EASA Workshop on the new Conformity assessment for ATM/ANS systems & ATM/ANS constituents

16 December 2022
Welcome & Opening

Introduction to EASA Workshop
TOWARDS THE NEW EU FRAMEWORK - SETTING THE SCENE

- Introduction to the new conformity assessment framework, the benefits and the outcome of the public consultation

- Q &A session (by audience)
Why is a new framework for the attestation of ATM/ANS equipment needed?

- differing specifications and standards
- insufficient IOP validation
- overlapping efforts by ANSPs, manufacturers and authorities
- lack of efficiency, costs
- oversight, non-harmonised
What the new framework aims to deliver?

- single source of technical requirements
- consistent application of requirements across all manufacturers
- common process to demonstrate compliance
- ATM/ANS providers allowed to focus on their core business

**FIT FOR PURPOSE**

**ATTESTATION**

**CERTIFICATION**

**KEY ATM EQUIPMENT**
Objectives and benefits

Attestation against common specifications

- Common and harmonised basis from which to develop a product
- Implementation issues minimized
- Better use of resources (at ATM/ANS provider, DPO and authority level)
- Level playing field

- Interoperability
- Efficient and effective deployment of key technology
- Economic efficiency

Single approval and oversight

- Streamlined and proportionate tasks and responsibilities
- Performance
- Better use of resources (at ATM/ANS provider, DPO and authority level)
- Economic efficiency
Different attestation methods

- Certification by EASA
- Approval of Design & Production Organisation (DPO) by EASA
- Declaration by the manufacturer (*)
- Statement of Compliance by ATM/ANS provider

(*) ATM/ANS manufacturer = Design & Production Organisation (DPO)

Criticality (in terms of interoperability, safety & security)
Essential Requirements – Interoperability

All EATMN constituents subject to DoC/DSU by manufactures

All EATMN systems subject to DoV by ANSP

SES today

Essential Requirements – safety & IOP

Certification by EASA

Declaration by DPO

Statement of compliance (SoC) by ANSP

From 12/09/2023 by EASA

(*) DPO = ATM Design & Production organisations
Holistic (end-to-end) approach

- **DESIGN**
  - by approved DPO

- **PRODUCTION**
  - ATM/ANS Equipment Certificate (by EASA)
  - ATM/ANS Equipment Declaration (by DPO)
  - ATM/ANS Equipment SoC (by ANSP)

- **ATTESTATION**
  - by ANSP -> Competent authority

- **INSTALLATION & TEST**
  - by ANSP -> Competent authority

- **ENTRY INTO SERVICE**

for Conformity assessment + EASA detailed Specs
ATM/ANS Conformity assessment - Detailed Specifications

**ATM/ANS.EQMT.AR.A.040**
Detailed specifications for the equipment design compliance

ATM GE certification when the applicant demonstrates compliance with EASA Certification Specifications

**Art. 4**
Certification (by EASA)

**Art. 5**
Declaration (by DPO)

ATM/ANS GE manufacturer (DPO) permitted to declare compliance with EASA Declaration Specifications

ATM/ANS equipment Conformity Assessment

**Art. 6**
Statement of Compliance (by ANSP)

ANSP required to declare compliance with EASA SoC Specifications for ATM/ANS GE put into operation
Regulatory Framework

Regulation(EU)No. 2018/1139

- Annex VIII Essential requirements for ATM/ANS systems and ATM/ANS constituents
- Chapter III, Section V ATM/ANS
- Draft IA on DPO approval
- Draft DA on Conf. assessment for (certain) ATM/ANS eq.
- Draft IA amending EU IR 2017/373 (provision of ATM/ANS)

Detailed Specifications for certain ATM/ANS equipment subject to Conformity assessment

AMC & GM for DPOs

AMC & GM for ANSPs

AMC & GM for DPOs
Delegated Act on conformity assessment (= certification/declaration) of ATM/ANS equipment

1. Scope
2. Definitions
3. Competent authority
4. Certification of ATM/ANS systems
5. Declaration of ATM/ANS systems and equipment
6. Statement of compliance
7. Transitional provisions
8. Entry into force

Annex I
Categories of ATM/ANS equipment subject to Conf. Assessment

Annex II
Part-ATM/ANS.
EQMT.AR
(= EASA)
* approval of DPO; ATM/ANS eq. certification; oversight & enforcement measures

