) From the assessment at (**2**); The Supplier shall determine any possible affect the non-conformance may have on the Authority. The non-conformance shall be categorised as defined in Def Stan 05-061 Pt.1 and appropriate concession action taken.

(5) Any non-conformance categorised as 'Major' shall require Authority approval for a concession. The application for Authority concession approval shall be made as defined in Def Stan 05-061 Pt.1.

(6) The Authorities 'Authorised Person' (i.e. SQEP with the appropriate delegations authorised to assess the concession request), shall assess the impact of the concession request and determine if it is of benefit to the Authority to accept the request. Benefits should be in the form of Time, Cost and Performance in both the acquisition and user environment. This assessment shall also consider any accumulative affect against other concessions granted and ensure that the appropriate approvals are in place.

(7) Supplier notified of Authority decision, concession application completed and recorded.

(8) The nonconforming product is not acceptable to the Authority and must be removed from the supply chain.

(9) Supplier procedures for recording and identification of nonconforming products, that do not affect the Authority, are to be followed. Records are to be maintained for the life of the non-conformance.

(10) Supplier procedures for the recording and identification of concessed nonconforming product are to be followed. Records are to be maintained for the life of the non-conformance.

Figure 4-D1: Management of Non-conforming Product and Defence Standard 05-061 Pt 1

GQA FOR CONTRACTS INVOLVING SAFETY-CRITICAL PRODUCTS

Competent GQA Practitioners will need to consult with the MOD Acquisition Organisation's appropriate Technical and Safety SQEP to determine whether a contract contains SCP and ensure that they obtain relevant information regarding the SCP and associated risks. Once it has been established (by the relevant Safety and / or Technical Subject Matter Experts) that the contract involves SCP MOD Acquisition Organisations **should** ensure that:

a.   contracts involving SCP are placed with suppliers holding Appropriate Certification, whose scope covers the provision of the contracted requirements.

b.   the appropriate Government Quality Assurance Representative (GQAR) Organisation is consulted for all contracts involving SCP and an assessment of the requirement to carryout risk based surveillance documented.

c.   where GQARs are tasked:

(1)   this tasking will need to include activities directed at performing Government Quality Assurance Surveillance (GQAS) throughout the supply chain. GQAS will need to be conducted as far down the supply chain as necessary to ensure product compliance.

(2)   the GQAR is made aware of the existence of SCP by including the phrase 'This contract involves Safety Critical Products' within the tasking to the GQAR.

(3)   reports raised by the GQAR are retained as project records.

d.   Def Stan 05-061 Part 9 'Independent Inspection Requirements for Safety Critical Items' is included within contracts where it is determined that independent inspections are required.

e.   contracts involving SCP will need to have the requirement for a Deliverable Quality Plan (DQP) reviewed, should this review determine that a DQP is not required the justification for not having it **should** be documented.

f.   where items affect safety (safety related), they **should** be identified as configured items and managed under formal Configuration Management principles[57] (reference Def Stan 05-057 - Configuration Management of Defence Materiel).

g.   Configuration Management and Safety Management requirements for SCP will need to be defined in the contract via the inclusion of the appropriate standards and conditions.

h.   where a SCP is being acquired, a Certificate of Conformity alone may not be an adequate means of ensuring the product meets all contractual requirements. The Supplier must produce and maintain adequate records to provide traceability

---

[57] Refer to JSP 945 - MOD Policy for Configuration Management.

assurance of SCP, to ensure traceability and assure the conformance to contracted requirements. Once delivered by the Supplier, the delivery team is responsible for the maintenance of these records which will form part of the project / product document set.

i.   SCPs are identifiable and accountable in accordance with the requirements of the Defence Logistics Framework (DLF) as well as any single Service requirements.

j.   the Prime Supplier is responsible for ensuring that SCP meet contract requirements throughout the supply chain.

k.   any additional activity required for the provision of assurance for SCP should be planned and tailored according to the SCP in question, this may include Pre-Contract Award Evaluation (PCAE), GQAS, independent inspection and product verification.

l.   records of decisions and reports concerning assurance activities in contracts involving SCP are retained.

m.   where it is identified that quality failures could adversely compromise safety, they are to be reported through the appropriate Hazard Log (for example in accordance with Project Oriented Safety Management System (POSMS)).

n.   where SCPs are managed by one delivery team and supplied to other delivery teams, all relevant delivery teams are to be consulted where there are changes that impact on the SCP. This consultation will enable assessment of any changes and potential impact to the respective equipment, including the Safety Case or Safety Assessment Report.

