



International Civil Aviation Organization

IRTI/TF/1

**DRAFT ICAO Position FOR WRC-15
Agenda Item 5
(WP/09)**

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Outline

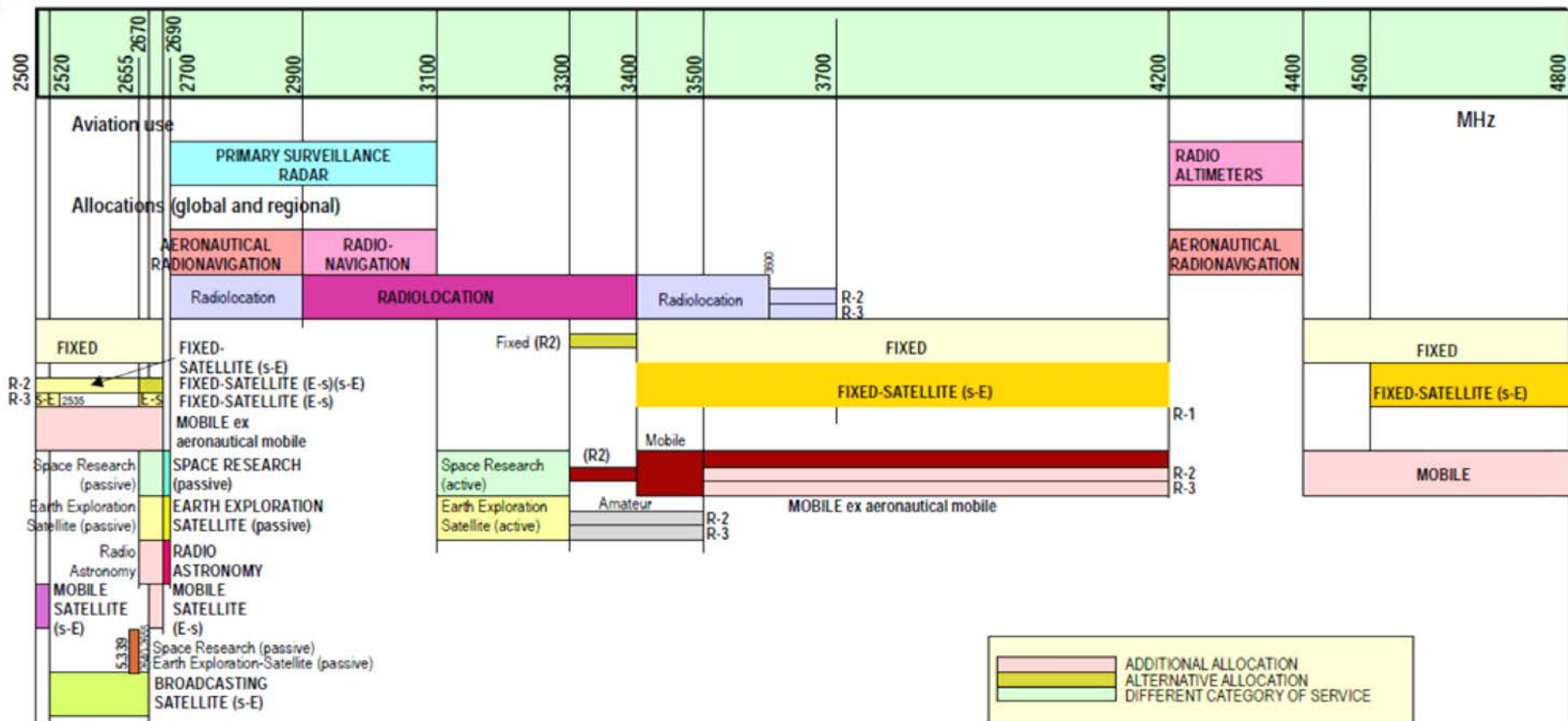


- Basis and objectives of ICAO Position for WRCs
- Importance of WRC-15 Agenda items to ICAO
- WRC-15 Agenda items of particular importance to ICAO
- Other WRC-15 Agenda Items of Importance to ICAO
- Support to ICAO Position on WRC-15 Agenda items
- AN-Conf/12 Recommendation 1/14
- Conclusion

