Conformity assessment framework
for ATM/ANS systems and ATM/ANS constituents,
from the application to the approval

Cologne, 04/07/2023
Welcome & Opening

Strategy & Safety Management Director

An Agency of the European Union
SETTING THE SCENE: OVERVIEW OF THE NEW CONFORMITY ASSESSMENT FRAMEWORK

Overview
EU ATM/ANS RULES

ATCO Licensing

Provision of ATM/ANS

Standardised European Rules of the Air (SERA)

Airspace Usage Requirements (AUR)

ATM Ground Equipment
Streamlining the attestation of ATM/ANS equipment
• Single demonstration of compliance
• Manufacturing industry bringing fit-for-purpose solutions to the EU market
• Better use of resources by organisations and authorities
• Compliance throughout the full equipment lifecycle
Regulatory framework on conformity assessment

Subtask 1
Framework

Subtask 2
IOP IR

Subtask 3
Specs, AMC/GM

NPA 2022-09

NPA 2022-107

Opinion 01-2023

Positive vote
EASA Committee
28/06/2023

NPA 2023-05

Jun 2022
Aug 2022
Oct 2022
Dec 2022
Feb 2023
Apr 2023
Jun 2023
Aug 2023

12 Sept. 2023+
Regulatory framework on conformity assessment

Annex VIII Essential requirements for ATM/ANS systems and ATM/ANS constituents

Chapter III, Section V ATM/ANS

Draft IA on AUR

Draft IA amending EU IR 923/2012 (SERA IR)

Draft IA amending EU IR 2017/373 (provision of ATM/ANS)

Detailed Specifications for ATM/ANS equipment subject to Conformity assessment

AMC & GM
CERTIFICATION/DECLARATION OF ATM/ANS EQUIPMENT

EU rules
Detailed specifications and compliance demonstration
AMC/GM
Q&A incl. Slido
2. Definitions

(1) ‘ATM/ANS equipment’ means ATM/ANS constituents as defined by Article 3(6) of Regulation (EU) 2018/1139 and ATM/ANS systems as defined by Article 3(7) of that Regulation, excluding airborne constituents, which are subject to Commission Regulation (EU) No 748/2012;

(2) ‘ATM/ANS equipment directive’ means a document issued by the Agency which mandates actions to be performed by ATM/ANS providers on ATM/ANS equipment to address an unsafe and/or insecure condition that has been identified and restore the performance and interoperability of that ATM/ANS equipment when evidence shows that the safety, security, performance or interoperability of that particular equipment may otherwise be compromised;

(3) ‘European air traffic management network’ (EATMN) means the collection of systems, listed in point 3.1 of Annex VIII to Regulation (EU) 2018/1139, enabling air navigation services in the Union to be provided, including the interfaces at boundaries with third countries;

(4) ‘functional system’ means a combination of procedures, human resources and equipment, including hardware and software, organised to perform a function within the context of ATM/ANS and other ATM network functions.
3. Competent authority

4. Certification of ATM/ANS equipment

5. Declaration of design compliance of ATM/ANS equipment

6. Statement of compliance
### GM | Scope of ATM/ANS equipment subject to conf. assessment

<table>
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<tr>
<th>Article 4 Certification of ATM/ANS equipment</th>
<th>Article 5 Declaration of design compliance of the ATM/ANS equipment</th>
<th>Article 6 Statement of compliance</th>
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<tr>
<td><strong>4. Certification of ATM/ANS equipment</strong></td>
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<td><strong>5. Declaration of design compliance of ATM/ANS equipment</strong></td>
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<td><strong>6. Statement of compliance</strong></td>
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<tr>
<td>The equipment shall include in particular equipment required to support the following functions and services:</td>
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<tr>
<td>1. airspace management (ASM)</td>
<td>X</td>
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<td>2. air traffic flow management (ATFM)</td>
<td>X</td>
<td></td>
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<td>3. air traffic services (ATS), in particular flight data processing systems, surveillance data processing systems and human-machine interface systems;</td>
<td></td>
<td></td>
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<td>3a. controller-pilot communications</td>
<td>X</td>
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<tr>
<td>3b. air traffic control (ATC) services when enabling the separation of aircraft or the prevention of collisions</td>
<td>X</td>
<td></td>
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<tr>
<td>3c. other ATS equipment supporting air traffic control—(ATC)—services—when—enabling—the separation of aircraft or the prevention of collisions</td>
<td>X</td>
<td></td>
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<tr>
<td>4. communications (COM) including ground-to-ground/space, air-to-ground and air-to-air/space communications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4a. ground-to-ground communications</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4b. air-to-ground communications (i.e. controller–pilot communication)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5. navigation (NAV)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6. surveillance (SUR)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7. aeronautical Information services (AIS)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>8. meteorological services (MET)</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
4. Certification of ATM/ANS equipment

GM2 Article 4 Certification of ATM/ANS equipment; Article 5 Declaration of design compliance of the ATM/ANS equipment; Article 6 Statement of compliance

For ATM/ANS equipment subject to certification in accordance with Article 4 of this Regulation, the approved DPO shall, following the acceptance of the certification programme by EASA, demonstrate compliance with the ATM/ANS equipment certification basis before a certificate against the design is issued. The DPO produces ATM/ANS equipment against the design data and issues an EASA release form to be provided to the ATM/ANS provider. Figure 1 shows the interactions between the regulated parties when the ATM/ANS equipment is subject to certification.
5. Declaration of design compliance of ATM/ANS equipment

GM2 Article 4 Certification of ATM/ANS equipment; Article 5 Declaration of design compliance of the ATM/ANS equipment; Article 6 Statement of compliance

