



Defence
Safety
Authority

Manual of Military Air Traffic Management Equipment Assurance (MMATMEA)

Military
Aviation
Authority

Military Aviation Authority

MAA

CONTENTS

CONTENTS	2
CHAPTER 1: INTRODUCTION	3
PURPOSE.....	3
LAYOUT.....	3
CROSS-REFERENCES	4
DEFINITIONS	4
CHAPTER 2: ASSURANCE OF AIR TRAFFIC MANAGEMENT EQUIPMENT AND THE RELEASE INTO SERVICE PROCESS (RISP)	6
MODIFICATION CLASSIFICATION	6
RELEASE INTO SERVICE PROCESS (RISP).....	6
STAGE 1 - RELEASE INTO SERVICE STRATEGY (RISS).....	7
STAGE 2 – RELEASE INTO SERVICE EXPOSITION (RISE)	9
STAGE 3 – EQUIPMENT ACCEPTANCE BOARD (EAB)	10
STAGE 4 – SITE SPECIFIC ACCEPTANCE AND COMMISSIONING BOARD (SSACB)	10
CHAPTER 3: MINOR MODIFICATIONS	11
CHAPTER 4: ASSURANCE CREDIT WITHIN THE RISP	13
CHAPTER 5: DEFENCE STANDARD 00-972	14
SCOPE	14
COMPOSITION.....	14
ATM-ARI	15

CHAPTER 1: INTRODUCTION

PURPOSE

1. The purpose of this Manual of Military Air Traffic Management Equipment Assurance (MMATMEA) is to provide guidance to the Regulated Community (RC), including those organizations required to manage Air Traffic Management (ATM) Equipment in accordance with (iaw) the MAA's 3100 Series Regulatory Articles (RAs) and is applicable to all Military ATM Equipment.
2. RA 3134¹ provides the Regulatory requirements for achieving MAA Assurance of Military ATM Equipment including the introduction of new, and changes to extant equipment. Military ATM Equipment is any equipment used for the provision of ATM, including equipment used in the Defence Air Environment (DAE). ATM Equipment can be ground based or part of an Air System, ship, or vehicular platform.
3. The techniques and processes described in this Manual have evolved since the creation of the MAA in 2010 and have been informed by best practice from civil aviation. This Manual presents a single, comprehensive resource to all aspects of Military ATM Equipment Assurance and is a source of guidance to RA 3134¹. However, the nature of ATM Equipment procurement means that no single approach will suit every application; thus, effective and efficient ATM Equipment Assurance requires Delivery Teams (DT)² to act on an informed understanding of the assurance options available to them. Accordingly, the MAA Certification Division and the Defence Equipment and Support (DE&S) Airworthiness Team (DAT) remain a key source of assistance and guidance.

LAYOUT

4. Chapter 1 provides the purpose and layout of the MMATMEA, with the addition of cross-references and definitions that support the Release into Service Process (RiSP).
5. Chapter 2 provides guidance for the Assurance of ATM Equipment and explains the RiSP (supporting RA 3134¹).
6. Chapter 3 explains the circumstances and processes to be applied if a DT considers a change to be simple and low Risk and applying the full RiSP unnecessary.
7. Chapter 4 explains how credit can be claimed during the RiSP by leveraging assurance from another Aviation Regulator and / or against alternative assurance standards.
8. Chapter 5 provides details regarding Defence Standard (Def Stan) 00-972 and guidance on requesting clarification and / or interpretation of Safety, Performance or Regulatory requirements. In addition, details of the ATM Assurance Review Item (ATM-ARI) process are provided.

¹ Refer to RA 3134 – Air Traffic Management Equipment Release into Service Process.

² Any reference to a DT within this Manual also includes any organization responsible for delivering ATM Equipment, whether or not they are a DE&S DT; this includes Platform Authorities and other project teams with a similar remit.

CROSS-REFERENCES

9. Further details on requirements can be gained from reference to the following Standards, Regulations and publications:

a. **Standards**

(1) Def Stan 00-972 Military Air Traffic Services Equipment Safety and Performance Standards.

b. **Regulatory Article (RA)**

(1) [RA 1005](#) Contracting with Competent Organizations.

(2) [RA 1027](#) Air Traffic Management Equipment Organizations – Responsibilities of Contracted Organizations.

