Ministry of Defence

# Quality and Configuration Management in Your Pocket

# MANAGING QUALITY IN DEFENCE

## Foreword by the Defence Functional Authority for Technical, Quality and Standardisation

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"*Everyone has a part to play in effective Quality Management and Assurance. It is about providing operational excellence across all aspects of our business through our governance, assurance and improvement. Quality is not a retrospective exercise rather it is about informing and driving continuous improvement, drawing on data and information to inform proactive measures to improve, to ensure we uphold the highest levels of safety through our Quality activity, and to hold ourselves to account for the work we undertake in support of our Armed Forces. To meet their needs, we need to be safe, efficient and consistent in providing reliable and effective products, services and support to the front-line commands. This Pocket Guide covers the essentials of Quality across the MOD which I commend to you and your people*."

# Foreword by Quality and Configuration Management Policy Team Leader

**Tim Pearce**
CQI MCQI

*"Quality and Configuration Management (CM) are key enablers to us providing safe and fit for purpose equipment, support and services to protect our people, territories, values and interests at home and overseas, our security and to work jointly with our allies.*

*Quality is about us achieving consistent and predictable results to meet Defence needs, expectations and requirements in an effective and efficient way. To do this we need to ensure; we have the right frameworks and conditions in place to succeed, our risks are appropriately managed, we have balanced levels of risk-based assurance, we are working to ensure that waste and rework are minimised, that issues and trends are attended to, and necessary improvements put in place to prevent recurrence.*

*CM applies discipline and technique to things we produce, acquire and manage. This enables us to; have an effective baseline that should be consistently match through life in order to meet the performance levels we require or specified, to test and verify/validate they have met these, to effectively manage and control variation, to effectively manage lifed components and other serviceable aspects/maintenance such they continue to perform as required, to help us identify and manage unplanned deviations (including quarantine and incident management in a way that minimises risk and operational impact) and to control and manage upgrades and changes effectively.*

*Done well and early, they enable us to succeed. Done poorly or as an afterthought they drive up cost and rework, risk compromising safety and adversely impact our ability to effectively support national and international Defence needs."*

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# 1. Introduction

Configuration Management (CM), together with Quality Assurance (QA) and Quality Management (QM) combine to build confidence that the product supplied to the end user is fit for purpose.

## 1.1 Quality in the MOD

Quality is about meeting the needs and expectations of the customer by doing the right things at the right time. The benefits of a sound approach to managing quality (both internally (QM) and of the products, goods, and services we acquire (QA)) are improving performance and safety across the business whilst making savings to time, cost, and reducing waste.

Quality is based on the following key principles.

a) Effective planning

b) Suitable Qualified and Experienced Personnel (SQEP)

c) Appropriate Quality Management Systems (QMS)

d) Accurate Quality Assurance requirements

e) Appropriate counterfeit materiel avoidance processes

f) Appropriate risk mitigation and GQA Surveillance (GQAS)

g) Only task authorised GQA Representatives for GQAS

## 1.2 MOD Policy for Quality

***JSP 940 MOD Policy for Quality Part 1: Directive***, contains the policy and direction that must be followed in accordance with Statute or policy mandated by Defence, or on Defence by Central Government.

***JSP 940 MOD Policy for Quality Part 2: Guidance***, provides the means of compliance, guidance and best practice that will assist the user to comply with the Directive(s) detailed in ***JSP 940: Part 1***.

**Knowledge in Defence (KiD)** gives guidance to MOD staff on policy and process. The Managing Quality topic within the KiD provides more in-depth guidance in support of ***JSP 940***.

## 1.3 Configuration Management in the MOD

The objective of CM is to define a Capability and it's supporting documentation by recording specifications. Its application is a critical enabler for safety, functionality, supportability, and cost. Enacted to the lowest appropriate level, CM is critical to providing the basis for all safety cases.

Configuration Management (CM) is based on the 5 pillars of CM:

a) Configuration Identification

b) CM and Planning

c) Configuration Change Control

d) Configuration Status Accounting (including CM records)

e) Configuration Audit (physical and functional)

## 1.4 MOD Policy for Configuration Management

MOD policy on CM is contained in the ***Defence Logistics Framework: Section 11***. An extensive list of CM policy can be found in Section 11 of this document.

***JSP 945 MOD Policy for Configuration Management Part 1: Directive***, applies to all MOD organisations responsible for the development, procurement, and logistics support of Defence Capability. Should the acquirer act in collaboration with another NATO nation, ***ACMP 2100*** should be applied.

***JSP 945 MOD Policy for Configuration Management Part 2: Guidance***, contains the guidance in accordance with the policy set out in ***JSP 945: Part 1***. This provides policy-compliant business practices which should be considered best practice in the absence of any contradicting instruction.

# 2. Quality

## 2.1 What is Quality Management?

"Quality Management (QM) 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. QM needs to be governed, assured, and improved ensuring the delivery of high standard products, services, and outcomes critical to MOD Organisations." as described in ***JSP 940 Pt 2***, Chapter 3.

In meeting the MOD policy requirements for QM, all 'Top Management'[1] 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 (QMS) using the principles defined in the ***ISO 9000*** standard (Quality Management Systems - Fundamentals and Vocabulary). *See section 2.3 Quality Management Principles for more information*.
c) Ensure that suitably qualified and experienced personnel are developed and employed across the department to enable the effective delivery of Quality Management (QM) and Government Quality Assurance (GQA).

[1] "Top management are individuals at Chief Executive Officer/TLB Holder or equivalent level" – ***JSP 940 Pt2***

## 2.2 Chartered Quality Institute Profession Map

Forming the basis of all MOD Quality policy, applying the Chartered Quality Institute's (CQI's) Profession Map 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.

The MOD has adopted the CQI's Profession Map as the basis for its Quality Governance structure. This is reflected in the policy and structure within ***JSP 940***. All 'Top Management' within MOD Organisations shall implement the requirements as follows:

- **Context:** Ensuring that the organisation and its suppliers understand the complexity of the customers' needs and the regulatory environment's requirements.
- **Governance:** Ensuring that organisation requirements are reflected in operational frameworks, policies, processes, and plans, and that these meet stakeholder requirements.
- **Assurance:** Embedding the principles of assurance to ensure that policies, processes, and plans are effectively implemented, and that all outcomes (both internals and deliverable) are consistent with requirements.
- **Improvement:** Facilitating the principles of measurement, evaluation, learning from experience and improvement, which drives more effective, efficient, and agile ways of working to support business strategy, to enhance reputation and increase value for money and savings.
- **Leadership:** Instilling a quality focused approach to the business and facilitating good quality practices.