For ATM/ANS equipment subject to declaration of design compliance in accordance with Article 5 of this Regulation, the DPO is privileged to design and produce ATM/ANS equipment in accordance with the terms of the EASA approval. The test and verification activities leading to the issue of declaration of design compliance will be subject to continuous oversight by EASA. Figure 2 shows the interactions between the regulated parties when the ATM/ANS equipment is subject to declaration of design compliance.
GM2 Article 4 Certification of ATM/ANS equipment; Article 5 Declaration of design compliance of the ATM/ANS equipment; Article 6 Statement of compliance

To issue a SoC for ATM/ANS equipment, the ATM/ANS provider performs the necessary verification and test activities, as required. The competent authority oversees the SoC as part of the continuous oversight and, as necessary, applies enforcement measures to the ATM/ANS provider(s). Figure 3 shows the interactions between the regulated parties when the ATM/ANS equipment is subject to a SoC.
A DPO can be privileged in accordance with the terms of the EASA approval to issue a SoC on behalf of an ATM/ANS provider. If during the continuous oversight of the ATM/ANS provider by the competent authority any non-compliances of the SoC are identified, that competent authority informs EASA whether any enforcement measures are required. Figure 4 shows the interactions between the regulated parties when the ATM/ANS equipment is subject to a SoC.
6. Statement of compliance

AMC1 Article 6 Statement of compliance
REISSUE

AMC1 Article 6(1) Statement of compliance
ISSUE

AMC2 Article 6(1) Statement of compliance
ACTIVITIES

AMC3 Article 6(1) Statement of compliance
RECORD-KEEPING

AMC4 Article 6(1) Statement of compliance
ISSUE BY APPROVED ORGANISATIONS INVOLVED IN THE DESIGN AND/OR PRODUCTION OF ATM/ANS EQUIPMENT (DPOs)

GM1 Article 6(1) Statement of compliance
RESPONSIBILITY WHEN PURCHASING ATM/ANS EQUIPMENT SUBJECT TO SoC

GM2 Article 6(1) Statement of compliance
DOCUMENTS

GM1 Article 6 Statement of compliance

ISSUE | STANDARD FORM

SoC No [internal numbering]
issue No [version of this SoC]

1. Name and address of ATM/ANS provider

2. Description, identification and scope of the ATM/ANS equipment(*)

Note: It should include e.g. type, SW/HW version number and master drawing record, as applicable.

3. Specification reference, i.e. EASA detailed specification No.

4. Reference to the qualification test report

5. Service and instruction manual reference number

6. SoC with the applicable EASA detailed specification, as far as applicable for the intended use, and any deviations therefrom.

7. The declaration in this document is made under the authority of ........................................ (Name of ATM/ANS provider or approved DPO).

(AMT/ANS provider’s or approved DPO’s name) cannot accept responsibility for equipment used outside the limiting conditions stated above without their agreement.

Date: .... Signed .............. (AMT/ANS provider’s or approved DPO’s authorised representative)

Question
EASA requests the stakeholders’ views as to whether the subject GM should be retained as a separate dedicated GM paragraph (as in the current proposal) or it should be integrated into AMC1 Article 6(1).

EASA looks forward to stakeholders’ feedback.
Article 7 Transitional provisions

Sep/2023 New rules enter into force

Legacy equipment provisionally compliant

Sep/2028 Certification/declaration by approved DPO will apply

Legacy equipment assessed & compliance demonstrated
Modified/new ATM/ANS GE provisionally compliant

Certification
Declaration
SoC

DoV
Statement of Compliance by ATM/ANS providers
(for modified and new ATM/ANS equipment)

Evaluation by EASA of legacy ATM/ANS GE

Evaluation by EASA of legacy ATM/ANS GE issued with SoC 2023-2028, but subject to certification/declaration

Sep/2031 Certification/Declaration/SoC fully applicable

Modified/new ATM/ANS GE assessed & compliance confirmed

conf. assessment framework fully implemented
**Article 7** Transitional provisions

**AMC1 Article 7(2) Transitional provisions**

**RELEVANT INFORMATION**

For the purpose of the evaluation referred to in Article 7(2), the competent authorities responsible for the certification and oversight of the ATM/ANS providers referred to in Article 4(1) of Implementing Regulation (EU) 2017/373 should provide the following information to EASA upon request:

**GM1 Article 7(2) Transitional provisions**

**SUBMISSION OF INFORMATION**

The relevant information may be provided in a form of the DoV for the ATM/ANS system(s), including its technical file, issued by the ATM/ANS provider under the oversight of the competent authority.

**GM2 Article 7(2) Transitional provisions**

**RELEVANT INFORMATION**

For the purpose of the evaluation referred to in Article 7(2), the competent authorities responsible for the certification and oversight of the ATM/ANS providers referred to in Article 4(1) of Implementing Regulation (EU) 2017/373 may provide EASA with any certificate, approval, licence, authorisation, attestation, technical file or other document issued as a result of a process attesting compliance of the ATM/ANS equipment with the applicable essential requirements laid down in Regulation (EC) No 552/2004.
Annex I
REQUIREMENTS FOR THE AGENCY (Part-ATM/ANS.EQMT.AR.)