(3) [RA 3100](#) Air Traffic Management Equipment Approved Organization Scheme.

(4) [RA 3120](#) Air Traffic Management Equipment Standards.

(5) [RA 3130](#) Air Traffic Management Equipment Safety Management.

(6) [RA 3132](#) Air Traffic Management Equipment Safety Cases.

(7) [RA 3134](#) Air Traffic Management Equipment Release into Service Process.

(8) [RA 3136](#) Air Traffic Management Equipment Technical Safeguarding.

(9) [RA 3140](#) Air Traffic Management Equipment End to End Safety.

c. **Other References**

(1) [MAA01](#) Military Aviation Authority Regulatory Principles.

(2) [MAA02](#) Military Aviation Authority Master Glossary.

(3) [MAA03](#) Military Aviation Authority Regulatory Processes.

(4) [CAP 670](#) Air Traffic Services Safety Requirements.

DEFINITIONS

10. In addition to the MAA02, the following Table contains terms, abbreviations and definitions used within this Manual:

Table 1 – Glossary of Certification-Specific Terms

Term	Abbreviation	Definition
Applicable	-	When considering requirements for new, or modifications to ATM Equipment, a requirement is Applicable if the potential exists for the new ATM Equipment, or the change to ATM Equipment, to impact that requirement.
Air Traffic Management Assurance Review Item	ATM-ARI	The ATM-ARI is a tool for any occasion where assurance issues require clarification and / or interpretation. An ATM-ARI records the reason why an ATM Safety, Performance or Regulatory requirement is under review, how it will be addressed and the final agreement between the MAA and DT.

Term	Abbreviation	Definition
Compliant	-	A compliant requirement is one where evidence successfully supports the technical interpretative material provided within; the established Acceptable Means of Compliance (AMC) or agreed Alternative AMC (AAMC). Thus, a non-compliant certification requirement is one where the evidence falls short of showing full compliance.
Defence Standard 00-972	Def Stan 00-972	Def Stan 00-972 is primarily the UK Military Delta to CAP 670 - Air Traffic Service (ATS) Safety Requirements.
Legacy ATM Equipment	-	Legacy ATM Equipment is equipment that was already contracted prior to the introduction of the Def Stan 00-972 Issue 1 dated 21 May 2012.
Minor Modification	-	A type of change to ATM Equipment as defined in RA 3134(1) ³ .
Planning and Tasks Co-ordinator	PTC	Within the MAA's Certification Division, PTC is the single point of contact for all enquiries relating to Certification, including the recipients of all completed Release into Service Exposition (RiSE) and MAA Form 1430 ⁴ submissions.
Release into Service Audit Report	RiSAR	The Release into Service Audit Report (RiSAR) is the outcome of the MAA's Audit of the DT's RiSE submission; the RiSAR will state the level of assurance provided by the MAA. This assurance is based upon a compliance assessment of the submission.
Release into Service Process	RiSP	The four stage (4-stage) RiSP is used to demonstrate that military ATM Equipment meets appropriate Safety and performance requirements and that it is acceptably safe to operate in the defined Service environment.
Release into Service Strategy	RiSS	The Release into Service Strategy is the DT's document that defines their approach to the RiSP; this strategy will be reviewed by the MAA and Release To Service Authority (RTSA) and authorized.
Safety, Performance and Regulatory Requirements	-	Safety, performance and Regulatory requirements are the individual design requirements, against which compliance will be shown in order to demonstrate an acceptable level of system Safety.
Significant Modification	-	A type of change to ATM Equipment as defined in RA 3134 ¹ .

³ Refer to RA 3134(1): Air Traffic Management Equipment Release Into Service Process.

⁴ Refer to MAA Form 1430 – Application for Classification of a Modification to Air Traffic Management Equipment.

CHAPTER 2: ASSURANCE OF AIR TRAFFIC MANAGEMENT EQUIPMENT AND THE RELEASE INTO SERVICE PROCESS (RiSP)

1. For new, and modifications to, ATM Equipment operated within the DAE it is necessary to demonstrate that appropriate Safety and performance standards have been met. As a result, a systematic, independent Risk-based Assurance process is required for new and significant modifications of UK military ATM Equipment. Achieving MAA Assurance provides adequate confidence and evidence, through due process, that the military ATM Equipment has met appropriate Safety and performance standards. This Chapter supports RA 3134 which is the Regulation for the ATM Equipment RiSP.
2. **Legacy Equipment.** RA 3134 applies to modification of all ATM Equipment, whether that equipment was brought into service prior to the MMATMEA Initial Issue of RA 3134 or the MMATMEA Initial Issue of Def Stan 00-972. RA 3120 details how ATM Equipment will comply with Def Stan 00-972.

