European Common Proposals regarding WRC-07 Agenda Item 1.6

SUB-PART 6A

Resolution 414

Consideration of the frequency range between 108 MHz and 6 GHz for new aeronautical applications

Introduction

1 In accordance with the Radio Regulations, the bands 108-117.975 MHz, 960-1 164 MHz and 5 010-5 150 MHz are allocated on a primary basis to the aeronautical radionavigation service in all ITU regions.

2 According to footnote 5.328 the use of the band 960-1 215 MHz by the aeronautical radionavigation service is reserved on a worldwide basis for the operation and development of airborne electronic aids to air navigation and any directly associated ground-based facilities.

3 In accordance with footnote 5.444 the band 5 030-5 091 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. The requirements of this system shall take precedence over other uses of this band.

4 In accordance with footnote 5.367, the bands 1 610-1 626.5 MHz and 5 000-5 150 MHz are also allocated to the aeronautical mobile-satellite (R) service on a primary basis, subject to agreement obtained under No. **9.21**.

5 Results of ITU-R studies already performed with some non ICAO standardized systems show that in the different bands listed in item 6 below, the sharing is feasible with these systems.

6 In response to Resolution 414 (WRC-2003) Europe proposes three new allocations (112-117.975 MHz, 960-1 164 MHz and 5 091-5 150 MHz) for the Aeronautical Mobile (R) Service on a primary basis and limited to systems that will operate in accordance with international aeronautical standards under the conditions specified in Resolution 413 (WRC-03),Resolution [AM(R)S (WRC-07)] and Resolution [AM(R)S 5 GHz] (WRC-07).

7 In response to Resolution 414 (WRC-2003) Europe also proposes one new allocation (5 091-5 150 MHz) for the Aeronautical Mobile Service on a primary basis and limited to aeronautical security applications under the conditions specified in Resolution [AMS(AS) 5 GHz] (WRC-07).

Proposals

ARTICLE 5

MOD EUR/XXA6/1

108-117.975 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
108-117.975	AERONAUTICAL RADIONAVIGATION AERONAUTICAL MOBILE (R) ADD 5.XXX	
	5.197~~5.197A~~	

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ADD EUR/XXA6/2

5.XXX The use of the band 108- 117.975 MHz by AM(R)S shall be in accordance with Resolution **413 [EUR/XXA6/3] (WRC-07)** and Resolution [AM(R)S (WRC-07]. The use of the band 108-112 MHz by the AM(R)S is limited to systems that transmit navigational information in support of air navigation and surveillance functions . (WRC-07)

Reasons:

It is considered appropriate to indicate at an early stage to the aeronautical community the availability of the frequency bands 112 - 117.975 MHz, for AM(R)S systems, in order to allow AM(R)S development.

Studies have shown that there are sharing possibilities in the band 112 - 117.975 MHz which is already allocated for use by the Aeronautical Radionavigation Service and systems that transmit navigational information in support of air navigation and surveillance functions.

The European Civil Aviation Conference (ECAC) long term navigation strategy foresees a diminishing role for the current VHF Omnidirectional Radio Range (VOR) navigation aid in the band 112 – 117.975 MHz with planned generalized deployment of the satellite-based navigation systems and the emergence of economically affordable inertial navigation. Accordingly it is anticipated there will be an opportunity to reallocate spectrum in the afore-mentioned band to AM(R)S.
The frequency band 112 - 117.975 MHz by the AM(R)S shall not be used as an extension band for the current analogue VHF voice communication system operating in the band 117.975 – 137 MHz unless required to advance the transition to the future communications system.

