



**ASSEMBLY — 40TH SESSION**

**TECHNICAL COMMISSION**

**Agenda Item 29: Aviation Safety and Air Navigation Regional Implementation Coordination Mechanisms**

**CERTIFICATION OF AERODROME AND EN-ROUTE EQUIPMENT**

(Presented by the Interstate Aviation Committee)

**EXECUTIVE SUMMARY**

Working Paper A37-WP/83 addressed the issue of certification of safety-critical aerodrome and en-route equipment as an effective means for ensuring compliance with the ICAO Standards and Recommended Practices (SARPs) and thus improving flight safety.

Practice of certification of aerodrome and en-route equipment existing in the region of Member States of the Agreement on Civil Aviation and Airspace Use (Agreement) has been further developed by improving the certification regulations for the equipment and its manufacturers.

This document is presented to inform the international aviation community about the use of an important reserve in the field of improving flight safety – certification of aerodrome and en-route equipment.

<i>Strategic Objectives:</i>	This information paper relates to Strategic Objectives on Safety.
<i>Financial implications:</i>	Without any financial implications for ICAO.
<i>References:</i>	Resolution A39-12: <i>ICAO global planning for safety and air navigation</i> Resolution A39-14: <i>Regional cooperation and assistance to resolve safety deficiencies, establishing priorities and setting measurable targets</i> A37-WP/83 Annex 10 — <i>Aeronautical Telecommunications</i> Annex 14 — <i>Aerodromes</i>

**1. INTRODUCTION**

1.1 The aerodrome and en-route equipment means communication, navigation and surveillance aids, equipment for air traffic control centers, lighting, meteorological equipment, systems for pavement surface condition monitoring, etc.

<sup>1</sup> English and Russian versions provided by IAC.

1.2 Compliance of the aerodrome and en-route equipment with SARPs may include the following stages:

- a) compliance of the type (reference) design presented by the equipment manufacturer with the established requirements;
- b) conformity of the produced equipment with the type design; and
- c) compliance of the installed equipment.

1.3 Demonstrating compliance of equipment on-site is a common practice in the Contracting States. However, the proof of compliance with all necessary requirements of the equipment at its installation stage can be difficult to implement and ineffective. For example, the necessity to demonstrate compliance with the International Commission on Illumination equations in Annex 14 for the chromaticity of the aerodromes' lighting equipment as well as compliance with several Annex 10 provisions on the radio navigation aids particularly regarding new ones, e.g. satellite systems. Consequently, confirmation of compliance of a sample of the equipment at its installation site may not guarantee compliance of the equipment with ICAO SARPs' requirements and requires repeated duplication of tests and assessments.

1.4 ICAO also does not have guidance and information material on the requirements for assessing the conformity of the equipment type (reference) design presented by the manufacturer to SARPs.

1.5 There is no guidance or information material needed to confirm compliance of the serial equipment samples with the type (reference) design which has been fully tested and certified against SARPs.

## 2. **DISCUSSION**

### *Certification of equipment type design*

2.1 The IAC regional Aviation Regulations "Certification of Aerodrome and En-route Equipment" have been developed for unification of the methods for demonstrating compliance of the type design with SARPs which establish the procedure for the type design approval: starting from an application for certification and up to granting the equipment manufacturer with the certificate.

2.2 The practice of certification of the equipment type design has existed since 1975; first certificate for the approved equipment type design was issued in 1978.

2.3 Throughout the entire period of the equipment type design certification, the continuity of the succession of the certification body activities is being provided. The present certification executive body of IAC, which is responsible for the equipment type design certification (IAC Aviation register), is a legal successor of the bodies which have acted since 1975.

2.4 The current "Certification Rules for Aerodrome and En-route Equipment" were updated in 2018 with the introduction of new chapters for the modification of the type design and an attachment (Data Sheet) to the certificate which is an integral part of Equipment Type Certificate and contains information on type design, Certification Basis, conditions and limitations under which compliance with requirements of Certification Basis referred in Equipment Type Certificate is provided.

*Certification of equipment type design*

2.5 Since 1997, there has been the practice for certification of the equipment manufacturers located in Member States of the Agreement which has been carried out by the certification executive body of IAC.

2.6 Certification of the equipment manufacturers by IAC Aviation Register is a tool for feedback in the general process for type design approval as well as creation of conditions for compliance of the manufacturing equipment samples with the earlier approved type design.

2.7 In 2018, the updated IAC regional Aviation Regulations “Certification of Aerodrome and En-route Equipment Manufacturers” were adopted which bring up to date the requirements for aerodrome and en-route equipment manufacturers which production facilities are located in Member States of the Agreement and also determine the conditions for interaction between participants of production certification process.

2.8 IAC regional Aviation Regulations establish the form of supervision of the activities of the aerodrome and en-route equipment manufacturers.

**3. CONCLUSION**

3.1 Therefore, equipment type certification, on the one hand, and certification of equipment manufacturers, on the other hand, including regular flight and/or ground checks, creates effective basis for ensuring compliance of aerodrome and en-route equipment with SARPs and provide the enhanced flight safety within an IAC regional mechanism for carrying out activities in the field of safety and air navigation.

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