MODIFICATION CLASSIFICATION

3. Modifications to ATM Equipment can be classified as significant or minor. RA 3134 requires that the introduction of new ATM Equipment and significant modifications to In-Service ATM Equipment follow the 4-stage RiSP.
4. **Significant Modifications.** RA 3134 classifies modifications to ATM Equipment as significant when:
 - a. They change the way components of the functional system are used; or
 - b. The changes to equipment, either hardware or software, could affect the functional performance of the ATM Equipment; or
 - c. The changes affect equipment configuration, excluding changes during Maintenance, repair and alternative operations that are already part of the accepted operational envelope; and
 - d. They are not classified as minor.
5. **Minor Modifications.** Agreement can be sought for changes classified by the DT as minor, not to be subject to the RiSP, using the MAA Form 1430⁴; see chapter 3 for further information.

RELEASE INTO SERVICE PROCESS (RiSP)

6. The conceptual design through to delivery in-Service of ATM Equipment can take many years; consequently, a robust, structured framework for assurance ensures that the necessary foundations are established before more detailed activity is undertaken.
7. The aim of the 4-stage RiSP is to demonstrate that military ATM Equipment meets appropriate Safety, performance and Regulatory requirements and that it is 'acceptably safe to operate' in the defined DAE. Thus, a large part of the RiSP is assessing compliance with the wider MAA Regulatory Publications (MRP) as they relate to ATM Equipment.
8. The 4-stages of the RiSP consist of:
 - a. **Stage 1.** Release into Service Strategy (RiSS).
 - b. **Stage 2.** Release into Service Exposition (RiSE).
 - c. **Stage 3.** ATM Equipment Acceptance Board (EAB).
 - d. **Stage 4.** Site-Specific Acceptance and Commissioning Board (SSACB).

STAGE 1 - RELEASE INTO SERVICE STRATEGY (RiSS)

9. The DT will determine the RiSS on how new or significantly modified equipment will successfully progress through the RiSP iaw RA 3134(2)⁵. RiSS submissions are to be submitted, at the earliest opportunity, to the MAA via DSA-MAA-CertPTCGroup@mod.gov.uk.
10. The purpose of the RiSS is to:
- Ensure that the strategy is formally accepted, formal acceptance will be documented.
 - Ensure that all stakeholders have a clear and shared understanding of the role, type and extent of ATM Equipment that is being brought into service.
 - Describe how the project will fulfil the requirements of the RiSP.
 - Ensure that all applicable system, Safety, performance and Regulatory requirements are met.
11. Successful ATM Equipment projects are to have defined user requirements leading to identification of appropriate Safety, performance and Regulatory requirements being specified within the Invitation To Tender (ITT) and subsequent equipment contract. The purpose of a RiSS is to ensure all applicable Safety, performance and Regulatory requirements are adequately defined, reducing the Risk of incurring significant unforeseen project costs, limitations being placed on operational capability and / or increased or unsubstantiated Risk being taken on by Duty Holders (DH).
12. In producing the RiSS the following will be considered:
- Type of ATS⁶.** RA 3200⁷ series and RA 3300⁸ series cover the provision of ATM related services and must be considered when defining User, System, Safety and Performance requirements for ATM Equipment.
 - Def Stan 00-972 Requirements.** RA 3120 requires that all new and upgraded ATM Equipment meets the applicable minimum specification requirements of Def Stan 00-972. It is critical that these requirements, and any derived requirements, are understood and defined in detail prior to issuing an ITT or subsequent contract award. An ATM-ARI will be raised to obtain MAA clarification or interpretation for any applicability or compliance query. See Chapter 5 for further details about the ATM-ARI process.
 - System and Service Interfaces.** RA 3140 requires that the Safety of ATM Equipment must be considered on an end-to-end basis. It must consider all relevant Organizations, Service⁹, services, systems, interfaces, activities and processes. It needs to include all Defence Lines of Development (DLoD)¹⁰ and all relevant areas whether internal or external to the MOD. The responsibilities of different Organizations and suppliers must be coordinated to achieve an acceptably safe outcome.
 - Safety Responsibilities.**
 - RA 3130 provides Regulations relating to the responsibilities of DT Leaders (DTL) and those of the User / Operator.
 - RA 3132 provides Regulations relating to the responsibilities of DH-Facing Organizations and the requirement for the establishment of a Project Safety Panel (PSP) to manage the ATM Equipment Safety Case (SC).

