Informal Working Group 5 (IWG-5)

Preparation for WRC-03

DRAFT PRELIMINARY VIEWS

WRC-03 Agenda Item 1.24: to review the usage of the band 13.75-14 GHz, in accordance with Resolution **733** (WRC-2000), with a view to addressing sharing conditions;

ISSUE: To determine sharing conditions required by the FSS, Radionavigation, Radiolocation, and Space Research services while taking into consideration:

1) the constraints in footnote **S5.502** regarding the minimum antenna diameter of GSO FSS Earth stations and alternatives to those constraints,

2) review the e.i.r.p. for operation of Radiolocation service,

3) the needs of the Space Research service per **S5.503**.

BACKGROUND: Prior to WRC-2000, footnote **S5.502** contained constraints such as, e.i.r.p. and antenna size limits on the fixed-satellite service and e.i.r.p. limits on the radiolocation service. Footnote **S5.503** contained e.i.r.p. limits on the fixed-satellite service to protect the space research service. These constraints were intended to accommodate a delicate sharing of the band among these services. These constraints were developed based upon the planned use of 13.75-14.0 GHz by geostationary satellites in the FSS, and were intended to limit the number of FSS earth stations to the point that sharing could occur, though a potential for interference from the limited number of earth stations would still exist. Since the time that the regulatory constraints were developed, GSO FSS operators have expressed interest in operating small earth stations. This is due to the increased requirement for broadband data services delivered to businesses, hospitals, schools, etc., in both rural and urban areas. Radiolocation operators have expressed interest in using higher than currently allowed e.i.r.p. values. WRC-2000 modified footnotes **S5.502** and **S5.503** to include:

- within footnote **S5.502** that the protection of the receiving space stations in the FSS operating with earth stations that, individually, have an e.i.r.p. of less than 68 dBW shall not impose constraints on the operation of the radiolocation and radionavigation stations operating in accordance with the Radio Regulations.
- within footnote **S5.503** that the e.i.r.p. density of emissions from any earth station in the FSS operating with a space station in non-geostationary satellite orbit shall not exceed 51 dBW in band 13.772 to 13.778 GHz until those geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 Jan. 1992 cease to operate in this band.

The conference has created a Joint Task Group 4-7-8 to address the sharing conditions in footnotes **S5.502** and **S5.503** with a view to review the minimum antenna diameter of GSO FSS Earth station's and the e.i.r.p. constraints of radiolocation service.

It is believed that the ITU-R studies will take into account the reductions in resulting Radiolocation power flux density transmissions towards over-the-horizon inland earth station sights. Such studies should result in quantifying the reduction of interference into FSS earth station receivers located inland from the operating Radiolocation sea lanes. That, in turn, would indicate the reduced protection needs and consequently smaller earth station antenna sizes at those locations. Studies will also have to be conducted which take into account those Space Research Satellites still having priority in the 13.772 – 13.788 GHz band.

PRELIMINARY VIEW: Based on the ITU-R studies, it would be the U.S. view to relax the 4.5 meter constraint on the GSO FSS to smaller sizes in proportion to the pfd reductions afforded to over the horizon FSS earth station inland sight locations while also temporarily taking into account the needs of the remaining Space Research satellites still operating in the 13.772 – 13.778 GHz band.

(4/3/01)