*You can find out more in the 'Managing Quality Section' on the KiD.*

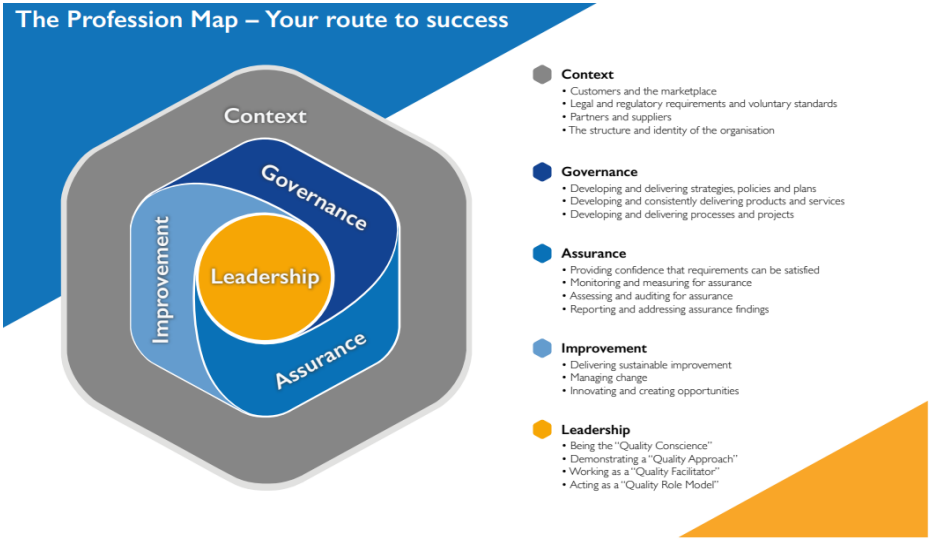


*Figure 1: Governance, Assurance and Improvement (GAI) Model – Chartered Quality Institute - [The Profession Map | CQI | IRCA (quality.org)]*

## 2.3 Quality Management Principles

***ISO 9000*** introduces seven Quality Management Principles (QMPs) upon which effective Quality Management is based. These guide an Organisation towards improved performance and delivery of products that meet customer requirements:


*Figure 2: Quality Management Principles*

- **QMP 1**: Customer Focus - The primary focus of QM is to meet customer requirements and to strive to exceed customer expectations.
- **QMP 2**: Leadership - Leaders at all levels establish unity of purpose and direction and create conditions in which people are engaged in achieving the organisation's quality objectives.
- **QMP 3**: Engagement of People - Competent, empowered and engaged people at all levels throughout the organisation are essential to enhance its capability to create and deliver value.
- **QMP 4**: Process Approach - Consistent and predictable results are achieved more effectively and efficiently when activities are understood and managed as interrelated processes that function as a coherent system.
- **QMP 5**: Improvement - Successful organisations have an ongoing focus on improvement.
- **QMP 6**: Evidence Based Decision Making - Decisions based on the analysis and evaluation of data and information are more likely to produce desired results.
- **QMP 7**: Relationship Management - For sustained success, an organisation manages its relationships with interested parties, such as suppliers.

## 2.4 Quality Management Operational Framework

To establish a management system, there are key elements to be considered, all of which are centred on Leadership. These are shown in *Figure 3* below, but for further details on each element can be found in ***JSP 940 Pt 2, Section 3.3***.

*You can find out more in the 'Managing Quality Section' on the KiD.*


*Figure 3: Organisational Context of Quality*

# 3. Government Quality Assurance (GQA)

Government Quality Assurance (GQA) is undertaken to establish confidence that the contractual requirements relating to Quality are met for the acquisition and support of defence materiel and services[2].

Government Quality Assurance (GQA) consists of multiple activities to be applied at all levels of Ministry of Defence (MOD) Acquisition.

Its primary role is to deliver technical assurance to the MOD for the management of risk via internal activities and, where appropriate, activities across the contractual boundary for achievement of the Defence Lines of Development.

GQA in acquisition is broken down into 6 separate stages that reflect the Acquisition Cycle. These are:

a) Planning for Acquisition.

b) Requirements Preparation.

c) Supplier Selection and Contract Award.

d) Contract Execution.

e) Delivery.

f) Acquisition Conclusion.

The activities and benefits of GQA in each stage are further detailed in the document ***'Government Quality Assurance - A Framework for Acquisition'***. Details on policy and guidance governing these stages are referenced in ***JSP 940, Part 2 Chapter 4***, and in the 'Managing Quality' Section on the *KiD*.

Key activities within the GQA Framework are shown in *Figure 4* and explained on the next page.

[2] NATO Standardisation Agreement, STANAG 4107, Mutual Acceptance of Government Quality Assurance and Usage of Allied Quality Assurance Publications (AQAPs).

## 3.1 GQA Framework Stages

The GQA Framework (*Figure* 4) consists of six sequential stages; each outlines the effective application of QA activities required during that specific stage of the acquisition process. The diagram below shows the relationships between the stages and the expected output of each feeding into the next in sequence.

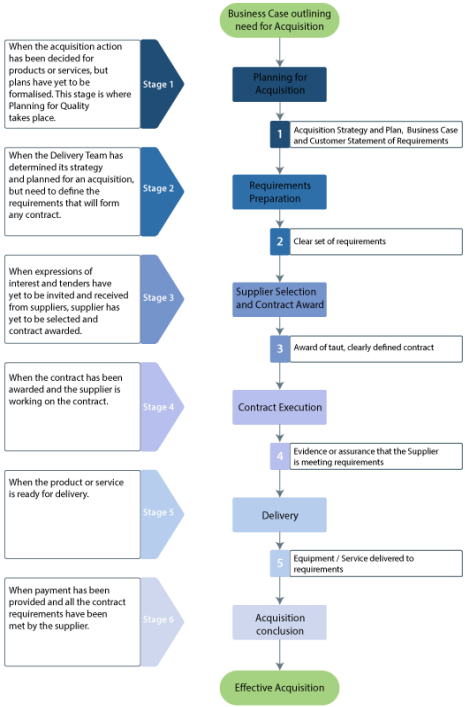


*Figure 4: GQA Framework*

## 3.2 Planning for Acquisition

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 (PDCA) philosophy and the principles of Through Life Management.

Effective quality planning is required to be conducted and documented for the procurement and support of all products supplied to the MOD.

Quality planning in the MOD should be conducted by a Competent Quality Practitioner within a structured process, as part of a MOD Organisation's adherence to their QMS, and should adopt the following 8 principles:

a) Be initiated at the outset of a Project.
b) Involve all Stakeholders and include identification of Quality resources required throughout the project's lifecycle.
c) Be appropriate to the size and scope of the Project and the associated Risks.
d) Facilitate the achievement of Project/Contract requirements.
e) Include the whole Supply Chain.
f) Be an iterative process throughout the Project lifecycle.
g) Promote a 'right first time on time' culture.
h) Build upon a principle of continual improvement.

## 3.3 Project Quality Management Plan

The Project Quality Management Plan was developed to provide a generic format for capturing the Planning for Quality requirements, incorporating the hierarchical planning elements in a single document. To ensure that internal MOD acquisition quality activities are appropriate and implemented, the Acquisition Organisation is expected to apply a tailored planning approach to the achievement of quality for an acquisition and/or support contractual activity.

## 3.4 Requirements Preparation

Requirements Preparation deals with the determination of the Quality requirements for the contract, and the appropriate Supplier assessment measures.

## 3.5 Appropriate Certification

The MOD policy requirement (***JSP940 Pt 1***) is that GQA MOD Organisations shall (as a minimum) 'only place MOD contracts with Suppliers who can demonstrate that they have a QMS appropriate for the products or services being acquired'.

Appropriate Certification is defined as:

**The Right Standard** – a recognised European [Euro Norm - EN] QMS standard.

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

**The Right Issuing Body** – certification was issued by a Certification Body holding suitable accreditation, with the right scope, from a National Accreditation Body who is a signatory of the International Accreditation Forum (IAF) or IAF Accredited Regional Multi-Lateral Agreements. In the UK, this body is UKAS.

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.

The requirement for an appropriately certified QMS as a Technical Discriminator is mandated where:

a) Regulatory requirements for Supplier QMS certification exist (i.e., domain specific Supplier certification).
   &/or
b) A Very High / High Risk Project

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

It may also sometimes be necessary or appropriate to place contracts with Suppliers who do not hold appropriate certification where the assessed risks are low or very low.

All activities and decisions related to this process in the Project Record and / or applicable Project Quality Plan.
Further guidance on the application of Appropriate Certification can be found in ***JSP 940 Pt 2*** and ***JSP 940 Pt 2, Annex A***.

## 3.6 Selecting QA Requirements for Contracts

Quality Assurance (QA) provides confidence that robust plans are developed, implemented, monitored, and improved with the goal of achieving fit for purpose outputs, on time delivery and within budget.

