WRC-19 Agenda: Challenges and Opportunities ahead

ITU International Satellite Symposium 2016

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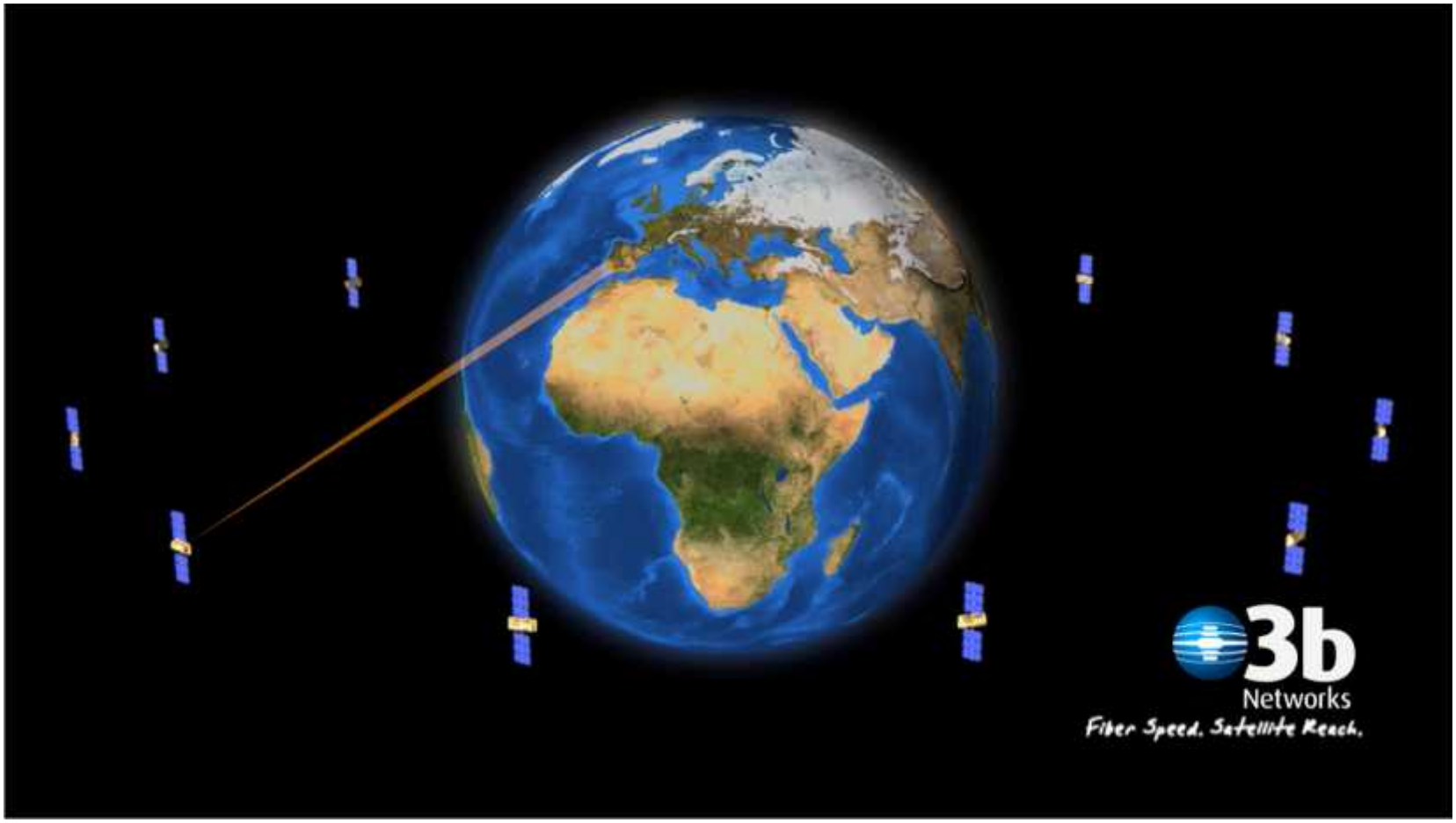
AGENDA

1. O3b – one year on
2. AI 1.6: Regulatory framework for non-GSO FSS satellite systems in V band NGSO-NGSO/GSO coordination
3. AI 9.1.3: NGSO systems in C Band
4. Bringing into use

O3b – One Year On

Fiber without the Cable



AI 9.1.3: NGSO systems in C Band

Background

- Some Administrations are seeking to revisit EPFD limits in C-band in the bands 3700-4200 MHz, 5925-6425 MHz, and 6725-7025 MHz and NGSO pfd limits in 3700-4200 MHz
  - Resolution 157 [COM5/6] calls to study technical and operational issues and regulatory provisions for these NGSO systems
- Studies to ensure that adequate protection is assured for GSO systems in these bands