MOD EUR/XXA6/3

960-1164 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
960-1 164	AERONAUTICAL RADIONAVIGATION 5.328 AERONAUTICAL MOBILE (R) ADD 5.328C	

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ADD EUR/XXA6/4

5.328C The use of the band 960-1 164 MHz by aeronautical mobile (R) service is limited to systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution [AM(R)S (WRC-07]. (WRC-07)

Reasons:

There is a need for additional allocation for long range aeronautical mobile (R) service applications for the development of an aeronautical future radio system. This band is well suited for components of the new aeronautical communication system. An allocation of the whole band 960-1164 MHz wouldaccommodate the AM(R)S spectrum requirements as identified by ICAO (up to 60 MHz) providing more flexibility for the implementation of the new system.

NOC EUR/XXA6/5

4800 - 5570 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
5 000-5 010	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-Space) 5.367	
5 010-5 030	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-space) 5.328B 5.443B 5.367	

Reason : Sharing studies between systems ofthe Radionavigation Satellite Service (RNSS) and AMRS have not been conducted, whereas Galileo is using the band 5000-5010 MHz and RNSS systems are planning to use the band 5010-5030 MHz (including Galileo in the future).

MOD EUR/XXA6/7

4800 - 5570 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
5 030-5 091	AERONAUTICAL RADIONAVIGATION 5.367 MOD 5.444	
5 091- 5 150	AERONAUTICAL RADIONAVIGATION AERONAUTICAL MOBILE ADD 5.ZZZ 5.367 ~~MOD~~ 5.444A	

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5.444 The band 5030-5091MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. The requirements of this system shall take precedence over other uses of this band.

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Reason: The proposal is to keep an allocation for ARNS in 5091-5150 MHz in the Table but to delete the super primary status for this band from the footnote.

ADD EUR/XXA6/8

5.ZZZ The use of the band 5 091 - 5 150 MHz by aeronautical mobile service shall be in accordance with Resolution [AM(R)S (WRC-07)] and is limited to:

- systems operating in the aeronautical mobile (R) service and in accordance with international aeronautical standards limited to applications at airports. Such use shall be in accordance with Resolution [AM(R)S - 5GHz] (WRC-07);
- aeronautical security transmissions. Such use shall be in accordance with Resolution [AMS - 5GHz] (WRC-07)

Editorial note 1: to make more clear what the proposals are under the separate agenda items this proposal intends for the time being not to accommodate the requirements of both a.i.1.5 and a.i.1.6 of WRC-07.The proposal is aligned as far as practicable with the draft ECP for agenda item 1.5. and the intention is to align both proposals at later stage again in the framework of PT3.Editorial note 2: the correct service designation(s) for systems identified under Res 414 considering g) should be determined

MOD EUR/XXA6/9

RESOLUTION 413 (WRC-2000)

Use of the band 108-117.975 MHz by aeronautical services

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The World Radiocommunication Conference (Geneva, 2007),

considering

a) the current allocation of the frequency band 108-117.975 MHz to the aeronautical radionavigation service (ARNS);

b) the current requirements of FM broadcasting systems operating in the frequency band 87-108 MHz;

c) that digital sound broadcasting systems are capable of operating in the frequency band at about 87-108 MHz as described in Recommendation ITU-R BS.1114;

d) the need for the aeronautical community to provide additional services by enhancing navigation and surveillance systems through a communication data link;

e) the need for the broadcasting community to provide digital terrestrial sound broadcasting services,

f) the need for the aeronautical community to provide additional services for communications relating to safety and regularity of flight in the band 112-117.975 MHz,

recognizing

a) that precedence must be given to the ARNS operating in the frequency band 108-117.975 MHz;

b) that, in accordance with Annex 10 of the Convention of the International Civil Aviation Organization (ICAO) on international civil aviation, all aeronautical systems must meet standards and recommended practices (SARPs) requirements;

c) that within ITU-R, compatibility criteria between FM broadcasting systems operating in the frequency band 87-108 MHz and the ARNS operating in the frequency band 108-117.975 MHz already exist, as indicated in the most recent version of Recommendation ITU-R SM.1009;

d) that all compatibility issues between FM broadcasting systems and ICAO standard ground-based systems for the transmission of radionavigation-satellite differential correction signals have been addressed,