To achieve fit for purpose outputs and meet the mandated requirements for quality, the correct QA requirements and standards must be correctly selected for use in MOD contracts – as per the Selection Flowchart and supporting table in ***JSP 940 Pt.2, Chapter 4, Annex B and C***.

## 3.7 Standard QA Requirements for Contracts

Standard QA requirements are categorised as either:

- Primary – the main requirements for a QMS; or
- Supplementary –that supplement the QMS for a specific purpose.

In meeting the MOD policy requirements for GQA; "all MOD contracts include a section entitled Quality Assurance Requirements, and that all Contract Requisitions shall have had the Standard Quality Assurance Contractual Requirements endorsed by a member of MOD staff who is an Authorised Quality Assurance Signatory".

## 3.8 Primary QA Requirements

Primary Standard Quality Assurance Contractual Requirements are expressed in the NATO Primary Allied Quality Assurance Publications (AQAPs). AQAPs contractually invoke compliance with ***ISO 9001*** or ***BS EN 9100***, including NATO specific requirements, which are to be applied to the provision of products and services. They are not certification standards, and they do not mandate that a supplier must have a certified QMS.

AQAPs contain the requirements which, if applied appropriately, provide confidence in the Supplier's capability to deliver a product that conforms to the Acquirer's contract requirements. The Primary AQAPs contain generic requirements that are complimentary to other contractual requirements and are to be considered for all suppliers to the MOD regardless of type, size, and product. These standards can also be used as part of any GQA activity that has an agreement such as a MOU between nations where they have been sighted.

**Primary Quality Assurance Contract Requirements – Only One:**

| | |
|---|---|
| AQAP 2110 | *NATO Quality Assurance Requirements for Design, Development and Production. It contractually invokes compliance with **ISO 9001** QMS standard requirements* |
| AQAP 2131 | NATO Quality Requirements for Final Inspection and Test. It is not directly linked to the Supplier's QMS. |
| AQAP 2310 | NATO Quality Assurance Requirements for Aviation, Space and Defense Suppliers. It contractually invokes compliance with ***BS EN 9100 QMS*** standard requirements. |

*Note: Where the need for a primary AQAP has been identified, <u>one and only one</u> of the primary AQAPs is to be included in the Statement of Requirements (SoR) and Contract Requisition (CR).*

***Def Stan 05-61: Part 4** can be used when **AQAP 2110** and **AQAP 2310** are not included in the contract.*

## 3.9 Supplementary QA Requirements

**Supplementary Quality Assurance Contract Requirements – As Required:**

| | |
|---|---|
| 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**, shall be included. **AQAP 2210** requires the supplier to apply additional controls to assure software quality. Note: **ISO 25051**: Software engineering – Software Product Quality Requirements and Evaluation (SQuaRE) is recommended as an informative standard for Commercial off the Shelf (COTS) Software.* |
| Supplier Quality | Where risks to achieving contract requirements warrant |

| | |
|---|---|
| Plans | a 'deliverable' Quality Plan and supplementary information for the application of the Supplier's QMS processes, the contract will need to include ***AQAP 2105*** and either ***DEFCON 602A*** or ***DEFCON 602C***. The inclusion of ***AQAP 2110*** or ***AQAP 2310*** in a contract must always be accompanied by either ***DEFCON 602A***: Quality Assurance (with a Deliverable Quality Plan) or ***DEFCON 602B***: Quality Assurance (without Deliverable Quality Plan) or ***DEFCON 602C***: Quality Assurance (with a Deliverable Quality Plan and QA Information). ***DEFCON 602C*** additional information requirements are aligned to the requirements of the KPI for Quality, which is detailed in 'Managing Quality' on the KiD. |
| Certificate of Conformity (CoC) | A CoC provides a method of formal assurance from the Supplier that the product(s) conform to contractual requirements. ***DEFCON 627***: Quality Assurance - Requirements for a Certificate of Conformity, shall be used to contractually invoke CoC requirements for all contracts with a Primary AQAP or for design provenance / traceability. |
| Managing Concessions | The process for a technically competent Supplier to request, and the MOD to approve, concession is set out in ***Def Stan 05-061: Part 1*** - Quality Assurance Procedural Requirements Part 1: Concessions. |
| Contractor Working Parties | A Contractor Working Party (CWP) is comprised of one or more contractor's representatives contracted to undertake specific tasks outside of their own facility, usually on MOD premises. Where there is a likelihood that CWPs will be required to operate under a contract, the contract shall include ***Def Stan 05-061: Part 4*** – *Quality Assurance Procedural Requirements Part 4: Contractor Working Parties*. |

| | |
|---|---|
| Independent Inspection for Safety Critical Items | *Wherever the likelihood exists that the Supplier will need to conduct independent inspections of safety critical equipment, systems, or where the contract includes 'one shot' escape and survival systems, the contract shall include* ***Def Stan 05-061: Part 9*** *– Quality Assurance Procedural Requirements Part 9 – Independent Inspection Requirements for Safety Critical Items.* |
| Avoidance of Counterfeit Materiel | Where it is considered, there is a risk of counterfeit materiel in the supply chain, ***DefStan 05-135*** 'Avoidance of Counterfeit Materiel' shall be invoked in the contract.<br>***Def Stan 05-135*** can be used when ***AQAP 2110*** and ***AQAP 2310*** are not included in the contract.<br>***AQAP 2021*** is used for CA requirements with NATO collaborative contracts. |

## 3.10 Counterfeit Materiel

Materiel refers to all equipment, parts, components, products, raw material, or software associated with the deliverable product or service.

Counterfeit Materiel constitutes "Materiel whose origin, age, composition, configuration, certification status or other characteristics (including whether the materiel has been used previously) has been falsely represented by:

- Misleading marking of the materiel, labelling or packaging.
- Misleading documentation; or
- Any other means, including failing to disclose information.

except where it has been demonstrated that the misrepresentation was not the result of dishonesty by a supplier or external provider within the supply chain." – ***Def Stan 05-135*** and ***AQAP 2021***.

***DEF STAN 05-135***: Avoidance of Counterfeit Materiel, when applied to a contract, dictates that the supplier shall have a defined and documented policy for the avoidance of counterfeit materiel, including the requirement for an Anti-Counterfeiting Management Plan (ACMP). The ACMP shall be made available to customers on request. The supplier shall have arrangements in place to manage the risk of counterfeit materiel in their supply chain.

The **Counterfeit Avoidance Maturity Model** (CAMM) has been developed as a support tool for the MOD and its Suppliers; it is intended to provide a consistent assessment of ***DEFSTAN 05–135***. The CAMM reflects good practice from across industry and establishes a level of maturity for a Supplier's processes. NATO has also produced Standardisation Recommendation ***STANREC 4791*** which identifies several requirements that address counterfeit material including NATO ***AQAP 2021***: Avoidance of Counterfeit Material in the Defence Supply Chain. ***AQAP 2021*** includes requirements on CA for use with NATO collaborative contracts.

The **Counterfeit Avoidance Working Group** (CAWG) is a MOD led Working Group with representation from MOD and Industry who provide direction, through policy and guidance, on the aspects of preventing, detecting, and responding to the threat of counterfeit materiel within defence acquisition. The CAWG annually convenes a joint MOD/Industry international event to enhance awareness and showcase the latest practices to mitigate the Counterfeit threat.

## 3.11 Performance Indicators

### 3.11.1 Key Performance Indicators (KPIs)

The Key Performance Indicator (KPI) for Quality is used as assurance for the continued application of the Supplier's Quality Management System (QMS), Quality Planning and Quality Assurance during the term of the contract. This emphasises to the Supplier that the MOD recognises the importance of Quality Management and its Assurance.