⁵ Refer to RA 3134(2): Release into Service Strategy.

⁶ Refer to MAA02: Military Aviation Authority Master Glossary.

⁷ Example not limited to RA 3224 – UK Flight Information Services.

⁸ Example not limited to RA 3301 – Meteorological Information.

⁹ Example not limited to RA 1395 – Authorization to Permit Embarked Aviation in Her Majesty's / MOD Ships.

¹⁰ Whilst MAA Certification Division prime focus will be the Equipment DLoD, both the EAB and SSACB are responsible for ensuring all DLoD requirements have been met.

(3) **Independent Audit.** The arrangements for ensuring independent Audit by an Independent Safety Auditor (ISA) will need to be detailed¹¹. The ISA will be a competent and suitably qualified individual or team, as determined by the DT, and they will be independent of the outcome or processes they are reviewing. A DT may also consider using an Independent Technical Evaluator (ITE) where complex, novel or high-Risk technologies are being proposed, and / or where it lacks sufficient Suitably Qualified and Experienced Personnel (SQEP) in specific areas.

e. **ATM Approved Organization Scheme.** ATM Equipment Organizations that are contracted by the UK MOD to provide and / or install ATM Equipment, and / or provide technical services that support ATM Equipment, are required to be approved iaw the ATM Equipment Approved Organization Scheme (AAOS). The AAOS is the Assurance mechanism underpinning the competence of ATM Equipment Organizations and ensures such Organizations comply with the MRP. DTs need to communicate AAOS requirements to ensure that in-scope Organizations are able to meet the conditions of the AAOS. RA 3100 defines the overarching AAOS Regulatory requirements.

f. **DLoD Responsibilities.** All DLoDs are key from a Systems Engineering and System of Systems Approach in ensuring that a system is both 'safe to operate' and can be 'operated safely'. It is essential to ensure all DLoD considerations and responsibilities are identified as early as possible in system development and design activities rather than just as part of down-stream system integration activities.

g. **Safety Programme Timescales and Milestones.** To support efficient progress through the RiSP, an understanding of project and Safety milestones will enable the MAA Certification Division, and other stakeholders, to plan a project's activity amongst the wider portfolio of concurrent assurance programmes. Failure to meet planned milestones, even by a small amount, can result in a significant delay to the MAA's ability to staff RiSE submissions due to conflicting activity. Early engagement about changes within the programme is essential. Consequently, it is strongly recommended that RiSP schedules are robust and take account of potential resolution activity that may be required as a result of MAA Assurance activity. The MAA will Audit the scheduled RiSE submission and produce any findings that may require resolution prior to an EAB and / or SSACB being convened.

13. See Chapter 4 for guidance on leveraging assurance credit from other civil aviation regulators.

¹¹ Refer to RA 3132(6): Air Traffic Management Equipment Safety Case Independent Assessment.

STAGE 2 – RELEASE INTO SERVICE EXPOSITION (RiSE)

14. To demonstrate ATM Equipment is ‘acceptably safe to operate’ a DT will provide the MAA with a RiSE. The RiSE will be in a final state that has been reviewed and authorized iaw RA 3134(2)⁵, including independent assessment.

15. RA 3134(3)¹² provides further detail on what will be included within a RiSE submission. This includes parts 1, 2 and 3 and a draft part 4 of the ATM Equipment SC¹³ or the most recent ATM Equipment Safety Case Reports (SCRs), which present a structured and explicit argument, and a supporting body of evidence that together provide a compelling, comprehensive, and valid case that the ATM Equipment is ‘acceptably safe to operate’, meets appropriate legislative and Regulatory requirements and has been appropriately authorized¹⁴. It will also identify any compliance shortfalls and any restrictions on the use of the equipment and sentence any outstanding recommendations in the supporting evidence submission. In addition, a statement from the DTL that the SCRs have been appropriately signed and authorized is required. It is essential that all claims and arguments are supported by appropriately referenced evidence; this evidence will be available for MAA Certification review as part of the Audit. Claims and arguments made without supporting evidence are considered unfounded.