NOTE: It may be determined that, to manage product risk effectively, independent product qualification approval is required. This may be gained through contractually requiring the Supplier to implement Product Conformity Certification (refer to the Product Conformity Certification topic within Managing Quality on the KiD for further guidance).

Further advice on domain requirements for SCP can be found in Managing Quality on the KiD.

PROCESS FOR THE AVOIDANCE OF COUNTERFEIT MATERIEL

F1. Assessing the Risk of Counterfeit Materiel in the Supply Chain

The MOD Acquisition Organisation shall assess the risk of counterfeit materiel. This risk assessment will need to cover the equipment and potential Suppliers.

There is an increased probability of counterfeit materiel in equipment where:

    a.   the components or raw material are of a type that are known to be vulnerable to counterfeiting.

    b.   the equipment is complex.

    c.   the design requires the sourcing of parts that are obsolescent or are foreseen to become obsolescent during the lifecycle of the equipment.

    d.   there are likely to be multiple tiers in the supply chain.

    e.   traceability of the materiel is not otherwise mandated.

    f.   the design includes high value items.

    g.   the design includes programmable parts.

    h.   the design includes electrical, electronic and electro-mechanical parts.

The MOD Acquisition Organisation shall assess the implications of counterfeit materiel on safety and mission effectiveness arising from:

    a.   unpredictable equipment failure.

    b.   unpredictable equipment performance.

The MOD Acquisition Organisation are to assess the risk of the Supplier supplying counterfeit materiel, as a minimum the following should be taken into account:

    a.   the extent the Supplier already complies with the requirements of the Def Stan 05-135[58], including:

        1)   having a policy on the avoidance of counterfeit materiel.

        2)   providing traceability of the materiel.

    b.   the length of the supply chain (direct sourcing of all materiel and components by the supplier from a manufacturer or official distributor is less of a risk than sourcing by the Supplier though a chain of brokers).

---

[58] Defence Standard 05-135 - Avoidance of Counterfeit Materiel.

c. whether the Supplier is the original manufacturer.

d. whether there are long lead times.

e. whether the trading history of the supplier can be ascertained.

f. whether the Supplier's past performance is known.

g. whether the Supplier is located in a jurisdiction in which intellectual property and other trading laws are effectively policed.

h. whether the Supplier only sells online which may result in poor procurement decisions.

i. the location of the Supplier's premises. If in doubt, review the address via on line mapping. Does it look a reputable site or just an accommodation address?

Where the origin of raw materiel or the manufacturer of components is known before the time of bid, risk considerations include:

a. whether the component / materiel manufacturer has taken measures to reduce the risk of its products being counterfeited by others; these might include:

(1) using high security packaging or marking.

(2) registering its trade marks.

