

**Supporting Documents for Statement of compliance
under
Regulation (EC) No. 2018/1139 of the European Parliament and of the Council
and delegated Commission Regulation (EC) No. 2023/1768**

(a) Purpose of use the ATM/ANS equipment:

(b) Manufacturer:

(c) Scope of the change of the ATM/ANS equipment:

(d) Reference to the applicable EASA detailed specification

Annex No. 2 - Relevant documents and qualification test report

The table shall be completed by the design and manufacturing organization responsible for designing and producing the system and its components.

(e) Description of the equipment, operational conditions, deviations and limitations

a) Technical and users manuals:

b) Instruction manual:

c) Service manual:

d) Description of the equipment deviations and constraints:

(f) Note

Annex 1 of Technical Specification – Supporting Documents for Statement of compliance

Results of conformity assessment for ATM/ANS equipment

Requirement	DS Reference	AMC Reference	Requirement description	Document Reference	Compliance Verification Reference	Previously Issued Documents
PART1 - General						
General	DS GE.GEN.001	Scope	These Detailed Specifications (DSs) and the related acceptable means of compliance (AMC) and guidance material (GM) are applicable to the design, or changes to the design, of ATM/ANS equipment for which certification is to be required in accordance with Regulation (EU) 2023/1768 or a declaration is to be made by an approved organisation involved in the design or production of ATM/ANS equipment (DPOs) in accordance with Regulation (EU) 2023/1769.			
General	DS GE.GEN.002	Information security	The ATM/ANS equipment provides information security appropriate for the intended use in the intended environment.			

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Requirement	DS Reference	AMC Reference	Requirement description	Document Reference	Compliance Verification Reference	Previously Issued Documents
PART1 - General						
General	DS GE.GEN.002 Information security	AMC1 GE.GEN.002 Information security	Information security should include one of the following measures as a minimum: (a) System isolation System interfaces may be isolated from critical servers, flows and specific security zones by: (1) data isolation (e.g. firewalls) and dependency on network layout (physical layer); and/or (2) physical isolation (server rooms, disaster recovery requirements).			
General	DS GE.GEN.002 Information security	AMC1 GE.GEN.002 Information security	Information security should include one of the following measures as a minimum: (b) Authentication (1) Authentication and encryption mechanisms to protect, control and filter exchanges (2) Specific logon settings, particularly in the case of system restart			
General	DS GE.GEN.002 Information security	AMC1 GE.GEN.002 Information security	Information security should include one of the following measures as a minimum: (c) System configuration record and security register			

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PART1 - General						
			(1) Systems support the recording of security events. (2) System should have the ability to export and to fully restore the system configurations.			
General	DS GE.GEN.002 Information security	AMC1 GE.GEN.002 Information security	Information security should include one of the following measures as a minimum: (d) Interfaces (1) Systems and interfaces should be designed to reduce the overall attack surface (audits of access privileges, disabling certain network protocols, non-necessary network ports, network services, etc.). (2) Usage of data integrity checks (3) Security threats on internal and external interfaces should be addressed. <i>Note: The term 'interfaces' may refer to physical or network interfaces, and to external or internal equipment interfaces.</i>			

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Requirement	DS Reference	AMC Reference	Requirement description	Document Reference	Compliance Verification Reference	Previously Issued Documents
PART1 – General						
General	DS GE.GEN.003	Software	(a) The software is to be suitable for the intended use. (b) A software portability specification or equivalent is provided.			
General	DS GE.GEN.003	AMC1 GE.GEN.003 Software	(a) Software should be developed with an assurance level that is commensurate with the severity of the effect of failure. (b) The software portability specification or equivalent should provide all the features required by the target hardware to ensure that software can run correctly.			
General	DS GE.GEN.004	Hardware	The hardware is to be suitable for the intended use.			
General	DS GE.GEN.004	AMC1 GE.GEN.004 Hardware	Evidence regarding the ability of the hardware to behave as intended and to support the intended use (commensurate with the associated assessment of failure conditions should be provided. The hardware architecture design should be considered in the assessment.			