SUBPART A — GENERAL REQUIREMENTS (ATM/ANS.EQMT.AR.A)

ATM/ANS.EQMT.AR.A.001 Scope
ATM/ANS.AR.A.020 Allocation of tasks to qualified entities
ATM/ANS.AR.A.030 ATM/ANS equipment directive
ATM/ANS.AR.A.035 Detailed Specs for ATM/ANS equipment

SUBPART B — CERTIFICATION, OVERSIGHT, ANS ENFORCEMENT (ATM/ANS.EQMT.AR.B)

ATM/ANS.AR.B.001 ATM/ANS equipment certification basis
ATM/ANS.AR.B.005 Special conditions
ATM/ANS.AR.B.010 LoI
ATM/ANS.AR.B.015 Issue of ATM/ANS equipment certificate
ATM/ANS.AR.B.020 Initial oversight investigation of declaration of design compliance of ATM/ANS equipment
ATM/ANS.AR.B.025 Registration of a declaration of design compliance of ATM/ANS equipment
ATM/ANS.AR.B.030 Changes of declarations
Annex II
ATM/ANS EQUIPMENT CERTIFICATES
(Part-ATM/ANS.EQMT.CERT)

ATM/ANS.EQMT.CERT.001 Scope

ATM/ANS.EQMT.CERT.005 Eligibility

ATM/ANS.EQMT.CERT.010 Demonstration of capability

ATM/ANS.EQMT.CERT.015 Application for ATM/ANS equipment certificate

ATM/ANS.EQMT.CERT.020 Changes that require the issue of a new ATM/ANS equipment certificate

ATM/ANS.EQMT.CERT.025 Demonstration of compliance with the ATM/ANS equipment certification basis

ATM/ANS.EQMT.CERT.030 Means of compliance

ATM/ANS.EQMT.CERT.035 ATM/ANS equipment design

ATM/ANS.EQMT.CERT.040 Inspection and testing

ATM/ANS.EQMT.CERT.045 Record-keeping

ATM/ANS.EQMT.CERT.050 Manuals
Annex III
DECLARATION OF DESIGN COMPLIANCE OF ATM/ANS EQUIPMENT
(Part-ATM/ANS.EQMT.DEC)

ATM/ANS.EQMT.DEC.001 Scope

ATM/ANS.EQMT.DEC.005 Eligibility and demonstration of compliance

ATM/ANS.EQMT.CERT.010 Declaration of design compliance of ATM/ANS equipment

ATM/ANS.EQMT.DEC.015 Means of compliance

ATM/ANS.EQMT.DEC.020 Changes to the declaration of ATM/ANS equipment design

ATM/ANS.EQMT.DEC. record-keeping

ATM/ANS.EQMT.DEC.030 Manuals

ATM/ANS.EQMT.DEC.035 Maintenance instructions

ATM/ANS.EQMT.DEC.ATM/ANS.040 ATM/ANS equipment directive

ATM/ANS.EQMT.DEC.ATM/ANS.045 Inspections performed by the Agency
NETWORKING
COFFEE BREAK

15min
Structure and format of the detailed specifications

- Detailed Specifications
- Certification Specification DS GE.CER.xxxx
- Declaration Specifications DS GE.DEC.xxxx
- Detailed Specifications and Acceptable Mean of Compliance and Guidance Material for ATM/AND Ground Equipment DC-GE
- AMC & GM
- Industry Standards (ESO, SDO etc.)
- Listing of Industry Standards
- • FUNCTIONS
- • PERFORMANCES
- • INTERFACES
- • Listing of Industry Standards
- Detailed Specifications And Guidance Material for ATM/ANS Systems subject to Statement of Compliance DS-SoC
1st set of Detailed Specifications – Certification/Declaration

**DS-GE**

- **Part 1**
  - General
  - DS GE.GEN

- **Part 2**
  - ATM/AN Equipment subject to certification
  - DS GE.CER
    - Subpart A
      - Air Traffic Services
      - DS GE.CER.ATS
    - Subpart B
      - Air-Ground COM
      - DS GE.CER.GGCOM

- **Part 3**
  - ATM/ANS Equipment Subject to declaration of design compliance
  - DS GE.DEC
    - Subpart A
      - Ground-Ground COM
      - DS GE.DEC.GGCOM
    - Subpart B
      - Navigation (NAV)
    - Subpart C
      - Surveillance (SUR)
      - DS GE.DEC.
1st set of Detailed Specifications – Certification

Part 2

Subpart A
Air Traffic Services
DS GE.CER.ATS

Section 1
General
DS GE.CER.ATS

Section 2
Flight Data processing
DS GE.CER.FDP

Section 3
Extended Arrival management
DS GE.CER.AMAN

Section 4
Departure manager
DS GE.CER.DMAN

Section 5
A-SMGCS
DS GE.CER.AMGSC

Section 6
Data link services
DS GE.CER.DLS

Section 7
Surveillance data processing
DS GE.CER.SURS
Subpart A
Air-ground COM

Section 1
Data Communications
DS GE.CER.AGDC

Section 2
Voice Communications
DS GE.CER.AGVC
1\textsuperscript{st} set of Detailed Specifications – Declaration

Part 3

Subpart A
Ground- Ground Communications

Section 1
General
DS GE.DEC.GGCOM

Section 2
AMHS
DS GE.DEC.AMHS

Section 3
SWIM
DS GE.DEC.SWIM

Section 4
FMTP
DS GE.DEC.FMTP

EASA
Part 3

Subpart C
Surveillance

Section 1
General
DS GE.DEC.GEN

Section 2
Mode S ground station
DS GE.DEC.MSS

Section 3
ADS-B
DS GE.DEC.ADSB

Section 4
Wide area multilateration
1st set of Detailed Specifications – Statement of Compliance
Certification/Declaration – General - Example

**DS GE.GEN.003 Software**
(See AMC1 GE.GEN.003, GM1 GE.GEN.003 and GM2 GE.GEN.003)

(a) The software is suitable for the intended purpose.

(b) A software portability specification or equivalent is provided.

**AMC1 GE.GEN.003 Software**

(a) Software should function as intended to support the intended purpose.

(b) Software should be developed with an assurance level that is commensurate with the severity of the effect of failure.

(c) The software portability specification or equivalent should provide the minimum features required by the target hardware to ensure that software can run correctly.