The KPI for Quality has been developed for use in MOD contracts which is aligned to (and a continuation of) the 'additional QMS information' required in ***DEFCON 602C***. Designed to provide an incentive to the Supplier for the application of robust QMS processes during the term of a contract, this KPI should be used within the Contract Management Plan and is recommended for use for complex and high risk acquisition (including the risk of reputational damage to the MOD).

Whilst the requested QA information in ***DEFCON 602C*** and the KPI for Quality are linked, ***DEFCON 602C*** can be used independently of the KPI should the competent GQA Practitioner consider that the contract requires only ***DEFCON 602C***. However, the use of both ***DEFCON 602C*** and KPI in the contract require the application of appropriate QMS certification at Dynamic Pre-Qualification Questionnaire (DPQQ) / Invitation to Tender (ITT).

### 3.11.2 Quality Performance Indicators (QPIs)

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

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.

*You can find out more in Managing Quality Section on the KiD.*

## 3.12 Supplier Selection and Contract Award

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, a competent/licenced Quality Practitioner shall assess submitted QMS certificates.

***JSP 940: Part 2, Chapter 4, Annex A3*** states that the certificate needs to be valid, in date, and have stated a matching name and address for the supplier on the Expression of Interest and QMS certification.

Once it has been determined to apply Appropriate Certification for a contract, the competent GQA Practitioner is to use the suitable Model Quality question published within the Defence Sourcing Portal; the instructions within the 'Model Acquisition QA Questions Application Instruction' document published within the Commercial Toolkit Quality Assurance (QA) in the 'Contracts' page in the KiD refers.

### 3.12.1 Pre-Contract Award Evaluation (PCAE)

PCAE is one of several Tender Assessment (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 acquisition team, at the tenderer's premises, in support of project TA activities.

For the PCAE to be effective, the acquisition team should ensure that individuals evaluating the Tenderer's QM controls are, as a minimum, a competent Quality Practitioner. More information on the PCAE can be found in the Tender Preparation and Process Management Commercial Policy Statement in the Commercial Toolkit on the KiD.

## 3.13 Contract Execution

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 Acquirer's strategy for the acquisition.

## 3.14 Supply Chain GQA

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.** Within the supply chain this is **to be conducted by an authorised GQA Representative (GQAR) organisation** through the conduct of GQA Surveillance (GQAS). UK MOD delivery teams are to apply the **risk based** GQAS process when tasking GQARs.

## 3.15 GQA Representatives (GQARs)

GQARs are the personnel with responsibility for GQA, within the supply chain, acting on behalf of the Acquirer. There are currently four registered GQAR organisations in the UK:

- Defence Quality Assurance Field Force (DQAFF)
- Principle Naval Overseer (PNO)
- Nuclear Propulsion Project Team (NPPT)
- In-Service Submarines (ISM)

Three provide GQA services within their own delivery areas. The fourth, Defence Quality Assurance Field Force (DQAFF), which provides GQAR services to MOD delivery teams and NATO nations that place contracts with UK suppliers. All GQAR organisations are **tasked based on risk** in product delivery and the supply chain.

'Managing Quality' on the KiD contains details of MOD Organisations and individuals authorised by the DFATQS to act as a GQAR within MOD contracts.

## 3.16 GQA Surveillance (GQAS)

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 meeting the MOD policy requirements (***JSP 940***) for GQA, the MOD shall as a minimum:

- Manage supplier and/or product related risk, with consideration given to conducting GQAS to assist the risk mitigation process
- Only task authorised GQARs to carry out GQAS to assist in the mitigation of risk on contracts or sub-contracts within the UK
- Utilise the Overseas Quality Assurance procedures to request GQAS to assist with risk mitigation on contracts or sub-contracts placed outside the UK.

Within the UK, GQAS can only be performed by a registered GQAR organisation. GQARs are the personnel with responsibility for GQA activities within the Supplier environment, acting on behalf of the MOD Acquirer. This is to ensure that the MOD maintains a consistent engagement with industry. MOD ensures the organisation uses competent GQAR practitioners, that follow the procedures agreed by NATO nations under ***STANAG 4107*** and defined in ***AQAP 2070*****:** NATO Mutual GQA Process.

## 3.17 Overseas Quality Assurance

Many MOD contracts are now placed with overseas suppliers or have global supply chains. When contracting for quality and managing quality aspects in overseas contracts, many basic principles are the same as for domestic contracts; however, if the contracts are placed with suppliers in NATO countries, then we have access to GQA services from the NATO nation who has signed up to ***STANAG 4107***.

Requests for GQA must be in accordance with ***AQAP 2070***: NATO Mutual Government Quality Assurance Process, GQA procedure and associated templates and guidance.

The Organisation for Joint Armament Cooperation (OCCAR) uses ***OMP 7*** (OCCAR Management Procedure 7: Government Quality Assurance), which is based on ***AQAP 2070*** for the mutual GQA between participating nations. OCCAR can request Member States to provide GQA for all OCCAR Programs irrespective of their involvement in the Programme.

Where a nation is not within the NATO alliance and is signed up to ***STANAG 4107***, which includes NATO Interested Parties then GQA will be subject to a bilateral agreement under a Memorandum of Understanding (MoU) or a Implementing Arrangement (IA) under an MoU. Care must be taken to ensure the work is carried out under the terms of the correct MoU. If no MoU exists with the final user nation, GQA should not be provided. ***JSP 462*** controls the financial arrangements embedded in any other document and states that charges must be levied awhenever a MOD organisation is providing services to non-MOD bodies.

*More information on Overseas QA, and request processes can be found in the 'Managing Quality' section in the KiD and* ***JSP 940: Part 2****.*

## 3.18 Delivery

The Delivery stage is concerned with the Supplier's presentation of products or services that conform to the requirements of the contract. Activities during Delivery include:

- Verification of conformance for contract deliverables to the contractual requirements.
- Resolution of issues (including verification of any concessions issued).
- Completion of the contractual documentation in accordance with MOD and applicable regulatory requirements.

## 3.19 Acquisition Conclusion

Activities conducted at this stage are concerned with reviewing the performance of both the MOD delivery team and the Supplier in delivering the project/contract over the acquisition lifecycle. GQA Practitioner should ensure that all GQA activities are concluded, recorded, and reported accordingly.

*You can find out more in 'Managing Quality' Section on the KiD.*

# 4. Quality Improvement Tools and Techniques

Quality Improvement is an essential aspect of QM and GQA. Tools and Techniques can be utilised to improve quality, manage change, and deliver capability. There are a range of tools and techniques the Quality Practitioner can utilise to develop Quality Improvement.

### Tools Include

- Brainstorming
- Control Chart
- Learning from Experience
- Root Cause Analysis (RCA)
  - 5 Why's
  - The Cause-and-Effect Diagram
- Plan, Do, Check, Act

### Techniques Include

- DRIVE (Define, Review, Identify, Verify, and Execute).
- Six Sigma.
- DMAIC process (Define, Measure, Analyse, Improve, Control).
- DMADV process (Define, Measure, Analyse, Design, Verify).
- Process Mapping.
- Statistical Process Control (SPC).
- Simulation.

*You can find out more in Managing Quality Section on the KiD.*

# 5. Configuration Management

## 5.1 What is Configuration Management?

CM ensures the product or service functions, is operated, and is maintained as designed. It is a through life activity and must be considered at the earliest stages in the capability lifecycle, from pre-Concept through to Disposal / Termination.

The identification of these interfaces allows:

a) An assessment to be made of the Defence Lines of Development (DLOD) interaction or dependency.
b) The Capability to be tailored to suit the operational environment / duration of the deployment.
c) The improved operation of the Capability either independently or in conjunction with other coalition capabilities.