noting

a) that aeronautical systems are converging towards a communication data link environment to support aeronautical navigation and surveillance functions, which need to be accommodated in existing radio spectrum;

b) that some administrations are planning to introduce digital sound broadcasting systems in the frequency band at about 87-108 MHz;

c) that no compatibility criteria currently exist between FM broadcasting systems operating in the frequency band 87-108 MHz and the planned additional aeronautical systems in the adjacent band 108-117.975 MHz using aircraft transmission;

d) that no compatibility criteria currently exist between digital sound broadcasting systems capable of operating in the frequency band at about 87-108 MHz and aeronautical services in the band 108-117.975 MHz;

e) that surveillance functions include the observation of aircraft location and velocity, and weather conditions for the purpose of air traffic control and situational awareness/collision avoidance between aircraft,

resolves

1 that any AM(R)S systems operating in the band 108-117.975 MHz shall not cause harmful interference to, nor claim protection from aeronautical radionavigation service systems operating in accordance with international aeronautical standards;

2 that any aeronautical mobile (R) service systems planned to operate in the frequency band 108-117.975 MHz shall, as a minimum, meet the FM broadcasting immunity requirements contained in Annex 10 of the ICAO Convention on International Civil Aviation for existing aeronautical radionavigation systems operating in this frequency band;

3 that aeronautical mobile (R) service systems operating in the band 108-117.975 MHz shall place no additional constraints on the broadcasting service or cause harmful interference to stations

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operating in the bands allocated to the broadcasting service in the frequency band 87-108 MHz and No. **5.43** does not apply to systems identified in *recognizing d)*;

4 that frequencies below 112 MHz shall not be used for aeronautical mobile (R) service systems excluding the ICAO systems identified in *recognizing d)* until all potential compatibility issues with the lower adjacent frequency band 87-108 MHz have been resolved,

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invites ITU-R

to study any compatibility issues between the broadcasting and aeronautical services that may arise from the introduction of these additional aeronautical systems as referenced in *noting a)*, or appropriate digital sound broadcasting systems, as described in Recommendation ITU-R BS.1114 and to develop new or revised ITU-R Recommendations as appropriate,

instructs the Secretary-General

to bring this Resolution to the attention of ICAO.

Reasons:

The need to protect broadcasting service below 108 MHz

ADD EUR/XXA6/10

RESOLUTION **[AM(R)S (WRC-07)]**

Conditions for the use by the Aeronautical Mobile (R) Service AM(R)S of the frequency bands 112-117.975 MHz, 960-1 164 MHz and 5 091-5 150 MHz

The World Radiocommunication Conference (Geneva, 2007),

considering

a) that not all systems operated under the aeronautical navigation service in the band 960 – 1164 MHz are subject to standards and recommended practices published in Annex10 to the convention on international civil aviation,

b) that WRC-07 has allocated new AM(R)S spectrum in order to guarantee to the aeronautical community the availability of these frequency bands for new AM(R)S systems and in doing so enabling the further technical developments, investments and deployment,

c) that these allocations were made in the knowledge that studies are ongoing but yet to be completed with respect to the technical characteristics, sharing criteria and the sharing capabilities,

d) that the current aeronautical mobile (R) service frequency band 117.975 – 137 MHz is reaching saturation point within Europe,

e) that there is a predicted continuing growth in the requirement for aeronautical mobile (R) service for the foreseeable future which may accelerate due to the requirement to meet aviation objectives,

f) that these new allocations may be used for applications and concepts in air traffic management which are data intensive; and which may need to support data links that carry safety critical aeronautical data.

g) that currently insufficient information is available about the technologies which will be used, the amount of spectrum required, the characteristics and the sharing capabilities/conditions, and that therefore studies are required with urgency which AM(R)S systems will be used, the amount of spectrum required, the characteristics and the conditions for sharing with ICAO and non-ICAO ARNS systems,

recognising

a) that Resolutions **114 (Rev.WRC-03)** and Resolutions **413 (WRC-03)** require compatibility studies to be undertaken in the relevant aeronautical bands,

b) that ICAO has already shown compatibility between the Universal Access Transceiver (UAT) operating on 978 MHz and existing radionavigation systems operating in the 960-1 164 MHz,

c) that ICAO have adopted Standards And Recommended Practices (SARPs) for the UAT.