*Note 1: The development assurance level for software supporting ATM/ANS functions is derived from the assurance level to be defined for these ATM/ANS functions.*

*Note 2: Software development assurance should be understood to ensure that the probability of development errors causing or contributing to ATM/ANS failures is minimised with an appropriate level of rigour. In this respect, assurance applies also to the selection and installation of commercial off-the-shelf (COTS) software.*

**GM1 GE.GEN.003 Software**

Software includes different types of software such as COTS software, as well as previously and newly developed specific software. Firmware is considered as software.

**GM2 GE.GEN.003 Software**

(a) EUROCAE ED-153 - Guidelines for ANS Software Safety Assurance may be used to allocate software assurance level (SWAL) associated with the risk assessment as defined in DS GE.GEN.007.

(b) EUROCAE ED-109 - Software Integrity Assurance Considerations for CNS/ATM Systems may be used to allocate SWAL associated with the risk assessment as defined in DS GE.GEN.007.
Certification/Declaration - Structure

**APPLICABILITY**
• Score of the equipment subject certification/declaration

**FUNCTION**
• Contains the function requirements of the DS GE.CER or DS GE.DEC

**PERFORMANCE**
• Contains the performance requirements of the DS GE.CER or DS GE.DEC

**INTERFACE**
• Contains the interface requirements of the DS GE.CER or DS GE.DEC

Acceptable Means of Compliance - to comply with the stated requirement

Guidance material – for a better understanding
Certification/Declaration – Example
Section 6 – Data link applications

Section 6 — Data link services

APPLICABILITY

DS GE.CER.DLS.601 Applicability
This Section provides the functional and performance standards applicable to data link services equipment supporting ATS B2 and ATN B1.
Certification/Declaration – Example
Section 6 – Data link applications

**AMC1 GE.CER.DLS.610 DLS equipment**

DLS equipment should comply with:

(a) EUROCAE ED-228A - Safety and Performance Requirements Standard for Baseline 2 ATS Data Communications (Baseline 2 SPR Standard), Sections 3.1, 3.2, 3.3, 3.4, 3.9, 4, 5.1, 5.2, 6.1 and 6.2;

(b) EUROCAE ED-229A - Interoperability Requirements Standard for Baseline 2 ATS Data Communications (Baseline 2 Interop Standard), Sections 2, 3, 4, 5.1 and 5.3;

(c) EUROCAE ED-231A - Interoperability Requirements Standard for Baseline 2 ATS Data Communications and ATN Baseline 1 Accommodation (ATN Baseline 1 - Baseline 2 Interop Standard), Sections 4 and 5;


**GM1 GE.CER.DLS.610 DLS equipment**

The ATS B2 referred to in this Section supports the services ATC communications management (ACM), ATC clearances (ACL) and ATC microphone check (AMC) through the CPDLC application and the downlink of extended projected profile (EPP) through the ADS-C application.

Through the ATS B2 / ATN B1 backward compatibility, the ATN B1 referred to in this Section supports the data link services ACM, ACL and AMC.

The context management (CM) application and supporting datalink initiation and capability (DLC) service are prerequisites for the initiation of CPDLC and ADS-C applications and consequently are part of this Section.
Certification/Declaration – Example

Section 6 – Data link applications

**PERFORMANCE**

**DS GE.CER.DLS.620 DLS equipment performance**

(See AMC1 GE.CER.DLS.620)

The performance of DLS equipment supports the intended purpose.

**AMC1 GE.CER.DLS.620 DLS equipment performance**

(a) DLS equipment should comply with EUROCAE ED-228A - Safety and Performance Requirements Standard for Baseline 2 ATS Data Communications (Baseline 2 SPR Standard), Sections 5.3 CPDLC Safety and Performance Requirements, and 6.3 ADS-C Safety and Performance Requirements.

(b) Additional performance conditions applicable to the intended purpose of DLS 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, and DS GE.GEN.004, for which the possible effects of the severity of the effect of failure on safety should be assessed.
Certification/Declaration – Example
Section 6 – Data link applications

Interface

**DS GE.CER.DLS.630 DLS equipment interfaces**

(See AMC1 GE.CER.DLS.630)

(a) DLS equipment interfaces support the functions and levels of performance as required in DS GE.CER.DLS.610 and DS GE.CER.DLS.620.

(b) A clear and unambiguously means is provided to the air traffic controller to:

1. initiate and to terminate the data link services and ADS-C contracts;
2. know in real time the identifiers of the connected aircraft;
3. prepare and transmit uplink messages (UM);
4. inform when downlink messages (DM) are received;
5. inform that pending or open messages are waiting for a response;
6. display all messages (UM and DM), with minimal human action, in a format that is easy to comprehend and distinguishable from each other;
7. determine the status of the data link system.

(c) A means is provided to the air traffic controller to prohibit the deletion, confirmation, or clearance of a message until the entire message is displayed.