CM documents the through-life management of changes to and traceability of the evolution of the user requirements, to the eventual manufacture of equipment, development of software or the provision of a service. This information can be used later in the Capability Lifecycle to influence decisions, improve design, enhance maintainability, and reduce cost.

Changes may be introduced to mitigate or nullify the effects of product deterioration due to ageing, corrosion, or repair on repair.

Typical changes include In-service modification to improve/enhance:

- Safety
- Risk reduction
- Correction of product defects
- Comply with legislative changes
- Allow for technology insertion
- Capability, performance & supportability
- Mitigate obsolescence

CM is key to ensuring such changes and their impacts are appropriately considered. "This ensures configuration is identified to the lowest appropriate level as well as establishing system / sub-system interfaces" - ***JSP 945, Pt 2***.

## 5.2 Configuration Management Principles

The MOD Organisation Team Leader is ultimately responsible for the implementation of Configuration Management policy and ensuring the 5 Key CM Principles are applied appropriately, as follows:

a) **Configuration Management and Planning**

To implement an effective CM process, it is necessary to first undertake a rigorous planning exercise. The aim being to plan and manage the CM process such that it delivers the outputs expected when required.

Configuration Management and Planning is a through life activity; it should be undertaken initially by the MOD Delivery Organisation and then the Supplier upon contract award. Post contract award the plan should detail the activities, authority, and responsibilities for both the MOD and the contractor.

b) **Configuration Identification and Documentation**

The application of CM controls at a system level rarely results in effective control. For this reason, it is normal to produce a Product Breakdown Structure (PBS) and then review the PBS to identify those assemblies, sub-assemblies, and components for which the control of functional and physical characteristics is critical to ongoing product performance, safety, quality, supportability etc.

The output from the PBS review is a listing of assemblies/sub-assemblies and components that will be subject to CM practices throughout the product life cycle. These items are known as Configured Items (CI).

Each CI should have a list of defined properties which together define its uniqueness. A change to any of these properties constitutes a change to the CI. For each CI there should be associated configuration documentation defining the properties. Depending on the complexity, this may range from a full specification with detailed manufacturing drawings down to a brief descriptive brochure or datasheet.

c) **Configuration Change Management**

The Configuration Change Management (CCM) process shall:

- Always identify the CCM authority, throughout the product life cycle.
- Enable decisions to be taken on proposed changes to the product.
- Ensure that compatibility is maintained between the product CIs themselves and those in any interfacing product or system.
- Establish CCM groups/committees as determined by change processes.
- Determine the terms of reference for each group/committee and the controls required to manage the CCM system efficiently and effectively.

d) **Configuration Status Accounting**

- A Configuration Status Accounting (CSA) process shall be developed for all CIs and be maintained for the life cycle of the product.
- CSA shall record and make available the information necessary to manage the configuration effectively and maintain traceability of the CM documentation, the status of proposed changes to the configuration and the implementation status of authorised changes to the product.
- Configuration information shall be presented in the formats specified in the Configuration Management Plan (CMP).
- Procedures for CSA shall be detailed in the CMP.

e) **Configuration Audits (CA)**

CA reports shall be formally presented to the appropriate authority for acceptance and evaluation of any need for corrective action.

There are two types of Configuration Audit (CA):

- Functional Configuration Audit (FCA) – is the examination of test data/quality records for a Configured Item (CI) to verify conformance with performance/functional characteristics.
- Physical Configuration Audit (PCA) – is the examination of the "as built" CI to verify conformance with build data.

More information on the key principles of CM can be found within the Engineering Section on the KiD, and in ***JSP 945 Part 1***.

### 5.3 Configuration Management Plans

An example of a generic CM plan is available in the KiD, and a CM Plan template can be found on GEAR. MOD Organisations can tailor the content to suit their needs. Only relevant CM activities which add value to the process should be included, thereby reducing negatory effort.

### 5.4 Assurance of Configuration Management

Assurance for all users of CM can be provided by carrying out a Project Review & Assurance (PR&A) assessment. PR&A is an activity designed to deliver progressive assurance throughout the life of a project and prior to key investment decisions.

The Defence Functional Authority for Technical, Quality and Standardization (DFATQS) is responsible for the delivery of all PR&A CM activities. More on DFATQS can be found in ***Section 6*** of this document.

Assurance and assessment are also provided to PTs for compliance with Support Solution Development Tool SSDT21, Cross Cutting Themes CCT5.2, offering advice and guidance on compliance criteria.

## 6. Roles and Responsibilities

### 6.1 Defence Functional Authority for Technical, Quality & Standardisation (DFATQS)

The Defence Functional Authority for Technical, Quality and Standardization (DFATQS) operates under a Letter of Authority from the MOD Permanent Secretary.

The DFATQS vision for Quality in MOD is to: "*Ensure correct standards are maintained in delivering Defence Capability by the appropriate assurance of acquisition, engineering and logistics support activities through the coherent and effective management of Quality across Defence*".

The DFATQS is the Deputy Head of Profession for Quality and Configuration Management (QCM), responsibilities include championing both the Quality and the Configuration profession across all civilian and military staff in the Defence workforce. Within DE&S the Skills Lead is also the Head of Specialism (HoS) for QM.

The Deputy Head of Profession sponsors the MOD civilian functional competences for Quality and CM and maintains a strategic overview of

Quality and Configuration specific competences and training available across all MOD Top Level Budget areas, including the training courses for Quality and CM delivered by the Defence Academy. This supports the development of individuals to ensure capable, suitably qualified, and experienced personnel in both Quality and CM across the department.

## 6.2 DFATQS Policy

QCM Policy as the executive arm of the DFATQS are responsible for setting Ministry of Defence:

- Quality and Configuration Management policies and guidance.
- Quality and Configuration Management contractual standards.
- Professional standards by upskilling, assuring the competence of licensing Quality Practitioners in the Ministry of Defence.
- Furthering collaboration and UK Ministry of Defence Quality and Configuration Management interests in national and international committees.
- Raising awareness and setting the policy for the identification and control of counterfeit avoidance within the UK Defence Industry.

## 6.3 Key MOD Quality Engagements

The MOD undertakes external engagement with other Quality organisations and influences the development of standards with ISO and NATO. These engagements include:

- NATO WG 2 and NATO WG 7
- UK's Accreditation Service (UKAS) to influence third party certification via the UKAS Board, the Policy Advisory Committee (PAC) and the Policy Advisory Forum (PAF).
- The Defence Industries Quality Forum (DIQF). the formal consultation link with industry.
- The CAWG is a joint MOD/Industry international forum. More information can be found in ***Section 3.10***.
- The Chartered Quality Institute (CQI) to input to direction on competence, special interest groups and studies through the Defence Special Interest Group (DSIG) Steering Committee and the CQI Council.

Internally the Quality Assurance Consultation Group (QACG) are the senior MOD internal consultative mechanisms aimed at identifying and sharing information on quality principles, good practice, issues, and risks.

It enables the DFATQS to consult internally, to develop and deliver effective Policies, Standards and Processes focused on achieving capability at the required quality, on time, and at the best value for money across the MOD community. Together with the DIQF, the QACG monitors the implementation of MOD Quality Policies, Standards and Processes.

*You can find out more in 'Quality Management' Section on the KiD.*

## 6.4 National Quality Assurance Authority (NQAA)

The UK National Quality Assurance Authority (NQAA) is a position established within the MOD to meet UK commitment to NATO under ***STANAG 4107*** Mutual Acceptance of Government Quality Assurance and usage of the AQAP.

The NQAA has two major roles:

- Ensure the UK MOD meets its responsibilities in accordance with NATO agreement ***STANAG 4107***.
- Represent UK MOD interests for Quality within NATO.

The DFATQS is delegated to be UK NQAA, operating under a letter of delegation from the MOD PS through the UK NATO Conference of National Armament Directors (CNAD) representative.