resolves

1 that the use of the bands 112 – 117.975 MHz, 960 – 1 164 MHz and 5091 – 5150 MHz by the AM(R)S shall not cause harmful interference to nor claim protection from stations operating in the aeronautical radionavigation service,

2 that the use of the band 112 – 117.975 MHz shall be in accordance with Resolution 413 (WRC-07),

3 that the frequency band 112 - 117.975 MHz by the AM(R)S shall not be used as an extension band for the current analogue VHF voice communication system operating in the band 117.975 – 137 MHz unless required to advance the transition to the future communications system,

4 that these allocations cannot be used for operational service until the relevant sharing studies have been completed and reviewed in the ITU-R,

5 that the WRC-11 shall, based on the results of the ITU-R studies mentioned under *invites* ITU-R 1 review:-

– the progress made regarding the development of new AM(R)S systems,

– the decisions made by the WRC-07 concerning the regulatory provisions, including the allocations, applicable to the AM(R)S in order to meet the requirements of these AM(R)S systems under development

invites ITU-R

1 to study with urgency the AM(R)S systems which will be used, the amount of spectrum required, the characteristics and the conditions for sharing with ICAO and non-ICAO ARNS systems,

2 to continue studies in the bands 112-117.975 MHz, 960-1164 MHz and 5 091-5 150 MHz for use by new aeronautical applications in the aeronautical mobile (R) service in order to determine how these can be optimally accommodated in these bands without placing undue constraints to services to which the frequency bands are additionally allocated,

3 to report to WRC-11 on the results of these studies.

further invites

1 ICAO to supply technical and operational criteria suitable for sharing studies for new aeronautical systems,

2 ICAO to provide any sharing studies undertaken within ICAO between ICAO standardised systems,

3 all members of the Radiocommunications Sector and especially ICAO to contribute to these studies.

requests the Secretary-General

to bring this Resolution to the attention of ICAO

Reasons:

1) It is considered appropriate to indicate at an early stage to the aeronautical community the availability of the frequency bands 112 - 117.975 MHz, 960- 1164 MHz and 5 091 - 5 150 MHz for AM(R)S systems, in order to allow the further technical developments and investments. Since the technical characteristics and the sharing capabilities / conditions applicable to such a new AM(R)S system are not known, it may be necessary to specify during the development of these new systems some further provisions relevant to these allocations. A Resolution is the best instrument to do this: a Resolution can invite future Conferences to consider the developments, and at the same time it may include the provisions deemed necessary at certain stages of development or introduction of such new systems.

2) The resolution limits the use of the new allocations to systems which have proven compatibility with systems operated in the radionavigation service.

ADD EUR/XXA6/11

RESOLUTION [AM(R)S-5 GHz] (WRC-07)

Compatibility between the aeronautical mobile (R) service and fixed-satellite service (Earth-to-space) in the band 5 091 -5 150 MHz

The World Radiocommunication Conference (Geneva, 2007),

considering

a) the allocation of the 5 091-5 150 MHz band to the fixed-satellite (FSS) (Earth-to-space) limited to feeder links of non-geostationary-satellite (non-GSO) systems in the mobile-satellite service (MSS);

b) the current allocation of the frequency band 5 000-5 150 MHz to the aeronautical mobile satellite (R) service (AMS(R)S) subject to agreement obtained under No. 9.21 and the aeronautical radionavigation service (ARNS);

c) this conference has allocated the 5 091-5 150 MHz band for the aeronautical mobile (R) service (AM(R)S) limited to systems operating in accordance with recognized international aeronautical standards;