**AMC1 GE.CER.DLS.630 DLS equipment interfaces**

DLS equipment should comply with:

(a) Part 2, Subpart B, Section 1 'Data Communications' of this DS; and

(b) Part 3, Subpart A, Section 4 ‘FMTP’ of this DS.
TERMS OF APPROVAL FOR ORGANISATIONS INVOLVED IN THE DESIGN OR PRODUCTION OF ATM/ANS EQUIPMENT (DPO)

EU rules
AMC/GM
Q&A incl. Slido
Implementing Act on approval of ATM/ANS equipment manufacturers

1. Subject matter
2. Definitions
3. Competent authority requirements
4. Organisations involved in D&P
5. Amendments to EU IR 2023/203
6. Entry into force

ANNEX I
Requirements for the agency
(Part-DPO.AR)

ANNEX II
Requirements for organisations involved in the design or production of ATM/ANS equipment
(Part-DPO.OR)
ANNEX I REQUIREMENTS FOR THE AGENCY (Part-DPO.AR)

- Annex I (Part-DPO.AR)
  - SUBPART A — GEN (DPO.AR.A)
  - SUBPART B — MANAGEMENT (DPO.AR.B)
  - SUBPART C — CERTIFICATION, OVERSIGHT, AND ENFORCEMENT (DPO.AR.C)
ANNEX I REQUIREMENTS FOR THE AGENCY (Part-DPO.AR) | Subpart C

ANNEX II | SUBPART C — CERTIFICATION, OVERSIGHT, AND ENFORCEMENT (DPO.AR.C)

- Appendix 1
  SPECIFICATIONS OF THE APPROVAL OF AN ORGANISATION INVOLVED IN THE DESIGN OR PRODUCTION OF ATM/ANS EQUIPMENT

- DPO.AR.C.001 Issue of approvals to organisations involved in the design or production of ATM/ANS equipment
- DPO.AR.C.005 Oversight programme
- DPO.AR.C.010 Changes to the information security management system
- DPO.AR.C.015 Findings, corrective actions, and enforcement measures
ANNEX II REQUIREMENTS FOR ORGANISATIONS INVOLVED IN THE DESIGN OR PRODUCTION OF ATM/ANS EQUIPMENT (Part-DPO.OR)
ANNEX II | SUBPART A — GENERAL REQUIREMENTS (DPO.OR.A) ➔ AMC/GM

DPO.OR.A.001 Scope
DPO.OR.A.005 Eligibility
DPO.OR.A.010 Application for a design or production organisation approval and demonstration of capability
DPO.OR.A.015 Organisation exposition
DPO.OR.A.025 Duration, continued validity and privileges of an organisation approval
DPO.OR.A.030 Facilitation and cooperation
DPO.OR.A.035 Findings and corrective actions
DPO.OR.A.040 Immediate reaction to a safety, security and interoperability problem
DPO.OR.A.045 Failures, malfunctions, and defects
DPO.OR.A.050 Approval transferability
Example(s):

AMC1 DPO.OR.A.010(a) Application for a design and/or production organisation approval and demonstration of capability

FORM

The dedicated EASA Form should be obtained from the EASA website and completed and signed by the accountable manager of the design and/or production organisation (DPO). The completed form should be submitted to EASA, accompanied by a copy of the organisation exposition and the company's registration.

AMC1 DPO.OR.A.045(a)(1) Failures, malfunctions and defects .......................................................... 46
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GM1 DPO.OR.A.045(b);(c) Failures, malfunctions and defects ......................................................... 47
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- DPO.OR.B.005 Change management
- DPO.OR.B.010 Facility requirements
- DPO.OR.B.015 Contracted activities
- DPO.OR.B.020 Personnel requirements
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Example(s):

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Example(s): major vs. minor changes

<table>
<thead>
<tr>
<th></th>
<th>Minor change to ‘certified’ functionality or any change to client functionality</th>
<th>Major change to ‘certified’ functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notification of a change to EASA prior to implementation</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Authorisation to proceed</td>
<td>No — DPO privilege</td>
<td>Yes</td>
</tr>
<tr>
<td>Notification of a change to EASA after completion</td>
<td>Yes, in accordance with the approved change management procedure(*)</td>
<td>Yes</td>
</tr>
<tr>
<td>Reissue Certificate/Declaration</td>
<td>N/A</td>
<td>EASA</td>
</tr>
</tbody>
</table>

(*) The frequency of the notification will be defined in the change management procedure.
ANNEX II | REQUIREMENTS FOR DPO
(Part-DPO.OR) | Subpart C → AMC/GM

SUBPART C — TECHNICAL REQUIREMENTS (DPO.OR.C)

- DPO.OR.C.001 Organisations involved in the design or production of ATM/ANS equipment
- DPO.OR.C.005 Coordination
- DPO.OR.C.010 ATM/ANS equipment directives
Example(s): PRODUCTION ACTIVITIES
EASA Form XXX

1. DPO reference

2. Statement Ref No:

3. ATM/ANS equipment Identification No

4. ATM/ANS EQUIPMENT NAME

5. Certificate/Declaration Refs:

6. Design changes, if any

7. ATM/ANS equipment directives

8. (unintended) Deviations

9. Exemptions, waivers or derogations

10. Remarks

11. Statement of Conformity

It is hereby certified that this ATM/ANS equipment conforms fully to the certificated design/the declaration of design compliance and to the items above in boxes 7, 8, 9 and 10.

12. Signed

13. Name

14. Date (d/m/y)

15. DPO Approval Reference

An EASA release form should be issued for ATM/ANS equipment produced by the DPO as per the organisation’s scope of work relevant to the terms of approval.

Each organisation involved in the production of ATM/ANS equipment subject to conformity assessment under this Regulation should issue a statement of conformity, an EASA release form XXX (see Appendix XX). This statement should be signed by an authorised person involved in the production of the ATM/ANS equipment.

An EASA release form should contain a statement that:

1. the ATM/ANS equipment conforms to the approved design data of the ATM/ANS equipment subject to certification or declaration in accordance with Article 4 or Article 5 of Regulation (EU) 2023/XXX respectively;

2. the ATM/ANS equipment has been manufactured in compliance with Regulation (EU) 2023/xxx [DPOs approval].

