

***WRC-2003 Advisory Committee
Informal Working Group-4***

**IWG-4 Preliminary Views on
WRC-03 Agenda Item 1.25**

WRC-2003 Agenda Item 1.25: *“to consider, with a view to global harmonisation to the greatest extent possible, having due regard to not constraining the development of other services, and in particular of the fixed service and the broadcasting-satellite service, regulatory provisions and possible identification of spectrum for high-density systems in the fixed-satellite service above 17.3 GHz, focusing particularly on frequency bands above 19.7 GHz.”*

ISSUE: Adoption of regulatory provisions and identification of certain FSS bands to facilitate high-density applications in the FSS (HDFSS).

BACKGROUND:

The demand for broadband services is increasing. Leading market research groups project substantial growth in broadband multi-media satellite access. This growth is projected for both residential and business purposes. By 2005, the average bandwidth required per user for high-speed access will be at least 10 times that which it is today. Provisions of these services by satellites provide an attractive competitive alternative to terrestrial communication systems. Satellite systems typically require a much longer lead time than do terrestrial systems to develop and implement; therefore, some regulatory assurances that terminal deployment will be commercially viable is essential.

HDFSS means ubiquitous deployment of a large number of small FSS earth stations. This type of earth station deployment is not compatible either with site-by-site coordination between FS and HDFSS stations within a country, or with a regime in which an individual authorization is required for each earth station. Therefore, it is appropriate for administrations to authorize HDFSS earth stations under a class (“blanket”) licensing policy. Implementation of class licensing procedures does not obviate the need for satellite network coordination in accordance with the ITU Radio Regulations (or applicable national regulations) or preclude the use of FSS networks with other types of earth stations and characteristics. Nor does class licensing relieve, where required, an HDFSS network from the ITU requirements to coordinate with FS networks across international borders. This type of licensing or authorization regime does, however, greatly facilitate the early and efficient introduction of HDFSS earth stations, and hence HDFSS services, into a country.

Regarding the band 17.3 – 17.7 GHz, in all three Regions this is a planned band for BSS feeder links (Earth-to-space) (AP S30A). In Region 2, the FSS (Earth-to-space) allocation in this band is limited to GSO BSS feederlinks. Also, in Region 2, as per S5.517, an allocation to the BSS in the band 17.3-17.7 GHz shall come into effect on 1 April 2007. Radiolocation systems, including aeronautical systems, operate worldwide in the 17.3-17.7 GHz band (on a secondary basis). Furthermore, there is an agenda item (1.18) of WRC-03 to possibly introduce a primary FS allocation in the 17.3-17.7 GHz sub-band for Region 1.

Many administrations have submitted ITU filings for FSS systems in the 17.7 – 20.2 GHz (space-to-Earth)/27.5 – 30.0 GHz (Earth-to-space) and in the 40-42 GHz (space-to-Earth)/ 48.2-50.2 GHz (Earth-to-space) bands. Many of these FSS filings propose using all or portions of these bands for global HDFSS systems (using GSO and/or NGSO satellites) that will deliver global communications services, including to areas that presently are not served. It is impractical to coordinate HDFSS earth stations with FS because of the large number of HDFSS earth stations and the type of user.

Many administrations, including the U.S., through national spectrum management regulations have developed or are developing rules that facilitate the deployment of HDFSS in some of these frequency bands. In particular many Administrations have implemented policies to allow HDFSS applications in the 29.5 – 30.0 GHz/19.7 – 20.2 GHz bands, due to great demand for use of this band and the fact that there is no co-primary FS allocation in these bands in the ITU Table of Frequency Allocations. The bands 18.8-19.3 GHz/28.6-29.1 GHz have also been included for HDFSS in many countries. In the U.S., in order to facilitate HDFSS, the FCC has adopted rules that allow class (i.e., blanket) licensing of FSS terminals and has prohibited the use of FS in certain of these bands. This policy precludes the need to coordinate each FSS earth station with FS stations (except for transition periods when there was already use of FS in the band and near international borders).

