



Agenda Item 6: Other business

The new European Conformity Assessment framework for ATM/ANS ground equipment

(Prepared by the European Union Aviation Safety Agency - EASA)

SUMMARY

The European Union has adopted a new set of rules to increase interoperability of ATM/ANS ground equipment, make their performance more uniform, and support the introduction of innovative technologies.

The new rules take a single market approach, reducing fragmentation within the ATM/ANS ground equipment market, and clearly allocating responsibilities for demonstrating compliance, in particular on the detailed specifications for the equipment that will be now issued by EASA.

They also strengthen EASA's role as certifying authority for both airborne and ground equipment, ensuring that both are done consistently. With digitalisation, data exchange and automation becoming more widespread, it is important to ensure a common approach towards interoperability, safety and overall performance of ATM/ANS equipment.

This approach will address known bottlenecks and inefficiencies in the previous conformity assessment framework, which were constraining and delaying technological evolution for ATM/ANS in Europe. A single certificate will replace multiple processes run in parallel by ATM/ANS providers and their respective competent authorities today, thus allowing them to better allocate their limited resources to higher value-adding activities, resulting also in more efficient and effective oversight and enforcement processes in Europe.

1. Background

1.1 The European Union Aviation Safety Agency (EASA) is the entity in charge of ensuring that the levels of safety in civil aviation in Europe are harmonized and of the highest level. The main tasks of EASA are:

- Drafting Implementing Rules and other regulatory instruments
- Certifying and approving products and organizations at European level
- Providing oversight and support to member states
- Promoting the use of European and global standards
- Cooperating with international actors for the advancement of global aviation safety

1.2 In this context, EASA manages technical cooperation projects globally, providing support to states and regional organizations with the development of civil aviation through the promotion of European experiences and standards, as well as the participation of European industry.

1.3 Within these technical cooperation projects, the EU-Latin America & Caribbean Aviation Partnership Project II (EU-LAC APP II) is an initiative financed by the European Union (EU)

and implemented by EASA with Argentina, Brazil, Chile, Colombia, Mexico Panama and Dominican Republic as bilateral partners, as well as the SRVSOP (Regional Safety Oversight Cooperation System for Latin America), ACSA (Central American Agency for Aeronautical Safety), CASSOS (Caribbean Aviation Safety and Security Oversight System) and CLAC (Latin American Civil Aviation Commission) as regional partners. The project also works in cooperation with the regional EU delegations, the ICAO regional offices, and aeronautical industry.

1.4 The EU-LAC APP II aims to strengthen institutional relations, deepen dialogue and cooperation between aviation authorities, encourage regional cooperation and support implementation of aviation agreements and working together to identify the challenges and improvement areas at national and regional level in order to provide support through activities such as institutional and technical support, workshops and trainings, and collaboration with industry.

1.5 The project has supported the SRVSOP specifically with AIDC (Air Traffic Services Inter-Facility Data Communication) implementation and interoperability for the last years, taking part in the activities of the regional Interoperability Working Group (GT-INTEROP) and the regional Implementation Group (SAMIG).

1.6 Within this context, the EU-LAC APP II would like to take the opportunity to present the EU latest advancements aiming at improving interoperability and harmonization in Europe among ATM/ANS equipment and manufacturers, through the new regulatory, certification and oversight framework for ATM/ANS ground equipment.

2. Introduction

2.1 The modernization of ATM/ANS equipment is a key factor to ensure that Air Navigation can keep up with the increased performance needs in terms of capacity, safety, environment and other key areas. One of the core enablers of the modernization is the automated exchange and processing of digital information across borders, stakeholders, and organisations. These increases in automation, digitalisation and interconnectivity come with the need for systems be as interoperable and standardized as possible.

2.2 For these reasons, interoperability has been at the heart of all ATM modernization initiatives in Europe, from common and coordinated research, development and deployment of new solutions through programmes such as the Single European Sky ATM Research (SESAR), to the activities of standardization groups such as EUROCAE and the rulemaking work of EASA and the European Commission aiming at ensuring interoperability of the European Air Traffic Management network.

2.3 A set of new rules to better manage interoperability between the systems and constituents used in ATM/ANS and to ensure they are fit for purpose has been recently adopted at European level. This new framework comprises five regulations aimed at increasing interoperability, making the performance of ATM/ANS ground equipment more uniform, and supporting the introduction of innovative technologies.

2.4 The new framework streamlines the attestation of ATM/ANS equipment and strengthen EASA's role as certifying authority for both airborne and ground equipment, ensuring that both are designed and produced consistently.

2.5 The framework introduces clear allocation of responsibilities for the certification or declaration of ATM/ANS ground equipment, as well as the procedures for the approval of organisations involved in the design or production of such equipment. The driving principle is the essential need to achieve a single and mutually recognised compliance demonstration methodology for the ground equipment used to support ATM/ANS service provision.

2.6 The framework will also provide detailed specifications and requirements for the different types of ATM/ANS equipment in terms of functionality, performance and interfaces. These specifications will refer as much as possible to widely recognized standards, developed and published by industry and developed through standards-development organisations. Therefore, the package will also foster the quality and completeness of the standards landscape.

2.7 This approach addresses previous interoperability shortcomings and enables a more efficient EU market for this equipment, ensuring that all elements impacting the performance of ATM/ANS services are consistently managed from an end-to-end perspective.