The term ‘produced’ should be considered as ‘released’ for ATM/ANS software equipment.
ATM/ANS PROVIDERS’ RESPONSIBILITIES AND THEIR OVERSIGHT IN THE NEW CONFORMITY ASSESSMENT FRAMEWORK

Speakers:
Giuseppe Graniero (ENAV) & Michael Rued (BAF)

EU rules
AMC/GM
Q&A incl. Slido

An Agency of the European Union
Conformity Assessment for ATM/ANS System & Constituents
from the application to the approval

Cologne – 04/07/2023
Main Milestones

- The new conf. assessment framework applicable to ATM/ANS providers.
  - COMMISSION DELEGATED REGULATION (EU) .../... of XXX laying down detailed rules for the certification and declaration of ATM/ANS systems and ATM/ANS constituents
  - COMMISSION IMPLEMENTING REGULATION (EU) .../... of XXX amending Implementing Regulation (EU) 2017/373 as regards ATM/ANS systems and ATM/ANS constituents
  - COMMISSION IMPLEMENTING REGULATION (EU) .../... of XXX amending Implementing Regulation (EU) No 923/2012 (SERA) as regards the operating rules related to the use of ATM/ANS systems and constituents in the SES airspace

- NPA 2023-05 (AMC/GM and DSs supporting the new regulatory framework)
  - AMC/GM associated to SoC (Art. 6 of the Delegated act)
  - DSs and AMC/GM for ATM/ANS (ground) equipment – DS.GE.CERT | DS.GE.DEC | DS SoC
  - AMC/GM to EU IR 2017/373
**Some definitions**

`functional system` means a combination of procedures, human resources and equipment, including hardware and software, organised to perform a function within the context of ATM/ANS and other ATM network functions [*Annex I, point 56 to EU IR 2017/373*]

vs.

`ATM/ANS system` means the aggregation of airborne and ground-based constituents, as well as space-based equipment, that provides support for air navigation services for all phases of flight [*Art. 3(7) of Reg. (EU) 2018/1139 (EASA BR)*]
Some definitions (2)

‘ATM/ANS system’ means the aggregation of airborne and ground-based constituents, as well as space-based equipment, that provides support for air navigation services for all phases of flight [Art. 3(7) of Reg. (EU) 2018/1139 (EASA BR)]

‘ATM/ANS constituent’ means tangible objects such as hardware and intangible objects such as software upon which the interoperability of the EATMN depends [Art. 3(6) of Reg. (EU) 2018/1139 (EASA BR)]

‘ATM/ANS equipment’ means ATM/ANS constituents as defined by Article 3(6) of Regulation (EU) 2018/1139 and ATM/ANS systems as defined by Article 3(7) of that Regulation, excluding airborne constituents, which are subject to Commission Regulation (EU) No 748/2012 [Art. 2(1) of DA]
(key) Re-arrangements

- Discharging the responsibilities in terms of equipment compliance with ERs in Annex VIII to the BR enabled by the adoption of DS (=detailed specifications) issued by EASA
  - Sharing of responsibilities among ATM/ANS providers and DPOs

- Flexible approach
  - If already in service → DoV still valid but subject to EASA evaluation
  - Put in service from e.i.f. until 12 Sep 2028 → SoC from ATM/ANS provider
  - Put in service after the TP → GE to be attested according to the new framework

- Overall responsibilities of the ATM/ANS providers in terms of change managements and safety (support) assessment remains unchanged (= under the scope of EU IR 2017/373)
  - Installation, operational integration and recurrent maintenance according to ATM/ANS provider’s change Management procedures; i.e. remains under ATM/ANS provider’s responsibility
  - The AMC/GMs from NPA 2023-05 address how the new type of evidences for compliance demonstration should be used by ATM/ANS provider when consolidating the safety evidence
Novelties

- Management of Legacy GE
  - Conformity assessment on the basis of based on Reg. (EC) No 552/2004 continue to be valid, unless a (major) change is introduced
  - Routine maintenance will be still possible until the end of the GE lifecycle

- ATM/ANS Equipment change management
  - Procedures allowing categorization of changes (minor/MAJOR)
  - Only Major changes will require reissuance of attestations

- Initial attestation process
  - SoC will be the main attestation process until September 2028
  - SoC subject to CA’s oversight and not to approval
SoC of ATM/ANS GE – Scenario 1

EASA publish the applicable DSs [ATM/ANS.EQMT.AR.A.035]

Supplier design the product

Supplier produce the product

Cert. ATM/ANS provider test the product [AMC to ATM/ANS.OR.A.045 (g) (3)]

Cert. ATM/ANS provider issues SoC [Art.6 & ATM/ANS.OR.A.045 (g) (3)]

Management of functional change [ATM/ANS.OR.A.045]
Some enablers for the SoC from NPA 2023-05

- Standard template form included as GM

- Requires ATM/ANS provider’s compliance with the applicable req. before SoC issuance

- Supplier (even if not approved) should support ANSP to:
  - Ensure the GE is designed according to the EASA DS
  - Manufactured, verified and tested according to the intended use
  - It might require a DSU like approach to be put into the contract

- Minor changes to the SoC do not require its reissuance.
  - No need of notification prior to change implementation
  - Notification of the change to the CA after completion (iaw change management procedure)

- Unplanned changes are also possible to cover urgent needs

- SoC are to be recorded by ATM/ANS providers and made available upon CA request
The transitional provisions allow the issuance of SoC by ATM/ANS provider for all type of ATM/ANS equipment (until Sep 2028). However, during the TP we might have ATM/ANS equipment certified/declared by Approved DPO

Q: Would there be the possibility of receiving an SoC?
A: No need for SoC to be issued by ATM/ANS providers for ATM/ANS equipment subject to certification/declaration

Some events to be collected and investigated by DPO lie in the sphere of ATM/ANS provider’s competences rather than DPO (e.g. Hazard, near miss, etc.). So, the system for collecting events should be supported by management procedure allowing DPO/ANSP interactions.

