International Air Transport Association

Final Position for the International Telecommunication Union (ITU)

World Radiocommunication Conference 2015 (WRC - 15)

The International Air Transport Association (IATA) is the global trade association for the airline industry, representing the interests of some 250 member airlines comprising an average of 85% of total air traffic in the entire globe. Air transport today plays a major role in driving sustainable economic and social development. It directly and indirectly supports the employment of 56.6 million people, contributes over $2.2 trillion to global Gross Domestic Product (GDP), and carries over 2.9 billion passengers and $5.3 trillion worth of cargo annually.

Introduction

Air Traffic Management (ATM) relies on having access to CNS systems with the relevant levels of availability and reliability. These systems are based on the provision of sufficient spectrum that is suitably protected. The requirements are expanding as aviation looks at new applications such as data link, weather applications, and remotely piloted aircraft (RPA) systems.

Aiming the harmonization among regional and national ATM programs, and taking into account spectrum needs for aeronautical purposes, ICAO launched the concept of the Aviation Systems Block Upgrades (ASBUs), part of the Fourth Edition of the Global Air Navigation Plan (GANP), which was endorsed by the resolution A38-2: ICAO global planning for safety and air navigation of the 38th Session of ICAO Assembly.

Besides, targeting the harmonization of different ATM programs with regard to the application of the ASBUs content, IATA has launched an initiative, called One Voice, joining key industry partners to:

- Provide the required operational improvements by the industry highlighting the benefits that can be achieved, and listing the technology systems and ASBU modules that can enable such improvements.

- Provide guiding principles that govern the planning, rulemaking, and deployment of modern ATM Systems.

- Work with the relevant regulatory and government entities to develop an integrated master schedule for the implementation of national and regional ATM programs.

Although it is not expected to have a huge increase of safety-of-life aeronautical services and applications in the near term, frequency spectrum is becoming more critical not only for the implementation of the referred new technologies reflected in the GANP and the One Voice initiative, but to possibly accommodate new requirements for the International Mobile Telecommunication (IMT).

In support to the safety aspects related to the use of radio frequency spectrum by aviation, Article 4.10 of the Radio Regulations states that “ITU Member States recognize that the safety aspects of radionavigation and other safety services require special measures to ensure their freedom from harmful interference; it is necessary therefore to take this factor into account in the assignment and use of frequencies”. In particular, compatibility of aeronautical safety services with co-band or adjacent band aeronautical non-safety services or non-aeronautical services must be considered with extreme care in order to preserve the integrity of the aeronautical safety services.

Objectives of IATA Position for the WRC-15

It is recognized that the aeronautical safety of life systems operate requiring additional safety margins and this fact is important to be taken into account when studying electromagnetic compatibilities for the additional spectrum allocation with other services.

In the past, aviation has been able to defend its spectrum allocation primarily on safety reasons, but those arguments are perceived as less convincing by non-aviation sectors, for which economic considerations are increasingly used as a basis for decision making instead of flight safe.

The WRC 15 encompasses a considerable number of items of importance or with direct impact on the aviation applications and systems, highlighting:

- Spectrum requirements and additional allocations to the Mobile Service (MS) to support the terrestrial component for International Mobile Telecommunications (IMT).
- Study regarding the use of bands allocated to the Fixed Satellite Service (FSS) for unmanned aircraft systems in non-segregated airspace.
- Spectrum and regulatory requirements to support wireless avionics intra communications (WAIC) systems.

Moreover, due to the fatidic events surrounding Malaysia Airlines flight MH370, the International Telecommunications Union (ITU) Plenipotentiary Conference (Busan, 2014) decided to include the Global Flight Tracking (GFT) for civil aviation as addressed by Resolution 185.

The IATA Position for the World Radiocommunication Conference 2015 (WRC-15) seeks to guarantee appropriate, secure radio spectrum to support current and future communications, navigation and surveillance /air traffic management (CNS/ATM) technologies and systems essential to meeting future growth in airline services in a safe and efficient manner.

The main objectives of the IATA position are:

- Ensure that spectrum is available for new technologies for CNS/ATM and GFT;
- Maintain protection for the spectrum used for aeronautical radiocommunication and radionavigation systems required for current and future safety-of-life applications;
- Ensure that the application of new regulatory measures does not impact on global operations or result in social or economic penalty to aviation without providing benefit.

WRC Agenda Items Related to Aeronautical Spectrum Allocations

Agenda Item 1.1

***Agenda Item Title*:**

To consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution 233 (WRC-12).

Discussion:

A considerable number of aviation systems operate below 6 000 MHz and it is therefore essential to ensure that any new allocation to the mobile service does not adversely impact the operation of these systems. Based on recent experience with the introduction of mobile systems in the frequency band below 2 690 MHz and interference to primary surveillance radar systems in the adjacent band (2 700 – 2 900 MHz), care needs to be taken not only with any proposal for co-frequency band sharing of aeronautical services with non-aeronautical services but also with proposals for the introduction of new allocations in frequency bands.

Spectrum has become an increasingly scarce resource and the current demands for spectrum from non-aviation sectors is placing aeronautical spectrum at risk. Aviation has determined that aeronautical safety of life radio systems operate in spectrum that is either allocated to or specifically identified for aeronautical services where it is recognized that additional safety margins are required when studying compatibility.

As this agenda item could impact a variety of frequency bands used by aeronautical safety services below 6 GHz it will be important to ensure that agreed studies validate compatibility prior to considering additional allocations.

ITU-R Working Parties 5A and 5D indicated a number of frequency ranges as suitable for possible future deployment of mobile broadband applications including IMT. Based on that input, the following frequency bands/ranges were identified as potential candidate bands 470-694/698 MHz; 1 350-1 400 MHz; 1 427-1 452 MHz; 1 452-1 492 MHz; 1 492-1 518 MHz; 1 518-1 525 MHz; 1 695-1 710 MHz; 2 700-2 900 MHz; 3 300-3 400 MHz; 3 400-3 600 MHz; 3 600-3 700 MHz; 3 700-3 800 MHz; 3 800-4 200 MHz; 4 400-4 5 00 MHz; 4 500-4 800 MHz; 4 800-4 990 MHz; 5 350-5 470 MHz; 5 725-5 850 MHz and 5 925-6 425 MHz. It should be noted that identification was solely based on three criteria: the frequency band/range had to: a) be indicated as suitable by WP5D; b) be proposed by at least one administration; and c) have been studied by the ITU-R.

The following aeronautical systems operate in or near the potential candidate frequency bands/ranges, for International Mobile Telecommunications (IMT):

1 215 – 1 350 MHz

Primary radar: This band, especially frequencies above 1 260 MHz, is extensively used for long-range primary surveillance radar to support air traffic control in the en-route and terminal environments.