Figure 4-G1 reflects the risks described in the text in relation to counterfeit materiel in the Supply Chain and risk in Final Equipment.
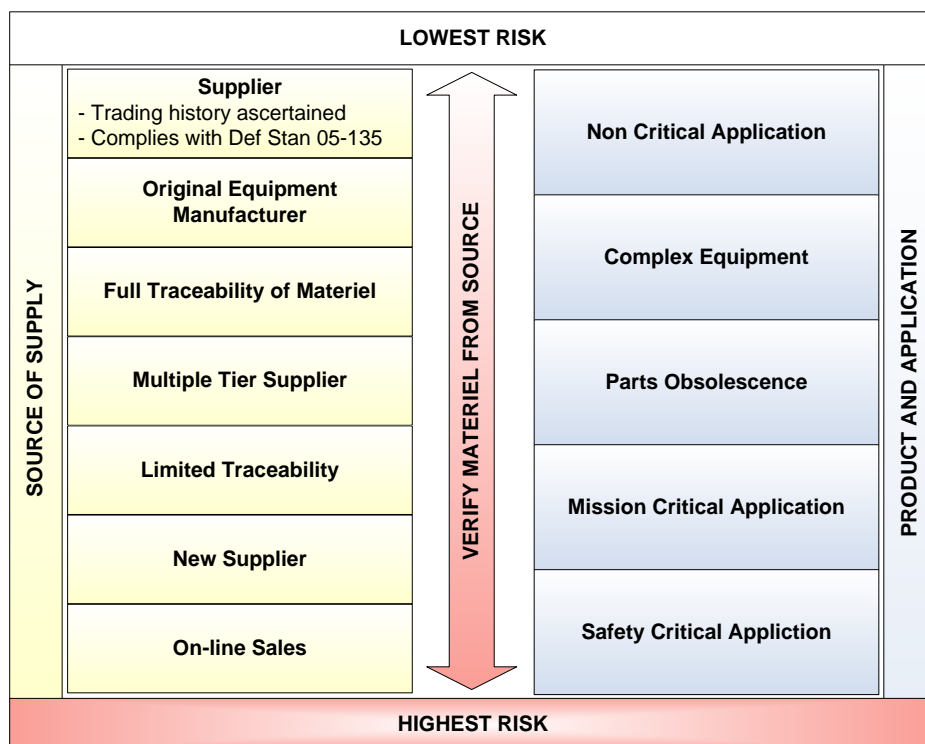
Figure 4-G1: Supply Chain Risk Levels

F2. Investigation and Evaluation of Equipment Failure

In the event of premature or unexpected equipment failure, the investigation **should** consider if the failure was due to counterfeit materiel.

F3. Suspected Counterfeit Materiel

Where possible, materiel suspected to be counterfeit **should** be immediately removed from use. It shall be identified and quarantined. The MOD Acquisition Organisation is to be immediately notified. The MOD Acquisition Organisation **should** instigate a technical review and risk assessment of the implications of allowing the materiel to remain in use.

The outcome of the review is to be documented, including all risks and risk management actions, the decision whether to replace the materiel or not and, where appropriate the activities planned to replace the materiel.

If it is not possible to immediately remove suspected counterfeit materiel from use for operational or other reasons all affected equipment is to be identified.

The MOD Acquisition Organisation is responsible for liaising with the equipment user and Supplier to establish test requirements to verify whether or not the materiel is counterfeit.

Where it is appropriate, suspected counterfeit materiel may be sent to an independent test house for test and verification of authenticity.

Subject to commercial and legal agreement, a sample of the materiel may be returned to the Supplier, under controlled conditions, for test and verification.

Relevant reporting systems for reporting material failure **should** also be followed, in order to alert other MOD users to the potential problem.

Commercial Officers are to be kept informed of any instances where suspected counterfeit materiel has been identified in delivered equipment so the legal and contractual implications can be addressed.

F4. Reporting of Counterfeit Materiel

Confirmed counterfeit materiel identified by any employee of the MOD or member of the Armed Forces shall be notified to QCM-Policy Help line[59]. QCM Policy will notify the Confidential Hotline and relevant enforcement agencies.

Where counterfeiting has involved an infringement of intellectual property rights (e.g. the application of a false trade mark) QCM Policy will liaise with the DIRC to inform the rights owner.

F5. Disposition of Counterfeit Materiel

Materiel confirmed as counterfeit (beyond confirmatory samples) **should not** be returned to the Supplier; this prevents counterfeit materiel being returned into the supply chain. The Supplier is to be informed of such materiel.

---

[59] Email: DES-QCM-Policy-Helpline@mod.gov.uk.

Subject to completion of the investigation and agreement from commercial and legal, confirmed counterfeit materiel shall be destroyed (i.e. rendered unusable) in accordance with disposal regulations. If merely sold as scrap, there is a risk that the counterfeit materiel may be reintroduced into the supply chain.

5 Quality Improvement

5.1 Introduction

Quality Improvement (QI) is an essential aspect of Quality Management and Government Quality Assurance (GQA). This Guidance has been produced to assist Top Management and Quality Practitioners across the MOD in their roles and aims to explain the benefits of QI and why is it necessary to **continually strive for improvement**. Although it needs to be recognised that QI is applicable to all MOD personnel and not just the Quality Practitioner.