Annex III
Part-ATM/ANS.
EQMT.CERT

Annex IV
Part-ATM/ANS.
EQMT.DEC
Implementing Act on approval of ATM/ANS equipment manufacturers

1. Scope
2. Definitions
3. Competent authority
4. Organisations involved in D&P
5. Entry into force

Annex I
Part-DPO.OR
Minimum capability

ATM/ANS equipment
Conformity Assessment

Certifiable
ATM/ANS equipment

- DPO approval required

Declarable
ATM/ANS equipment

- DPO approval required with privileges (full or limited to declarable equipment)

ATM/ANS equipment subject to
Statement of Compliance

- ATM/ANS provider certified iaw EU IR 2017/373

- DPO approval required

By way of derogation, a SoC confirming that the ATM/ANS equipment complies with the technical standards established by recognised standardisation bodies and listed in detailed specifications adopted by the Agency
<table>
<thead>
<tr>
<th>Regulation (EC) No</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1032/2006 [COTR]</td>
<td>laying down requirements for <strong>automatic systems for the exchange of flight data</strong> for the purpose of notification, coordination and transfer of flights between ATC units</td>
</tr>
<tr>
<td>1033/2006 [IFPL]</td>
<td>laying down the requirements on <strong>procedures for flight plans</strong> in the pre-flight phase for the single European sky</td>
</tr>
<tr>
<td>633/2007 [FMTP]</td>
<td>laying down requirements for the application of a <strong>flight message transfer protocol</strong> used for the purpose of notification, coordination and transfer of flights between air traffic control units</td>
</tr>
<tr>
<td>29/2009 [DLS]</td>
<td>laying down requirements on <strong>data link services</strong> for the single European sky</td>
</tr>
<tr>
<td>262/2009 [MSI]</td>
<td>laying down requirements for the coordinated <strong>allocation and use of Mode S interrogator codes</strong> for the single European sky</td>
</tr>
<tr>
<td>1206/2011 [ACID]</td>
<td>laying down requirements on <strong>aircraft identification for surveillance</strong> for the single European sky</td>
</tr>
<tr>
<td>1207/2011 [SPI]</td>
<td>laying down requirements for the <strong>performance and the interoperability of surveillance</strong> for the single European sky</td>
</tr>
<tr>
<td>1079/2012 [VCS]</td>
<td>laying down requirements for <strong>voice channels spacing</strong> for the single European sky</td>
</tr>
</tbody>
</table>
SES IOP rules → Regulatory structure

**SES IOP RULES**

- COTR
- FMTP
- MSI
- SPI

**Airspace Usage requirements**

- DLS, SPI, VCS

(proposed) EASA rules

**Reg 2017/373**

- Safety + IOP requirements on ANSPs

**Reg 923/2012**

- Section 4 | FPL

(New) Reg 2023/xx

- ATM eq.

**ATM/ANS detailed Specifications**

**SES IOP standards (as necessary)**

(new) ATM/ANS Specifications

amendments
Implementing Act on Airspace Usage Requirements (AUR)

1. Subject matter and scope
2. Definitions
3. Requirements on airspace usage
4. Compliance
5. MoC
6. Repeal
7. Entry into force

Annex I Part-COM
Annex II Part-NAV
Annex III Part-SUR
Implementing Act on Airspace Usage Requirements (AUR) (2)

SES IOP RULES

- COTR
- IFPL
- FMTP
- DLS
- MSI
- ACID
- SPI
- VCS

Airspace Usage requirements

DLS, SPI, VCS

Part-COM

- Section 1
  - GEN
- Section 2
  - DLS
- Section 3
  - VCS

Part-NAV

Reserved

Part-SUR

- Section 1
  - GEN
- Section 2
  - Dependent Collaborative SUR
Implementing Act amending EU IR 2017/373

1. Amendments to 2017/373
   - Amdt. Art. 2 Definitions
   - Amdt. Art. 3 Provision of ATM/ANS
   - New Art. 3e Allocation of Mode S interrogator codes
   - New Art. 3f Measures for the use of airspace