All studies carried out were based on the parameters provided by ITU-R and show that within the same geographical area co-frequency operation of mobile broadband systems and radar is not feasible. Furthermore, there is widespread usage of this frequency range in some countries for radar. In addition, harmonized usage of all or a portion of this frequency range by mobile services for the implementation of IMT may not be feasible, in particular on a global basis. Hence none of the frequency bands in the frequency range were included in the list of potential candidate frequency bands. However, these studies could not agree on the size of the guard band required to protect radars operating in the frequency band 1 300 – 1 350 MHz. Therefore, the proposal to use the adjacent frequency band 1 350 – 1 400 MHz should be treated with caution.

In some countries the band is not fully used by radio determination systems, and there were studies undertaken in ITU-R which showed that sharing may be feasible in those countries subject to various mitigation measures, and to co-ordination with potentially affected neighbouring countries. However, no conclusions as to the applicability, complexity, practicability or achievability of these mitigations could be reached.

1.5 / 1.6 GHz

Aeronautical mobile satellite communication systems: Portions of the frequency bands 1 525 –1 559 and 1 626.5 –1 660 MHz as well as the frequency band 1 610 – 1 626.5 MHz are used for the provision of ICAO standardised satellite communication services. A number of recent studies have been undertaken within ITU-R with respect to the compatibility between terrestrial mobile systems and aeronautical satellite systems and indicated that sharing was not possible. While those bands are not identified as potential candidate bands, adjacent bands have been. Studies related to adjacent band compatibility have identified the need for IMT constraints in order to protect aeronautical satellite systems.

2 700 – 3 100 MHz

Approach primary radar: This band is extensively used to support air traffic control services at airports, especially approach services. There have been a number of studies undertaken within the ITU-R, Europe and the United States on sharing with respect to compatibility with terrestrial mobile systems. All studies carried out were based on the parameters provided by ITU-R and show that within the same geographical area co-frequency operation of mobile broadband systems and radar is not feasible. Furthermore, there is widespread usage of this frequency range in some countries for radar. In addition, harmonized usage of all or a portion of this frequency range by mobile services for the implementation of IMT may not be feasible, in particular on a global basis.

In some countries the band is not fully used by radio determination systems, and there were studies undertaken in ITU-R which showed that sharing may be feasible in those countries subject to various mitigation measures, and to co-ordination with potentially affected neighbouring countries. However, no conclusions as to the applicability, complexity, practicability or achievability of these mitigations could be reached.

3 400 – 4 200 MHz and 4 500 – 4 800 MHz

Fixed Satellite Service (FSS) systems used for aeronautical purposes: FSS systems are used in the frequency range 3 400 – 4 200 MHz and the frequency band 4 500 – 4 800 MHz as part of the ground infrastructure for transmission of critical aeronautical and meteorological information (see Resolution **154** (WRC-12) and agenda item 9.1.5). FSS systems in the 3.4 – 4.2 GHz frequency range are also used for feeder links to support AMS(R)S systems. ITU-R Report **M.2109** contains sharing studies between IMT and FSS in the frequency range 3 400 – 4 200 MHz and frequency band 4 500 – 4 800 MHz and ITU-R Report **S.2199** contains studies on compatibility of broadband wireless access systems and FSS networks in the frequency range 3 400 – 4 200 MHz. Both studies show a potential for interference from IMT and broadband wireless access stations into FSS Earth stations at distances of up to several hundred km. Such large separation distances would impose substantial constraints on both mobile and satellite deployments. The studies also show that interference can occur when IMT systems are operated in the adjacent frequency band.

4 200 – 4 400 MHz

Radio altimeters: This frequency band is used by radio altimeters. Radio altimeters provide an essential safety-of-life function during all phases of flight, including the final stages of landing where the aircraft has to be maneuvered into the final landing position or attitude. It should be noted that although adjacent frequency bands/ranges were identified as potential candidate bands, no studies were provided within ITU regarding protection of radio altimeters from unwanted emissions from IMT operating in those adjacent bands/ranges. Studies were carried out within the auspices of ICAO however, and have indicated that deployment of IMT in an adjacent band would cause interference to radio altimeters especially on approach to an airport where their operation is most critical.

5 350 – 5 470 MHz

Airborne weather radar: The frequency range 5 350 – 5 470 MHz is globally used for airborne weather radar. The airborne weather radar is a safety critical instrument assisting pilots in deviating from potential hazardous weather conditions and detecting wind shear and microbursts. This use is expected to continue for the long-term.

5 850 – 6 425 MHz

Fixed Satellite Service (FSS) systems used for aeronautical purposes: The frequency range 5 850 – 6 425 MHz is used by aeronautical VSAT networks for transmission (E-s) of critical aeronautical and meteorological information.

Other bands important to protect which are not identified as potential candidate frequency bands:

As this agenda item could impact a variety of frequency bands used by aeronautical safety services below 6 GHz it will be important to ensure that agreed studies validate compatibility prior to considering additional allocations.

It should be noted that the following frequency bands are also used by aeronautical systems and whilst these frequency bands have not been identified, this does not preclude proposals being made which may need to be addressed:

406 – 406.1 MHz

Emergency Locator Transmitter: Emergency locator transmitters, referred to as emergency position-indicating radio beacons (EPIRB) in the ITU, when activated transmit a distress signal which can be received by the COSPAS/SARSAT satellites and suitably equipped aircraft and vessels to facilitate search and rescue operations. Whilst there have been no recent compatibility studies, Resolution **205** was updated at WRC-12 to call for regulatory, technical and operational studies with a view to identify any required regulatory action that can be identified in the Director's report to WRC-15.

960 – 1 215 MHz

Distance measuring equipment (DME): DME is the ICAO standard system for the determination of the position of an aircraft based on the distance between that aircraft and ground-based DME beacons within radio line of sight. Studies in Europe with respect to compatibility with adjacent frequency band (below 960 MHz) IMT systems, and within ICAO with regard to co-frequency band sharing of the aeronautical mobile (R) service (AM(R)S) within the frequency band 960 – 1 164 MHz, show that any co-frequency band sharing with IMT systems would be difficult.

1 030 & 1090 MHz

Secondary surveillance radar (SSR): SSR is the ICAO standard system that operates on two frequencies (1 030 and 1 090 MHz), used to identify the position of an aircraft based on that aircraft's response to an interrogation by the ground based element of the SSR system.

1 090 Extended Squitter (1 090ES) ÷ 1 090 ES is an ICAO standard system to support automatic dependent surveillance-broadcast (ADS-B); automatically broadcasting the position and other parameters of the aircraft in order to allow other aircraft and ground facilities to track that aircraft.

Multilateration (MLAT): MLAT is the ICAO standard system used to identify the position of an aircraft based on an aircraft's transmission on 1 090 MHz as response to an interrogation on 1 030M Hz by a ground based SSR or by active MLAT.

Airborne collision avoidance system (ACAS): ACAS is the ICAO standard system operating on the same frequencies as SSR, used for the detection and avoidance of collision as in ICAO Annex 10 Vol.4 Chapter 4.