16. **Compliance.** Partial compliance to a Regulatory / legislative requirement is not a recognized position. Requirements are either wholly compliant or otherwise are non-compliant. Taking Def Stan 00-972 Issue 1, Chapter 8, 2.4 requirement as an example:

2.4. The response time of an Aeronautical Ground Lighting (AGL) control system should be less than 250 milli seconds. The overall response time shall be better than 5 seconds. The system shall provide a visual and audible alarm within 1 second of failure.

17. If all of the aspects of this requirement are to be achieved, then the project can declare compliance with the requirements of 2.4. If the project identifies that the overall response time will not be met / achieved, then the claim cannot be made that the project is compliant or partially compliant with 2.4; it is non-compliant. An ATM-ARI will be raised to obtain MAA clarification or interpretation for any applicability or compliance query. See chapter 5 for guidance.

18. **MAA Audit.** The MAA will review the RiSE to assure that the ATM Equipment is designed and built to a defined and recognized standard¹⁵ by a competent Organization¹⁶. Any deviation in the agreed RiSS timeline is to be communicated, at the earliest opportunity, to the MAA via DSA-MAA-CertPTCGroup@mod.gov.uk.

19. The Audit will provide independent Assurance to the RTSA that the ATM Equipment is fit for the intended purpose³. The outcome of the MAA Audit will be the production of the RiSAR which will contain Audit findings, where applicable, to be closed by the DT for either EAB (Stage 3 of the RiSP) or SSACB (Stage 4 of the RiSP) to convene.

¹² Refer to RA 3134(3): Release into Service Exposition.

¹³ Refer to RA 3132 – Air Traffic Management Equipment Safety Cases.

¹⁴ Refer to RA 3132(3): Air Traffic Management Equipment Safety Case Management Process.

¹⁵ Refer to RA 3120 – Air Traffic Management Equipment Standards.

¹⁶ Refer to RA 3100 – Air Traffic Management Equipment Approved Organization Scheme.

20. **MAA Assurance.** The Risk based¹⁷ RiSE Audit will culminate in an MAA declaration of the level of confidence it has that the Safety requirements have been met. The level of assurance provided will be based on the extent of the degree of compliance with the RiSP; definitions of the Assurance levels are as follows:

- a. **Full Assurance.** A high degree of confidence based upon effective compliance with the RiSP has been demonstrated with any compliance issues resolved through an ATM-ARI.
- b. **Limited Assurance.** A limited degree of confidence based upon compliance with the RiSP has been demonstrated, except for some areas where non-compliances have been identified and ATM-ARIs, AAMC, Waivers and / or Exemptions are required¹⁸.
- c. **No Assurance.** No confidence based upon compliance with the RiSP has not been demonstrated. Major areas of non-compliance have been identified in multiple areas of the RiSP and have not been supported by ATM-ARIs, AAMC, Waivers or Exemptions¹⁸.

STAGE 3 – EQUIPMENT ACCEPTANCE BOARD (EAB)

21. The purpose of the EAB¹⁹ is to confirm that any new or significantly modified ATM Equipment is ready to be released for installation / commissioning on a specific platform / site / operating area. It is convened and chaired by the relevant RTSA. The EAB will consider:

- a. The MAA RiSAR.
- b. The maturity of all DLoDs, such that their effects upon the Equipment DLoD can be verified prior to MMATMEA Initial Issue of an equipment release.
- c. All three parts (Part 1, 2 & 3) of the ATM Equipment Safety Case, confirming that they have been signed off (RA 3132), to ensure that the equipment is safe to operate and safe to install.

22. The Board will establish whether the equipment can be a Full Release, Release with Limited Evidence (RLE), Operational Emergency Release (OER) or not released.

