

# The Threat to C-band and Efforts to Safeguard Satellite Spectrum

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**October 6, 2013**  
**ASBU Satellite Interference Forum**

# Demand for Additional Spectrum from IMT Community

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- **The terrestrial mobile services community claims that it needs up to 2,000 MHz of spectrum by the year 2020 in order to satisfy future demand for mobile broadband services**
- **Agenda Item 1.1 the 2015 World Radiocommunication Conference (“WRC-15”) will consider additional spectrum allocations to the terrestrial mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (“IMT”) services**
- **C-band frequencies [3400-4200 MHz (space-Earth) and 5850-6725 MHz (Earth-space)] are targeted and under threat**
- **Studies at WRC-07 already showed that Fixed-Satellite Services (“FSS”) and IMT are NOT COMPATIBLE services**

# Why C-Band Frequencies Remain of Importance to the Satellite Industry?

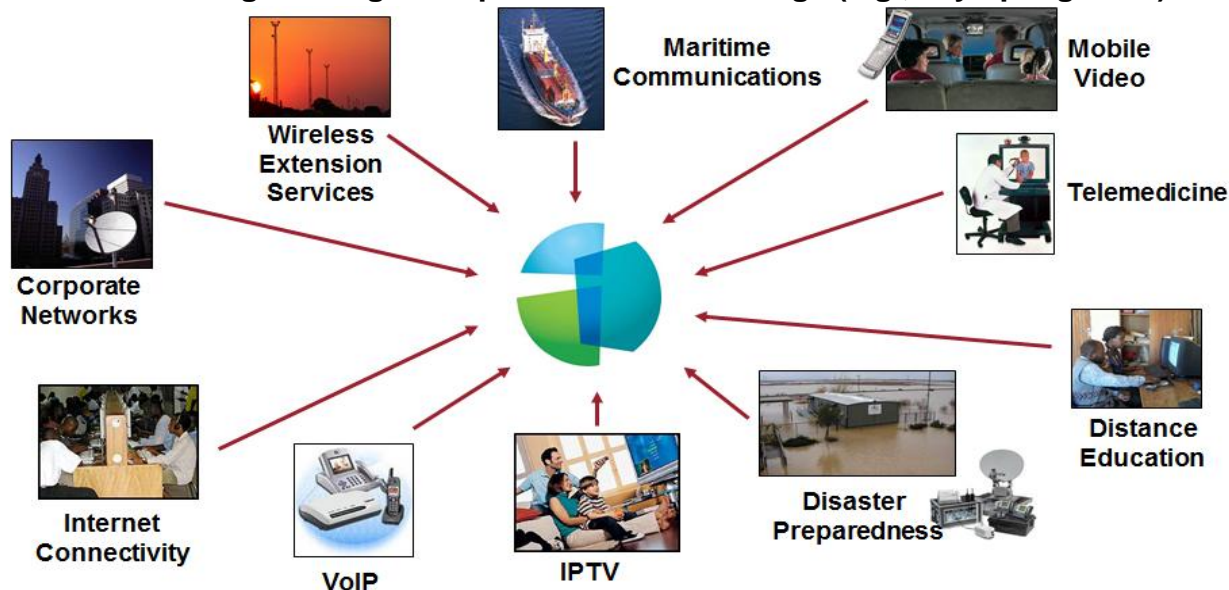
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- **Wide Geographic Coverage C-band Beams**
  - Due to geographic reach that easily covers entire continents and oceans, C-band offers an economically viable way of providing intercontinental and global communications
  - Smaller or hard-to-reach markets and low density regions are covered as easily as metropolitan areas
  - Particularly ideal for point-to-multipoint applications (broadcast, widely-dispersed networks)
- **Resistance to Rain-fade**
  - C-band is less susceptible to signal interruptions from heavy rains than higher bands (Ku- or Ka-band), making it better suited for tropical or high-rain areas at high availabilities
- **C-band satellite services cannot easily be replicated at other satellite bands or via terrestrial means**
- **C-band satellite services are being innovated to allow for higher throughput and efficiencies**

# C-Band Satellite Services Today

## C-band Is Key for Media Distribution and Contribution

- Cable TV distribution to over 7,000 cable headends in the United States, serving 60 million households [Source: NCTA (Mar. 2012)]
- Over 1,400 Standard Definition TV channels and 300 High Definition TV channels [Source: NSR (Aug. 2012)]
- Over 20 million receive-only C-band TV dishes in Brazil alone [Source: Report ITU-R M.2109 (2007)]
- Over 600 earth stations predominantly in C-band used by the BBC to reach about 185 million viewers and listeners [Source: ITU-R Doc 4-5-6-7, 94-E (Nov. 2012)]
- Satellite news gathering and special events coverage (e.g., Olympic games)



