



# WRC-15 and Satellites

The Challenges and Opportunities

# Spectrum for satellites

An essential resource

## L-band MSS (1.5/1.6 GHz)

This frequency range has the ideal characteristics for providing coverage, mobility and high levels of service availability given the negligible impact of rain attenuation. L-band terminals can be small and do not always require pointing to the satellite.

These reliable characteristics make L-band ideal for mobile services such as maritime, aviation (including cockpit communications and flight tracking), land (particularly in remote areas), as well as government (e.g., safety, defence), M2M.



**AI 1.1**

**Need to exclude 1518-1525 MHz band for IMT:** already in use by MSS and vital for its expansion

**-> supported proposal: NOC (no change)**

**If 1492-1518 MHz identified for IMT:** need for ITU-R to study compatibility with adjacent MSS from 1518 MHz

**-> supported proposal: e.g., CEPT (EUR/9A1A1/7)**

# Spectrum for satellites

An essential resource

## C-band FSS (4/6 GHz)

Vital services rely on C-Band: broadcasting/ humanitarian programs/ mobile backhaul/ oil & gas/ ATM networks/ air navigation & meteorology/ maritime/ MSS feederlinks/ government services.

Sharing not possible with mobile & there is no replacement for displaced services.

Needs are different in different regions: a one-size fits all approach does not work.



**AI 1.1**

**Need to keep existing allocation status for the FSS in 3400-4200 MHz band and avoid further identification for IMT: 3400-3600 MHz already identified in 90 countries since 2007**

**-> supported proposal: NOC (no change)**

**If 3400-3600 MHz is identified for IMT in additional countries: need to keep protection conditions for FSS receiving earth stations as agreed in 2007**

# Spectrum for satellites

An essential resource

## Ka-band FSS (20/30 GHz)

The advantages of using Ka-band satellite networks comes from the fact that there is a larger amount of available spectrum in that band, which is less congested, thus enabling high bandwidth data throughput.

Ka-band satellites are highly efficient, resulting in lower bandwidth costs, and the user's premises are equipped with smaller antennas.

Now in a period of high investment and rapid expansion. Ka-band broadband satellite is now a proven technology with 60+ satellites in operation or under construction.

New agenda item for IMT should be focussed on a small sets of bands with realistic chance of a positive outcome, i.e. some bands above 31 GHz



**Need to keep Ka-band (27.5-29.5 GHz) out of the list of bands proposed for study for possible identification for future IMT/5G and HAPS in the agenda of WRC-19**

**-> supported proposal: Candidate bands for IMT above 31 GHz**

**AI 10**

# Satellite broadband with mobility

An essential feature

## Earth Stations On Mobile Platforms (*ESOMPs*)

Technological developments and available bandwidth in Fixed-Satellite Service (FSS) Ka-band represent the ideal solution for the provision of global broadband applications with mobility.

Several networks are available or under construction enabling the operation of *ESOMPs* for use with aviation, maritime and land-based applications. Technical and operational features provide the necessary protection for existing radio services in the band.



AI 9.2

**Need to make corrections and changes to RR to provide for use of *ESOMPs* in FSS Ka-band (19.7-20.2/29.5-30.0 GHz) on a global basis while protecting existing services**

**-> supported proposal: e.g., CEPT (EUR/9A23/1-6), ATU (AFCP/28A23A2A3/1), CITELE (IAP/7A23/1-5), ASMG (ARB/25A23A3/1-5)**

# Satellite regulatory framework

## Challenges of a revised regulatory framework

### Radio Regulations provisions and procedures

Studies in ITU-R, issues raised by Director, BR and proposals to revise the RR applicable to space services aim to improve the existing regulatory framework and prevent cases of misuse.



**Bringing into use, satellite hopping, satellite failure, excessive filings, launch failure, etc.:** need to minimize risks of adding to complexity, causing undesired consequences, and creating unbalance in the application of a revised set of RR regulatory provisions

**-> supported proposals: focussed and fair changes for efficiency**



Thank you