These systems provide essential surveillance functions on a global basis. Although detailed studies would be required to fully assess any sharing proposals, the fact that two frequencies are used to support all of these safety of life systems would indicate that any sharing is unlikely to be acceptable to ICAO on safety grounds.

Universal access transceiver (UAT): UAT is an ICAO standardised system operating on 978 MHz intended to support automatic dependant surveillance-broadcast as well as ground uplink services to aircraft such as situational awareness and flight information services.

Global navigation satellite systems: The global allocation to the radionavigation satellite service in the frequency bands 1 164 – 1 215 MHz is intended to provide civil precision navigational services for various users, including aviation. Compatibility of the radionavigation satellite service and the aeronautical radionavigation service in the frequency range 960 – 1 215 MHz has been established through footnote **5.328A** and Resolutions **609** and **610**.

Aeronautical Communications Future Communication System: The frequency band 960 – 1 164 MHz was allocated to the AM(R)S for the development by ICAO of a significant component of the aeronautical future communication system. Report ITU-R **M.2235** presents compatibility studies of AM(R)S systems operating in the band 960 – 1 164 MHz with systems operating in the same frequency band, and in the adjacent frequency bands, both on-board the aircraft and on the ground.

1 559 – 1 610 MHz

Global Navigation Satellite Systems (GNSS): These systems are used by the ICAO standardised satellite navigation systems for navigation in the en-route, terminal and airport environments. A number of recent studies have been undertaken with respect to the compatibility between terrestrial mobile systems operating in an adjacent frequency band and satellite navigation systems. Those studies indicated that adjacent band operations are not possible.

5 000 – 5 250 MHz

Microwave Landing System (MLS): The frequency band 5 030 – 5 091 MHz is to be used for the Microwave Landing System. MLS provides for precision approach and landing of aircraft. Future implementation of MLS is expected to be limited, but where deployed, the MLS needs to be protected from harmful interference.

UAS Terrestrial and UAS Satellite communications: At WRC-12, an allocation to the AM(R)S was introduced and a footnoted AMS(R)S allocation was brought into the table of allocations in the frequency range 5 000-5 150 MHz with the view to provide spectrum for command and non-payload communications with unmanned aircraft systems. The development and implementation of these systems, taking into account the need to protect other uses in the frequency range 5 000 – 5 150 MHz is currently being considered in ICAO.

AeroMACS: Provisions for introducing systems for communications with aircraft on the surface of an airport (AeroMACS) were introduced in the Radio Regulations in 2007 in the frequency band 5 091 – 5 150 MHz.

Aeronautical Telemetry: Provisions for introducing systems for Aeronautical telemetry were introduced in the Radio Regulations in 2007 in the frequency range 5 091 – 5 250 MHz. Aeronautical telemetry systems are currently being implemented.

IATA's Position 1.1:

To oppose any new allocation to the mobile service for IMT in or adjacent to:

- frequency bands allocated to aeronautical safety services (ARNS, AM(R)S, AMS(R)S);

- frequency bands allocated to RNSS and used for aeronautical safety applications; or

- frequency bands used by fixed satellite service (FSS) systems for aeronautical purposes as part of the ground infrastructure for transmission of aeronautical and meteorological information or for AMS(R)S feeder links, unless it has been demonstrated through agreed studies that there will be no impact on aeronautical services.

Due to the potential for serious impact to aeronautical radar systems, global and/or regional allocations to the mobile service for IMT, and/or identification for IMT, should be opposed in any portion of the potential candidate frequency bands/ranges 1 350 - 1 400 MHz and 2 700 - 2 900 MHz. Allocations/identifications on a country/multi-country basis should be contingent on successful completion of coordination with countries within several hundred kilometres of the IMT proponent country's border.

Any new allocations to the mobile service for IMT, and/or identification for IMT, in frequency bands/ranges near that used by radio altimeters (4 200 - 4 400 MHz) should be contingent on successful completion of studies to demonstrate that IMT operations will not cause harmful interference to the operation of radio altimeters.

Agenda Item 1.4

Agenda Item Title:

To consider possible new allocation to the amateur service on a secondary basis within the band 5 250-5 450 kHz in accordance with Resolution 649 (WRC-12).

Discussion:

The frequency band 5 450 – 5 480 kHz is allocated on a primary basis to the aeronautical mobile (R) service (AM(R)S) in Region 2. The use of this band for long distance communications (HF) by aviation is subject to the provisions of Appendix 27. Any allocation made to the amateur service in the band 5 250 – 5 450 kHz under this agenda item must ensure the protection of the adjacent frequency band 5 450 – 5 480 kHz from harmful interference.

IATA's Position 1.4:

To ensure that any allocation made to the amateur service shall not cause harmful interference to aeronautical systems operating under the allocation to the aeronautical mobile (R) service in the adjacent frequency band 5 450 – 5 480 kHz in Region 2.

Agenda Item 1.5

Agenda Item Title:

To consider the use of frequency bands allocated to the fixed-satellite service not subject to Appendices 30, 30A and 30B for the control and non-payload communications of unmanned aircraft systems (UAS) in non-segregated airspaces, in accordance with Resolution 153 (WRC-12).

Discussion:

The implementation of Unmanned Aircraft (UA) in non-segregated airspaces is a challenge to industry, States and ICAO not only due the state of the art of the technology involved but all the new procedures and frequency spectrum to be considered in an environment of coexistence of UAS with piloted aircrafts. So, the UA needs to operate seamlessly with manned aircraft in the non-segregated airspace and, to the extent practicable, use globally harmonized spectrum.

Established in close cooperation with the member airlines and Strategic Partners through the IATA Safety Group (SG) and the Operations Committee (OPC) in 2013, the revised Six Point Safety Strategy is a comprehensive approach to identify organizational, operational and emerging safety issues. The Strategy focuses in six key areas, one of the main concerns is related to the safe Integration of Remotely Piloted Aircraft Systems (RPAS) [(1)].

At WRC-12 no new satellite allocations were made to support beyond-line-of-sight (BLOS) unmanned aircraft system (UAS[1]) control and non-payload communications (CNPC) [2]. However, the previous allocation of the range 5 000 – 5 150 MHz to the aeronautical mobile satellite (R) service (AMS(R)S) footnote 5.367 was replaced by a table allocation, and the co-ordination requirements in the frequency band 5 030 – 5 091 MHz were changed from 9.21 to 9.11A.

The requirement for BLOS (satellite) communications of between 56 and 169 MHz, as documented in Report ITU-R M.2171, likely cannot be fulfilled entirely in the AMS(R)S allocated frequency bands 1.5 / 1.6 / 5 GHz, especially as no satellite system is operational at 5 GHz in the current or near-term to support UAS CNPC.

Existing networks operating in the FSS in the unplanned frequency bands at 14/12 GHz and 30/20 GHz have potential spectrum capacity available that can meet the requirements for BLOS communications and could be used for UAS CNPC provided that the principles (conditions) detailed below are fulfilled. However, the FSS is not recognized in the ITU as a safety service and it should be noted that any consideration of operation of UAS CNPC under an allocation to the FSS must address the inconsistency with Article 1 definitions of the fixed satellite service (No. 1.21) and aircraft earth station (No. 1.84).

