



30 Jun 2025

## MAA/RN/2025/03 - Certification of military Airborne Communications, Navigation and Surveillance designs as part of UK military Air System Type Designs, and associated Type Design Changes, to enable airspace usage Operating Approvals

### References:

- A. RA 1380 - Performance Based Navigation.
- B. RA 1390 - Reduced Vertical Separation Minimum.
- C. RA 5810 - Military Type Certificate (MRP Part 21 Subpart B).
- D. RA 5820 - Changes in Type Design (MRP Part 21 Subpart D).
- E. Defence Standard 00-970 - Certification Specifications for Airworthiness, Part 00: PROCEDURES FOR USE, CONTENT AND DEFINITIONS, Issue 24.

### Issue

1. This Regulatory Notice (RN) addresses a Regulated Community (RC) requirement for further clarification on the route to Certification of military Airborne Communications, Navigation and Surveillance (ACNS) designs<sup>1</sup> within UK military Air System Type Designs, and associated Type Design Changes (TDC) to support Operating<sup>2</sup> Approvals. The Certification<sup>3</sup> of these designs is key to underpin and enable certain airspace usage Operating Approvals, such as the approval to conduct Performance Based Navigation (PBN) operations<sup>4</sup>, the approval to use Reduced Vertical Separation Minimum (RVSM) systems in RVSM designated airspace<sup>5</sup> and Automatic Dependent Surveillance – Broadcast (ADS-B) Out system approvals.

### Scope

2. This RN provides further clarity on the Airworthiness Certification requirements referenced in RA 1380<sup>6</sup> and RA 1390<sup>7</sup> as prerequisites to enable Operating Approval, and also details the route to achieving Certification for military ACNS designs and TDC which do not have supporting civil Certification pedigree such as design elements compliant to TSO or ETSO.

<sup>1</sup> The term military ACNS designs is used to describe ACNS designs which are part of UK military Air System Type Designs, but which are not supported by civil Certification pedigree, such as design elements compliant to civil Technical Standard Orders (TSO) / European TSO (ETSO) or prior Airworthiness Certification to the necessary civil performance requirements.

<sup>2</sup> Note: International Civil Aviation Organization (ICAO) and the UK Civil Aviation Authority (CAA) use the term 'Operational Approval'. This is also used in RA 1380 and RA 1390.

<sup>3</sup> Refer to RA 5810 – Military Type Certificate (MRP Part 21 Subpart B) and RA 5820 - Changes in Type Design (MRP Part 21 Subpart D), .

<sup>4</sup> The PBN Approval Process is defined in RA 1380: PBN Approvals will be granted via the Release To Service (RTS), Military Permit To Fly (MPTF), Ops Manuals and local orders.

<sup>5</sup> The RVSM Approval Process is defined in RA 1390: The process includes the requirement to assert compliance to the Defence Airspace and Air Traffic Management (DAATM) organization for the Certification and Operation of State Aircraft in European RVSM Airspace.

<sup>6</sup> Refer to RA 1380 – Performance Based Navigation.

<sup>7</sup> Refer to RA 1390 – Reduced Vertical Separation Minimum.



## Aim

3. This RN is aimed at the Type Airworthiness Authority (TAA)<sup>8</sup> for any military Air System for which airspace usage Operating Approvals are sought, and whereby the underpinning Airworthiness Certification required is for military ACNS designs.

## Implementation

4. The guidance is effective immediately and represents the MAA's current position for the Certification of military ACNS designs in support of airspace usage Operating Approvals.

## Background / Introduction

5. The European Union Aviation Safety Agency (EASA) Certification Specifications (CS) are modular by design meaning the platform-based CS (eg CS-25 Large Aeroplanes, CS-29 Large Rotorcraft, etc) are supplemented by additional CS, addressing specific Air Operations and Air Traffic Management / Air Navigation Services (ATM / ANS) interoperability requirements, depending on the intended airspace usage and operational requirements.

6. The Defence Standard (Def Stan) 00-970 Transformation work adopted EASA CS as the basis of the respective platform and engines Def Stan 00-970 Parts, supplemented or replaced by military 'delta' requirements where appropriate (eg EASA CS-25 requirements form the basis of Def Stan 00-970 Part 05). Def Stan 00-970 Part 13 now solely addresses military equipment which is common to both fixed- and rotary-wing Air Systems and which is not covered by EASA CS. However, as highlighted in Def Stan 00-970 Part 00, the Transformation work removed several previous Part 13 requirements that replicated those found in the wider EASA CS, such as EASA's Certification Specifications for Airborne Communications, Navigation and Surveillance (CS-ACNS) and EASA's Certification Specifications for All Weather Operations (CS-AWO). These CS may not be sign-posted from the platform CS or Def Stan 00-970 Parts as their applicability is dependent on both the Air System design and the intended usage. Consequently, Def Stan 00-970 Part 00<sup>9</sup> details the requirement on the Applicant to consider the applicability of the wider CS requirements (such as EASA CS-ACNS) for inclusion in an Air System Type Certification Basis (TCB).

