

RA 3222 – Autonomous Radar Units

Rationale

Military ► Aircraft ◄ require access to controlled airspace in the UK Flight Information Region (FIR) / Upper Information Region (UIR) to meet training and operational requirements. The provision of Air Traffic Services (ATS) for such activity provides a barrier which mitigates the Risk to Life (RtL) of mid-air collision. ATS in controlled airspace may only be delivered by units with the appropriate approval from the Civil Aviation Authority (CAA) in order to meet ► United Kingdom ◄ obligation under the European Council Implementing Regulation ► 2018/1139 ◄¹. This Regulatory Article specifies the requirements for ATS provision inside en-route Controlled Airspace (CAS) by a unit other than the notified airspace controlling authority.

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Autonomous Radar Units

3222(1) Only units approved by the CAA **shall** provide ATS inside en-route CAS within the UK FIR / UIR.

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Autonomous Radar Units

1. Where a requirement exists for the provision of ATS within en-route CAS, the unit **should** be designated as an Autonomous Radar Unit (ARU), by approval from the CAA², with the exception of:

- a. The notified airspace controlling authority;
- b. National Air Traffic Services (NATS) Swanwick Area Control Centre (ACC);
- c. NATS Prestwick ACC;
- d. ► Swanwick Military (78 Sqn) ◄ ACC³;
- e. Units providing VFR ATS in Class E en-route airspace⁴.

2. **Criteria for ARU.** Aviation Duty Holders (ADHs), Heads of Establishment (HoEs) and Duty Holder (DH)-Facing Organizations applying for ARU status **should** demonstrate compliance with the following requirements:

- a. **Personnel.** The unit **should** demonstrate that it is resourced with sufficient suitably qualified controllers⁵ and support staff to undertake the task defined within the application.
- b. **Technical Requirements.** The unit **should**, as a minimum, meet the applicable military technical⁶ and functionality requirements. They **should** demonstrate that they are equipped with suitable surveillance and communication equipment capable of undertaking the autonomous radar task. Specifically, the unit **should** provide the CAA with a Safety Assessment that

¹ ► Refer to CAP 2020A00: Basic Regulation 2018/1139 ◄ (commonly referred to as the 'Basic Regulation') ► ◄.

² CAA approval is detailed in CAA Safety and Airspace Regulation Group (SARG) Policy; ATS Provision within Controlled Airspace by Units not Notified as the Controlling Authority including Annex A, ATS Provision by ARUs and Annex C, ATS Provision within En-Route Class E Airspace.

³ ► Swanwick Military (78 Sqn) ◄ is designated by the MOD as the Controlling Authority for en-route Operational Air Traffic (OAT) ATS provision. Furthermore, given its co-location with and shared use of NATS infrastructure and systems, which are approved for use by the CAA; the requirement to seek additional ARU status is waived.

⁴ ► Refer to ◄ RA 3223 - Provision of Air Traffic Service Inside Controlled Airspace.

⁵ Controllers that have successfully completed a MOD or CAA approved course to support the task required, and either hold a local operating endorsement or be undergoing training with an instructor or screen controller.

⁶ ► Refer to ◄ CAP 670, ATS Safety Requirements and DefStan 00-972 ► - Military Air Traffic Services Equipment Safety and Performance Standards (Aerodrome, Terminal and Naval Air Traffic Services). ◄

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affirms that the equipment intended to be used by an ARU safely supports the ATS to be discharged⁷. Authorization will be considered by the CAA in consultation with Defence Airspace and Air Traffic Management (DAATM). The following **should** be considered to be the minimum surveillance and communication requirements. These **should** be enhanced where necessary in order to meet any additional safety requirements identified during the Risk Assessment phase of the application:

- (1) **Surveillance Requirements.** The unit **should** demonstrate that they are equipped with primary surveillance radar (PSR) and secondary surveillance radar (SSR)⁸ equipment which meets the surveillance coverage and redundancy requirements set out within CAP 670⁹ and / or DefStan 00-972¹⁰ (as appropriate to the submission) and is commensurate with the defined ARU task. Where such requirements are not met, these **should** be detailed within the unit's Hazard Analysis with appropriate contingency mitigations, including measures necessary to address the Risk of sensor failure.
- (2) **Communication Requirements:**
 - (a) **Land-based.** Land-based units **should** demonstrate that they are equipped with communications equipment and systems which meet the requirements stipulated within CAP 670¹¹ and / or DefStan 00-972 and are commensurate with the defined ARU task.
 - (b) **Maritime.** Communication requirements for Royal Navy (RN) ships applying for ARU approval **should** be considered by the CAA and DAATM on a case-by-case basis.
 - (c) **Airborne.** Airborne units **should** maintain continuous 2-way radio contact with both the **Aircraft** under their control and the Control and Reporting Centre (CRC) tasked as their Weapons Manager. The latter **should** act as a point of contact with the ACC and other land-based ATS units as necessary to facilitate co-ordination requirements.
3. In addition a Letter of Agreement (LOA) **should** be agreed between the applicant, relevant ACC, other ATS units with overlapping or adjoining airspace and other relevant parties as identified on a case-by-case basis. The LOA **should** include:
 - a. Definition of both the task to be undertaken by the ARU and the terms and conditions applicable to autonomous radar operations.
 - b. Detailed procedures for the sharing of, and right of access to, airspace specified within the agreement and the associated co-ordination procedures to be employed.
 - c. Description of agreed contingency procedures including the criteria and procedures for the suspension of the LOA.
 - d. A narrative description and graphical depiction of the lateral and vertical limits of the specified Area of Operations in which the ARU will operate.