Studies within the ITU have provided information on the CNPC radio link performance under various UAS operating conditions. Other studies within the ITU also address the compatibility between this application of the FSS and other services that may be authorized by administrations.

1 UAS is referred to in ICAO as Remotely Piloted Aircraft Systems (RPAS).

2 CNPC is referred to in ICAO as Command and Control (C2) or Command, Control and ATC Communications (C3).

The International Civil Aviation Organization (ICAO) is responsible for developing the technical Standards and Recommended Practices (SARPs) for CNPC to ensure safe operation of UAS in non-segregates airspace. UAS CPNC operations in non-segregated airspace need to satisfy ICAO SARPS requirements.

ICAO SARPs for UAS CNPC are in the early stages of development, so the technical and operational requirements of satellite systems supporting those communications are not yet defined. As a result, the ITU-R actions under WRC-15 Agenda Item 1.5 should be focused on providing a regulatory framework for the safe operation of UAS CNPC links in FSS bands under the ITU Radio Regulations and thus obtaining international recognition along with the basis for avoiding harmful interference.

In order to satisfy the requirements for BLOS communications for UAS, the use of satellite CNPC links will have to comply with the following eight conditions, the first four of which will be addressed in the ITU-R Radio Regulations, and the remainder in the ICAO UAS CNPC SARPS:

1. That the technical and regulatory actions be limited to the case of UAS using satellites, as studied, and not set a precedent that puts other aeronautical safety services at risk.

2. That all frequency bands which carry aeronautical safety communications be clearly identified in the ITU Radio Regulations.

3. That the assignments and use of the relevant frequency bands be consistent with article **4.10** of the ITU Radio Regulations which recognizes that safety services require special measures to ensure their freedom from harmful interference.

4. That any UAS CNPC assignment operating in those frequency bands:

   - be in conformity with technical criteria of the ITU Radio Regulations,
   - be successfully co-ordinated, including cases where co-ordination was not completed but the ITU-R examination of probability of harmful interference resulted in favourable finding, or any caveats placed on that assignment have been addressed and resolved such that the assignment is able to satisfy the requirements to provide BLOS communications for UAS; and
   - be recorded in the ITU International Master Frequency Register.

5. That any harmful interference to FSS networks supporting CNPC links be reported in a transparent manner and addressed in the appropriate timescale.

6. That realistic worst case conditions, including an appropriate safety margin, be applied during compatibility studies.

7. That any operational considerations for UAS be handled in ICAO and not in the ITU-R.

IATA's Position 1.5:

Recognizing that unmanned aircraft systems (UAS) have great potential for innovative civil applications, provided that their operation does not introduce risks to the safety of life, and taking into account the Twelfth Air Navigation Conference (November 2012) Recommendation 1/12; and Recommendation 1/13 as amended by the 38th Assembly, to ensure that in order to support the use of FSS systems for UAS CNPC links in non-segregated airspace, the technical and regulatory actions identified by studies under **Resolution 153** (WRC-12) be consistent with the above Recommendations, and satisfy the following conditions:

1. That the technical and regulatory actions be limited to the case of UAS using satellites, as studied, and not set a precedent that puts other aeronautical safety services at risk.
2. That all frequency bands which carry aeronautical safety communications be clearly identified in the ITU Radio Regulations.
3. That the assignments and use of the relevant frequency bands be consistent with article **4.10** of the ITU Radio Regulations which recognizes that safety services require special measures to ensure their freedom from harmful interference.

Additional conditions will need to be addressed in ICAO SARPs for UAS CNPC, and not in ITU.

The provisions for UAS CNPC communications links to meet the necessary technical and operational requirements for any specific airspace in any particular frequency band will be addressed within ICAO.

Agenda Item 1.6

Agenda Item Title:

To consider possible additional primary allocations:

- to the fixed-satellite service (Earth-to-space and space-to-Earth) of 250 MHz in the range between 10 GHz and 17 GHz in Region 1;

- to the fixed-satellite service (Earth-to-space) of 250 MHz in Region 2 and 300 MHz in Region 3 within the range 13 – 17 GHz;

and review the regulatory provisions on the current allocations to the fixed-satellite service within each range, taking into account the results of ITU-R studies, in accordance with Resolutions 151 (WRC-12) and 152 (WRC-12), respectively.

Discussion

This agenda item seeks to address the spectrum needs of the fixed satellite service to support projected future needs. Whilst the scope of this agenda item is limited in terms of frequency bands within which studies can take place there are a number of aeronautical systems such as Doppler navigation aids (13.25 – 13.4 GHz) and airport surface detection equipment/airborne weather radar (15.4 – 15.7 GHz) which need to be appropriately protected. Any allocation to the fixed satellite service should not adversely impact on the operation of aeronautical services in this frequency range.

IATA's Position 1.6:

To oppose any new fixed satellite service allocation unless it has been demonstrated through agreed studies that there will be no impact on aviation use of the relevant frequency band.

Agenda Item 1.7

Agenda Item Title:

To review the use of the band 5 091 – 5 150 MHz by the fixed-satellite service (Earth-to-space) (limited to feeder links of the non-geostationary mobile-satellite systems in the mobile-satellite service) in accordance with Resolution 114 (Rev.WRC-12).

Discussion:

In 1995 the allocation in the frequency band 5 091 – 5 150 MHz to the fixed satellite service (FSS) (Earth-to-space), limited to feeder links of the non-geostationary mobile satellite systems in the mobile satellite service, was added in order to address what at the time was perceived to be a temporary shortage of spectrum for such feeder links. To recognize the temporary nature of the allocation two clauses were added to the allocation at that time limiting the introduction of new assignments to the period up to 1 January 2008 and making the FSS secondary after the 1 January 2010. Subsequent conferences have modified these dates with the current dates being 1 January 2016 (no new frequency assignments) and 1 January 2018 (revert FSS to a secondary status) respectively.

Resolution 114 (WRC-12) calls for a review of allocations to both the aeronautical radionavigation service (ARNS) and the FSS in this band. ICAO is specifically invited to further review the detailed spectrum requirements and planning for international standard aeronautical radionavigation systems in the band. Initially this band was reserved to meet requirements for microwave landing system (MLS) assignments which could not be satisfied in the frequency band 5 030 – 5 091 MHz.

Aviation is implementing a new airport communication system under the recently allocated aeronautical mobile (R) service (AM(R)S) in the frequency band 5 091 – 5 150 MHz. Deployment and the capacity of this airport communication system is limited by the restrictions on the aggregate signal level permissible under the co-ordination arrangements established as part of agreeing to the AM(R)S allocation. Those arrangements allowed an increase in FSS satellite noise temperature (ΔTs /Ts) for the AM(R)S of 2% under the assumption that ARNS and aeronautical telemetry in the band would be contributing an additional 3% and 1% respectively.