MAIN OBJECTIVES GUIDING ICAO POSITION FOR WRCs

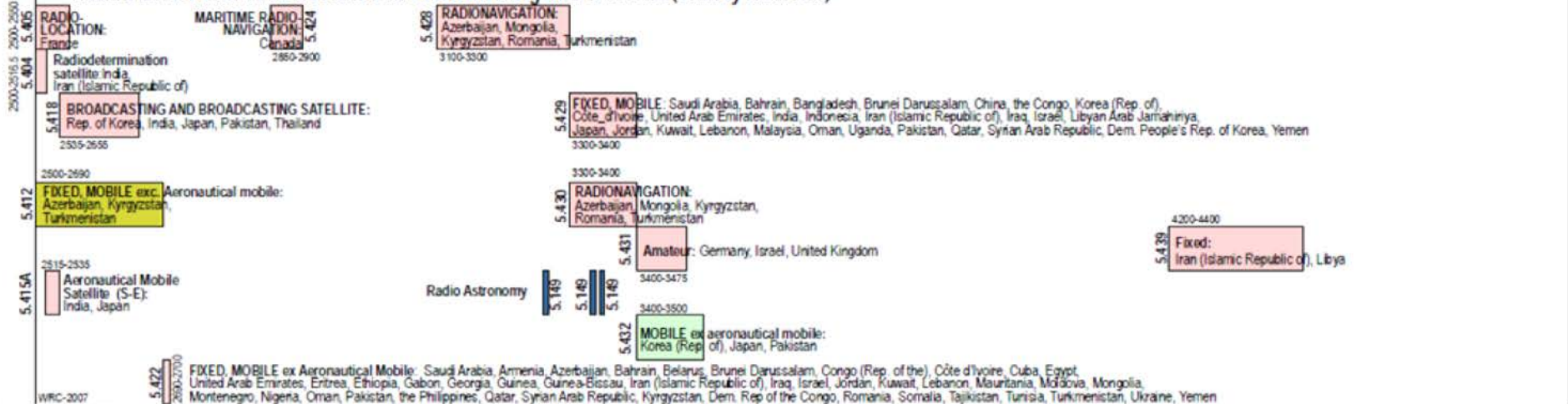


- To ensure that the ITU Radio Regulations shall not be in conflict with ICAO Standards and Recommended Practices and/or do not compromise the safety of civil aviation.
- To secure the continuing availability of adequate radio frequency spectrum to support the current and planned aeronautical CNS infrastructure requirements.
- To enable the advancement of technological innovation to maintain and enhance the safety of the global air transport system as well as increased efficiency in spectrum utilization.
- To ensure that proposals for new or modified allocations are supported by adequate sharing studies in the ITU-R Sector or in ICAO, as appropriate and take full account of the possible impact on the aeronautical safety case.



ADDITIONAL ALLOCATION
 ALTERNATIVE ALLOCATION
 DIFFERENT CATEGORY OF SERVICE

Additional and alternative allocations and different categories of service (country footnotes)



IMPORTANCE OF WRC-15 AGENDA ITEMS TO ICAO



✈️ Agenda Items of particular importance

- WRC-15 Agenda Items **1.1**; **1.5**; **1.17** and **9.1** (sub-item **5**)

✈️ Other WRC-15 Agenda Items of importance

- **1.4**; **1.6**; **1.7**; **1.10**; **1.11**; **1.12**; **1.16**; **4**; **8**; **9.1** (sub-items **1** and **6**) and **10**.

✈️ WRC-15 Agenda items with no expected impact

- **1.2**; **1.3**; **1.8**; **1.9**; **1.13**; **1.14**; **1.15**; **1.18**; **3**; **5**; **6**; **7**; **9.2** and **9.3**.

WRC-15 AGENDA ITEMS OF PARTICULAR IMPORTANCE TO ICAO



AGENDA ITEM 1.1

ICAO POSITION

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)

To oppose any new allocation to the mobile service in or adjacent to frequency bands allocated to aeronautical services (ARNS, AM(R)S, AMS(R)S) unless it has been demonstrated through agreed studies that there will be no impact on aeronautical services.



WRC-15 AGENDA ITEMS OF PARTICULAR IMPORTANCE TO ICAO



Agenda Item 1.5

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 (CNPC) of unmanned aircraft systems (UAS) in non-segregated airspaces, in accordance with Resolution 153 (WRC-12)



ICAO position

In order to support the use of FSS systems for UAS CNPC links, the technical and regulatory actions identified by studies under Resolution 153 (WRC-12) must satisfy the following conditions:

1. That the technical and regulatory actions should 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 need to be clearly identified in the Radio Regulations.
3. That the assignments and use of the relevant frequency bands have to be consistent with article 4.10 of the Radio Regulations which recognizes that safety services require special measures to ensure their freedom from harmful interference.
4. Knowledge that any assignment operating in those frequency bands has been successfully coordinated under article 9 of the radio regulations (e.g. any caveats placed on that assignment have been addressed and resolved).
5. That all assignments used by satellite systems for the provision of UAS CNPC links are registered with favorable findings in the master international frequency register.
6. That interference to systems is reported in a transparent manner and addressed in the appropriate timescale.
7. That realistic worst case conditions with the inclusion of a safety margin can be applied during compatibility studies.
8. That any operational considerations for UAS will be handled in ICAO and not in the ITU.