d) this conference has allocated the 5 091-5 150 MHz band to the aeronautical mobile service (AMS) limited to secure and confidential communications between aircraft and ground, principally during unlawful interference to aircraft;

e) that ICAO is in the process of identifying the technical and operating characteristics of new systems operating in the AM(R)S in the band 5 091-5 150 MHz;

f) that one AM(R)S system, to be used by aircraft operating on the airport surface, has demonstrated compatibility with the FSS in the 5 091-5 150 MHz band;

g) that ITU-R studies have examined potential sharing among AMS applications and have shown that the aggregate interference from aeronautical security, aeronautical telemetry and AM(R)S should total no more than 3% $\Delta T/T$,

recognizing

a) that precedence is to be given to the microwave landing system (MLS) in accordance with No. **5.444** in the frequency band 5 030-5 091 MHz;

b) that ICAO publishes recognized international aeronautical standards for AM(R)S systems,

noting

a) that the number of FSS transmitting stations required may be limited;

b) that the use of the bands 5 091-5 150 MHz by the AM(R)S needs to ensure protection of the current or planned use of this band by the FSS (Earth-to-space);

c) that ITU-R studies describe methods for ensuring compatibility between the AM(R)S and FSS operating in the band 5 091-5 150 MHz, and compatibility has been demonstrated for the AM(R)S system referenced in *considering f)*,

resolves

1 that administrations, in making assignments, shall ensure that stations in the AM(R)S operate in accordance with International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPs);

2 that prior to operating in the frequency band 5 091-5 150 MHz any AM(R)S systems shall meet SARPs requirements published in Annex 10 of the ICAO Convention on International Civil Aviation, and that those requirements will ensure, consistent with appropriate ITU-R Recommendations, compatibility with FSS systems operating in that band;

3 that studies of the band 5 091-5 150 MHz be undertaken by ITU-R regarding the apportioning of the FSS 3% $\Delta T/T$ aggregate interference limit between new AMS allocated at this Conference, with the task of developing or revising Recommendation ITU-R M.[AM(R)S/AS 5 091-5 150 MHz] to ensure that aggregate limit is not exceeded;

4 Until the studies in *resolves 4* are completed, stations in the AM(R)S, shall be designed in such a manner that the maximum EIRP applied to any station of an AM(R)S network be limited to the following EIRP mask:

$$EIRP_{\max}(\theta) = 4.6 + \max\left[G_1(\theta), G_2(\theta)\right] - 10 \times \log 10\left(\frac{1.23}{Bt}\right)$$

$$G_1(\theta) = 8 - 12\left(\frac{\theta}{17}\right)^2$$

$$G_2(\theta) = -4 + 10\log\left[\left(\max\left\{\frac{|\theta|}{17}, 1\right\}\right)^{-1.5} + 0.7\right]$$

where:

$EIRP_{max}(\theta)$: AM(R)S station maximum EIRP (dBW/1.23 MHz)

Bt: AM(R)S station transmitted bandwidth (in MHz)

θ: absolute value of the elevation angle relative to the angle of maximum gain (in °)

This EIRP mask will be reviewed at a future conference preferably WRC-10,

invites

administrations and ICAO to supply technical and operational criteria necessary for sharing studies for the aeronautical mobile (R) service, and to participate actively in such studies,

instructs the Secretary-General

to bring this Resolution to the attention of ICAO.

Reasons:

The resolution limits the use of the new allocations to systems in accordance with ICAO standards. Compatibility studies between standardized ICAO systems are under the responsability of ICAO..