While the ARNS allocation should be maintained for the future, ARNS systems are not expected to operate in that band in the near-term, so as part of the review of the FSS allocation ICAO would wish to see a more flexible allocation of the ΔTs /Ts between the various aeronautical services. Instead of limiting AM(R)S to 2% and ARNS to 3%, the regulations should be revised to restrict the combination of AM(R)S plus ARNS to a total of 5% ΔTs /Ts. This would allow increased flexibility for the AM(R)S while retaining the overall noise temperature increase caused by aeronautical systems operating in the band to 6%. Hence, the removal of the date limitation of the FSS can be supported, provided that stable sharing conditions with the ARNS and AM(R)S in the band are maintained and flexibility is improved in regards to ΔTs /Ts.

IATA's Position 1.7:

To support the removal of date limitations on the fixed satellite service (FSS) allocation in the frequency band 5091 – 5150 MHz subject to:

• the retention of the aeronautical protections contained in Resolution 114 (WRC-12).

• improving the flexibility for managing the allowed FSS satellite noise temperature increase by the aeronautical mobile (R) and aeronautical radionavigation services operating in the band 5 091-5 150 MHz.

Agenda Item 1.10

Agenda Item Title:

To consider spectrum requirements and possible additional spectrum allocations for the mobile satellite service in the Earth-to-space and space-to-Earth directions, including the satellite component for broadband applications, including International Mobile Telecommunications (IMT), within the frequency range from 22 GHz to 26 GHz, in accordance with Resolution 234 (WRC-12).

Discussion:

A shortfall is predicted in the amount of mobile satellite spectrum available to support the satellite component of IMT, partly due to the failure to identify any spectrum that could be allocated to the mobile satellite service (MSS) below 16 GHz at WRC-12. This agenda item seeks to address these spectrum needs by identifying suitable spectrum for assignment to the MSS in the frequency range 22 – 26 GHz. Whilst the scope of this agenda item is limited in terms of frequency bands within which studies can take place, aviation does operate a number of airport surface detection systems in the frequency range 24.25 – 24.65 GHz in Regions 2 and 3 that need to be appropriately protected.

Any allocation to the MSS should not adversely impact on the operation of aeronautical services in this frequency range.

IATA's Position 1.10:

To oppose any new mobile satellite service allocation unless it has been demonstrated through agreed studies that there will be no impact on aviation use in the 24.25 – 24.65 GHz frequency band in Regions 2 and 3.

Agenda Item 1.11

Agenda Item Title:

To consider a primary allocation for the Earth exploration-satellite service (Earth-to-space) in the 7-8 GHz range, in accordance with Resolution 650 (WRC-12).

Discussion:

Limited spectrum is available for tracking, telemetry and control systems operating in the Earth exploration-satellite service (EESS) and the available spectrum is currently in use by hundreds of satellites. This agenda item seeks to identify suitable additional spectrum for allocation to the Earth exploration-satellite service in the frequency range 7 – 8 GHz to complement the existing allocation at 8 025 – 8 400 MHz. Whilst the scope of this agenda item is limited in terms of frequency bands within which studies can take place, aviation does operate a number of airborne Doppler navigation systems in the frequency band 8 750 – 8 850 MHz that need to be appropriately protected. Any allocation to the EESS should not adversely impact on the operation of aeronautical services in the frequency band 8750 – 8850 MHz.

IATA's Position 1.11:

To oppose any new allocation to the Earth exploration satellite service, unless it has been demonstrated through agreed studies that there will be no impact on aviation use in the frequency band 8 750 – 8 850 MHz.

Agenda Item 1.12:

Agenda Item Title:

To consider an extension of the current worldwide allocation to the Earth exploration-satellite (active) service in the frequency band 9 300 – 9 900 MHz by up to 600 MHz within the frequency bands 8 700 – 9 300 MHz and/or 9 900 – 10 500 MHz, in accordance with Resolution 651 (WRC-12)

Discussion:

The frequency band 9 000 – 9 200 MHz is used by aeronautical radar systems (ground and airborne), including Airport Surface Detection Equipment (ASDE), Airport Surface Movement Radar (ASMR) and Precision Approach Radar (PAR) sometimes combined with Airport Surface Radar (ASR). They cater for short-range surveillance and precision functions up to a 50 km (approx. 25 NM) range. In aviation, these systems are used for precision monitoring, approach and surface detection functions and in airborne weather radar systems where their shorter wavelength is suitable for the detection of storm clouds. These radars are due to remain in service for the foreseeable future. The ongoing protection of the aeronautical uses of this frequency band needs to be assured.

Within ITU-R it has been argued that the impact on the aeronautical services has already been proven since the technical data is mainly identical to the outcome of studies performed prior to the allocation for the Earth exploration-satellite service (EESS) above 9 300 MHz by WRC-07. However the equipment types considered in the past were only un-modulated pulse Radars, rather than newer solid-state-based Radars that utilize pulse-compression modulation. The compatibility of these new Radar technologies with the EESS was addressed in new ITU studies contained in Report ITU-R RS.2313. Those studies demonstrated that EESS operation in 9 000 - 9 200 MHz would not be compatible with aeronautical radar systems.

IATA's Position 1.12:

To oppose any allocation to the Earth exploration-satellite service in the frequency band 9 000 – 9 200 MHz as it has been demonstrated through agreed studies that EESS would impact aviation use and place constraints on the use of the frequency band by aeronautical systems.

No change to Nos. **5.337**, **5.427**, **5.474** and **5.475**.

Agenda Item 1.16

Agenda Item Title:

To consider regulatory provisions and spectrum allocations to enable possible new Automatic Identification System (AIS) technology applications and possible new applications to improve maritime radiocommunication in accordance with Resolution 360 (WRC-12).

Discussion:

The maritime automatic identification system is fitted in search and rescue aircraft to allow coordination of search and rescue activities in which both vessels and aircraft are involved. It is essential to ensure that any change to the regulatory provisions and spectrum allocations resulting from this agenda item do not adversely impact on the capability of search and rescue aircraft to effectively communicate with vessels during disaster relief operations.

IATA's Position 1.16

To ensure that any change to the regulatory provisions and spectrum allocations resulting from this agenda item do not adversely impact on the capability of search and rescue aircraft to effectively communicate with vessels during disaster relief operations.

Agenda Item 1.17

Agenda Item Title:

To consider possible spectrum requirements and regulatory actions, including appropriate aeronautical allocations, to support wireless avionics intra-communications (WAIC), in accordance with Resolution 423 (WRC-12).

Discussion:

The civil aviation industry is constantly developing the future generation of aircraft. Each subsequent generation is being designed to enhance efficiency and reliability while maintaining or improving current required levels of safety. The use of wireless technologies in the aircraft may reduce the overall weight of systems, reducing the amount of fuel required to fly and thus benefiting the environment.

