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8. Other International Concerns of OES

ACTIVE SENSORS:

Recall that the satellites with active sensors (e.g., TRMM) operating in the 13.75 - 14.0 GHz band have limited protection - until January, 2001 at best, due to Fixed Satellite Services (FSS) in the band. At present, FSS uplinks must be coordinated in order for us to operate, and over 250 systems are involved. Remote sensor protection, indicated by footnote only, was lost in WRC-92. We must constantly defend our turf!

PASSIVE SENSORS:

There are discussions concerning a Space Solar Power Satellite. The affect of using radio frequencies to transfer massive amounts of power have the potential to be disastrous to both our passive and active sensors. This matter must be kept under watch and guarded carefully - it may be all right, but it must be proven first!

COMMUNICATIONS:

The spectrum below 3 GHz is under intense demand, particularly in the United States. Most of NASA's tracking, telemetry, and command links are around 2 GHz, and they must be protected both now and in the long run.

NAVIGATION:

A potential threat has been posed to the protection of the GPS system; it is being handled elsewhere.

OPERATIONS:

The number of EESS users of X-band (8025- 8400 MHz) communications is expected to triple between now and the year 2003. Most of these satellites are high-inclination, if not sun-synchronous, spacecraft. There is a concern that, should most people want to downlink their data to high latitude stations, they may occasionally interfere with each other.

- This contention problem needs to be quantified, and, if proven to be significant, worked upon jointly by all the users of the band (national and international, both governmental and commercial).