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PART1 - General						
General	DS GE.GEN.005	Human-machine interface	(a) Annunciations As required for the intended use, a means is provided for: (1) Aural and/or visual indications upon receipt of a message intended for display to or use by the operator(s) (2) Indication to the operator(s) of ATM/ANS equipment failure, including interface failures (degraded mode or loss of function) (b) Controls As required for the intended use, a means is provided for: (1) Means for the operator(s) to activate or deactivate ATM/ANS equipment (2) Means for the operator(s) to view information, and to create, store, retrieve, edit, delete, and send messages.			
General	DS GE.GEN.006	Environmental conditions	ATM/ANS equipment is to be designed so that it performs as intended under the operating and environmental conditions expected in service.			

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PART1 - General						
General	DS GE.GEN.006	AMC1 DS GE.GEN.006 Environmental conditions	The ATM/ANS equipment should comply where applicable with: (a) ETSI EN 300 019-1-3 (V2.4.1) (2014-04) ‘Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-3: Classification of environmental conditions; Stationary use at weather protected locations’; (b) ETSI EN 300 019-1-4 (V2.2.1) (2014-04) Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-4: Classification of environmental conditions; Stationary use at non-weather protected locations’; (c) ETSI EN 301 489-1 (V2.2.3) (2019-11) ‘Electromagnetic Compatibility (EMC) standard for radio equipment and services - Part 1: Common technical requirements’; (d) ETSI EN 301 489-22 (V2.1.1) (2020-10) ‘Electromagnetic compatibility (EMC) standard for radio equipment and services - Part 22: Specific conditions for ground-based VHF aeronautical mobile for fixed radio equipment’;			

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Requirement	DS Reference	AMC Reference	Requirement description	Document Reference	Compliance Verification Reference	Previously Issued Documents
PART1 - General						
General	DS GE.GEN.007	Assessment of failure conditions	The ATM/ANS equipment is to be designed such that the probability of a failure condition is low when the severity of the effect of the failure is high, with respect to its intended use.			
General	DS GE.GEN.007	AMC1 GE.GEN.007 Safety (support) assessment	(a) A failure mode effects analysis (FMEA) should be performed to evaluate the failure conditions. (b) The FMEA should be performed at different levels (e.g. system, subsystem, constituent, etc.), by postulating the ways the chosen level's specific implementation may fail. The effect of each failure condition should be determined at the given level and the next higher level, if applicable, for each operating mode. Specific operating scenarios should be considered when performing such analysis. It should account for all safety-/service-related effects. In cases where it is not possible to identify the specific nature of a failure mode, the worst credible effect should be assumed. (c) The following major FMEA steps should be taken: — preparation; — analysis; — documentation.			

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Requirement	DS Reference	AMC Reference	Requirement description	Document Reference	Compliance Verification Reference	Previously Issued Documents
PART1 - General						
General	DS GE.GEN.008	ATM/ANS equipment documentation	(a) Instructions for the continued operation of the ATM/ANS equipment as specified in this DS GE and any information related to the interfaces with other ATM/ANS equipment are to be provided. (b) The manuals, or similar documentation, provide: 1. the list of capabilities; 2. operation procedures to be applied; 3. limitations; and 4. preventive and corrective maintenance procedures. (c) If there are deviations from these specifications which result in limitation(s), they are to be clearly stated in the manuals or similar documentation.			

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PART2 - Voice communications						
Voice communications	DS GE.CER.AGVC.201	Scope	The Section provides the functional and performance standards for air-to-ground voice communication radios operating in the band 117,975-137 MHz.			
Voice communications	DS GE.CER.AGVC.210	Air-to-ground voice communications	Air-to-ground voice communication radios support the connections to the voice communication system.			
Voice communications	DS GE.CER.AGVC.210	AMC1 GE.CER.AGVC.210 Air-to-ground voice communications	The air-to-ground voice communication equipment should comply with: (a) ETSI EN 300 676-1 (V1.5.2) (2011-03) Ground-based VHF hand-held, mobile and fixed radio transmitters, receivers and transceivers for the VHF aeronautical mobile service using amplitude modulation; Part 1: Technical characteristics and methods of measurement; (b) EUROCAE ED-136 — Voice over Internet Protocol (VoIP) Air Traffic Management (ATM) System Operational and Technical Requirements, Section 2.4, requirement 25 [REQ RADIO FUNCTIONAL] Climax operation to be implemented for the off-set carrier or Climax system configuration to support the multi-carrier operation in the ground to air direction.			