Wireless Avionics Intra-Communications (WAIC) systems will offer aircraft designers and operators opportunities to improve flight safety and operational efficiency with the goal of reducing costs to airlines and passengers. WAIC systems could improve an aircraft's performance over its lifetime through more cost-effective flight operations, reduction in maintenance costs, enhancement of aircraft systems that maintain or increase the level of safety, and environmental benefits. WAIC systems are also envisioned to provide new functionalities to aircraft manufacturers and operators.

WAIC systems provide for radiocommunication between two or more points on a single aircraft and constitute exclusive closed on board networks required for the aircraft's operation. WAIC systems do not provide air-to-ground, air-to-satellite or air-to-air communications.

WAIC is a communication system which only carries aeronautical safety related content and should therefore be seen as an application of the aeronautical mobile (route) service (AM(R)S). When initially evaluating the spectrum requirements for WAIC systems it was identified that those requirements could not be met in existing AM(R)S frequency bands, hence additional AM(R)S allocations would be required. In accordance with Resolution 423 (WRC-12), an initial assessment was conducted, analysing potential compatibility between proposed WAIC systems and systems operating under an allocation to an incumbent service. It considered all aeronautical bands in the frequency range 960 MHz-15.7 GHz containing either an AM(R)S, AMS or ARNS allocation.

Studies were conducted analysing potential compatibility between proposed WAIC systems and systems operating under an allocation to an incumbent service in the frequency bands 2 700 - 2 900 MHz, 4 200 - 4 400 MHz, 5 350 - 5 460 MHz, 22.5 - 22.55 GHz, and 23.55 - 23.6 GHz. Of the frequency bands studied, only the frequency band 4 200 - 4 400 MHz shows that sharing is feasible. Use of the band 4 200 - 4 400 MHz by the radio navigation service is reserved for radio altimeters. Consistent with the studies contained in Report ITU-R M. 2319, the compatibility between WAIC systems and radio altimeters has been confirmed within ICAO and ITU-R Working Party 5B.

IATA's Position 1.17:

To support global aeronautical mobile (route) service allocation in the frequency band 4 200 – 4 400 MHz exclusively reserved for Wireless Avionics Intra-Communications (WAIC) systems operating in accordance with recognized international aeronautical standards and considering that WAIC systems will not cause harmful interference to existing or planned aeronautical systems operating in frequency bands allocated to aeronautical safety services (radio altimeters)..

WRC-15 Agenda Item 1.18

Agenda Item Title:

Allocation of the band 77.5 – 78 GHz to the radiolocation service to support automotive short-range high-resolution radar operations.

Discussion:

As aircraft have become larger, the ability of the captain and co-pilot to accurately taxi the aircraft around a busy airport has become more difficult and incidents of aircraft colliding with other objects on the airport have become more common. A solution has been proposed that would use off-the-shelf automotive radar located in the wing tips of aircraft to detect other ground object that might be in the path of the taxiing aircraft.

WRC-15 Agenda Item 1.18 is seeking an allocation to the radiolocation service at 77.5 - 78 GHz in order to create a contiguous piece of spectrum from 76 to 81 GHz that could support high resolution applications in the automotive industry. In order to ensure a cost effective solution for aviation to the ground taxiing issue it is essential to maintain commonality between automotive radars and those that can be fitted to aircraft. This application would operate in the radiolocation service on an advisory basis and only when the aircraft was on the airport surface.

As a result aviation would support an allocation to the radiolocation service at 77.5 - 78 GHz that is not limited in a way that would preclude the use of such radar on taxiing aircraft, noting that such an application is not regarded as a safety of life service.

IATA's Position 1.18:

To support the allocation of the frequency band 77.5 - 78 GHz to the radiolocation service in such a way as not to preclude its use on an advisory basis by taxiing aircraft..

Agenda Item 8

Agenda Item Title:

To consider and take appropriate action on requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, taking into account Resolution 26 (Rev. WRC-07).

Discussion:

Allocations to the aeronautical services are generally made for all ITU Regions and normally on an exclusive basis. This supports the global interoperability of radiocommunication and radionavigation equipment used in civil aircraft for safe and efficient flight. Certain States, however, add footnotes to the ITU allocations to indicate alternate usage of the subject band in different countries.

The use of country footnote allocations to non-aeronautical services in aeronautical bands is generally not desirable as such use may result in harmful interference to safety services. Furthermore, this practice generally leads to an inefficient use of available spectrum for aeronautical services, particularly when the radio systems sharing the band have differing technical characteristics. It also may result in undesirable (sub)-regional variations with respect to the technical conditions under which the aeronautical allocations can be used. This can have a serious impact on the safety of aviation.

The following footnotes in aeronautical bands should be deleted for safety and efficiency reasons as discussed below:

a) In the frequency bands used for the ICAO instrument landing system (ILS), (marker beacons 74.8 – 75.2 MHz; localizer 108 – 112 MHz and glide path 328.6 – 335.4 MHz) and the VHF omni-directional radio range system (VOR); 108 – 117.975 MHz, Nos. 5.181, 5.197 and 5.259 allow for the introduction of the mobile service on a secondary basis and subject to agreement obtained under No. 9.21 of the Radio Regulations when these bands are no longer required for the aeronautical radionavigation service. The use of both ILS and VOR is expected to continue. In addition, WRC-03, as amended by WRC- 07, has introduced No. 5.197A stipulating that the band 108 – 117.975 MHz is also allocated on a primary basis to the aeronautical mobile (R) service (AM(R)S), limited to systems operating in accordance with recognized international aeronautical standards.

Such use shall be in accordance with Resolution 413 (Rev. WRC-12). The use of the band 108 – 112 MHz by the AM(R)S shall be limited to systems composed of groundbased transmitters and associated receivers that provide navigational information in support of air navigation functions in accordance with recognized international aeronautical standards. As a result, access to these bands by the mobile service is not feasible, in particular since no acceptable sharing criteria that secure the protection of aeronautical systems have been established to date. Nos. 5.181, 5.197 and 5.259 should now be deleted since they do not represent a realistic expectation for an introduction of the mobile service in these bands.

b) Nos. 5.201 and 5.202 allocate the frequency bands 132 – 136 MHz and 136 – 137 MHz in some States to the aeronautical mobile (off-route) service (AM(OR)S). Since these frequency bands are heavily utilized for ICAO-standard VHF voice and data communications, those allocations should be deleted.

c) In the band 1 215 - 1 300 MHz, which is used by civil aviation for the provision of radionavigation services. Footnote No. 5.330 allocates the band in a number of countries to the fixed and mobile service. Given the receiver sensitivity of aeronautical uses of the band, IATA does not support the continued inclusion of an additional service through country footnotes.

d) In the frequency bands 1 610.6 – 1 613.8 MHz and 1 613.8 – 1 626.5 MHz, which is assigned to the aeronautical radionavigation service, No. 5.355 allocates the band on a secondary basis to the fixed service in a number of countries. Given that this band is allocated to a safety of life service, ICAO does not support the continued inclusion of an additional service through country footnotes. IATA urges administrations to remove their name from the No. 5.355.