This Guidance introduces a number of Tools and Techniques (T&T) that can be utilised to improve quality, manage change and deliver capability. The T&T introduced in this chapter will require varying levels of training, dependent upon the T&T used and 'scale' of its application. This Guidance does not attempt to provide an exhaustive list, but merely aims to highlight a small number that can be used by the Quality Practitioner in their role.

Finally, this Guidance encourages the Quality Practitioner to **promote improvement** as a key feature of the progressive Governance and Assurance approach and part of MOD business.

5.2 Why Should we Continually Strive to Improve?

It is crucial to the Quality profession that we strive towards Continual Improvement (CI). Striving for Improvement means continuing to eliminate the problems that keeps a process, product or service from surpassing the expectations of the customer. CI is defined as a gradual never-ending change which is focused on increasing the effectiveness and/or efficiency of an Organisation to fulfil its policy and objectives. CI is about identifying best practices, adapting them, and continually improving them. The MOD should strive for CI because new processes, behaviours and opportunities can eventually become the norm.

5.3 Make Quality Easy to Improve

Complexity is often the enemy of improvement and effectiveness. The more variables and issues we face in our work, the more difficult it becomes to deliver. When focussing on QI, remember to keep it simple. The aim should be to establish, at the project, programme or organisational levels, what improvement can be made.

5.4 Learning from Experience

Learning from Experience (LFE) is a key development tool at Organisation, team and individual levels. Learning from past experience helps avoid repeating mistakes and is a vital part of improving ways of work throughout the life cycle. LFE involves the identification, capture and exploitation (through use and sharing) of lessons based on past experience. These lessons provide knowledge and expertise that can be used to improve our delivery of objectives and the way in which we work. It is through building on successes and exploring different, more appropriate ways of working and the ability to deliver is improved. LFE is an important enabler of CI and can help enhance the reputation of the MOD through more effective and efficient working. LFE and Improvement should be part of the way we operate. In order to be effective, it needs to become part of the way we

work. The selection of tools includes Plan, Do, Check, Act (PDCA), The Quality Interview, the Check Sheet and the Control Chart. In particular PDCA, or the 'The Deming Cycle', is a tool or Quality Planning process. PDCA is a repetitive four-stage model for CI that encourages the Quality Practitioner to be methodical in the approach to problem solving and implementing solutions. All the tools and techniques recommended in this Guidance are all designed to achieve the same output: *Improvement.* They are all tools and techniques to improve performance throughout the lifecycle.

The Quality Practitioner should ensure that root causes of problems and issues are identified, effective solutions implemented and that feedback loops are established. An important enabler of CI is LFE. Correct implementation of LFE throughout the life cycle, can help enhance the reputation of the MOD through more effective and efficient working.

5.5 Competences for Quality Improvement

In order to effectively promote and conduct QIs, a level of competence is required. This Guidance briefly describes QI techniques that can be applied by all MOD Organisations, with further supporting guidance and training to be featured in Managing Quality on the KiD, necessary to complete this role effectively.

NOTE: The CQI[60] recommends that to effectively promote and conduct QI the Quality Practitioner should gather Insight, evaluate measures and results and implement change.

5.5.1 Gather Insight

The Quality Practitioner should use appropriate methods to understand all stakeholder needs and to identify any changes to the Organisation's context including changes to the market, customer requirements and other factors impacting on the Organisation. The Quality Practitioner should use benchmarking and other appropriate tools and techniques to evaluate performance and improvement priorities.

5.5.2 Evaluate Measures and Results

The Quality Practitioner should facilitate the development and use of appropriate measures of operational performance and product / service Quality across the Organisation to ensure fact based decision making. The Quality Practitioner should help establish priorities for change.

5.5.3 Implement Change

The Quality Practitioner should evaluate the nature and magnitude of change required (incremental, step change, transformational) and how to achieve the required changes through the development of the Organisation's people, processes, tools, technologies and/or infrastructure. The Quality Practitioner should identify any issues associated with the Organisation's culture with respect to achieving and sustaining the desired levels of operational performance and product/service quality.