WRC-15 AGENDA ITEMS OF PARTICULAR IMPORTANCE TO ICAO

Agenda Item 1.17

ICAO position

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)

To support any necessary additional aeronautical mobile (route) service allocation required to facilitate the implementation of WAIC, **provided technical studies show that WAIC systems will not cause harmful interference to existing or planned aeronautical systems in the aeronautical bands.**

Legend:
(()) Gateway node
(()) End node
— Wireless link
— Wired link



WRC-15 AGENDA ITEMS OF PARTICULAR IMPORTANCE TO ICAO



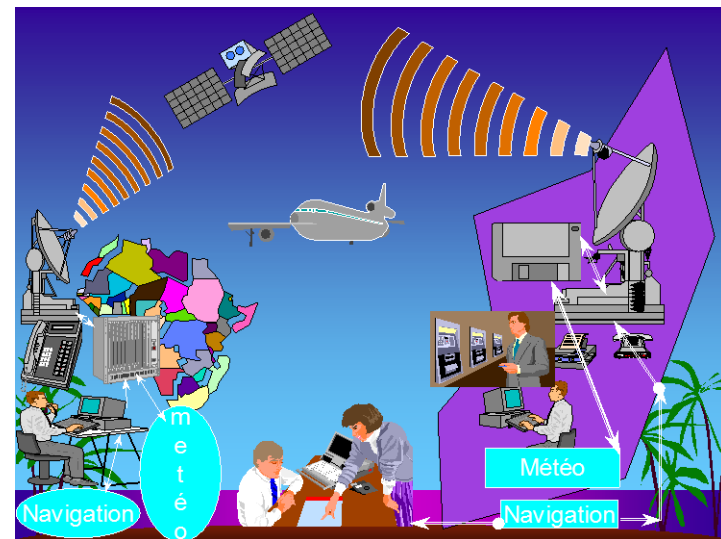
Agenda Item 9.1.5

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))



ICAO Position

To support possible technical and regulatory measures in the AFI other regions to ensure 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.



Other WRC-15 Agenda Items of importance



AGENDA ITEM 1.4

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)

ICAO POSITION

To ensure that any allocation made to the amateur service shall not cause harmful interference to the operation of 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.

Other WRC-15 Agenda Items of importance

Agenda Item 1.6

To consider possible additional primary allocations:

1.6.1 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;

1.6.2 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;

ICAO Position

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.

Other WRC-15 Agenda Items of importance



Agenda Item 1.7

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);

ICAO Position

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.

OTHER WRC-15 AGENDA ITEMS OF IMPORTANCE

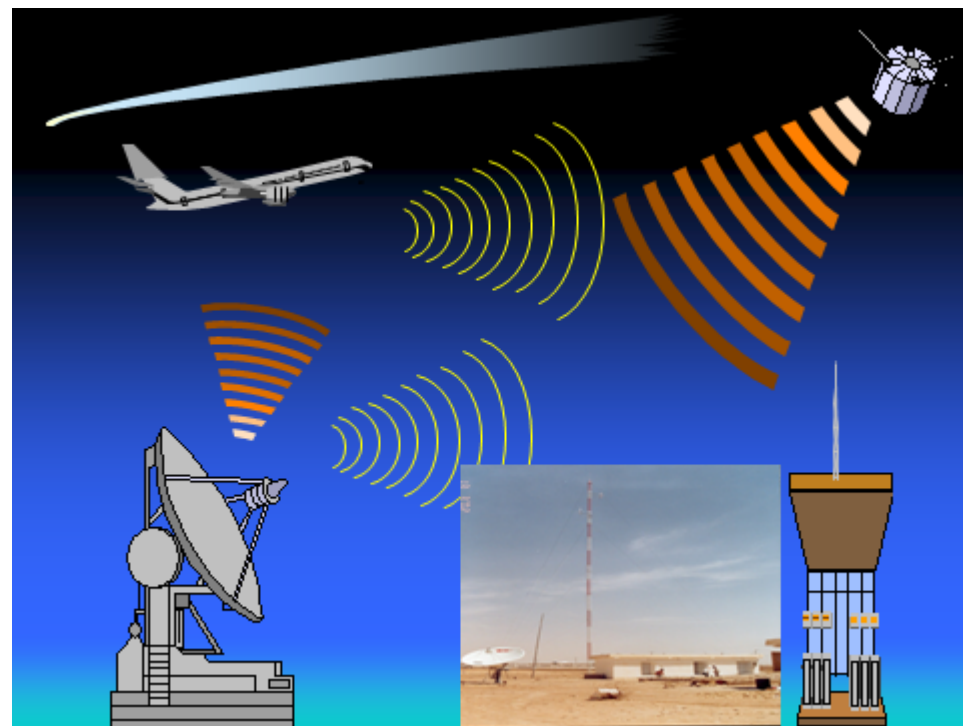


Agenda Item 1.10

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);

ICAO Position

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.