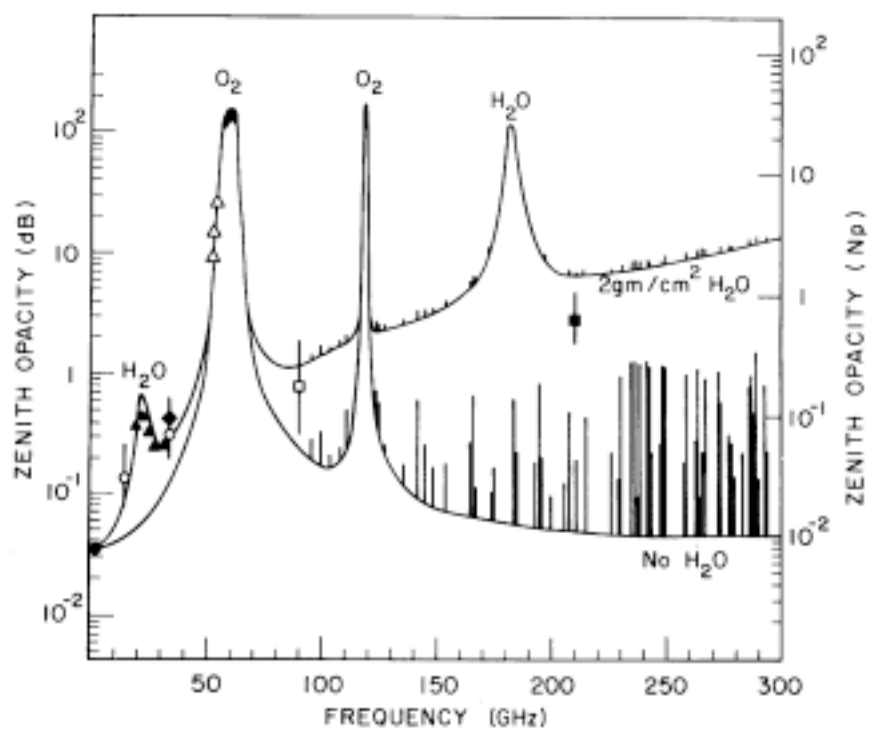
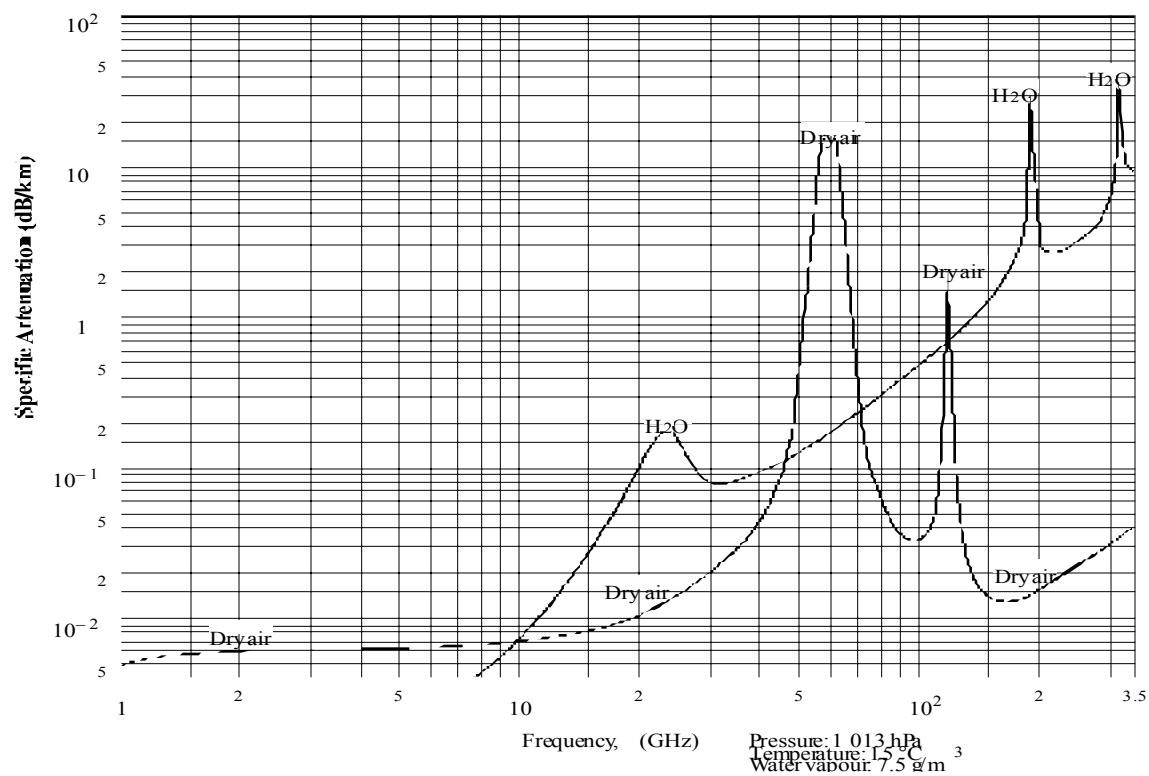
- Spectrum-conserving modulation techniques need to be developed and used both to maximize the data being downlinked per unit time (shorter contacts) and to minimize interference to other users of the band.

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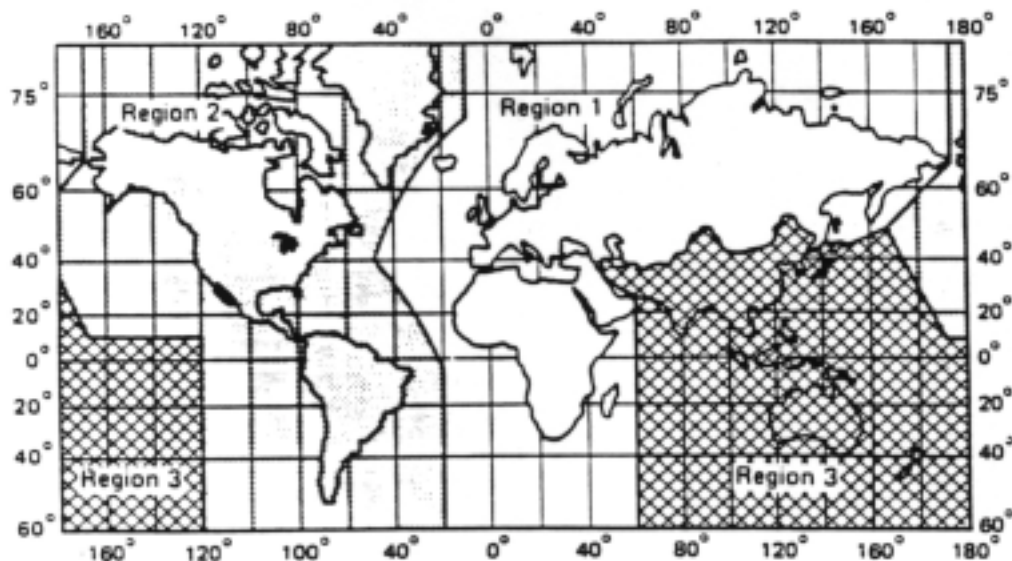
9. APPENDICES/BACKUP MATERIAL