---

[60] The Chartered Quality Institute is the external body to which MOD Quality principles and competences are aligned.

5.6 Promoting Quality Improvement

It is recommended that improvement is promoted as a key part of the progressive Governance and Assurance approach. QI involves both prospective and retrospective reviews. It is about measuring where you are and figuring out ways to make things better. Attributing blame should be avoided, with the focus on creating systems to prevent errors from happening.

5.7 Root Cause Analysis

Root Cause analysis is an iterative process and a tool of CI. The process is typically used as a reactive method of identifying event causes, revealing problems and solving them. Analysis is done after an event has occurred and the process can be used to solve problems at their root, rather than just fixing the obvious. Root Cause Analysis often leads to possible Organisational change, rather than just change at team level. The benefits of Root Cause Analysis are that it uncovers relationships between causes and symptoms of problems, the process works to solve issues at the root itself and provides tangible evidence of cause and effect and solutions.

Root Cause Analysis can be utilised to locate the 'defect' in the system and as an improvement tool to identify new ways to do things.

5.7.1 Methods of Root Cause Analysis

There are a number of methods that the Quality Practitioner can adopt to identify the root cause of a problem or understand a process. The methods include The Brainstorming Exercise, The Cause and Effect Diagram and The 5 Whys.

5.7.2 The Brainstorming Exercise

This is probably the most simple of all the QI tools. Brainstorming is a group technique of solving specific problems, stimulating creative thinking and generating a large number of ideas quickly. Brainstorming may be used in a variety of situations. Every participant is encouraged to think aloud and suggest as many ideas as possible no matter how 'outside the box'. Wild ideas are welcomed, and no criticism or evaluation occurs during brainstorming, all ideas should be recorded for subsequent analysis. The process continues until no further ideas are forthcoming and this increases the chance for originality and innovation.

5.7.2.1 When would you use Brainstorming?

Brainstorming can be used by the Quality Practitioner to solve all kinds of problems and areas for improvement, however, it is important to have a problem that is specific and can be made into a question.

5.7.3 The Cause and Effect Diagram

Professor Kaoru Ishikawa created Cause and Effect Analysis (also referred to as the fishbone diagram or Ishikawa diagram [see Figure 5-1]) in the 1960s. The technique uses a diagram-based approach for thinking through all of the possible causes of a problem. This helps the Quality Practitioner carry out a thorough analysis of the situation.

There are four steps to using the tool. Identifying the problem, work out the major factors involved, identify possible causes and analyse the resulting diagram.

5.7.3.1 When would you use a Cause and Effect Diagram?

The Quality Practitioner would use this tool to identify the possible causes of problems or the factors that affect a desired outcome or goal. Each fishbone in the diagram represents a category.
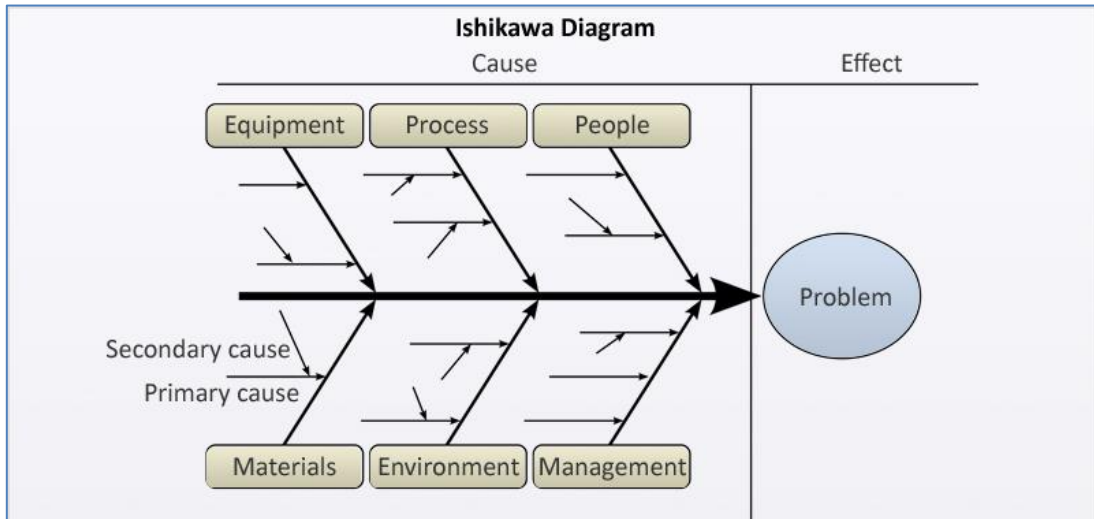