2. Reference
   - Amdt. Annex I (Part-DEF)
   - Amdt. Annex II (Part-ATM/ANS.AR)
   - Amdt. Annex III (Part-ATM/ANS.OR)
   - Amdt. Annex IV (Part-ATS)
   - Amdt. Annex VIII (Part-CNS)
   - Amdt. Annex XII (Part-NM)
   - ATM/ANS.AR.A.020(a)
   - ATM/ANS.AR.C.005(a)(4)
   - ATM/ANS.AR.C.050 (c)(d)(e), new (f) & (g)
   - ATM/ANS.OR.A.045 (new g) & (new h)
Implementing Act amending EU IR 923/2012 (the SERA Regulation)

Cover Regulation

1. Amendments to 923/2012

2. Entry into force

Article 1(3) Scope

Article 2 Definitions

Annex

Amdt. Section 14 FPL

New Section 15 CPDLC PROCEDURES

Amdt. SERA.4001 Submission of FPL

Amdt. SERA.4005 Contents of FPL

Amdt. SERA.4010 Completion FPL

New SERA.4013 Acceptance of FPL

Amdt. SERA.4015 Changes to FPL

Appendix 6 Instructions for completion of FPL
EASA Opinion XX/2023

“Establishment of Conf. assessment framework for ATM/ANS equipment towards interoperable and seamless EATMN”

→ DA on Conf. Assessment of ATM/ANS equipment;
→ IA on approval of ATM/ANS equipment manufacturers
→ IA on AUR
→ IA amending EU IR 2017/373 (provision of ATM/ANS)
→ IA amending EU IR 923/2012 (SERA)
IMPACT ASSESSMENT: applied methodology

Multi-criteria analysis (MCA):

- Establishing criteria for comparing the options
- Scoring how well each option meets the criteria; the scoring are relative to the baseline scenario (Option 0)
- Ranking the options by combining their scores (scale per criteria of −10 to +10)

MCA allows a comparison of impacts which cannot be measured in the same unit
IMPACT ASSESSMENT: input from stakeholders

- Feedback collected via interviews and surveys from RMG Members
- Main purpose of the data collection: to gather quantitative/qualitative input to estimate economic impact
- The input received was considered in the NPA/Opinion, taking into account that:
  - the proposal was modified compared to the baseline considered in the survey
  - there were few/there was lack of replies for some elements
NPA 2022-09 | Consultation

→ The deadline for the submission of comments: 07 Oct 2022

→ 50+ stakeholders commented

→ 1160 comments received

→ Most comments received from ANSPs, ATM/ANS equipment manufacturers and NSAs

NPA 2022-107 | Consultation

→ The deadline for the submission of comments: 14 Dec 2022

→ 10+ stakeholders commented

→ 450+ comments received

→ comments received from a/c operators associations, ANSPs, competent authorities
NPA 2022-09 | Summary of feedback received

Stakeholders group | Number of Comments
--- | ---
ANSPs | 513
ATM/ANS Equipment Manufacturer | 113
Authority | 433
Individuals | 50
Other Industry | 30
Others | 21
**TOTAL** | **1160**

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NPA 2022-09 Sections | Number of Comments
--- | ---
General Comments | 102
Explanatory Notes | 450
Appendix 1: IR on DPO approval | 200
Appendix 2: DA on ATM/ANS eq. conf. assessment | 362
Appendix 3: IA amending EU IR 2017/373 | 46
**Total** | **1160**
NPA 2022-09 Summary of feedback received

<table>
<thead>
<tr>
<th>Positive in general</th>
<th>Require clarifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Harmonisation of interoperability, security, performance and safety requirements</strong></td>
<td><strong>Appropriate transition mechanism</strong> with a balanced approach to legacy equipment and oversight by NSAs</td>
</tr>
<tr>
<td>Introduction of the real ‘level paying field’ for ATM/ANS manufacturers and ‘clear allocation of responsibilities’ of ANSPs and ATM/ANS manufacturers</td>
<td>Clarity on the <em>scope of the ATM/ANS equipment</em> subject to the different attestation mechanisms</td>
</tr>
<tr>
<td><strong>Streamlined/more efficient processes</strong> for the introduction of equipment into service, addressing the inefficiencies and fragmentation of the previous interoperability framework</td>
<td>Mechanisms to ensure continuity of service for ANSPs in case of discontinuation of DPO approval</td>
</tr>
<tr>
<td><strong>Facilitation of industrial cooperation</strong> at EU level</td>
<td><strong>Market access</strong> for small manufacturers/new entrants</td>
</tr>
<tr>
<td></td>
<td>Availability of the <em>detailed specifications and AMC/GM</em></td>
</tr>
<tr>
<td></td>
<td><strong>Level of details of the impact assessment</strong></td>
</tr>
</tbody>
</table>
NPA 2022-09 | Topics addressed in the comments (General and Explanatory note)

