



**WORKING PAPER**

**ASSEMBLY — 40TH SESSION**

**Agenda Item 30: Other issues to be considered by the Technical Commission**

**REGULATION OF MOBILE SATELLITE SYSTEMS**

(Presented by the United Arab Emirates)

**EXECUTIVE SUMMARY**

The need of regulation and standards for the satellite service providers is obvious, since civil aviation is becoming increasingly dependent on mobile satellite systems. This makes ICAO well placed to seek a solution at international level.

**Action:** The Assembly is invited to:

- a) note the information provided; and
- b) consider the issues raised in the document, in particular, the proposal under section 3 for the adoption of an international solution to regulate mobile satellite services providers for civil aviation.

<i>Strategic Objectives:</i>	This working paper relates to the Strategic Objectives associated with the implementation and management of the aeronautical safety satellite services.
<i>Financial implications:</i>	The introduction of an independent layer of assessment and regulation for providing satellite communication in the aeronautical safety satellite services will require consideration of a means of funding the required regulatory activities, such as annual fees payable by satellite service providers without requiring Member State contributions.
<i>References:</i>	Annex 10 — <i>Aeronautical Telecommunications</i> Doc 9925, <i>Manual for Aeronautical Mobile Satellite (Route) Service</i>

**1. BACKGROUND**

1.1 Civil aviation depends on reliable communication links, in particular, the vast technological evolution experience made it possible in the last decades through satellite systems becoming available to the aeronautical sector. Satellite technology presents a significant advantage when compared to traditional radio communication, such as high frequency (HF) and very high frequency (VHF) communications. These advantages can be observed in satellite network availability, satellite coverage area, satellite data bandwidth and crucially reliability in navigation, communication etc. These systems now allow for continuous real-time tracking on top of data and voice communication. The aeronautical sector has been discussing the advantages of such satellite systems and how they could improve safety in civil aviation, with a clear focus on real-time tracking over ocean regions in the light of

the loss of AF447 (2009) and MA370 (2014). Nowadays, mobile satellite terminals are a usual device in aircraft involved in commercial operations.

1.2 The principle set forth in Resolution 1721 (XVI) of the General Assembly of the United Nations that communication by means of satellites should be available to the nations of the world on a global and non-discriminatory basis, and the relevant provisions of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, concluded on 27 January 1967, and in particular Article 1, states that outer space shall be used for the benefit and in the interests of all countries.

## 2. DISCUSSION

2.1 The importance of mobile satellite technology to ICAO is now formalized through the aeronautical mobile-satellite (route) service (AMS(R)S) specification in the Annex 10 — *Aeronautical Telecommunications*, Chapter 4. This documentation and the *Manual for Aeronautical Mobile Satellite (Route) Service* (Doc 9925) specify the requirements placed on any mobile-satellite system intended to provide communications in the AMS(R)S.

2.2 The level of dependence on mobile satellite systems for Civil Aviation is set to increase rapidly, with the advent of the Global Aeronautical Distress and Safety System (GADSS) and its tracking and distress services. Even considering that the specifications are technology-neutral, the reality is the satellite technology will be the first option for the new safety-related services. Furthermore, it is noted that, even though GADSS operations are set to become ever more dependent on the availability of satellite constellations, there are only a small number of satellite constellations able to support these services.

2.3 The consequence is that airlines, especially those mainly with routes over remote or ocean areas, will depend on this small number of satellite companies for services related to communication, navigation, telemetry and distress.

2.4 The AMS(R)S Manual considers that institutional arrangements must recognize States' responsibility and authority to enforce safety regulations. The manual also acknowledges that the complexity of modern satellite systems makes it difficult for States to know how best they may exercise their individual responsibilities in the overall international context. Notably, the manual does not discuss how continuous compliance with the requirements should be ensured at the international level, leaving individual administrations to decide on how they will determine and discharge their own responsibilities.

2.5 These two principles cited under paragraph 1.2 above, make it clear that issues related to satellite services deserve being handled at the global or international level. In practice, satellite service providing companies based in a country are multinational by formation and offer services globally. Such character of the companies makes it difficult for every individual States to regulate them independently and in a harmonised manner. It is also not feasible that hundreds of States apply their regulatory role in a harmonised manner over such a multinational company individually. This is why regulators for satellite services are established at international level, in order to regulate the satellite service providers in harmonised manner on behalf of all Member States with globally agreed standards.

2.6 Looking at the global maritime sector it is noted the International Maritime Organization (IMO) established its own regime (e.g. *Criteria for the provision of satellite services*) for regulating the satellite service providers and engaged an intergovernmental organization (IGO) to oversee the satellite communication services, in order to ensure continuous availability of satellite network for the users,

minimising outages of satellite service. IMO's regime for regulating satellite services is designed in a way that does not impose new burdens in terms of efforts and costs for Member States and, at the same time, provide transparency to all stakeholders.

2.7 This need in discussing the regulation of mobile satellite services at international level is even more reasonable for the aviation sector. ICAO, sets the minimum requirements and metrics applicable to the provisions of aeronautical safety satellite services and conditions how Member State administrations should organise the implementation of those regulations in a harmonised manner. A solution that creates a unique international regulator responsible for ensuring the continuous availability of mobile satellite communication services, especially those related to safety, as specified, would not only safeguard the system reliability, but will also be more efficient and cost-effective in a global scale.

### 3. **PROPOSAL**

3.1 Considering the scenario presented, the United Arab Emirates is of the view that ICAO should consider how to implement effective arrangements to regulate the satellite service providers. The need of regulation is obvious, since civil aviation is becoming increasingly dependent on mobile satellite systems. This makes ICAO well placed to seek a solution at international level, thus reducing the burden to all Member States and making the process more efficient and transparent.

3.2 In this context, the ICAO Council may be authorised to examine the issues raised and establish appropriate regulatory regimes for regulating the satellite service providers in a harmonised manner.

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