3. Analysis

3.1 Different attestation methods for ATM/ANS ground equipment will be applicable, based on their “criticality”. This has been established via a detailed impact assessment with inputs from stakeholders. The following is an overview of the different attestation methods, their procedures and their applicability:

- **Certification by EASA** → The manufacturer will have to follow a certification programme for the equipment to demonstrate compliance with EASA Certification Specifications. The equipment can be delivered to the service provider after it is certified and it has been proven to be produced according to the design data, after which it will be subject to continuous oversight by EASA. The entry into service and associated changes to functionalities at the service provider will be managed in the usual way between service provider and competent authority. The certification procedure will apply to the following categories of equipment:
 - ATS Equipment, in particular those supporting controller-pilot communications as well as enabling the separation of aircraft of the prevention of collisions. This includes Flight Data Processing (FDP) systems & Surveillance Data Processing (SDP) systems.
 - Air-to-ground communications equipment.
- **Declaration of design compliance by the ATM/ANS equipment manufacturers** → The manufacturer is permitted to declare design compliance with the detailed specifications developed by EASA. The test and verification activities leading to the issue of the declaration will be subject to continuous oversight by EASA. Applies to:
 - Ground-to-ground communications equipment
 - Equipment supporting Navigation (NAV) functions and services
 - Equipment supporting Surveillance (SUR) functions and services
- **Statement of compliance** → ATM/ANS Service providers are required to declare compliance with EASA specifications for ATM/ANS equipment put into operation. The ANSP would go through the necessary verification and testing activities and issue a Statement of Compliance (SoC). If the manufacturer is approved by EASA, they may also issue the statement of compliance themselves. The competent authority oversees the SoC as part of the continuous oversight. Applies to:
 - Equipment supporting Airspace Management (ASM) functions and services
 - Equipment supporting Air Traffic Flow Management (ATFM) functions and services
 - Equipment supporting Aeronautical Information Services (AIS)

- Equipment supporting Meteorological (MET) services
- Other equipment supporting ATS services and functions

3.2 ATM/ANS equipment manufacturers developing equipment falling in the certification/declaration categories (referred to in the framework as **Design & Production Organisations - DPOs**) will require a prior approval by EASA, in order to ensure the adequate design and production standards for ground equipment. Their responsibilities will include consolidating the functional specifications and design of the equipment, as well as producing and maintaining the compliance demonstration with the certification/declaration specifications throughout the lifecycle of the equipment.

3.3 The **ATM/ANS Providers** will have to ensure that equipment is certified by EASA or declared by an approved DPO. For equipment not requiring certification/declaration, they will have to establish procedures for the verification of functionalities of equipment in accordance with detailed specifications and issuing of Statements of Compliance. Additionally, they will have to establish the deployment procedures for putting the equipment into service as well as perform testing and inspections of the equipment to ensure suitability, as is currently the case, with the involvement of the supervisory authority as required.

3.4 **National Supervisory Authorities** will have to approve change management procedures and oversee the ANSP's conformity assessments (verification of compliance and deployment procedures) in relation to the equipment, and may participate in compliance activities as deemed necessary.

3.5 The new regulatory framework and associated technical material (Acceptable Means of Compliance, Guidance Material and Certification Specification) provide the detailed requirements and specifications for ATM/ANS systems and its constituents (Hardware, software and any tangible objects upon which interoperability depends).

3.6 The new rules entered into force in September 2023, and the certification and declaration requirements will fully apply by September 2028. Until then, legacy equipment is considered provisionally compliant and will be evaluated by EASA, and statements of compliance by ANSPs will be sufficient for modified and new ATM/ANS equipment.

4. **Conclusions**

4.1 The new approach addresses known bottlenecks and inefficiencies in the previous conformity assessment framework, which were constraining and delaying technological evolution for ATM in the EU. A single certificate will replace multiple processes run in parallel by ATM/ANS providers and their respective competent authorities today. ATM/ANS providers and their competent authorities will therefore be able to better allocate their limited resources to higher value-adding activities, resulting also in more efficient and effective oversight and enforcement processes in the EU.

4.2 The goal of this framework is to achieve 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.

4.3 The new conformity assessment framework will strengthen the value of industrial standards in the demonstration of compliance with the Single European Sky needs and requirements. EASA is working intensively with all relevant industry partners to support the implementation of the package.

4.4 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).

4.5 The harmonisation of aspects related to design, implementation, and demonstration of compliance for ATM/ANS equipment, as well as for the evaluation and approval of manufacturers, will improve performance and facilitate the demonstration of compliance at global level.

4.6 The development of common requirements and detailed specifications for different ATM/ANS equipment based on internationally recognised standards will facilitate harmonisation of equipment, reinforce standardisation bodies, and provide useful references for compliance demonstration at global level.

5. Suggested actions

5.1 It is suggested to the meeting to:

- a) Take note of the information paper;
- b) Review the new framework's regulatory instruments (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1769> & <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1768>) and the proposed Acceptable Means of Compliance, Guidance Material and Detailed Specifications (<https://www.easa.europa.eu/en/document-library/notices-of-proposed-amendment/npa-2023-05>);
- c) Contact EASA for the identification of cooperation areas relevant to this topic and which could be performed within the frame of the EU-LAC APP II.

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