MOD EUR/XXA6/11bis

APPENDIX 7 (Rev.WRC-07)

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Methods for the determination of the coordination area around an earth station in frequency bands between 100 MHz and 105 GHz

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TABLE 7B (WRC-07)

Parameters required for the determination of coordination distance for a transmitting earth station

Transmitting space radiocommunication service designation		**Fixed-satellite, mobile-satellite**	**Fixed-satellite**	**Fixed-satellite**	**Fixed-satellite**	**Fixed-satellite**		**Space operation, space research**		**Fixed-satellite, mobile-satellite, meteorological-satellite**		**Fixed-satellite**		**Fixed-satellite**		**Fixed-satellite**	**Fixed-satellite** [3]	**Fixed-satellite**	**Fixed-satellite** [3]
Frequency bands (GHz)		2.655-2.690	5.091-5.150	5.091-5.150	5.725-5.850	5.725-7.075		7.100-7.235 [5]		7.900-8.400		10.7-11.7		12.5-14.8		13.75-14.3	15.43-15.650	17.7-18.4	19.3-19.7
Receiving terrestrial service designations		Fixed, mobile	Aeronautical radio-navigation	Aeronautical mobile (R)	Radio-location	Fixed, mobile		Fixed, mobile		Fixed, mobile		Fixed, mobile		Fixed, mobile		Radiolocation radionavigation (land only)	Aeronautical radionavigation	Fixed, mobile	Fixed, mobile
Method to be used		§ 2.1			§ 2.1	§ 2.1		§ 2.1, § 2.2		§ 2.1		§ 2.1		§ 2.1, § 2.2		§ 2.1		§ 2.1, § 2.2	§ 2.2
Modulation at terrestrial station [1]		A				A	N	A	N	A	N	A	N	A	N	–		N	N
Terrestrial station interference parameters and criteria	p_0 (%)	0.01				0.01	0.005	0.01	0.005	0.01	0.005	0.01	0.005	0.01	0.005	0.01		0.005	0.005
	n	2				2	2	2	2	2	2	2	2	2	2	1		2	2
	p (%)	0.005				0.005	0.0025	0.005	0.0025	0.005	0.0025	0.005	0.0025	0.005	0.0025	0.01		0.0025	0.0025
	N_L (dB)	0				0	0	0	0	0	0	0	0	0	0	0		0	0
	M_s (dB)	26 [2]				33	37	33	37	33	37	33	40	33	40	1		25	25
	W (dB)	0				0	0	0	0	0	0	0	0	0	0	0		0	0
Terrestrial station parameters	G_x (dBi) [4]	49 [2]	6	6		46	46	46	46	46	46	50	50	52	52	36		48	48
	T_e (K)	500 [2]				750	750	750	750	750	750	1 500	1 100	1 500	1 100	2 636		1 100	1 100
Reference bandwidth	B (Hz)	4×10^3	150×10^3	[10^6]		4×10^3	10^6	4×10^3	10^6	4×10^3	10^6	4×10^3	10^6	4×10^3	10^6	10^7		10^6	10^6
Permissible interference power	$P_r(p)$ (dBW) in B	–140	–160	[-143]		–131	–103	–131	–103	–131	–103	–128	–98	–128	–98	–131		–113	–113

ADD EUR/XXA6/12

RESOLUTION [AMS(AS) 5 GHz] (WRC-07)

Considerations for sharing the band 5 091 -5 150 MHz by the aeronautical mobile service for aeronautical security applications and fixed-satellite service

The World Radiocommunication Conference (Geneva, 2007),

considering

a) the current allocation of the 5 091-5 150 MHz band to the fixed-satellite (FSS) (Earth-to-space), which is limited to feeder links of non-geostationary-satellite (non-GSO) systems in the mobile-satellite service (MSS) services;

b) the current allocation of the frequency band 5 000-5 150 MHz to the aeronautical mobile satellite (R) service (AMS(R)S) subject to agreement obtained under No. 9.21 and the aeronautical radionavigation service (ARNS);

c) this conference has allocated the 5 091-5 150 MHz band for the aeronautical mobile (R) service (AM(R)S);