Figure 5-1: Fishbone or Ishikawa Diagram

5.7.4 The 5 Whys

The '5 Whys' (see Figure 5-2) is an iterative interrogative technique which the Quality Practitioner can use to explore the cause and effect relationships underlying a particular problem. To solve the problem properly, the Quality Practitioner would need to drill down through the symptoms to the underlying cause. The aim of this method is to determine the root cause of a defect or problem by repeating the question 'Why?' Each answer forms the basis of the next question. Not all problems have a single root cause. If the aim is to uncover multiple root causes, the method will be repeated asking a different sequence of questions each time.

The method provides no hard and fast rules about what lines of questions to explore, or how long to continue the search for additional root causes and when the method is closely followed, the outcome still depends upon the knowledge and persistence of the people involved.
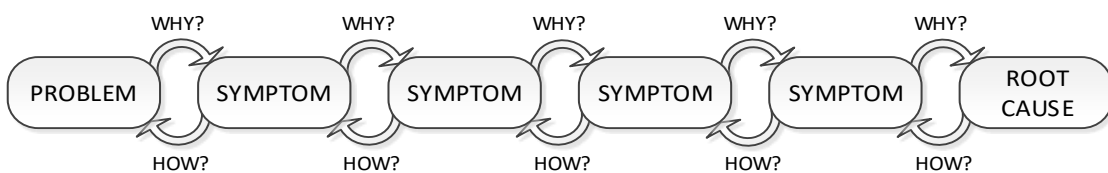

Figure 5-2: Example of the '5 Whys'

5.7.4.1 When would you use The 5 Whys?

The 5 Whys is an excellent tool for QI and problem solving, but it is best for simple or Moderately difficult problems.

5.7.5 Plan, Do, Check, Act

PDCA is also known as the Deming Cycle (see Figure 5-3). This is an excellent technique for CI and very useful when implementing a change or starting a new improvement project. When change or improvement is necessary it is wise to have a process that you can follow, and this technique is a four-step process used for the control and CI of processes and products. The main benefit of PDCA is that it ensures that you plan, test and incorporate feedback before you commit to implementation. It is recommended that a review is conducted at the end of each stage to capture any lessons learnt and allow that learning to be implemented as appropriate in the next stage.
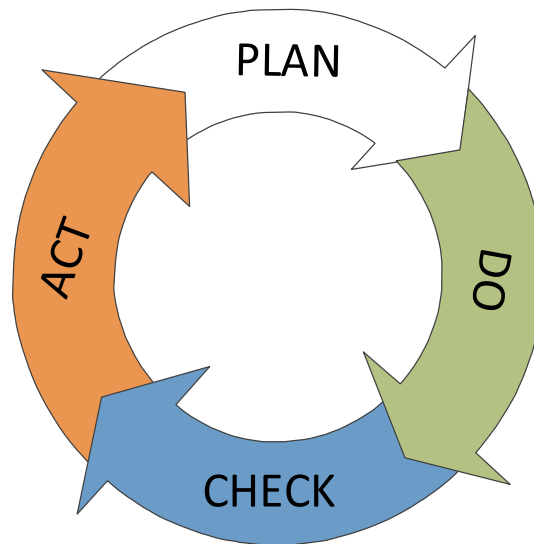
Figure 5-3: Deming's Plan, Do, Check, Act Cycle

5.7.5.1 When would you use Plan-Do-Check-Act?

PDCA is a technique for continuous improvement and best used when starting a new improvement project. It can be used when developing a new or improved design of a process, product or service, when defining a repetitive work process, or when implementing any change.