## 6.5 Defence Quality Assurance Field Force (DQAFF)

DQAFF has been established by the UK NQAA to fulfil the UK obligations under ***STANAG 4107*** for the provision of NATO nation GQA and agreements established through intergovernmental MoU. This should define the requirements for mutual GQA under ***STANAG 4107*** and the benefits to acquisition through the oversight and risk-based surveillance of the defence suppliers and their supply chain.

*See useful websites for more information on DQAFF.*

### 6.6 Configuration Management

The MOD Delivery Team (DT) CM focal point is responsible for ensuring development, implementation, and control within the PT for the life of the project.

The Supplier shall develop a deliverable CM plan to meet the requirements in ***Def Stan 05-057***. The supplier is also responsible for fulfilling the contractual CM requirements and ensuring that CM controls are effective, including all sub-contractor CM activities.

# 7. Check Lists

Quality Assurance (QA), Quality Management (QM), and Configuration Management (CM) are the 3 elements that ensure the Management of Quality and Configuration Management (QCM).

A checklist of QA requirements can be found in ***Annex A*** with checklists being split into the roles and requirements of the following roles:

- Delivery Team Leader (***Annex A.1***)
- Authorised QA Signatory (***Annex A.2***)
- Project GQA Practitioner (***Annex A.3***)
- GQARs (***Annex A.4***)
- Delivery Team Members (***Annex A.5***)

The QM roles and requirements are based on the elements of the CQI's Profession Map (*Figure 1*):

- **Context -** Uses domain and/or industry-specific knowledge to ensure effective implementation of governance, assurance, and improvement.
- **Governance -** Ensures that all organisation requirements are reflected in operational frameworks, policies, plans, and that these meet all stakeholder requirements.
- **Assurance -** Embeds a culture of assurance to ensure that policies, processes, and plans are effectively implemented, and that all outputs (both internal and deliverable) are consistent with requirements.

- **Improvement -** Facilitates a culture of evaluation (both qualitative and quantitative), learning and improvement which drives more effective, efficient, and agile ways of working to support business strategy, enhance reputation and increase profitability.
- **Leadership -** Uses leadership behaviours to maximise influence and develop a culture of evaluation and improvement.

A checklist for CM can be found in ***Annex B***. CM tasks are completed by many roles and CM assurance tasks should be completed by a Subject Matter Expert (SME). CM SMEs provide support to delivery teams and can be contacted through the QCM-Policy Helpline.

# 8. Professional Competences

## 8.1 Description


The competence levels are made up of Core and MOD professional requirements and often take the form of Skills Footprints or Terms of Reference in relation to post and individual performance requirements. A Quality Practitioner should be able to demonstrate competence on the application of knowledge and experience, in areas of activity such as QCM or GQA.

The basis Success Profiles, in the MOD, is the “Managing Quality” Competence Framework, which can be found on the DefNet People Portal under the Competence Frameworks M-Z, which takes its lead from the competence requirements defined by the professional body for Quality – the Chartered Quality Institute (CQI). The Managing Quality competences are supported by other functional competence frameworks such as Quality and Configuration Management (QCM) and Risk Management and are underpinned by the Civil Service Core Competency Framework.

## 8.2 Personal Development

Training and development opportunities are available to help Quality Practitioners attain and improve MOD Quality competencies and professionalism. Details of all courses available are shown in the Trifold Course Guide on the QCM-Policy website. Courses are provided in various forms:

The MOD's Quality Development Scheme (QDS)

- Aims to develop or refresh an individual's knowledge in Quality, providing individuals with the knowledge to complete quality activities in the workplace.
- 12 structured learning modules to be completed across 2 years
- Recognised professional status at the CQI
- Achievement of MOD Quality Intermediate Practitioner Licence
- Open to all TLBs and personnel in the MOD
- More details are shown on the KiD, or contact destech-qsepmodqds@mod.gov.uk for more information.

Virtual and face-to-face training delivered by the Defence Academy

- Quality Assurance Practitioner Training
- Contract Quality Requirements
- Configuration Management for Practitioners
- Audit and Evaluation Skills

On-Line Courses delivered by the Defence Academy

- Principles of Configuration Management
- AQAP 2070 Mutual GQA Process Online
- Counterfeit Avoidance on-line

Workbook courses hosted on the QCM-Policy website

- Quality Fundamentals
- Quality in the MOD
- Quality Management Principles (QMP)

## 8.3 MOD Quality Practitioner Licensing Scheme

The MOD Quality Practitioner Licensing Scheme is the official route for assessment of competence and forms a major part of the Upskilling Programme for Quality Practitioners throughout the MOD. Its intention is to enhance the professionalism of each of the two functions of GQA and QM by linking the competencies to the CQI.

## 8.4 Licenced Quality Practitioner

A Licenced Quality Practitioner holds one of the three types of licence gained through the MOD Quality Practitioner Licensing Scheme:

- Government Quality Assurance (GQA).
- Quality Management (QM).
- Comprehensive (GQA and QM combined).

*You can find out more in Managing Quality, Competence and Development, Licensing Section on the KiD.*

## 8.5 Chartered Quality Institute Membership

The CQI is a leading global professional body for quality and audit professionals. As a member of the CQI, you are a part of a unique network of thousands of professionals working in Quality Management. Becoming a member of the CQI gives you opportunities for learning, development, and networking, as well as unrivalled recognition.

The CQI offers a range of membership grades depending on where you are on you career path, ranging from Student to Fellow. You can find out more about CQI memberships here.

## 9. Quality Policy and Guidance Documents

| Related Publications | Publication Title |
|---|---|
| **ACMP 2100** | **The Core Set of CM 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 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 |
| DEFCON 524A | Counterfeit Materiel |
| DEFCON 602A | Quality Assurance (Without a Deliverable Quality Plan) |
| DEFCON 602B | Quality Assurance (Without a Deliverable Quality Plan) |
| DEFCON 602C | Quality Assurance (with a Deliverable Quality Plan and QA Information) |
| DEFCON 627 | Quality Assurance – Requirements 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 | MoD Requirements for Aircraft Flight and Grounding Running |
| **DEFSTAN 05 – 135** | **Avoidance of Counterfeit Materiel** |
| DEFSTAN 05 – 138 | Cyber Security for Defence Suppliers |
| JSP 822 | Defence Direction and Guidance for Training and Education |
| JSP 892 | Risk Management |
| **JSP 940** | **MOD Policy for Quality** |
| ISO 12207 | Systems and Software Engineering – Systems Life Cycle Processes |
| ISO 15288 | Systems and Software Engineering – Systems Life Cycle Processes |
| ISO 9000 | Quality Management Systems – Fundamentals and Vocabulary |
| **ISO 9001** | **Quality Management Systems – Requirements** |
| STANAG 4107 | Mutual Acceptance of Government Quality Assurance and Usage of Allied Quality Assurance Publications (AQAP) |