23. An EAB supported by SQEP²⁰ is deemed necessary to assist the DH decision.

STAGE 4 – SITE SPECIFIC ACCEPTANCE AND COMMISSIONING BOARD (SSACB)

24. The purpose of the SSACB²¹ is to confirm that any new or significantly modified ATM Equipment is ready to be accepted into service on a specific platform / site / operating area. It is convened and chaired by either the Head of Establishment (HoE), Accountable Manager (Military Flying) (AM(MF)), Delivery DH (DDH), Operating DH (ODH) or their delegated representative who holds accountability for accepting the equipment into service. The Board is required to assure itself that any site-specific requirements and Safety issues have been addressed, confirm that the SC Part 4¹³ demonstrates that the equipment will be operated safely and that all Safety Risks have been assessed as As Low As Reasonably Practicable and Tolerable.

25. The final decision on whether to accept equipment into service will be made by the SSACB chairperson.

¹⁷ From MAA01 para 2 refers (MAA assurance is Risk-based and derived from a comprehensive assessment of regulated Organizations, their outputs, and the associated Air Safety or Environmental Risk).

¹⁸ Refer to MAA03 - MAA Regulatory Processes.

¹⁹ Refer to RA 3134(5): Air Traffic Management Equipment Acceptance Board.

²⁰ SQEP (not limited to) MAA, ATM operators / maintainers, DTL, Front Line Commands and DLoD owners.

²¹ Refer to RA 3134(6): Site Specific Acceptance and Commissioning Board.

CHAPTER 3: MINOR MODIFICATIONS

1. It is important that any changes to ATM Equipment meet appropriate Safety, performance and Regulatory requirements to ensure the Safety implications of the change are fully recognized. Consequently, such changes are subject to classification and approval prior to the implementation of the change. This section explains the circumstances and processes to be applied if a DT considers a change to be simple and low Risk and applying the full RiSP is not necessary.
2. RA 3134(1)³ identifies the criteria for a change to be classified as minor. Agreement can be sought for changes classified by the DT as minor, not to be subject to the RiSP, using the MAA Form 1430⁴ process. A minor modification could be considered as simple and low Risk when it has no appreciable effect on the reliability, operational characteristics, or other characteristics affecting the functional performance of the ATM Equipment. In completing MAA Form 1430⁴, DTs will be expected to provide the following information:
 - a. Why the change is required.
 - b. Safety Assurance.
 - c. Organizations affected by the change.
 - d. Brief description of the change.
 - e. Any impact resulting from the change.
 - f. The Def Stan 00-972 requirements that are applicable to the change. Any Modification that alters a RTS or lifts any limitations on an RTS, will necessitate an EAB.
 - g. Confirmation that the underpinning assessment has been carried out by SQEP.
3. The MAA will endeavour to respond to the request within 20 working days. There are 3 possible outcomes to the application:
 - a. **Application Rejected.** In this case the change will be considered significant and subject to the full RiSP.
 - b. **Further Information Required.** In this case the DT is required to provide further information to enable MAA Certification to review the application.
 - c. **Application Agreed.** In this case the modification can proceed with no further scrutiny by MAA Certification.
4. Changes that would usually be considered significant would include (but not limited to):
 - a. Where the change involves multiple systems and areas, eg as part of a mid-life update, capability sustainment programme.
 - b. Changes essential to correct an unsafe condition.
 - c. Where the change introduces or affects functions where the failure effect is classified Catastrophic or Hazardous.
 - d. Where the demonstration of compliance uses methods that have not been previously accepted as appropriate for the nature of the change. Where the DT proposes a new interpretation of the Safety requirements that has not been published as AMC material or otherwise agreed with the MAA.
 - e. Where the extent of the change, and the degree to which the original SC has to be re-assessed and re-evaluated, is considerable.
 - f. When Programmable Elements (PE) are used, and where a perfective or adaptive change is made to any PE, the change will be classified as significant if any of the following apply:

- (1) Where the change impacts PE whose anomalous behaviour results in an ATM Equipment Risk Classification Severity²² of Catastrophic or Hazardous, unless that change involves only a variation of a parameter value within a range already verified for the extant Safety Case agreed by the MAA.
- (2) Where the change significantly impacts PE whose anomalous behaviour results in an ATM Equipment Risk Classification Severity of Major.
- (3) Where the change to PE has the effect of altering the ATM Equipment Risk Classification Severity.
- (4) Where the initial Cyber Security Vulnerability Analysis shows that, before the implementation of mitigation, there is a potential threat path that could result in an ATM Equipment Risk Classification Severity of Catastrophic or Hazardous.

