



Workshop on the preparations for WRC-15 (23 May 2012, Geneva)

Sharing between fixed service and other terrestrial and satellite services

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Presented by XXX]



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Introduction:

1. **Fixed service:** A radiocommunication service between specified fixed points (**No 1.20 RR**).

2. **Fixed service** issues are considered:

- in **WP 5A** - wireless **access** in the fixed service;
- in **WP 5C** - fixed wireless systems; HF and other systems below 30 MHz in the fixed and land mobile services.

3. There are **no items seeking new allocations for the fixed service** in Resolutions 807 (WRC-12) “Agenda for the WRC 15”. Following Administrative Circular CA/201 “Results of CPM-15-1”:

- a) **WP 5A** is: - **Responsible group** on Als 1.3; 1.4 and 1.18*);
 - Concerned group on Als 1.1; 1.2; 1.6; 1.8 – 1.13; 1.15; 1.16; 1.17; 7; 9.1.1; 9.1.6
- b) **WP 5C** is: - **Responsible group** on Als **NO**;
 - Concerned group on Als 1.1; 1.3; 1.4; 1.6; 1.8 – 1.13; 1.15; 1.17; 9.1.1; 9.1.6

*) *FS is not concerned*



Workshop on the preparations for WRC-15 (23 May 2012, Geneva)

General cases and approaches of sharing:

1. between fixed service and **other terrestrial services**:

- **below 30 MHz**: geographical separation, power limitation, frequency separation, working hours, ...
- **above 30 MHz**: geographical separation, antenna gain discrimination,...

2. with **passive services** (RAS, EESS and SRS (passive)): geographical separation, limits on in-band e.i.r.p. and unwanted emissions of FS stations, ... (**this case is out of WRC-15 Agenda**);

3. between fixed service and **satellite services** (uplink and downlink):

- **uplink**: geographical separation / coordination zones; separation angle with respect to GSO; e.i.r.p. value towards GSO arc, ...
- **downlink**: geographical separation / coordination zones; limits and/or coordination triggers of power flux-density from space stations, ...



Workshop on the preparations for WRC-15 (23 May 2012, Geneva)

Required information on fixed service for sharing study:

1. Technical characteristics and typical system parameters:

Below 30 MHz

Rec. ITU-R F.1761 (2006) “Characteristics of HF fixed radiocommunication systems”

Rec. ITU-R F.1762 (2006) “Characteristics of enhanced applications for high frequency (HF) radiocommunication systems”

Rec. ITU-R F.1821 (2007) “Characteristics of advanced digital high frequency (HF) radiocommunication systems”

Above 30 MHz

Rec. ITU-R F.758-4 (2005) “System parameters and considerations in the development of criteria for sharing or compatibility between digital fixed wireless systems in the fixed service and systems in other services and other sources of interference” (*rev 5 is available – see 5/BL/24 (03/2012)*)



Workshop on the preparations for WRC-15 (23 May 2012, Geneva)

Required information on fixed service for sharing study:

2. Protection criteria:

Below 30 MHz

Rec. ITU-R F.240 (2006) “Signal-to-interference protection ratios for various classes of emission in the fixed service below about 30 MHz”

Rec. ITU-R F.339-7 (2006) “Bandwidths, signal-to-noise ratios and fading allowances in complete systems”

Above 30 MHz

Rec. ITU-R F.758-4 (2005) (*rev 5 is available – see 5/BL/24 (03/2012)*)

Rec. ITU-R F.1565 (2002) “Performance degradation due to interference from other services sharing the same frequency bands on a co-primary basis with real digital fixed wireless systems used in the international and national portions of a 27 500 km hypothetical reference path at or above the primary rate”

Rec. ITU-R F.1334 (1997) “Protection criteria for systems in the fixed service sharing the same frequency bands in the 1 to 3 GHz range with the land mobile service” (Note: may be used for AI 1.1)

Rec. ITU-R F.1190 (1995!) “Protection criteria for digital radio-relay systems to ensure compatibility with radar systems in the radiodetermination service” (Note: may be used for AI 1.12)



Workshop on the preparations for WRC-15 (23 May 2012, Geneva)

Required information on fixed service for sharing study:

3. Antenna characteristics:

Below 30 MHz

Rec. ITU-R F.162-3 (1992!) “Use of directional transmitting antennas in the fixed service operating in bands below about 30 MHz”

Rec. ITU-R F.1610 (2003) “Planning, design and implementation of HF fixed service radio systems” (Chapter 4.6)

Above 30 MHz

Rec. ITU-R F.699-7 (2006) “Reference radiation patterns for fixed wireless system antennas for use in coordination studies and interference assessment in the frequency range from 100 MHz to about 70 GHz”

Rec. ITU-R F.1245-2 (2012) “Mathematical model of average and related radiation patterns for line-of-sight point-to-point fixed wireless system antennas for use in certain coordination studies and interference assessment in the frequency range from 1 GHz to about 70 GHz”

Rec. ITU-R F.1336-2 (2007) “Reference radiation patterns of omnidirectional, sectoral and other antennas in point-to-multipoint systems for use in sharing studies in the frequency range from 1 GHz to about 70 GHz” (*rev 3 is available – see F.5/324rev1*)



Workshop on the preparations for WRC-15 (23 May 2012, Geneva)

Required information on fixed service for sharing study:

4. Radio-frequency channel arrangements for fixed service systems: Below 30 MHz

Rec. ITU-R F.348-4 (1990!) “Arrangement of channels in multi-channel single-sideband and independent-sideband transmitters for long-range circuits operating at frequencies below about 30 MHz”

Above 30 MHz

Rec. ITU-R F.746-9 (2007) “Radio-frequency arrangements for fixed service systems” (*rev 10 is available – see F.5/315rev1*)



Workshop on the preparations for WRC-15 (23 May 2012, Geneva)

Required information on fixed service for sharing study:

5. Existing methodologies and other useful information:

Below 30 MHz

Rec. ITU-R F.1778 (2007) “Channel access requirements for HF adaptive systems in the fixed service”

Above 30 MHz

Rec. ITU-R F.1107-2 (2011) “Probabilistic analysis for assessing interference into the fixed service from satellites using the geostationary orbit”

Rec. ITU-R F.1108-4 (2005) “Determination of the criteria to protect fixed service receivers from the emissions of space stations operating in non-geostationary orbits in shared frequency bands”

Rec. ITU-R F.1333-1 (1999) “Estimation of the actual elevation angle from a station in the fixed service towards a space station taking into account atmospheric refraction”

Rec. ITU-R F.1403 (1999) “Power flux-density criteria in ITU-R Recommendations for protection of systems in the fixed service in frequency bands shared with space stations of various space services”

Rec. ITU-R F.1404-1 (2002) “Minimum propagation attenuation due to atmospheric gases for use in frequency sharing studies between systems in FS and systems in the broadcasting-satellite, mobile satellite and space science services”



Workshop on the preparations for WRC-15 (23 May 2012, Geneva)

Thank you for attention!



Any questions...?