7. RA 1380 and RA 1390 highlight the requirements for Airworthiness Certification as a prerequisite to enable Operating Approval for PBN operations, and for the use of RVSM systems in RVSM airspace, respectively. There is also a requirement for Certification to underpin ADS-B Out system approvals. For in-service platforms such Certification activity, if not already substantiated through prior Type Certification, would be considered a Change to the Type Design requiring Certification in accordance with the Military Air System Certification Process (MACP)<sup>10</sup>.

<sup>8</sup> Where the Air System is not UK MOD-owned, Type Airworthiness (TAW) management regulatory responsibility by either the TAA or Type Airworthiness Manager (TAM) needs to be agreed within the Sponsor's approved model; refer to RA 1162 – Air Safety Governance Arrangements for Civilian Operated (Development) and (In-Service) Air Systems or refer to RA 1163 – Air Safety Governance Arrangements for Special Case Flying Air Systems. Dependant on the agreed delegation of TAW responsibilities TAM may be read in place of TAA as appropriate throughout this RN.

<sup>9</sup> Defence Standard 00-970 - Certification Specifications for Airworthiness, Part 00: PROCEDURES FOR USE, CONTENT AND DEFINITIONS, Issue 24, Section 2.6.6.2 - Additional EASA Requirements and AMC.

<sup>10</sup> This is the case regardless of whether the equipment has been modified, or not; this is analogous to a change in the Operating envelope, for example.



8. The MAA is responsible for the determination of Certification compliance for military ACNS designs through the MACP. There is a requirement that military Air Systems are certified to equivalent standards of performance (including accuracy, integrity, continuity, and interoperability requirements) to that of civil Air Systems operating in the same airspace. To this end, the Def Stan 00-970 default Certification requirements are the respective EASA CS-ACNS requirements (latest Issue<sup>11</sup>; for PBN operations, this is modulated by the required PBN specification) and the default Acceptable Means of Compliance (AMC) is the corresponding EASA-published AMC.

9. Many military ACNS designs are, however, not supported by civil Certification pedigree such as design elements compliant to civil TSO / ETSO or prior Airworthiness Certification to the necessary civil performance requirements. This RN provides further clarification to the RC on the route to Certification for military ACNS, where there is not an option of an alternative 'civil' solution, to enable the respective airspace usage Operating Approvals.

### **Certification of military ACNS and equivalent means of compliance**

10. The TCB for the Certification of military ACNS should be developed from EASA CS-ACNS (latest Issue) and agreed with the MAA during MACP Phase 2<sup>12</sup>; it is expected that all applicable CS-ACNS requirements will be included. For the Certification Programme (CP, MACP Phase 3), the default means of compliance will be the applicable EASA AMC. However, where appropriate, the MAA can make equivalent alternative means of compliance findings; for PBN this approach is highlighted in the CAA / Irish Aviation Authority (IAA) Policy document for the Application of PBN in UK / Irish Airspace<sup>13</sup>. This means there is scope for the MAA to agree an alternative means of compliance with an Applicant, via a Military Certification Review Item (MCRI), for military ACNS designs.

11. The demonstration of equivalency is key, as military ACNS must be substantiated to have (at least) equivalent performance in accuracy, integrity, continuity, and interoperability requirements to that of designs certified to the EASA AMC. Any alternative means of compliance proposals for military ACNS should clearly demonstrate that equivalent performance to the standards referenced in the applicable EASA AMC will be evidenced in substantiation of the respective CS-ACNS requirements. It is important to note that non-compliances to any of the minimum performance requirements (including integrity and continuity requirements) cannot be accepted as residual Risk and held by an Aviation Duty Holder (ADH), as airspace usage Operating Approvals for PBN, RVSM and Approvals for ADS-B (Out) are predicated on the minimum performance requirements being met.