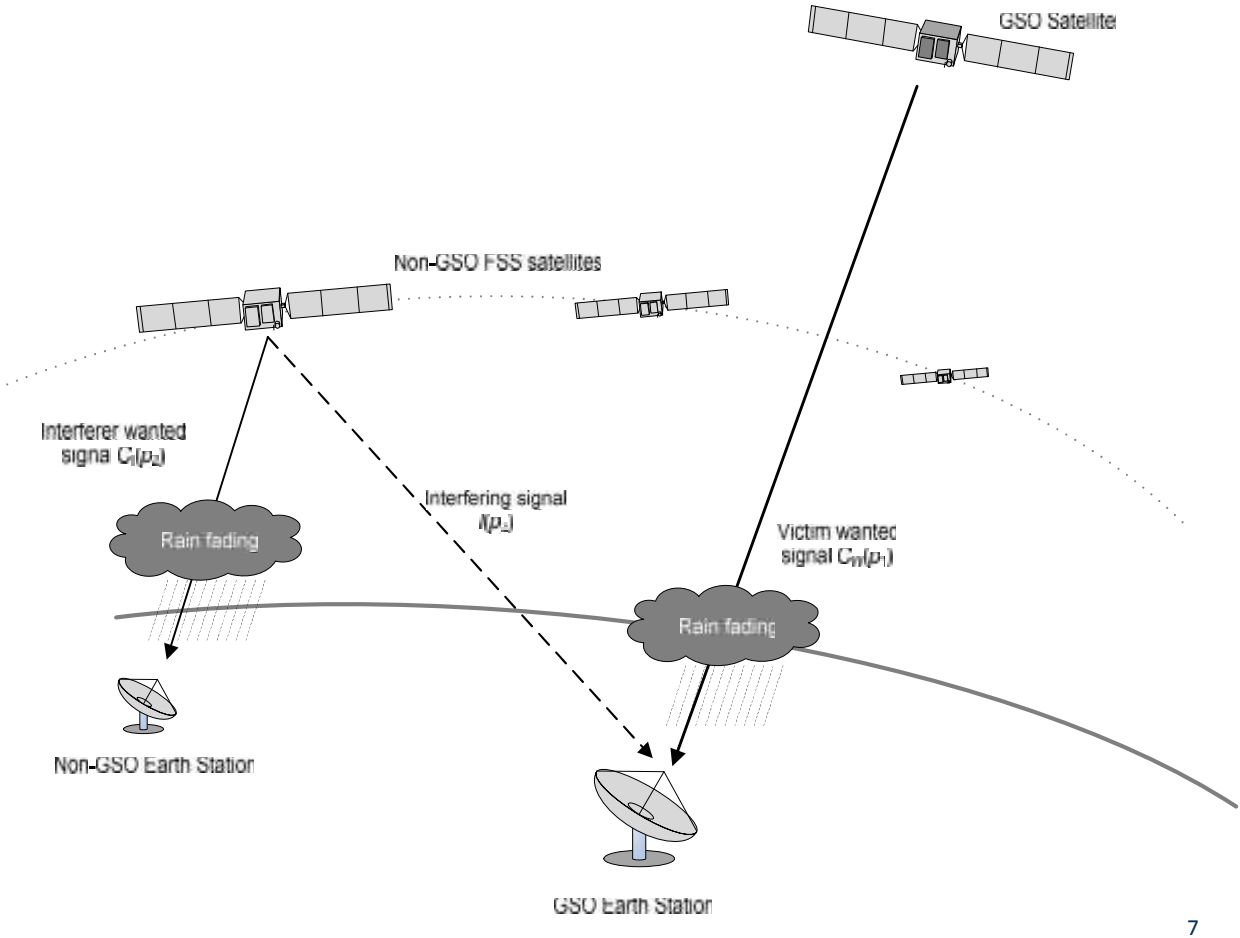
O3b Networks
Fiber Speed. Satellite Reach.

AI 1.6: Regulatory framework for non-GSO FSS satellite systems in V band

- FSS V-bands of 37.5-42.5 GHz (s-to-E) and 47.2-48.9 GHz (limited to feeder links only), 48.9-50.2 GHz and 50.4-51.4 GHz (all E-to-s)
- Purpose is to develop new technologies above 30 GHz associated with both GSO and NGSO satellite constellations to provide high-capacity and low-cost means of communication even to the most isolated regions
- To conduct technical/regulatory studies for the operation of NGSO FSS while:
  - ensuring protection of GSO satellite networks in the FSS, MSS and BSS
  - not limiting/unduly constraining future GSO networks
  - not modifying the provisions of Article **21**
- Develop equivalent power flux-density limits for NGSO FSS towards GSO or into any geostationary FSS earth station
- Develop sharing conditions between NGSO FSS
- WP4A leading discussion

V-Band Challenges

- Few deployed systems
- Effects of rain fade (20-30 dB)
  - modelling propagation loss accurately is important
  - Fading of the wanted and interfering signals due to rain loss
  - Variation in transmit power of wanted and interfering signals due to power control adjusting to rain loss
  - Correlation between propagation loss between wanted and interfering paths



AI 7 Satellite issues

The standing agenda item at all conferences to address satellite issues

1. The ITU verification software to check NGSO compliance with RRs
   - The beam pointing strategies and control of interference to the GSO are not possible to model
   - We are addressing this in the ITU-R working group 4A
   - The WRC-15 recognised this and noted such in the minutes of the Plenary

2. Bringing Into Use of NGSO networks
   - The current proposal is that 1 or 2 satellites BIU a constellation of thousands of satellites
   - Open to abuse
   - RRB considering Deployment Plan requirement
   - Minimum number of satellites to be define for intended service: Need for new service definitions?
   - WP4A should further study and new regulations enacted at WRC-19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Networks
Fiber Speed. Satellite Reach.