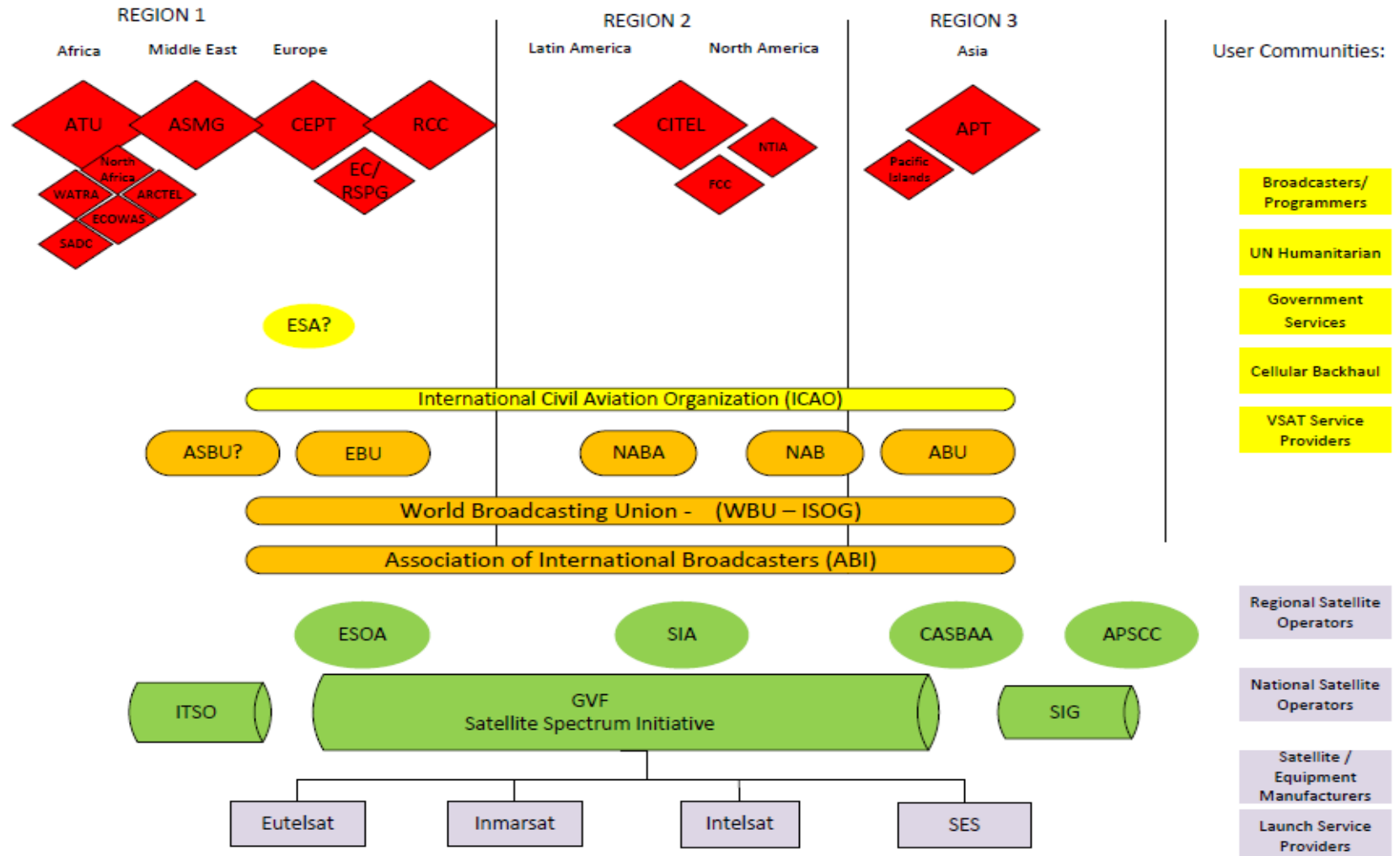
# What Are the Concerns of the Satellite Industry?

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- **Renewed efforts to identify the 3400-4200 MHz band for IMT**
  - WRC-07 studies demonstrated incompatibility of satellite services with IMT services
    - Interference from IMT transmissions into FSS receive stations
    - Large distance separations between IMT stations and FSS earth stations required
  - Interference studies with new IMT parameters are currently underway, but do not foresee different outcome
- **New efforts to identify the 5850–6725 MHz band for IMT**
  - ITU has not conducted sharing studies for this band
  - Receiving IMT stations are susceptible to interference from transmitting FSS Earth stations
    - It is likely that large distance separations will be required
    - Would severely restrict placement of new FSS Earth stations
    - Would limit the size of FSS Earth station antennas and, thus, restrict FSS applications

# The Global C-band Spectrum Initiative

World Radiocommunications Conference 2015 ("WRC-15")



# How You Can Help

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**The Challenge:** There is little awareness of the many critical and essential services supported by satellites. Since receive-only dishes do not require a license, regulators do not know how many hundred of thousands of C-band antennas are in use around the world today

- Information must be gathered and distributed to regulators
  - Number of earth stations
  - Number of viewers/users
  - Cases of interference to FSS
- Meet with local regulator to let them know about the importance of C-band for your business
  - Added choice in how your content is transmitted to customers
  - Allows your business to expand to rural and underserved areas as well as to urban areas
  - Costs associated with changing existing equipment and architecture

# How You Can Help – Recommended Activities

- **Participate in the ITU Process and domestic preparatory processes leading to WRC-15**
  - ITU-R Joint Task Group 4-5-6-7 (“JTG 4-5-6-7”)
- **Register Earth stations with local regulators**
  - Forces terrestrial mobile/IMT operators to place their base stations far away from Earth stations
- **Participate in consultations on frequency usage**
  - Underline the importance of the services being provided in C-band
- **Encourage partners and customers to make their voice heard as well**
  - ⇒ **Don’t let regulators hear only one message from IMT proponents!**



# Contacts

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The whole satellite industry stand ready to support you on your efforts to protect C-band frequencies!

For presentation materials and background information that you may require, please contact:

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