## 10. CM Policy and Guidance Documents

| Related Publications | Title |
|---|---|
| ACMP 2000 | NATO Policy on CM |
| ACMP 2009 | NATO Guidance on CM |
| **ACMP 2100** | **NATO CM Contractual Requirements for Materiel** |
| AQAP 2110 | NATO Quality Assurance Requirements for Design, Development and Production |
| AQAP 2210 | NATO Supplementary Software Quality Assurance Requirements to AQAP 2110 or 2310 |
| DEFCON 82 | Special Procedure for Initial Spares |
| DEFSTAN 00-600 | Integrated Logistics Support Requirements for MOD Projects |
| **DEFSTAN 05 - 057** | **CM of Defence Materiel** |
| DEFSTAN 05 - 061 | Quality Assurance Procedural Requirements |
| EIA649B | Standard for CM |
| ISO 9001 | Quality Management Systems - Requirements |
| ISO 10007 | Quality Management Systems – Guidance for CM |
| ISO 12207 | Systems and Software Engineering – Software Life Cycle Processes |
| ISO 15288 | Systems and Software Engineering – System Life Cycle Processes |
| ISO 90003 | Software Engineering – Guidelines for the Application of ISO 9001 to Computer Software |
| ITIL V3 | Information Technology Infrastructure Library |
| JSP 935 | Software Acquisition Management for Defence Equipment |
| **JSP 945 Part 1** | **MOD Policy for CM – Directive** |
| **JSP 945 Part 2** | **MOD Policy for CM – Guidance** |
| MAA RA 5301 | Air System Configuration Management |
| MAA RA 5305 | In-Service Design Change |
| STANAG 4427 | CM in System Life Cycle Management |

## 11. Useful Websites

| | |
|---|---|
| British Standards: | BSOL British Standards Online (bsigroup.com) |
| Chartered Quality Institute: | CQI \| IRCA \| - Leading Quality since 1919 |
| Commercial Managers Toolkit: | Home - Commercial Toolkit - KiD - UK MOD |
| Defence Academy: | DAMOD |
| Defence Quality Assurance Field Force (DQAFF): | Defence Quality Assurance – Field Force (DQA-FF) |
| European Co-operation for Accreditation: | publications Archive - European Accreditation (european-accreditation.org) |
| Institute of Process Excellence (Configuration Management) | Home (ipxhq.com) |
| International Organisation for Standardization: | ISO - International Organization for Standardization |
| ISO TC/176/SC2 Home Page: | ISO/TC 176/SC 2 - Quality systems |
| Joint Service Publication (JSP) 940 MOD Policy for Quality: | MOD policy for quality (JSP 940) - GOV.UK (www.gov.uk) |
| KiD - Configuration Management: | What is Configuration Management (CM) ? - Engineering - KiD - UK MOD |
| Knowledge in Defence (KiD) | Home - Managing Quality - KiD - UK MOD |
| NATO Standards: | NSO NSDD (nato.int) |
| QA Register: | United Kingdom Register of Quality Assessed Companies |
| Quality and Configuration Management Policy Helpline | QCM-Pol Helpline |
| Strategic Supplier Management (SSM): | Strategic Supplier Management Homepage (sharepoint.com) |

| | |
|---|---|
| UK Defence Quality and Configuration Management Policy | UK Defence Quality and Configuration Management Policy (QCM-Pol) - GOV.UK (www.gov.uk) |
| UK Defence Standardization (Dstan): | Home (mod.uk) |
| United Kingdom Accreditation Service: | UKAS - The UK Accreditation Body - Creating Confidence |
| Upskilling for Quality and Configuration Management (QCM): | Training - Managing Quality - KiD - UK MOD |

## 12. Abbreviations

| | |
|---|---|
| ACMP | Anti-Counterfeiting Management Plan |
| AQAP | Allied Quality Assurance Publications |
| BS EN | British Standard European Norm |
| CA | Counterfeit Avoidance |
| CA | Configuration Audit |
| CAMM | Counterfeit Avoidance Maturity Model |
| CAWG | Counterfeit Avoidance Working Group |
| CCM | Configuration Change Management |
| CCT | Cross Cutting Themes |
| CI | Configured Items |
| CM | Configuration Management |
| CMP | Configuration Management Plan |
| CNAD | Conference of National Armament Directors |
| CoC | Certificate of Conformity |
| COTS | Commercial Off the Shelf |
| CQI | Chartered Quality Institute |
| CQR | Contract Quality Requirements |
| CR | Contract Requisition |
| CSA | Configuration Status Accounting |
| CWP | Contractor Working Party |
| Def Stan | Defence Standards |
| DEFCON | Defence Conditions |
| DefNet | Defence Network |
| DFATQS | Defence Funtional Authority for Technology, Quality and Standardisation |
| DIQF | Defence Industry Quality Forum |

| | |
|---|---|
| DLOD | Defence Line of Development |
| DMADV | Define, Measure, Analyse, Design, Verify |
| DMAIC | Define, Measure, Analyse, Improve, Control |
| DPQQ | Dynamic Pre-Qualification Questionnaire |
| DQAFF | Defence Quality Assurance Field Force |
| DRIVE | Define, Review, Identify, Verify, Execute |
| DSIG | Defence Special Interest Group |
| DT | Delivery Team |
| FCA | Functional Configuration Audit |
| GQA | Government Quality Assurance |
| GQAP | Government Quality Assurance Practitioner |
| GQAP | Government Quality Assurance Plan |
| GQAR | Government Quality Assurance Representative |
| GQAS | Government Quality Assurance Surveillance |
| IA | Implementing Arrangement |
| IAF | International Accreditation Forum |
| ISM | In-Service Submarines |
| ISO | International Organisation for Standardisation |
| ITT | Invitation to Tender |
| JSP | Joint Service Publication |
| KiD | Knowledge in Defence |
| KPI | Key Performance Indicators |
| LQP | Licenced Quality Practitioner |
| MOD | Ministry of Defence |
| MoU | Memorandum of Understanding |
| NATO | North Atlantic Treaty Organisation |
| NPPT | Nuclear Propulsion Project Team |
| NQAA | National Quality Assurance Authority |
| OCCAR | Organisation for Joint Armament Cooperation |
| PBS | Product Breakdown Structure |
| PCA | Physical Configuration Audit |
| PCAE | Pre-Contract Award Evaluation |
| PDCA | Plan, Do, Check, Act |
| PNO | Principle Naval Overseer |
| PR&A | Project Review and Assurance |
| Pt | Part |
| QA | Quality Assurance |
| QACG | Quality Assurance Consultation Group |
| QAG | Quality Assurance Group |
| QCM | Quality and Configuration Management |

| | |
|---|---|
| QDR | Quality Deficiency Reports |
| QDS | Quality Development Scheme |
| QM | Quality Management |
| QMP | Quality Management Principles |
| QMS | Quality Management System |
| QPI | Quality Performance Indicators |
| RCA | Root Cause Analysis |
| SF | Stakeholder Forum |
| SME | Subject Matter Expert |
| SoR | Statement of Requirements |
| SOW | Statement of Work |
| SQuaRE | Software Quality Requirements and Evaluation |
| SSDT | Support Solution Development Tool |
| STANAG | NATO Standardisation Agreement |
| STANREC | Standardisation Requirement |
| TA | Tender Assessment |
| UKAS | United Kingdom Accreditation Service |

# Annex A – QA Checklists

## A.1 Delivery Team Leader

- Ensure compliance with ***JSP 940 Part 1***: Directive.
- Ensure that ***JSP 940 Part 2***: Guidance, and guidance published on the KiD, are complied with.
- Delegate authority for quality issues to a competent GQA Practitioner (GQAP).
- Ensure the team has the necessary resources and competences to address the application of, and compliance with, acquisition Quality requirements.
- Ensure compliance to their organisation's QMS.
- Ensure a Quality Strategy is defined for the portfolio or projects for which they are accountable.
- Ensure the generation and implementation of quality planning, at appropriate levels, is conducted by a competent GQAP.
- Ensure that there are appropriate forums in place within the formal acquisition reporting structure to address acquisition quality and quality assurance activities. For example, the formation of Quality Assurance Groups (QAGs).
- Comply with the DFATQS policies for the conduct of Quality Assurance Surveillance and the use of GQAR by:
  - Within the UK, ensure that only authorised MOD GQARs are tasked to carry out GQAS to assist in the mitigation of risk.
  - Outside the UK, ensure that the correct procedures are used to request GQA to assist with risk mitigation.
- Ensure that any proposed suppliers' QMS Certification meets the Appropriate Certification policy, and that appropriate Quality Assurance Standards and Requirements are included in contracts.
- Exceptionally approve use of suppliers with no certificated QMS.
- Ensure contractual requirements are clearly defined, measurable and achievable.
- Define clear product acceptance criteria.
- Ensure that corrective and preventive actions are completed in a timely manner.
- Ensure that unsatisfactory quality trends are monitored, for example, defects, deficiencies, and other feedback.
- Ensure GQAP activities are addressed.