e) In the frequency band 1 559 – 1 610 MHz, which is used for elements of the Global Navigation Satellite System (GNSS), Nos. 5.362B and 5.362C allow the operation of the fixed service in some countries on a primary basis until 1 January 2010 and on a secondary basis until 1 January 2015. This band is allocated, on a worldwide, primary basis, to the aeronautical radionavigation service (ARNS) and to the radionavigation satellite service (RNSS). The band already supports operation of two prime elements of the global navigation satellite system (GNSS), i.e. global navigation satellite system (GLONASS) and global positioning system (GPS), the standards for which have been adopted into ICAO SARPs. SARPs for other RNSS systems, such as the European Galileo system, are under development. Studies undertaken in preparation for WRC-2000 indicate that a geographical separation distance exceeding line-of-sight (in the order of 400 km) between aircraft using GNSS and stations of the fixed service is required to ensure safe operation of GNSS. This is a very severe restriction, which can prohibit the safe use of GNSS over wide areas around any fixed service installation. Were a fixed service to be introduced into this band then harmful interference situations could arise leading to disruption to GNSS, affecting the safety of aircraft in flight. Thus, the WRC-2000 agreement to terminate all use by the fixed service in this band in 2015 still constitutes a severe and unacceptable constraint on the safe and effective use of GNSS in some areas of the world. It is, therefore, recommended that deletion of these allocations be effective from 2015.

f) In the frequency band 3 400 – 4 200 MHz, the existing allocation to the fixed satellite service (FSS) (space-Earth) is used to provide aeronautical VSAT service, see discussion under agenda items 1.1 and 9.1.5. No. 5.430A allocates this band also to the mobile service in a number of States in Region 1, including States in Africa. African States are recommended to withdraw their names from this footnote.

g) In the frequency band 4 200 – 4 400 MHz, which is reserved for use by airborne radio altimeters, No. 5.439 allows the operation of the fixed service on a secondary basis in some countries. Radio altimeters are a critical element in aircraft automatic landing systems and serve as a sensor in ground proximity warning systems. Interference from the fixed service has the potential to affect the safety of all-weather operations. Deletion of this footnote is recommended.

IATA's Position 8:

To support the deletion of Nos. 5.181, 5.197 and 5.259, as access to the frequency bands 74.8 – 75.2, 108 – 112 and 328.6 –335.4 MHz by the mobile service is not feasible and could create the potential for harmful interference to important radionavigation systems used by aircraft at final approach and landing as well as systems operating in the aeronautical mobile service operating in the frequency band 108 – 112 MHz.

To support deletion of Nos. 5.201 and 5.202, as use by the AM(OR)S of the frequency bands 132 – 136 MHz and 136 – 137 MHz in some States may cause harmful interference to aeronautical safety communications.

To support deletion of No. 5.330 as access to the frequency band 1 215 – 1 300 MHz by the fixed and mobile services could potentially cause harmful interference to services used to support aircraft operations.

To support deletion of No. 5.355 as access to the frequency bands 1 610.6 – 1 613.8 and 1 613.8 – 1 626.5 MHz by the fixed services could potentially jeopardize aeronautical use of these frequency bands.

To support the deletion of Nos. 5.362B and 5.362C as of 2015 in order to eliminate harmful interference that has been caused by the fixed service to essential aeronautical radionavigation satellite functions in the frequency band 1 559 –1 610 MHz and to permit the full utilization of GNSS services to aircraft on a global basis.

To support the removal of States in the African region from No. 5.430A to ensure the protection of the safety operation of the aeronautical VSAT in the frequency band 3 400 – 4 200 MHz, where it is allocated on primary basis to the mobile service.

To support the deletion of No. 5.439 to ensure the protection of the safety critical operation of rad altimeters in the frequency band 4 200 – 4 400 MHz.

Agenda Item 9.1

Agenda Item Title:

To consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention: On the activities of the Radiocommunication Sector since WRC-12.

Sub-item 1 (9.1.1):

Resolution 205 – Protection of the systems operating in the mobile-satellite service in the band 406 –406.1 MHz.

Discussion:

This resolution calls for studies into the protection requirements of the distress and safety system operating at 406 MHz from interference and that the Director of the radiocommunication Bureau to report any regulatory action required to WRC-15.

Emergency Locating Transmitters (ELT's) are an element of the COSPAS-SARSAT system. Mandatory carriage of ELT's for aircraft is specified in Annex 6 to the ICAO Convention. SARPs for ELTs are contained in Annex 10 to the Chicago Convention. The use of ELTs offers the possibility of dramatically shortening the time required to alert rescue forces to the distress and to assist in final "homing" by the rescue team. In the ITU, such beacons are named emergency position-indicating radio beacons (EPIRBs). IATA supports the continued protection of this system through appropriate provisions in the Radio Regulations.

IATA's Position:

To support increased protection of COSPAS-SARSAT system in the frequency band 406 – 406.1 MHz.

Sub-item 5 (9.1.5):

Consideration of technical and regulatory actions in order to support existing and future operation of fixed-satellite service earth stations within the band 3 400 – 4 200 MHz, as an aid to the safe operation of aircraft and reliable distribution of meteorological information in some countries in Region 1 (Resolution 154 (WRC-12))

Discussion:

The efficient provision of air navigation services requires the implementation and operation of ground communications infrastructure with high availability, reliability and integrity in order to fulfil aviation performance requirements.

In the Africa and Indian Ocean region, the difficulty of fulfilling these requirements, given the extent of the airspace and weakness in terrestrial communication infrastructure, led, in 1997, the ICAO AFI Planning and Implementation Regional Group to approve the use of fixed satellite technology (VSAT) to support terrestrial aeronautical communications services in the frequency band 3.4 – 4.2 GHz. In tropical regions, due to more pronounced rain attenuation at higher frequency bands, this frequency band remains the only viable option for satellite links with high availability.

Since the 90s, States and / or organizations in the AFI Region have developed and implemented networks of satellite-based VSAT systems in this fixed satellite service (FSS) band. These VSAT networks support all aeronautical communications services including the extension of VHF aeronautical mobile, navigation and surveillance systems.

Today, these VSAT systems constitute a real infrastructure spanning the entire African continent and beyond and the availability of the entire 3.4 – 4.2 GHz FSS frequency band is crucial for the AFI Region to ensure the continued growth of traffic while maintaining the required level of safety in this region.

Recommendation 724, adopted by the WRC-07, indicates that satellite communication systems operating in the fixed satellite service may be the only medium to support the requirements of the ICAO communication, navigation, surveillance and air traffic management systems, where an adequate terrestrial communication infrastructure is not available.