5. Equipment that requires changes that are already addressed within the bounds of the Equipment SC, such as radar optimization settings for example, are not subject to RA 3134.

6. Similarly changes to dual role equipment, that do not have the potential to impact ATM functional performance, are not subject to RA 3134. For example, changes to Shared Infrastructure Systems that do not have the potential to impact ATM Equipment functionality are not required to follow the RiSP, nor apply for the changes to be considered as minor. It is incumbent upon the DT to ensure that any changes to dual role equipment are assessed to ensure that there is no impact on the safety, functionality and / or performance (in scope of the release) of the ATM Equipment. Where an impact is identified then the change will be subject to RA 3134.

²² Refer to RA 3130(7): Air Traffic Management Equipment Risk Classification.

CHAPTER 4: ASSURANCE CREDIT WITHIN THE RiSP

1. Application of the RiSP represents a significant undertaking on behalf of both the DT and the MAA; however, the UK MOD routinely procures ATM Equipment, or adopts design changes, that are subject to some degree of independent assurance activity. In demonstrating compliance with the RiSP, the MAA is therefore prepared to give credit to assurance activities performed by certain civil aviation regulators but only where these can be demonstrated to be both acceptable to the MAA and applicable to UK MOD configuration and intended usage of the ATM Equipment.
2. Claiming assurance credit within the RiSP may avoid unnecessary duplication of effort within both the DT and the MAA and enables UK MOD resource to be targeted at the areas of greatest Safety benefit. However, there are several aspects for DTs to consider when deciding whether, or not, requesting credit within the RiSP is an appropriate course of action for a project. The following paragraphs explain some of these considerations; however other aspects, such as the transfer of technical knowledge into the DT for sustaining system integrity through-life, are also important considerations.
3. Like the UK, many nations have civil aviation authorities to regulate aviation activities within their Area of Responsibility. Whilst assurance credit within the RiSP can be requested for the activities undertaken by certain civil regulators, the MAA treats civil regulators differently.
4. **Civil Aviation Regulators.** The only civil authorities where the MAA are prepared to give credit to their assurance activity, providing that the ATM Equipment's Configuration, Role and Environment (CRE) is applicable to the MOD product, are the UK Civil Aviation Authority (CAA), European Union Aviation Safety Agency and the Federal Aviation Administration²³. This is because they have a Certification system and organization approval system comparable to that of the MAA and they are engaged in common cooperation programmes with the UK MOD.
5. **Requirements of the DT.** The DT need to account for UK-specific CRE of the ATM Equipment and national legislation, they need to assure themselves, and subsequently the MAA, that they have considered and ensured that Def Stan 00-972 (military delta to CAP 670) requirements are achieved and that all applicable RA elements are covered.
6. This will invariably involve the DT undertaking, and recording for themselves and subsequent MAA Assurance, additional Risk-based Assurance, including deep-dives into high-Risk areas and checks elsewhere to assure due diligence and rigour has been applied across the full extent of the exposition. Furthermore, DTs will need to assess, and mitigate where necessary, the availability of evidence to support additional assurance activity, especially where such evidence is likely to be subject to commercial intellectual property or security disclosure constraints (such as in Security Cooperation Programmes).
7. In addition, a DT will need to ensure that contractual arrangements are in place to ensure continued unrestricted access to organizational approvals or artefacts through-life (ie to meet the planned UK out of service date for the ATM Equipment).

²³ DTs wishing to claim credit for assurance activities undertaken by another Civilian Aviation Regulator other than those listed will need to seek further guidance from MAA Certification Division.

CHAPTER 5: DEFENCE STANDARD 00-972

SCOPE

1. The scope of the contents of Def Stan 00-972 covers Safety, Performance and Regulatory aspects. RA 3120 details that all new and / or modified ATM Equipment meets the minimum specification requirements of Def Stan 00-972.
2. Def Stan 00-972 is hosted on the Standardization Management Information System (StanMIS) website and can also be accessed through the DStan within the Defence Gateway.
3. Def Stan 00-972 sets out the requirements for System Safety and Functional Performance of Military ATS Systems. All equipment that is intended to be used for ATS or ATM in its role, is required to comply with all the appropriate requirements within Def Stan 00-972 for the full coverage area, including all hardware and software used, regardless of the location of the equipment, platform it is situated on or the operational context in which it is being used.
4. Application of the appropriate requirements within Def Stan 00-972 is to be made at the time of any significant change to an ATS / ATM System Design or Architecture.
5. The MAA recognise that during the tenure of the contract, the contracted Def Stan issue may be superseded. In these circumstances a retrospective application of the update is not required unless analysis by the DT identifies a safety benefit.