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PART2 - Voice communications						
Voice communications	DS GE.CER.AGVC.220	Air-to-ground voice communications performance	The performance of the air-to-ground voice communication equipment supports the intended use.			
Voice communications	DS GE.CER.AGVC.220	AMC1 GE.CER.AGVC.220 Air-to-ground voice communications performance	(a) Voice communications AMC1 GE.CER.AGVC.220 Air-to-ground voice communications performance (1) ICAO Annex 10, Volume III, Part 2 (Second Edition – July 2007 incorporating Amendment No 91), Chapter 2, ‘Aeronautical Mobile Service’, Section 2.2.1.2 ‘Power’. (2) ETSI EN 300 676-2 (V2.1.1) (2015-12) Ground-based VHF hand-held, mobile and fixed radio transmitters, receivers and transceivers for the VHF aeronautical mobile service using amplitude modulation; Part 2: Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU. (b) Additional performance conditions applicable to the intended use of air-to-ground voice communication radios may be defined as required. Such potential additional performance conditions may be derived from activities related to DS GE.GEN.002, DS GE.GEN.003, GE.GEN.004 and DS GE.GEN.007, for which the possible effects of the severity of the effect of failure on safety should be assessed.			

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PART2 - Voice communications						
Voice communications	DS GE.CER.AGVC.220	AMC2 GE.CER.AGVC.220 Voice delay	The voice delay for ground transmission components should comply with EUROCAE ED-136 — Voice over Internet Protocol (VoIP) Air Traffic Management (ATM) System Operational and Technical Requirements, Section 2.3, requirement 6 [REQ RADIO PERFORMANCE].			
Voice communications	DS GE.CER.AGVC.220	AMC3 GE.CER.AGVC.220 Climax performance	In multi-carrier/climax operation the difference between the longest and the shortest voice latencies for ground transmission components should comply with: (a) EUROCAE ED-136 — Voice over Internet Protocol (VoIP) Air Traffic Management (ATM) System Operational and Technical Requirements, Section 2.3, requirement 7 [REQ RADIO PERFORMANCE]; (b) EUROCAE ED 137/1C — Interoperability Standards For VOIP ATM Components (Volume 1: Radio), Section 5.6.3 – Climax-Time-Delay.			
Voice communications	DS GE.CER.AGVC.225	Voice coding	The air-to-ground voice communications equipment supports voice codec.			
Voice communications	DS GE.CER.AGVC.225	AMC1 GE.CER.AGVC.225 Voice coding	The air-to-ground voice communications equipment should comply with EUROCAE ED-137/1C — Interoperability Standards For VOIP ATM Components (Volume 1: Radio), Section 4.2.3, requirement 5 – [AUDIO] Voice coding requirement.			
Voice communications	DS GE.CER.AGVC.230	RTP Class of service (CoS)	The air-to-ground voice communications equipment supports differentiated services (DiffServ).			

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PART2 - Voice communications						
Voice communications	DS GE.CER.AGVC.230	AMC1 GE.CER.AGVC.230 Class of service (CoS)	Differentiated services should comply with ED 137/1C Interoperability Standards For VOIP ATM Components (Volume 1: Radio), Section 5.2.3, requirement 7 – [RTP] RTP Class of Service (CoS).			
Voice communications	DS GE.CER.AGVC.240	Air-to-ground voice communications interfaces	The air-to-ground voice communications equipment provides interfaces to support the functions and levels of performance as required in DS GE.CER.AGVC.210, DS GE.CER.AGVC.220, DS GE.CER.AGVC.225, and DS GE.CER.AGVC.230.			
Voice communications	DS GE.CER.AGVC.240	AMC1 GE.CER.AGVC.240 Air-to-ground voice communications interfaces	(a) Air-to-ground voice communications equipment should support the following interfaces: (1) analogue 4W and 4WE&M; (2) voice over IP (VoIP); (b) Air-to-ground voice communications equipment should comply with: (1) ICAO Annex 10, Volume III, Part 2 (Second Edition – July 2007 incorporating Amendment No 91), Chapter 2, ‘Aeronautical Mobile Service’, Section 2.1; (2) ICAO Annex 10, Volume III, Part 2 (Second Edition – July 2007 incorporating Amendment No 91), Chapter 2, ‘Aeronautical Mobile Service’, Sections 2.2.1.1, 2.2.1.3 and 2.2.1.4; (3) EUROCAE ED-136, Section 2.2.1; (4) EUROCAE ED-137.1/C, Sections 2.3, 3.1, 3.3, 3.4, 3.8.4, and 5.5.4.			