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d) this conference has allocated the 5 091-5 150 MHz band for the aeronautical mobile service (AMS) limited to secure and confidential communications between aircraft and ground, principally during unlawful interruption to aircraft operations,

recognizing

a) that precedence is to be given to the microwave landing system (MLS) in accordance with No. **5.444** in the frequency band 5 030-5 091 MHz;

b) that Resolution 114 (WRC-03) applies to the sharing conditions between the FSS and ARNS in the 5 091-5 150 MHz band;

c) that Resolution [AM(R)S-5 GHz] provides guidance on the use of the band 5 091-5 150 MHz by the AMS,

noting

that ITU-R studies describe methods for ensuring compatibility between the AMS for aeronautical security applications and FSS operating in the band 5 091-5 150 MHz,

resolves

1 that the AMS is limited to stations providing secure and confidential radiocommunications intended for systems used in response to unlawful interruption of aircraft operations;

2 that studies of the band 5 091-5 150 MHz be undertaken by the ITU-R regarding the apportioning of the FSS 3% $\Delta T/T$ aggregate interference limit between new AMS allocated at this conference, with the task of developing or revising Recommendation ITU-R M.[AM(R)S/AS 5 091-5 150 MHz] to ensure that aggregate limit is not exceeded;

3 until the studies in *resolves* 2 are completed, stations in the AMS, limited to aeronautical security applications, shall be designed in such a manner that the transmitter power flux-density be limited to –140.25 dBW/(m^2 · 1.23 MHz) at an FSS satellite using full Earth coverage receive

antennas with an orbit of 1 414 km. This value will be reviewed at a future conference preferably WRC-11;

4 that administrations, in making assignments, shall ensure that the requirements for the AM(R)S take precedence over those of the AMS for security applications.

Reason:

1. There are many instances of unlawful interruptions to aircraft operations ranging from passenger air rage to hijacking. Every interruption requires intervention from the appropriate government authorities. Since the terrorist attack of 11 September 2001 there has been a significant increase in security measures for civil aviation, but even these have not eradicated air rage or even hijacking.
2. One requirement foreseen is the need to have cost effective confidential communications between aircraft and ground that can handle voice, data and video information. This would provide decision makers with accurate and timely situation awareness.
3. Flight trials using adapted IMT 2000 technology have demonstrated that propagation in the band 5091 – 5150 MHz provides acceptable performance for this purpose. The initial requirement for bandwidth is 15 MHz.
4. The band 5091 – 5150 MHz already has allocations for ARNS and FSS. Studies have concluded that sharing with ARNS (MLS) and FSS, and the proposed new allocations for AM(R)S and AMT (5 GHz), can be achieved. However, it is recognised that the FSS transmissions will cause intermittent interference in certain areas but the design of applications can provide adequate mitigation.

SUB-PART 6B

Resolution 415

Study of current satellite frequency allocations that will support the modernization of civil aviation telecommunication systems

Agenda Item 1.6 WRC07 is “to consider additional allocations for the aeronautical mobile (R) service in parts of the bands between 108 MHz and 6 GHz, in accordance with Resolution 414 (WRC-03) and, to study current satellite frequency allocations that will support the modernization of civil aviation telecommunication systems, taking into account Resolution 415 (WRC-03)”

Where, Resolution **415 (WRC-03)** resolved to invite WRC-07 to examine “the possibility of broadening the services and applications of the use of current satellite frequency allocations in order

to allow the expansion of ICAO CNS/ATM[1] systems that can also support other non-aeronautical telecommunication services"

Introduction

Resolution 415 sought to study the broadening of frequency allocations to allow expansion of the ICAO CNS/ATM systems. The studies reviewed ground-ground and ground-air communications.

Studies have not identified the need for any regulatory changes at this time and therefore no changes to the Radio Regulations are required as part of WRC07 Agenda item 1.6 Res 415.

Proposals

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SUP

WRC03 Resolution 415

Study of current satellite frequency allocations that will support the modernization of civil aviation telecommunication systems

Reasons:

- *Studies have concluded that the Radio Regulations do not need to be amended*

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[1] ICAO CNS/ATM is the acronym for International Civil Aviation Organization, Communication, Navigation and Surveillance/Air Traffic Management.