COMPOSITION

6. It is important to note that this Def Stan is primarily the UK Military Delta to CAP 670. CAP 670 must be used as a baseline in establishing appropriate design and Safety requirements taking account of the procurement strategy to be adopted, unless otherwise stated within Def Stan 00-972. In the event of a requirement being considered non-applicable or out of scope of the systems function / design, MAA Assurance²⁴ will be obtained before the design / project progresses to the next stage.
7. Additionally maximum use has been made of civilian Regulations (International Civil Aviation Organization (ICAO) and European standards and specifications) where these are applicable to both military and civil roles and incorporated into Def Stan 00-972 for compliance.
8. Demonstration of compliance is to be carried out against all applicable normative references. Any reference to a governing body (eg CAA) requiring contact or notification in normative reference documents will be read as the MAA.
9. Def Stan 00-972 is broken down into the following Sections:
 - a. **Section 1.** This Section is automatically generated by the StanMIS toolset and contains administrative information, such as: Revision Note; Historical Record; Warning and Standard Clauses.
 - b. **Section 2.** This section contains the Safety, performance and Regulatory requirements for ATM Equipment.
 - c. **Section 3.** As with Section 1, this Section is automatically generated by the StanMIS toolset and contains common information, such as: Normative References; Definitions and Abbreviation.
10. Def Stan 00-972 is intended to provide a modular set of requirements that define the fundamental design considerations necessary to produce equipment and services that are considered safe. These are the minimum requirements and do not represent a standard specification. The requirements are broken down into thirteen chapters, each focused on a different application as described below in Table 2.

²⁴ The ATM-ARI process will be used in the first instance to formally record the issue and any outcome; see para 10 to this Chapter.

Table 2 – Def Stan 00-972 Requirements

Chapter	Applicability
1	Generic and Software
2	Communications (including Cyber)
3	Surveillance
4	Navigation
5	Satellites
6	Meteorological Services
7	Flight Data Information Management Systems
8	Airfield Ground Lighting (AGL) and Arrestor Systems
9	System Assurance (Safeguarding)
10	Air Traffic Control Systems
11	Recording and Replay Systems
12	Alarm and Alert Systems
13	Master Time Sources

ATM-ARI

11. The ATM-ARI is a tool for occasions when compliance with Safety, performance or Regulatory requirements requires clarification and / or interpretation. An ATM-ARI records the reason why a Safety, performance or Regulatory requirement is under review, how it will be addressed and the outcome of agreement between the MAA and DT. As a result, an ATM-ARI represents a recorded, chronological and auditable discussion between the DT and the MAA. Accordingly, to preserve a robust audit trail new narrative sections will be added by the DT as required to present further evidence, rather than simply amending the previously submitted narrative sections.

12. The MAA will endeavour to respond to the request within 20 working days. There are 4 possible outcomes to the application:

- a. **Application Approved.** In this case the DT have provided sufficient evidence for a mutually acceptable position to be reached with MAA Certification.
- b. **Further Information Required.** In this case the DT is required to provide further information to enable MAA Certification to review the application.
- c. **Application Referred.** In this case the DT will be signposted to MAA03 for further guidance on AAMC, Waiver or Exemption.
- d. **Application Withdrawn.** In this case the DT will notify the MAA of the intent and reason behind the withdrawal.

13. The ATM-ARI needs to clearly state the Safety, performance or Regulatory requirements (other than those from Def Stan 00-972, including other standards or specifications referenced) and needs to articulate with justification why the alternative Safety, Performance or Regulatory Requirement is appropriate. Where an alternative is used, its use will deliver a level of Safety that is both consistent with the intent of Def Stan 00-972 (or, where mitigating factors are used, achieve the required Safety objective) and is acceptable to the MAA.

Intentionally Blank for Print Pagination