⁷ Military units **should** refer to [ATM 3000 Series](#) - RA 3120 to 3140 for Surveillance Equipment Safety Cases and Release To Service requirements. Where Surveillance Equipment meets this requirement it **should** be considered acceptable by the CAA.

⁸ Automatic Dependant Surveillance Broadcast (ADS-B) and Wide Area Multilateration (WAM) are acceptable alternatives to SSR.

⁹ **Refer to** CAP 670 - Part C, Section 3: SUR 01.

¹⁰ **Refer to DefStan 00-972 - - Military Air Traffic Services Equipment Safety and Performance Standards (Aerodrome, Terminal and Naval Air Traffic Services).**

¹¹ **Refer to** CAP 670 - Part C, Section 1: COM.

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4. **CAA Approval Procedure.** ADHs, HoEs and DH-Facing Organizations seeking ARU status will undertake Hazard identification, Risk Assessment and mitigation in accordance with (iaw) applicable MAA Regulatory Publications (MRP) safety regulations¹² to confirm that the unit is able to provide an ATS to ►Aircraft◄ operating within the proposed portion of en-route CAS. This assessment ►will◄ address all aspects of the ATS system, and thus encompass personnel / training, ATS procedures and equipment.
5. **Equipment standards.** Surveillance requirements in Def Stan 00-972 are predominately based upon airfield equipment. For submissions for en-route airspace, surveillance equipment standards may be found in CAP 670, specifically the requirement for dual-sensors.
6. Military applications for ARU status will be made through the appropriate chain of command to DAATM. DAATM, in turn, will co-ordinate such requests with the MAA to ensure all relevant military requirements have been addressed prior to submission to the CAA.
7. **UK Air Surveillance and Control Service (ASACS) Units.**
 - a. **Air Defence Priority Flight (ADPF).** All current UK land, surface or air-based ASACS units, with the exception of ►Crowsnest,◄ are permitted by the CAA to provide an ATS to Aircraft with ADPF status in any part of UK airspace.
 - b. **ASACS Airspace Restrictions.** For operations other than those associated with ADPF status, the following airspace structures¹³ are not to be penetrated by UK ASACS units:
 - (1) The main UK south-north airway and upper air route complex, from the London / Paris FIR boundary to the northern boundary of the Scottish Terminal Control Area (TMA).
 - (2) All TMAs.
 - (3) The following Control Areas (CTA)s: Clacton, Cotswold, Daventry, Midlands, Portsmouth, Severn, Southern, Strangford and Worthing.
 - (4) All Control Zones (CTR / CTZ)s and CTAs associated with an Aerodrome.
 - (5) Temporary controlled airspace established for Royal Flights.
 - (6) All airways except for the purpose of crossing.
 - c. ASACS operations within the Hebrides Upper Transition Area are only to be carried out following prior notification / co-ordination with Prestwick ACC.
8. **Non-UK Military ASACS Units.**
 - a. ASACS units which are not UK military units will not be considered for ARU status by the CAA and may only provide ATS within airspace segregated for the activity.
 - b. Non-UK military ASACS units may provide tactical information¹⁴ within Class G airspace during exercises that are subject to prior notification via an Airspace Coordination Notice (ACN). They are not, under any circumstances, to offer or imply any form of ATS, even if requested to do so by aircrew in receipt of tactical information. Comment on the nature of control provided will be included in the ACN, which will also specify for inclusion in Special Instructions (SPINS) as a mechanism to meet the requirement to brief aircrew.

¹² DefStan 00-972 as implemented by ATM 3000 Series - RA 3120 to 3140 for Surveillance Equipment Safety Cases and Release To Service requirements.

¹³ As published in the UK Aeronautical Information Publication.

¹⁴ NATO Tactical Control Rules iaw Allied Administrative Publication (AAP)-49 Air Control Terms and Definitions and STANAG 1183, NATO Qualifications For Fixed Wing Above Water Warfare (AWW) / Air Defence (AD) AS Controllers (ATP-81), accessed via UK Defence Standardization listings, [StanMIS](#).

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