- Ensure that contract related risks are considered during Contract Requisition process.
- Ensure that all quality assurance contractual requirements are endorsed by a LQP or and Authorised Signatory prior to submission.
- Ensure the application of the appropriate protections for the Defence Inventory for Counterfeit Avoidance.
- Apply the principles of PDCA.

## A.2 Authorised QA Signatory

An Authorised Quality Assurance Signatory is an individual who has been deemed competent to select and endorse Standard Quality Assurance Contract Requirements for MOD contracts subject to the relevant delegation of those duties by the Delivery Team Leader or relevant manager.

- Review the contract Business Case and draft Statement of Requirement / Statement of Work, inclusive of identified risks.
- Use the Selection Process in ***JSP 940 Pt 2 Chapter 4 Annex B*** to determine the Standard Quality Assurance Contractual Requirements appropriate for the contract.
- Ensure that the SOR / SOW is updated to include the recommended Standard Quality Assurance Contractual Requirements.
- Conduct a review of the contractual terms and conditions to verify the inclusion of the recommended Standard Quality Assurance Contractual Requirements.

An authorised QA Signatory is defined in ***JSP 940, Pt 2*** as:

"A MOD Crown Servant who meets one of the following:

1. Holds a Full MOD Quality Licence for GQA
2. Holds a Comprehensive MOD Quality Licence
3. Has completed the Contract Quality Requirements (CQR) course, has successfully passed the course examination, and possess a Letter of Authority issued by the Quality and Configuration Management Policy Licensing Team."

*You can find out more information in Managing Quality, Competence and Development and Licensing Section on the KiD.*

## A.3 Project GQA Practitioner

- Conduct GQA planning and produce a GQA Plan (GQAP) appropriate for the acquisition activities to be conducted, in consultation with the relevant project Subject Matter Experts (SMEs).
- Input to the project risk identification and assessment process, including the identification of risks that can be mitigated by tasking GQAR to conduct GQAS.
- Ensure the appropriate QA Standards and Requirements are included in the contracts.
- The Project Manager should approach the Project Quality Assurance Officer (and relevant SME's) to discuss the requirements for Counterfeit Avoidance, and the inclusion *of* ***Def Stan 05-135*** in the contract.
- Ensure that contract related risks are considered during the Contract Requisition process.
- Apply the principles of PDCA
- Review and endorse the quality requirements in the Contract Requisition, for the Request for Quote, prior to submission.
- Accept or reject and manage Deliverable Quality Plans.
- Co-ordinate and monitor all projects related quality assurance activities, including measurement of contract quality performance.
- Ensure adherence to a controlled process to manage supplier concession applications.
- Ensure that corrective and preventive actions are completed in a timely manner.
- When GQAR activities are to be called up in the contract, agree the use of GQAR resources with the GQARs concerned prior to contract let.
- Consult with GQARs to inform on acquisition risks and the need for GQAS.
- Task an authorised MOD GQAR organisation to carry out risk based GQAS.
- Provide GQARs with any necessary documentation.

- Liaise with GQARs to:
  - Assess supplier's capabilities.
  - Agree surveillance plans.
  - Assess whether GQA at sub-suppliers is required.
  - Advise of any risks not to be discussed with suppliers.
- Act upon GQAR reports as necessary.
- Where resolution of quality related contractual issues cannot be agreed, escalation action in accordance with the Partnering Approach for Improving Quality as defined in ***JSP 940 Part 2 Chapter 4*, *Section 4.5*** should be considered.
- Report on acquisition quality assurance to the appropriate forums.
- Maintain the required level of competence to fulfil the role of a GQA Practitioner.

*You can find out more information in Managing Quality, Competence and Development and Licensing Section on the KiD.*

## A.4 Government Quality Assurance Representatives (GQARs)

- Apply the Principles of PDCA
- Prepare surveillance plans that address the task and perceived risk(s), and then agree the plan with the tasking organisation.
- Discuss risks with suppliers and advise of any sub-delegated surveillance activities at sub-suppliers.
- Delegate surveillance activities to other GQAR organisations as necessary.
- Perform GQAS in accordance with the agreed surveillance plan and raise Observation and/or Quality Deficiency Reports (QDRs) as necessary; discuss findings with the tasking organisation and the supplier as appropriate.
- Copy QDRs to other affected MOD projects (informing the supplier of distribution).
- Monitor suppliers' response to QDR ensuring appropriate containment action is put in place. Provide surveillance reports to the tasking organisations and refer QDRs that indicate problems with the 3rd party quality management system certification process to QCM Policy to assist with third party improvement activities.

- Advise tasking organisations of any additional risks identified, and with the agreement of the tasking organisation, amend surveillance plans if necessary.
- Ensure that corrective and preventive actions are completed in a timely manner.
- On request, lead an In-Depth Audit to address significant quality related problems and seek rapid corrective action of the root causes. Unresolved issues to be reported to QCM Policy.
- Maintain records of surveillance activities for 6-years after contract closure unless stipulated otherwise.
- Monitor supplier performance and where appropriate escalate concerns to the authority.

## A.5 Delivery Team Members

- Think quality all the time, it is a habit not an act!
- Strive for continual improvement of project processes and delivered product and/or service quality.
- Be aware of and comply with the acquisition quality plan.
- Co-operate and engage with those conducting quality assurance related tasks.
- Ensure that quality assurance requirements are addresses in all contracts placed.
- Comply with internal quality requirements.
- Ensure that corrective and preventive actions are completed in a timely manner.
- Apply the principles of PDCA.

## Annex B - CM Checklist

A full CM checklist can be found within the CM Plan template in the 'Guide to Engineering Activities and Reviews' (GEAR).

- The CM strategy has been defined and communicated throughout the Delivery Team
- A competent CM practitioner has been appointed.
- CM planning is being undertaken by the DT, with CM requirements being identified.
- Project and Supplier CM risks are defined in the Project Risk Register by the DT, with linkage to project risks from the Supplier's risk management.
- Processes critical to project success have been identified, are being monitored, and results used to influence continual improvement.
- Commercial Strategy for contract placement is identified.
- The RCA invokes ***Def Stan 05-057***
- Contract Notice details supplier certification requirements.
- Proposed Supply Chain has been received and assurance activities identified.
- CM resources required to support CM surveillance are available, with CM Surveillance Plan(s) and reporting agreed with the DT
- A maturity assessment of Supplier processes, critical to project success, has been undertaken.
- Supplier has provided suitable evidence that the CM skills and competence needed to fulfil contract requirements are available.
- Supplier has provided proposals for the effective control of sub-contractors.
- Supplier has provided evidence of robust controls for the flow-down of contractual requirements to sub-contractors.

Ministry of Defence

**Need help or advice?**

QCM-Policy Helpline: https://forms.office.com/e/W14PwDDv9W

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

Address:

Quality and Configuration Management Policy
Spruce 2c, #1260
MOD Abbey Wood
Bristol
BS34 8JH

**Do you have some feedback or a suggestion, alternatively would you like to be added to the Quality and Configuration Management Policy stakeholders list?**

Please contact the Quality and Configuration Management Policy team.

**For more detailed information please see:**

Knowledge in Defence (KiD) website, JSP 940, and 945 MOD Quality Policy.

Images from: www.defenceimages.mod.uk



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