INDRA response to consultation on
World Radiocommunication Conference 2023 – EU position

1. Introduction

INDRA is pleased to offer comments to the RSPG aiming at helping to define the Draft RSPG´s Opinion on the Agenda Items in the context of the upcoming ITU-R World Radiocommunication Conference 2023. This opinion addresses only Agenda Item 1.7

INDRA, a world leader in the development of air traffic management systems, together with ENAIRE, the national air navigation agency in Spain, have created a new company STARTICAL. The later company will launch a constellation of over 200 satellites specifically designed for air traffic management (ATM), that will provide global VHF AMS(R)S voice and data communications coverage and ADS-B surveillance services. Startical will own the constellation, which will result in controlled costs, the ability to offer integrated communication and surveillance services and new services such as integrated ADS-B data verification using multilateration techniques. STARTICAL's services will not require any changes to avionics or existing facilities.

The innovative development of STARTICAL falls fully within the key innovation areas supported by the European Commission. Among them, the improved air traffic management (ATM), via solutions supported by the Climate, Infrastructure and Environment Executive Agency (CINEA), through the Connecting Europe Facility (CEF) fund, with the objective of validating and quantifying the advantages, reliability and availability, with which the space infrastructure will transform the air navigation sector, making it much more sustainable and bringing it closer to the decarbonisation objective set for 2050.

In addition to improving the capacity, fluidity, efficiency and environmental friendliness of air transport, this disruptive critical satellite infrastructure, with a major technological and industrial component, will act as a driving force that will position European industry at the forefront of new space, a business segment with strong growth potential. It will mean a leap forward in terms of quality, which in turn will boost the sector's competitiveness on a global scale.

The agenda item 1.7 is critical for the future development of global and regional air traffic control mechanisms based on satellite services. European industries are at the front of the technology and businesses related to air traffic management. Several projects, including some supported by the European Commission, are indeed addressing technologies related to the provision of air traffic management services via space.

2. INDRA´s Opinion on WRC 23 Agenda Item 1.7

Space-based VHF communication is a concept in which aircraft is connected to air traffic control (ATC) via satellite using VHF frequencies within the 117.975-137 MHz range. This concept, when implemented, is expected to enhance air traffic management and flight operations particularly in oceanic and remote airspace and will complement current aviation use of satellite-based navigation and surveillance technologies.

While currently there are other long-range communication systems, such as HF and SATCOM, available to facilitate communications between aircraft and to ATC in remote and oceanic airspace, the performance of these current systems is not adequate to safely support close aircraft-to-aircraft separation in a similar fashion as to what is being applied in dense airspace where terrestrial-based VHF communications infrastructure is predominant. Therefore, this leads to constraints in airspace capacity and efficiency in oceanic and remote areas, where it is not practical to deploy VHF terrestrial infrastructure.

The agenda item 1.7 and its Resolution are provided below.

WRC23 Agenda item 1.7. to consider a new aeronautical mobile-satellite (R) service (AMS(R)S) allocation in accordance with Resolution 428 (WRC-19) for both the Earth-to-space and space-to-Earth directions of aeronautical VHF communications in all or part of the frequency band 117.975 137 MHz, while preventing any undue constraints on existing VHF systems operating in the AM(R)S, the ARNS, and in adjacent frequency bands.

Resolution 428 (WRC-19). Studies on a possible new allocation to the aeronautical mobile satellite (R) service within the frequency band 117.975-137 MHz in order to support aeronautical VHF communications in the Earth-to-space and space-to-Earth directions.

The work being conducted at ITU in preparation of the WRC 23 regarding this agenda item is so far agreeing on the decision to allocate the band 117.975 – 137 MHz to the new aeronautical mobile satellite (route) service. The two methods being discussed assumed such new allocation. However, mostly pushed by Asian and Euro-Asian countries, one of the methods would require unnecessary constrains for the future ASM(R)S.

The ITU R is studying several ASM(R)S systems using several technologies (voice, data). The overall goal is to increase the capacity of the air traffic management tools bringing a number of significant advantages:
a) Reduced separations;
b) Increase capacity;
c) Better and more efficient use of the airspace;
d) Reduced frequency congestion and more efficient use of the spectrum; and,
e) More automated exchange of flight information between the aircrafts and the Air Traffic Control.

If Europe ambitious to lead the transition from purely terrestrial aeronautical air traffic management systems to hybrid terrestrial and space-based, the European Union should consider including this agenda item as a critical and strategic one to be supported at European Union level.

3. Link to the EU policies

Among other policies, the following ones are relevant regarding the AI 1.7:

- European Parliament resolution of 16 February 2017 on an Aviation Strategy for Europe (2016/2062(INI)). Commission's communication on strategy of an Aviation Strategy for Europe and its effort to identify sources for boosting the

sector by finding new market opportunities and dismantling barriers, and for its proposals to meet and anticipate new challenges on the basis of a common European vision, by developing modern regulatory frameworks; believes that, in a longer-term perspective, a further holistic and more ambitious approach should be embraced in order to provide the necessary boost for a sustainable and competitive European aviation industry.

This strategy encompasses, among other objectives, that the European aviation sector, though facing increased pressure from new competitors, many of which have used air transport as a strategic tool for international development, can fit into a competitive global environment by further building on and developing its assets, such as high safety and security standards, the role of EASA, geographical positioning, an innovative industry and social and environmental goals; strongly believes that competition from third countries, if fair, should be seen as an opportunity to develop further an innovative European aviation model that has the potential to provide a unique and competitive response to the specificities of competitors;

- European Datalink mandate IR 29/2009 amended by EU 2015/310. VHF data has been recently implemented in Europe following this mandate. One of its main targets is to increase safety due to possible misunderstandings and a heavy workload for both Air Traffic Control Units and pilots.
- (EU) 965/2012 lays down the technical requirements and administrative procedures related to air operations that Aircraft Operators. Space Based-VHF system would easily support the accomplishment of (EU) 965/2012 with the clear advantage of having no impact either on the aircrafts because no new equipment is required or on the operational procedures that pilots have to follow.
- Communication from the Commission No. 2014/9641, on the implementation of the SESAR Joint Undertaking.

Consequently, INDRA respectfully recommends RSPG to consider including AI 1.7 among the agenda items of relevance regarding EU policies and support the decision of the WRC23 to allocate the band 117.975-1367 MHz to the aeronautical mobile satellite (on route) service.