- Categorisation of ATM/ANS equipment: 16%
- Responsibilities (ATM/ANS provider vs. DPO): 16%
- Impact Assessment / CBA: 11%
- Detailed specifications: 10%
- Change management - Equipment: 8%
- Procedural - RMT.0161: 8%
- Allocation of certification/oversight responsibilities: 6%
- Transitional provisions: 5%
- Market access: 5%
- AMC/GM: 5%
- Military equipment: 5%
- DPO approval discontinuation: 3%
- CP1 impact: 1%
- Scope of applicability: 1%
- Allocation of certification/oversight responsibilities: 6%
- Procedural - RMT.0161: 8%
- Change management - Equipment: 8%
# TOPIC: Categorisation of ATM/ANS equipment (Annex I)

<table>
<thead>
<tr>
<th>#</th>
<th>Point 3 to Annex VIII ER</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>EASA BR (EU) 2018/1139</td>
<td>Article 4 Certifiable ATM/ANS Eq.</td>
<td>Article 5 Declarable ATM/ANS Eq.</td>
<td>Article 6 SoC ATM/ANS Eq.</td>
<td></td>
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<tr>
<td></td>
<td>The equipment shall include in particular those required to support the following functions and services:</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1.</td>
<td>Airspace management (=ASM)</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Air traffic flow management (=ATFM)</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>3.</td>
<td>Air traffic services (ATS), in particular flight data processing systems, surveillance data processing systems and human-machine interface systems;</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Communications (=COM) including ground-to-ground/space, air-to-ground and air-to-air/space communications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4a.</td>
<td>Ground-to-ground communications</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4b.</td>
<td>Air-to-ground communications</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5.</td>
<td>Navigation (=NAV)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6.</td>
<td>Surveillance (=SUR)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7.</td>
<td>Aeronautical Information services (=AIS)</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Meteorological services (=MET)</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TOPIC: roles and responsibilities of the different actors

A considerable number of comments to the NPA require further clarification/explanation about the split of responsibilities between the DPO and the ATM/ANS Provider.

DPO responsibilities include consolidating the functional specifications and design of the equipment, as well as producing, and maintaining throughout the lifecycle of the equipment, the compliance demonstration with the certification/declaration specifications.
# TOPIC: Impact assessment

<table>
<thead>
<tr>
<th>Certification costs and impacts on the market</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increase of the costs in the short term is acknowledged</td>
</tr>
<tr>
<td>• Gradual reduction of costs, thanks to detailed specifications, harmonised processes and clarification of the roles/responsibilities</td>
</tr>
<tr>
<td>• Increase of EASA resources is noted</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comments on the level of benefits of the proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Harmonised attestation processes: less fragmented process across EU and avoiding inefficiency</td>
</tr>
<tr>
<td>• Fostering innovation: clear process for new products in the market</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specification details</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Common detailed specifications will be provided</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proportionality of the proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The ATM equipment conformity assessment framework introduces three attestation methods depending on the criticality of the systems/constituents</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Definition of scores and comparison with option 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The option 0 is defined as the baseline for all criteria</td>
</tr>
<tr>
<td>• Option 1 is validated against that baseline</td>
</tr>
<tr>
<td>• If no action is taken, there would be a regulatory gap leading to an increasingly complex and less integrated ATM/ANS environment</td>
</tr>
</tbody>
</table>
**TOPIC: Transitional provisions**

- **Sep/2023**
  - New rules enter into force
  - Legacy equipment provisionally compliant with new requirements

- **Sep/2028**
  - Certification and declaration requirements fully apply
  - All legacy equipment still in operations have been positively assessed by EASA
# Certification/declaration specifications

## Technical Specifications

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>Aeronautical Information services</td>
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<tr>
<td>8</td>
<td>Meteorological services</td>
</tr>
</tbody>
</table>