5.7.7 Check Sheet

The Check Sheet (see Figure 5-4) is used for collecting data in the present time and in the actual location of the data. The chart is useful for both quantitative and qualitative data. When quantitative data is being obtained, it is referred to as the tally sheet. Basic formats are followed that entail proper placement of pertinent information like who, what, when, where, and why. It can be used as a measure of probability distribution, as a checklist, and to quantify defects.

Figure 5-4: Check Sheet Example

5.7.7.1 When would you use a Check Sheet?

A check sheet is a structured, prepared form for collecting and analysing data. It is a generic tool that can be adapted for a wide variety of purposes. However, it is best used when data can be observed and collected repeatedly by the same person or at the same location, when collecting data on the frequency or patterns of events, problems, defects, defect location, defect causes, etc.

5.7.8 Control Chart

A control chart (see Figure 5-5) is often used in QI. This chart is used for monitoring and ensuring statistical control. It will have certain measurements and limits, and when the measurements go beyond limits, this will signal a variation. The chart is also useful for tracing the cause of any possible variation.
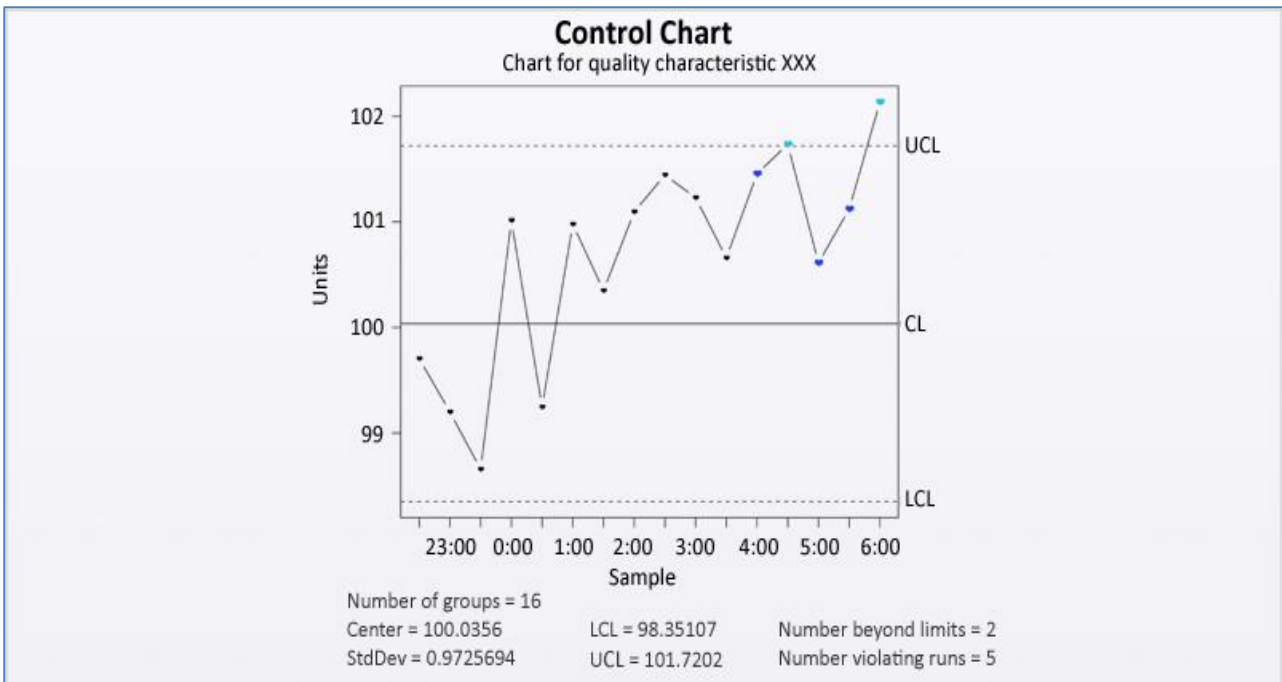
Figure 5-5: Control Chart Example

5.7.8.1 When would you use a Control Chart?

The Control Chart is a graph used to study how a process changes over time. It is best used when analysing patterns of process variation from special causes (non-routine events) or common causes (built into the process) or when determining whether your QI project should aim to prevent specific problems or to make fundamental changes to the process.