Other administrations are currently in the process of determining how to appropriately provide for HDFSS services in their countries. Some of these administrations are looking to the ITU for guidance on spectrum management issues concerning the FS and HDFSS.

WRC-97 and WRC-00 identified bands for High Density Fixed Services (HDFS) in the 31 GHz, 37.0-43.5 GHz and 55 GHz range. WRC-97 and WRC-00 also globally allocated the band 40.5-42.5 GHz to the FSS. Although no bands have yet been specifically identified for HDFSS use, WRC-00 did advise administrations that may be contemplating HDFS use of the bands 39.5-40 GHz and 40.5-42 GHz to take into account constraints to HDFS due to the potential deployment of high-density applications in the FSS. Further, Resolution 84 (WRC-2000) urges administrations considering regulatory provisions relating to the band 40-40.5 GHz to take into account that there were a number of proposals to WRC-00 to identify the band for HDFSS applications.

PRELIMINARY VIEW:

The identification of appropriate frequency bands for high-density applications in the FSS, and the adoption of associated regulatory provisions to facilitate deployment of HDFSS earth terminals, can help administrations and HDFSS satellite system operators in their earth station deployment.

The U.S. objective of enabling HDFSS in specific bands will be pursued by proposing adoption of footnotes to the International Table of Frequency Allocations that would “identify” certain bands for use by high-density applications in the FSS within existing FSS allocations. These footnotes could reference a resolution that would encourage those administrations desiring to take advantage of the benefits of HDFSS to adopt regulatory procedures, such as class (blanket) licensing of FSS earth stations, and to halt deployment of FS in the applicable bands in view of the sharing difficulties, in order to facilitate the introduction of HDFSS earth stations. The U.S. does not support removal of any existing allocations from the International Table of Frequency Allocations under WRC-03 Agenda Item 1.25.

In reviewing bands above 17.3 GHz, the U.S. has developed the following specific preliminary views:

- Regarding the band 17.3 – 17.7 GHz, in all three Regions this is a planned band for BSS feeder links (Earth-to-space) (AP S30A). In Region 2, the FSS (Earth-to-space) allocation in this band is limited to GSO BSS feederlinks. Also, in Region 2, as per S5.517, an allocation to the BSS in the band 17.3-17.7 GHz shall come into effect on 1 April 2007. Radiolocation systems, including aeronautical systems, operate worldwide in the 17.3-17.7 GHz band (on a secondary basis). Furthermore, there is an agenda item (1.18) of WRC-03 to possibly introduce a primary FS allocation in the 17.3-17.7 GHz sub-band for Region 1. Given these allocations, this band is not available for HDFSS identification.
- The bands 29.5 – 30.0 GHz and 19.7 –20.2 GHz are allocated globally to the FSS in the Earth-to-space and space-to-Earth directions, respectively. There is no co-primary FS allocation in the ITU Table of Frequency Allocations in these bands. Many administrations are planning to deploy HDFSS applications in these bands on a global basis. Therefore the U.S. supports the identification of these bands for HDFSS on a global basis.
- The paired bands 28.6-29.1 GHz and 18.8-19.3 GHz, are allocated globally to the FSS in the Earth-to-space and space-to-Earth directions, respectively. Furthermore, these are the only bands where NGSO FSS systems are not required to protect every current and future GSO FSS system and therefore represent the best opportunity for ubiquitously deployed NGSO FSS user terminals. Therefore the U.S. supports the identification of these bands for HDFSS on a global basis.
- The bands 18.58-18.8 GHz, and 40-42 GHz (all space-to-Earth), and 28.35-28.6 GHz, 29.25-29.5 GHz and 48.2-50.2 GHz (all Earth-to-space), are also planned for use by many administrations for HDFSS applications. Therefore the U.S. supports the identification of these bands for HDFSS on a global basis.

The U.S. will continue to participate in ITU-R studies related to agenda item 1.25 and develop views on other frequency bands as appropriate.

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