- A. Atmospheric Absorption versus Frequency
(per km and through atmosphere).
- B. Map of ITU Regions.
- C. Entire ITU-R Study Group Structure (Diagram and Table).
- D. Summary of WRC-97 Results from an Office of Earth Science
Viewpoint
- E. NTIA Licensing Stages.
- F. Glossary of Instruments and Spacecraft

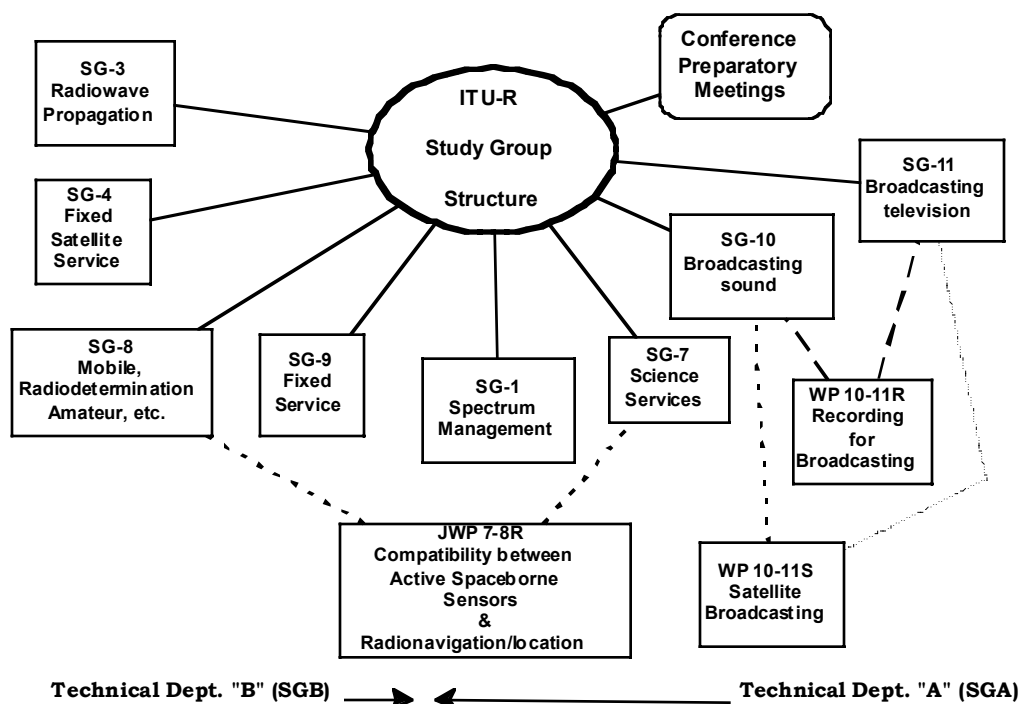
Specific attenuation due to atmospheric gases



ITU Regions



ITU, *Final Acts of the World Administrative Radio Conference, Geneva, 1979.*



C. ITU Radiocommunications Sector Study Group Structure