Q: are the available AMC/GM to ATM/ANS.OR.A.065(c) enough?
A: TBD
Some Insight on ED Decision 2017/001/R

- Introduction of new ConOps, technologies etc. are considered to be novelty, as such should be included as new attribute in the decision to review the change
  - Already in GM1 ATM/ANS.AR.C.035(b)
  - Q: should it be now more evident, i.e. at AMC level? A: TBD

- Before putting GE into service, the ATM/ANS provider should establish deployment procedure to ensure satisfaction of condition/limitation of use and impartiality of the staff

- Before the issue of a SoC: a process to ensure that the design of ATM/ANS equipment, or the changes to its design comply with the applicable specifications, including independent checking function of the demonstration of compliance

- Compliance procedure for SoC issuance should be approved by CA
Preliminary Conclusions

- The set of new Regulations on Conformity Assessment - DPO approval, AUR, and amendment to existing IRs well enable the implementation of the EASA BR requirements.

- Compliance to the EASA detailed specs is beneficial for interoperability and performance purpose, but it does still question the improvement of safety of operations as it depends on the operational context where the GE will be used.

- There are grounds for a reduction in efforts, but this reduction may not be significant since some verification activities remain ATM/ANS provider’s responsibility.

- Concepts like severity of effects, risk assessment, safety assessment; SWAL Allocation etc. might not be performed at this level as they strongly depends on the operational usage. To be effective, contribution of ATS providers seems necessary.
Oversight in the new conformity assessment framework

EASA Workshop on the implementing measures for the conformity assessment framework

Cologne 04\textsuperscript{th} July 2023
What’s new for NSAs?

Focus on timeline

• Until September 2023
  - ANSP issue DoV
  - NSA has to oversee DoV

• September 2023 – September 2028 (transitional period)
  - DoV issued from ANSP until September 2023 remain valid
  - Until DPO (design and producing organisation) are certified and ATM/ANS equipment is certified/declared:
    - ANSP issue SoC (statement of compliance) for all ATM/ANS equipment
    - DPO may issue SoC on behalf of ANSP
  - Oversight over SoC for all ATM/ANS equipment by NSAs
  - NSA shall provide EASA with information about SoC/DoV in case of EASA evaluation

• After September 2028 (full applicability of conformity assessment)
  - ATS, COM, SUR, NAV equipment is certified by EASA or declared by certified DPO
  - ANSP issue SoC only for AIM, ASM, ATFM, MET
    - SoC for AIM, ASM, ATFM, MET overseen by NSAs
What’s new for NSAs?  

Focus on change management

- **ANSP integrates new/modified ATM/ANS equipment into a functional system**
  - ANSP has to ensure that equipment is certified by EASA or declared from certified DPO
  - ANSP has to establish procedures to create SoC
    - verify functionalities of ATM/ANS equipment to be compliant with detailed specifications
    - create SoC
  - ANSP has to establish deployment procedures for putting ATM/ANS equipment into service
    - perform testing and inspections to ensure ATM/ANS equipment is usable in its deployment environment

- **NSAs tasks**
  - Change management procedures have to be updated by ANSP and approved by NSA
  - NSA oversees ANSPs conformity assessment
    - Verification of compliance (SoC)
    - Deployment procedures
  - NSA may participate in compliance activities
What’s new for NSAs?

Focus on certifying activities

• Article 3 (2) of Regulation on DPO approval
  The Agency may seek administrative support from national competent authorities for the performance of its tasks related to certification, oversight and enforcement when executing its functions under this Regulation.

• Opportunity for NSA to support EASA

Conclusion:
• Lot’s of new material (Regulations and AMC/GM) to get familiar with
• Learning process for all: DPO, ANSP, NSA and EASA
Aims and implementation of CA?  Focus on NSA perspective

IOP-Regulation suffered:
- No further development or improvement of regulation since setting into force
- Development was necessary because:

  • Problems to distinct EATMN (Which equipment has to be declared in DoV?)
    **CA: Certification/declaration/SoC only for ATM/ANS equipment**

  • Assignment of system type (To which of the 8 systems fits the DoV)
    **CA: Assignment of system type via detailed specifications**
Aims and implementation of CA?  Focus on NSA perspective

- Evidences against essential requirements (Essential requirements are to “essential”)
  - Difficult to deliver evidences

CA:
- Evidences against detailed specifications
- Detailed specifications contain mostly recognised (technical) standards

- Effort for creating DoV, TF

CA:
- Effort for ANSP will probably be reduced because substitution DoV trough Certification/Declaration
- Cost reduction?
  => DPO will hand over Certification Cost/ Declaration cost to ANSP
  => careful development of detailed specs to balance effort for DPO and benefits for ANSP
Aims and implementation of CA? Focus on NSA perspective

- Tests, functional checks, structured deployment instead of ANSPs paperwork to create DoV

CA:
- ANSPs need processes to perform tests (test equipment, measuring devices) and inspections (function is there and works)
- ANSP have to perform tests and inspections
- Tests and inspections have to be done in an impartial manner
- Covered in
  - AMC1 ATM/ANS.OR.A.045 (h) Changes to a functional system
  - GM1 ATM/ANS.OR.A.045 (h) Changes to a functional system
  - GM2 ATM/ANS.OR.A.045 (h) Changes to a functional system
Contact

Federal Supervisory Authority for Air Navigation Services (BAF)
Division Technology Safety Oversight
Head of Unit Interoperability, Flight Calibration, Type Certification
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BAF is moving! Please note our new contact details.