5.8 Improvement Tools and Techniques

In order to effectively **identify, analyse and improve** existing processes, the Quality Practitioner should be aware of the improvement techniques. These improvement techniques can be used by the Quality Practitioner meet new goals and objectives. The most commonly used include:

    a.   DRIVE (Define, Review, Identify, Verify, and Execute).

    b.   process mapping.

    c.   Six Sigma techniques:

        (1)   DMAIC process (Define, Measure, Analyse, Improve, Control), and

        (2)   DMADV process (Define, Measure, Analyse, Design, Verify).

    d.   Statistical Process Control (SPC).

    e.   simulation.

5.8.1 DRIVE

DRIVE is a continuous improvement tool commonly used in process improvement. DRIVE helps the Quality Practitioner analyse the problem from a number of angles. The tool involves evaluating problems so they can be broken down into simple, actionable steps. Potential solutions to the problem can then be identified and the Quality Practitioner can then evaluate what changes are required to sustain these improvements.

5.8.2 Process Mapping

Process Mapping is one of the initial steps to understand or improve a process. By gathering information, the Quality Practitioner can construct a 'dynamic' model - a picture of the activities that take place in a process. Process maps are useful communication tools that help improvement teams understand the process and identify opportunities for improvement. Mapped processes cans be evaluated through a Value Stream Mapping (VSM) activity to identify improvements. Refer to 5.8.3 Six Sigma for more on process improvement.

5.8.3 Six Sigma

Six Sigma is a set of techniques and tools for process improvement. Improvement is accomplished through the use of two Six Sigma methodologies; DMAIC and DMADV. Six Sigma is a disciplined, data-driven methodology for eliminating defects in any process. It is a measurement-based strategy for process improvement and problem reduction completed through the application of improvement projects.

5.8.3.1 DMAIC

The Six Sigma DMAIC process is an improvement system for existing processes falling below specification and looking for incremental improvement. DMAIC is an intensive solution approach that focusses only on cold, hard facts and not intuition. The DMAIC methodology, should be used when a product or process is in existence but is not meeting customer specification or is not performing adequately. DMAIC is the more well-known and most-used Six Sigma methodology and is focused on improving an existing process, rather than creating a new product or process like DMADV.

5.8.3.2 DMADV

The Six Sigma DMADV process (define, measure, analyse, design, verify) is an improvement system used to develop new processes or products at Six Sigma quality levels. DMADV focuses primarily on the development of a new service, product or process as opposed to improving a previously existing one. This can be especially useful when implementing new strategies and initiatives because of its basis in data, early identification of success and thorough analysis. The DMADV methodology should be applied when a non-existent product or process needs to be developed at a company and when an existing process or product already exists but still needs to meet a Six Sigma level or customer specification.

5.8.4 Statistical Process Control

SPC is a strategy for reducing the variability in processes which are the cause of most Quality problems. Decisions and actions are all based on the analysis of data, so

establishing a thorough data recording system is at the heart of this methodology. Quality Practitioners can use SPC to monitor and control a process to ensure it is optimised. The most common application of SPC is quality control in manufacturing.

5.8.5 Simulation

A simulation is a computer model that mimics the operation of a real or proposed system. The simulation is time based and takes into account all the resources and constraints involved, as well as the way these things interact with each other as time passes. Simulation also builds in the randomness you would see in real life. With simulation software you can quickly try out your ideas at a fraction of the cost of trying them in the real Organisation. And, because you can try ideas quickly, you can have many more ideas, and gain many insights, into how to run the Organisation more effectively.

5.9 Choosing a Quality Tool or Technique

The selection of tools and techniques by a Quality Practitioner will be dependent on the situation or task. All the tools and techniques are means to achieve the same thing: *Improvement.* They are all forms of ongoing effort to improve performance.

5.10 Continual Improvement as a Key Enabler

CI is a key part of the progressive Governance and Assurance approach and should be part of the way we operate. In order for an Organisation to be effective, CI needs to become part of the way we work. It is recommended that if we endeavor to continually improve, in time improvement will become just like any other process and form an integral part of the way the MOD works.