WRC-07 allocated the frequency band 3.4 – 3.6 GHz to the mobile, except aeronautical mobile, service on a primary basis in some countries, including Region 1, subject to regulatory and technical restrictions (No. 5.430A). The deployment of (non-aeronautical terrestrial) mobile service systems in vicinity of airports has led to an increased number of cases of interference into the FSS (VSAT) receivers. Consequently, some additional measures need to be adopted to improve the protection of the FSS links supporting aeronautical communications.

IATA supports ITU-R studies on the appropriate regulatory and/or technical measures that Administrations in the AFI region should apply to facilitate protection of VSATs used for the transmission of aeronautical and meteorological information in the 3.4 – 4.2 GHz frequency band from other services operating in the band. This will ensure the continued growth of traffic while maintaining the required level of safety in this region.

Note: The problem can also occur in other regions. The 3.4 – 4.2 GHz frequency range is used by VSAT networks for aeronautical communications in tropical regions of Central/South America and the Asia Pacific as well as Africa. Hence there is a potential link to WRC-15 AI 1.1.

IATA's Position:

To support possible technical and regulatory measures to ensure protection of VSATs used for the transmission of aeronautical and meteorological information in the frequency range 3.4 – 4.2 GHz from other services operating in the same or adjacent frequency range.

Sub-item 6 (9.1.6):

Resolution 957 – Studies towards review of the definitions of fixed service, fixed station and mobile station.

Discussion:

These three definitions are indirectly related to aeronautical services and hence any change in the definitions could have an impact on the interpretation of the definition of aeronautical mobile services. This Resolution calls for studies into whether a change in the definition of these terms is required and for the Director of the Radiocommunication Bureau to report to WRC-15.

IATA's Position:

To -ensure that any change to the definitions as a result of a review of the studies referenced in Resolution 957, do not adversely impact aviation.

Global Flight Tracking for Civil Aviation

Discussion:

The 2014 Plenipotentiary Conference of the ITU (PP-14) adopted Resolution 185 (Busan, 2014) on global flight tracking (GFT) for civil aviation. The Resolution resolved: “to instruct WRC-15, pursuant to No. 119 of the ITU Convention, to include in its agenda, as a matter of urgency, the consideration of global flight tracking, including, if appropriate, and consistent with ITU practices, various aspects of the matter, taking into account ITU-R studies”. PP-14 further instructed the Director of the Radiocommunication Bureau to prepare a report on GFT for consideration by WRC-15. Studies within the ITU-R related to GFT are being conducted as a matter of urgency in order to support that report.

ICAO, upon the completion of a Special Meeting on Global Flight Tracking of Aircraft in Montreal, May 2014, forged consensus among its Member States and the international air transport industry sector on the near-term priority to track airline flights, no matter their global location or destination. The meeting concluded that global flight tracking should be pursued as a matter of urgency and as a result, two groups were formed, an ICAO Ad hoc Working Group on Aircraft Tracking which developed a concept of operations to support future development of a Global Aeronautical Distress and Safety System (GADSS) and an IATA led industry group within the ICAO framework, the Aircraft Tracking Task Force (ATTF), that identified near-term capabilities for normal flight tracking using existing technologies.

With regard to the flight tracking technology, the ICAO Second High-level Safety Conference 2015 (HLSC 2015) noted the ATTF Report which detailed existing technologies such as automatic dependent surveillance-contract (ADS-C) which are already installed on aircraft and which could be used to perform global aircraft tracking. This range of technologies and related services will enable operators to take a performance-based approach when implementing aircraft tracking capabilities. The ATTF report contained a set of performance-based criteria that could be used to establish a baseline level of aircraft tracking capability. Additionally, the report also identified future technologies that could support flight tracking in oceanic and remote airspace such as satellite-based ADS – broadcast (ADS-B). In this regard, the conference supported that ICAO should encourage States and the ITU to discuss allocation requirements at WRC-15 to provide the necessary frequency spectrum allocations to enable global air traffic services (ATS) surveillance.

Elements of the final GFT configuration will not likely be available by WRC-15. Given the recent trend toward performance-based communications/navigation/surveillance, that final configuration may be a “system of systems” composed of both current and evolving capabilities, taking into account it must consider GFT for commercial/transport, as well as general aviation and business, aircraft. As a result, the IATA WRC-15 position on GFT supports consideration by the Conference of all possible options as supported by studies. That could include addition of an allocation around 1 090 MHz to the aeronautical mobile satellite (R) service (AMS(R)S) to support satellite reception of ADS-B, and support of a future Conference (WRC-19) agenda item to address evolving GFT applications. Consideration should be given to ensuring new allocations do not constrain the existing aeronautical safety systems.

IATA's Position:

To support consideration of all possible options for support of a global flight tracking as supported by work conducted by ICAO and IATA. This should include:

- a new provision in the Earth-to-space direction only for an AMS(R)S allocation at 1 090 MHz for the satellite reception of existing aircraft ADS-B signals, to enhance safety and air navigation of flight, that operate in accordance with recognized international aeronautical standards under the condition that it not constrain existing aeronautical safety systems;

- a future Conference (WRC-19) agenda item to address evolving GFT requirements.

Agenda Item 10 – Future Conference Agenda Items

GLOBAL AERONAUTICAL DISTRESS AND SAFETY SYSTEM

Discussion:

ICAO, upon the completion of a Special Meeting on Global Flight Tracking of Aircraft in Montreal, May 2014, forged consensus among its Member States and the international air transport industry sector on the near-term priority to track airline flights, no matter their global location or destination. The meeting concluded that global flight tracking should be pursued as a matter of urgency and as a result, two groups were formed, an ICAO Ad hoc Working Group on Aircraft Tracking which developed a concept of operations to support future development of a Global Aeronautical Distress and Safety System (GADSS) and an IATA – led industry group within the ICAO framework called the Aircraft Tracking Task Force (ATTF) that identified near-term capabilities for normal flight tracking using existing technologies. While not yet complete, in combination, those efforts will address issues such as:

- Aircraft tracking under normal and abnormal conditions.
- Autonomous distress tracking.
- Automatic deployable flight recorder.
- Procedures and information management.

The collective urgency of the situation is highlighted by the decision of the ITU Plenipotentiary Conference, through Resolution 185, to instruct WRC-15, pursuant to No. 119 of the ITU Convention, to include in its agenda, as a matter of urgency, the consideration of global flight tracking, including, if appropriate, and consistent with ITU practices, various aspects of the matter, taking into account ITU-R studies. As a result, the IATA WRC-15 position regarding global flight tracking is contained the previous item.

With respect to the GADSS, however, while the systems needed have yet to be fully defined and the first steps in implementing the GADSS can be taken in the short term by implementing the Aircraft Tracking solutions proposed by the IATA Task Force, it is anticipated that there will be a need to change the Radio Regulations in order to facilitate the introduction of such a system. It is therefore proposed that an agenda item be established for WRC-2019 that is flexible enough to address any required changes to the Radio Regulations necessary to allow the implementation of the GADSS.

IATA's Position:

To support the inclusion of an item on the agenda of a future World Radiocommunication Conference to address the needs of the global aeronautical distress and safety system.