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NETWORKING
COFFEE BREAK

15min
AIRSPACE USAGE REQUIREMENTS

EU rules
AMC/GM
Q&A incl. Slido
Implementing Act on Airspace Usage Requirements (AUR)

Cover Regulation

1. Subject matter and scope
2. Definitions
3. A/C equipment and operating procedures
4. MoC
5. Repeal
6. Entry into force

ANNEX I Communication (Part-COM)
Title 1 DLS
Title 2 VCS

ANNEX II Surveillance (Part-SUR)
Title 1 DEPENDENT COOPERATIVE SURVEILLANCE

Appendix I DLS Exemptions referred to in point (e) of AUR.COM.2010 (2), i.e. for certain operations

Appendix II Exemptions referred to in point (f) of AUR.COM.2010 (2), i.e. the 1st individual certificate of airworthiness issued prior to 5/02/2020
Implementing Act on Airspace Usage Requirements (AUR) #2 | Annex I (Part-COM)

Title 1 DLS

AUR.COM.2005
Scope

AUR.COM.2010
A/C eq. require.

AUR.COM.2015
DLS operating procedures and training

Title 2 VCS

Appendix I DLS Exemptions referred to in point (e) of AUR.COM.2010 (2) - aircraft types and models combinations

Appendix II DLS Exemptions referred to in point (f) of AUR.COM.2010 (2), i.e. the 1st individual certificate of airworthiness issued prior to 5/02/2020

AUR.COM.3001
Scope

AUR.COM.3005
A/C eq. require.
Implementing Act on Airspace Usage Requirements (AUR)

Cover Regulation

1. Subject matter and scope
2. Definitions
3. A/C equipment and operating procedures
4. MoC
5. Repeal
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Implementing Act on Airspace Usage Requirements (AUR) #2 | Annex I (Part-SUR)

Title 1
DEPENDENT COOPERATIVE SURVEILLANCE

- AUR.SUR.2001
  Scope

- AUR.SUR.2005
  A/C eq. require.

- AUR.SUR.2010
  Inoperative transponder

- AUR.SUR.2015
  Transponder 24-bit ICAO aircraft address

- AUR.SUR.2020
  Surveillance operating procedures and training
1st set of AMC/GM

- **Part-COM**
  - Title 1 DLS
    - AMC1 AUR.COM.2010
      - Requirements on a/c equipment
    - AMC 2 AUR.COM.2010
      - Requirements on a/c equipment
    - GM1 AUR.COM.2010
      - Requirements on a/c equipment
  - Title 2 VCS
    - AMC1 AUR.COM.3005
      - Requirements on a/c equipment

- **Part-SUR**
  - AMC1 AUR.SUR.2005
    - Requirements on a/c equipment
  - GM1 AUR.SUR.2005
    - Requirements on a/c equipment
  - GM2 AUR.SUR.2005
    - Requirements on a/c equipment
  - GM3 AUR.SUR.2005
    - Requirements on a/c equipment
  - AMC1 AUR.SUR.2010
    - Inoperative transponder
For data link capability, the letter code “J1” should be used to reflect CPDLC ATN VDL Mode 2 capability in item 10 ‘Equipment and capabilities’, furthermore, the letter “Z” should be used in item 18 preceded by “DAT”.

Aircraft to which Commission Implementing Regulation (EU) xxx/2023 does not apply or are equipped with data link capability that is temporarily inoperative, should insert the designators “DAT/CPDLCX” in Item 18 of the flight plan.
AMC - AUR.SUR

AMC1 AUR.SUR.2005 Requirements on aircraft equipment

EASA Certification Specifications for Airborne Communications, Navigation and Surveillance (CS-ACNS), Subpart D — Surveillance (SUR), and particularly:

— Section 2 — Mode S Elementary Surveillance; — Section 3 — Mode S Enhanced Surveillance; and — Section 4 — 1090 MHz Extended Squitter ADS-B,

AMC1 AUR.SUR.2010 Inoperative transponder

Information on the equipage and the operational status of Mode S and/or ADS-B capability as specified in SERA.4005 and SERA 4010.

Aircraft to which Commission Implementing Regulation (EU) xxx/2023 does not apply are equipped with Mode S EHS and/or ADS-B that are temporarily inoperative, should insert the designators ‘SUR/EUADSBX’ or ‘SUR/EUEHSX’, or a combination of them, in Item 18 of the flight plan.

GM2 AUR.SUR.2005 Requirements on aircraft equipment

SERVICEABLE SECONDARY SURVEILLANCE RADAR TRANSPONDERS

A secondary surveillance radar transponder is considered serviceable when it transmits all the data and parameters required by CS-ACNS, Subpart D.
WRAP-UP & CONCLUSIONS

Way forward
Sharing of experience and implementation support

- EASA engages periodically with its advisory bodies - Stakeholder Advisory Body (SAB), Member State Advisory Body (MAB), ATM/ANS Technical Advisory Board (States) and Community (Stakeholders) and other aviation domain specific bodies - In particular (but not limited to) the following areas of mutual interest are covered:
  - to provide updates and share experience gained on the implementation of regulatory acts, based on relevant elements, proposals and data collected from States and Stakeholders
  - to provide interpretation (technical opinion) and assistance with the rule implementation
  - to provide feedback from the Standardisation activity (compliance monitoring)
  - to assist on the Exemptions and Alternative Means of Compliance processes
- EASA engages on regular basis with representatives from the States & Stakeholders & Professional staff organisations in the domain of ATM/ANS
- EASA available for updates at the EASA Committee
Rulemaking task - RMT.0161 Planned timelines

Subtask 1
Framework

Subtask 2
IOP IR

Subtask 3
Specs, AMC/GM

NPA 2022-09

NPA 2022-107

Opinion 01-2023

Positive vote EASA Committee 28/06/2023

NPA 2023-05

Positive vote EASA Committee 28/06/2023