### Certification Specification for ATM/ANS Systems and Constituents
- CS-xxxx

### Declaration Specifications for ATM/ANS Systems and Constituents
- DS-xxxx

### Statement of Compliance Specifications for ATM/ANS Systems and Constituents
- SC-xxxx

- **FUNCTIONS**
- **PERFORMANCES**
- **INTEGRITIES**
- **INTERFACES**

### Industry Standards
- AMC & GM
- Industry Standards (ESO, SDO etc.)

- Listing of Industry Standards.
TOPIC: Changes to ATM/ANS equipment

1. Preventive and corrective maintenance
   → In principle, all these activities are performed within the boundaries of the certification basis as defined by the DPO and therefore do not require recertification
   → If a non-conformance of the equipment with its specification is detected, it is communicated to the DPO and trigger a DPO process of management of non-conformities

2. Obsolescence management
   → Replacement of a HW or SW constituent without an architecture modification typically does not require re-certification

3. Evolution / upgrades
   → If an upgrade affects SW or HW components designed in compliance with Regulatory Requirements or Certification Specifications, re-certification might be necessary
   → If an upgrade implements only user requirements and no-interference with regulatory requirements or Certification Specifications is demonstrated (by DPO) the re-certification is not required

The DPO change management process determines how to manage a particular change (including when re-certification process is to be launched).
TOPIC: Access to the market

→ The design and production of ATM/ANS equipment (subject to certification/declaration at the DPO) for its use in the EU market requires compliance with the BR and its implementing rules.

→ Third country organisations intending to sell equipment in the EU market will need to comply also with the relevant requirements (to ensure both that the essential requirements are met and that a level playing field is achieved).

→ The proposal is considered as achieving a good balance between the need to ensure the necessary integrity, performance and reliability of critical ATM/ANS equipment and the flexibility to drive innovation and effective deployment of new technologies/functionalities.

→ In particular, DPO requirements are commensurate to the privileges to declare the compliance of equipment with the applicable declaration specifications, and consist mainly on the demonstration of the availability of a management system with the relevant processes to perform the design and production activities.
TOPIC: Ceasing of DPO activities

→ A few questions/comments to the NPA refer to the situation where a DPO ceases operations or its approval would be suspended or revoked, and the potential impact for the equipment in operations in the EU.

→ This situation is not unique to this domain and EASA has concluded that the flexibility provisions in the Basic Regulation are adequate to deal also with this potential situation, without a need to introduce any dedicated mechanism in the delegated and implemented acts.
Some Member States raised a comment within the NPA 2022-09 that Art. 80 (1) c) of Reg. (EU) 2018/1139 is referring to the previous paragraph (b) stating that the competency of EASA for approving design and production organisations to systems and constituents for “pan-European ATM/ANS”, like services such as those used by pan-EU providers e.g. the Network Manager.

In this context, it should be highlighted that:

- most of the ATM/ANS equipment is actually being designed to be placed on the EU market, as defined in Art. 2 (4) of Reg. (EU) 2017/373., i.e. those ATM/ANS systems and ATM/ANS constituents could not be categorised into pan-European or local use. Hence, all ATM/ANS systems and ATM/ANS constituents would be placed on the EU market and potentially support pan-European services.
- The perspective of the ATM/ANS interoperability established already with the repealed Regulation (EC) No 552/2004, was always the pan-European ATM and at that time labelled as the EATMN. Furthermore, additionally for ATM/ANS systems and ATM/ANS constituents, the interoperability Regulation was always aiming at opening the European market for goods of the ATM sector.

In conclusion, the pan-European ATM/ANS referred to in Art. 80 (1) b) should be understood to all those ATM/ANS systems and ATM/ANS constituents that require a specific interoperability approach at European level and that could be used in the entire EU market. That would be most ATM/ANS equipment by definition (FDPS, SDPS, data communication etc.).
WORKING TOGETHER

Panel Discussion

- Civil-military coordination
- ATM/ANS equipment manufacturers
- EUROCAE
- ANSPs
- NSAs
- SJU
- EASA
CONFORMITY ASSESSMENT

Panel Discussion
OVERSIGHT and CERTIFICATION

Panel discussion

NSAs & EASA
WRAP-UP & CONCLUSIONS

Way forward
EXCHANGE & SHARING

EASA team available after the closure of the event for informal on-site discussion
RMT.0161 – Time plan for consultation

Opinion XX/2023

- DA on ATM/ANS equipment certification/declaration/SoC
- IA on DPO approval
- IA on AUR
- IA amending IR 2017/373 (provision of ATM/ANS)
- IA amending SERA IR 923/2012