12. For In-Service Platforms, this will be considered a Major TDC, owing to the likely adjustment of the TCB to include the required CS-ACNS requirements, the subsequent change in Operating Limitations and, if a bespoke testing strategy is to be proposed as part of an alternative means of compliance to demonstrate equivalent performance, compliance may use methods not previously accepted by the MAA. If compliance demonstration requires agreeing equivalence for an alternative means of compliance, the TDC will be MAA Assured.

<sup>11</sup> At time of publication, the UK CAA has formally adopted CS-ACNS Issue 4 in accordance with [CAA ORS9 Decision No. 36](#).

<sup>12</sup> Refer to the Manual of Military Air System Certification (MMAC) for more information.

<sup>13</sup> [DAP Policy 112](#): PBN Policy - Policy for the Application of Performance-based Navigation in UK/Irish Airspace, 11 Oct 2011, Section 5.3 - State Aircraft Compliance.



**MAA acceptance of Military Standard Orders (MSO) issued by the US Department of Defense (DoD) GPS Directorate and ACNS equipment with associated Military Standard Order Approvals (MSOA) from the United States Air Force (USAF) Precise Positioning Service Equipment Certification Office (PECO)**

13. The MAA accepts MSOs issued by the US DoD GPS Directorate<sup>14</sup> as an acceptable means to demonstrate equipment performance of military ACNS equipment in support of Certification compliance.

14. Following a UK MAA Assessment<sup>15</sup> of the USAF PECO, the MAA has also been able to confidently gain the necessary assurance and understanding of PECO's Governance, Authorisation process, Technical Delegation, and Safety Risk Assessment to issue MSOA for Air System Communications, Navigation, and Surveillance (CNS) equipment. Therefore, the MAA accepts ACNS equipment with MSOA issued by the USAF PECO, subject to provision of a suitable Declaration of Design and Performance (DDP) or other agreed means to evidence compliance to the MSO.

15. It is important to note that these MSOs do not necessarily demonstrate complete equivalency in all aspects to the respective civil (E)TSOs; however, they do detail where equivalent performance for compliant equipment has been demonstrated (and also aspects and operations where equipment qualified to the MSO is not an acceptable substitute for the civil counterpart<sup>16</sup>), therefore, these MSOs can be used as a basis for equivalency arguments in compliance demonstration for the requirements they address, towards specific Operating Approvals.

16. It should also be noted that MSO-C145b would not, for example, address wider Required Navigation Performance (RNP) CS-ACNS requirements related to the performance of a Flight Management System (FMS), or wider display requirements, as the MSO specifically prescribes the minimum performance standards (MPS) that the airborne navigation sensor (using the Global Positioning System (GPS) / PPS) must meet; an approach must be agreed with the MAA at MACP Phase 3 to satisfactorily demonstrate Certification compliance for all applicable CS-ACNS requirements.

## **MAA engagement**

17. Early engagement with the MAA Certification Division is recommended for any alternative means of compliance proposals.

<sup>14</sup> For example, MSO-C145b (AIRBORNE NAVIGATION SENSORS USING THE GLOBAL POSITIONING SYSTEM (GPS) / PRECISE POSITIONING SERVICE (PPS) FOR AREA NAVIGATION (RNAV) IN REQUIRED NAVIGATION PERFORMANCE (RNP) AIRSPACE AND FOR AUTOMATIC DEPENDENT SURVEILLANCE – BROADCAST (ADS-B)) and the related MSO-C204 (CIRCUIT CARD ASSEMBLY FUNCTIONAL SENSORS USING THE GLOBAL POSITIONING SERVICE (GPS) / PRECISE POSITIONING SERVICE (PPS) FOR AREA NAVIGATION (RNAV) IN REQUIRED NAVIGATION PERFORMANCE (RNP) AIRSPACE AND FOR AUTOMATIC DEPENDENT SURVEILLANCE – BROADCAST (ADS-B)).

<sup>15</sup> UK MAA Assessment Report of the United States Air Force Precise Positioning Service (PPS) Equipment Certification Office (PECO), 08 Feb 2021.

<sup>16</sup> For example, the SUBSTITUTION section of MSO-C145b highlights that this equipment will not enable Lateral Navigation / Vertical Navigation (LNAV / VNAV) and Localizer Performance with Vertical Guidance (LPV) operations, owing to the lack of Satellite Based Augmentation System (SBAS) functionality.



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## **Queries**

18. Any observations or requests for further guidance on the content of this RN should be submitted by email to [DSA-MAA-MRPEnquiries@mod.gov.uk](mailto:DSA-MAA-MRPEnquiries@mod.gov.uk)

**Head Regulation and Certification**

**MAA**



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