Other WRC-15 Agenda Items of importance



Agenda Item 1.12

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)

ICAO Position

To oppose any allocation to the Earth exploration-satellite service in the frequency band 9 000 – 9 200 MHz unless:

- it has been demonstrated through agreed studies that there will be no impact on aviation use.
- no additional constraints are placed on the use of the frequency band by aeronautical systems

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

Other WRC-15 Agenda Items of importance



Agenda Item 1.16

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);

ICAO Position

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

Other WRC-15 Agenda Items of importance



Agenda Item 4

In accordance with Resolution 95 (Rev.WRC-07), to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation

ICAO Position

Recommendations

- * No change to: 7, 9, 71, 75, 401 and 608

Resolutions

- * No Change to: 18, 20, 26, 27, 28, 63, 95, 207, 217, 222, 225, 339, 354, 356, 405, 413, 417, 609, 610, 612, 644 and 705
- * Modify based on WRC-15 studies: 114, 205, 418, 748, 67, 153, 360, 423 and 154
- * Delete after WRC-15: 729, 151, 152, 233 and 957
- * Modify/delete as necessary based on studies (non WRC-15): 608 and 422

Other WRC-15 Agenda Items of importance



Agenda Item 8

ICAO Position

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);

- To support **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 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 band 1 559 – 1 610 MHz and to permit the full utilization of GNSS services to aircraft on a global basis.
- To support the **deletion of No. 5.439** to ensure the protection of the safety critical operation of radio altimeters in the band 4 200 – 4 400 MHz.

Other WRC-15 Agenda Items of importance



Agenda Item 9.1.1

To consider possible additional allocations to the mobile-satellite service, in accordance with Resolution 231 (WRC-07).

ICAO Position

Support any proposals for increased protection of COSPAS-SARSAT system in the frequency band 406 – 406.1 MHz

Other WRC-15 Agenda Items of importance



Agenda Item 9.1.6

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

ICAO Position

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.

Other WRC-15 Agenda Items of importance



Agenda Item 10

To recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with Article 7 of the Convention,

ICAO Position

Position under Development

Support to ICAO Position for WRC-15

WRC Mechanism

- Specific Technical studies following WRC Resolution
- Assistance to Regional Preparatory Meetings
- Assistance to UN specialized Organizations Preparatory meetings
- Conference Preparatory Meetings
- WRCs sessions and follow up

Stakeholders

- Civil Aviation Industry consumer of spectrum to bring their service requirements with regard to ICAO SARPs:
 - ✓ Air navigation Service Providers
 - ✓ Airlines
 - ✓ Airport Operators
 - ✓ Aircraft Manufacturers
- Civil Aviation Authorities Regulator of Aviation Safety and Security to:
 - ✓ Oversight the service provision in line with the State Safety Programme,
 - ✓ Bring the national spectrum requirement to the regulator for consideration when preparing WRC and to ICAO for global monitoring
- Telecommunication Regulation Authorities to:
 - ✓ Take into consideration aviation requirements to be include in the national regulation policy
 - ✓ Involve aviation actors in preparatory meetings and in the Conference delegates

Outcome of ICAO AN-Conf/12

Recommendation 1/14 – Long-term very small aperture terminal spectrum availability and protection

That:

- ✈ ICAO and Member States not support additional international mobile telecommunications spectrum allocations in the fixed satellite service C-band spectrum at the expense of the current or future aeronautical very small aperture terminal networks; and
- ✈ ICAO and Member States pursue this matter in the International Telecommunication Union Radio Communication Sector (ITU-R) and during the World Radiocommunication Conference (WRC-15), with a coordinated proposal to promote a solution where the international mobile telecommunications spectrum allocation does not compromise the availability of the aeronautical very small aperture terminal networks.

Conclusion

Considering the criticality of the telecommunication infrastructure in the safe and efficient provision of air traffic management, the Task Force is requested to:

- include aeronautical spectrum issues in its work programme; and
- discuss strategies to support the ICAO Position for WRC-15, and secure the operation of aeronautical VSAT networks, in accordance with
 - ICAO Twelfth Air Navigation Conference (AN-Conf/12) Recommendation 1/14; and
 - ICAO Assembly Resolution A36-25.

ICAO

Uniting Aviation on

Safety | Security | Environment





Context

- Air Transport : Key Sector in a very great continent
- Air Transport in Africa: 3-5% of Global Market
- For next two decades
 - Annual Growth estimated trend: 6% Vs. 4% for Global growth
 - 125 million passengers to 377 million passengers
- Air Transport based on Safety of life

Challenges

- Building One sky to ensure the provision of a seamless ATM system
- Frequency Spectrum: scarce finite resource
- Efficient and cost effective utilization of spectrum
- Threat from emerging technologies on allocated spectrum
- Protection of Aeronautical spectrum for current/future needs