

Satcom Forum

Regional multi-stakeholder workshop on the Role of
Telecommunication/ICTs for Disaster Risk Reduction and
Management for the Arab Region

26 – 28 November 2019

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Executive



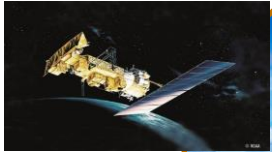
Agenda

- Satcom Forum
 - Aims, History, In the context of Disaster Risk Reduction
- Coordination Group for Meteorological Satellites (CGMS)
 - Meteosat Data Collection System (DCS)

SATCOM Forum

- The International Forum of users of satellite data telecommunication systems is an entirely self-funded body jointly sponsored by the World Meteorological Organization (WMO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO, of the United Nations in the view to address the requirements of these two Organizations for the timely collection of environment data from observing platforms.
- EUMETSAT represents the CGMS DCS Operators – EUMETSAT, NOAA and JMA.

SATCOM Forum



- Helping to bring
- the right data
 - in the right format
 - to the right people
 - at the right time
 - for the right price



Providing a forum for exchange of information of environmental science users to provide better service and prices for satellite communication.

<http://wis.wmo.int/page=SATCOM>



The primary aim of the Forum is to bring together participants involved in the collection and use of environmental data (Users/Network/Operators/Hydrometeorology equipment manufacturers/Terminal manufacturers...)

SATCOM Forum

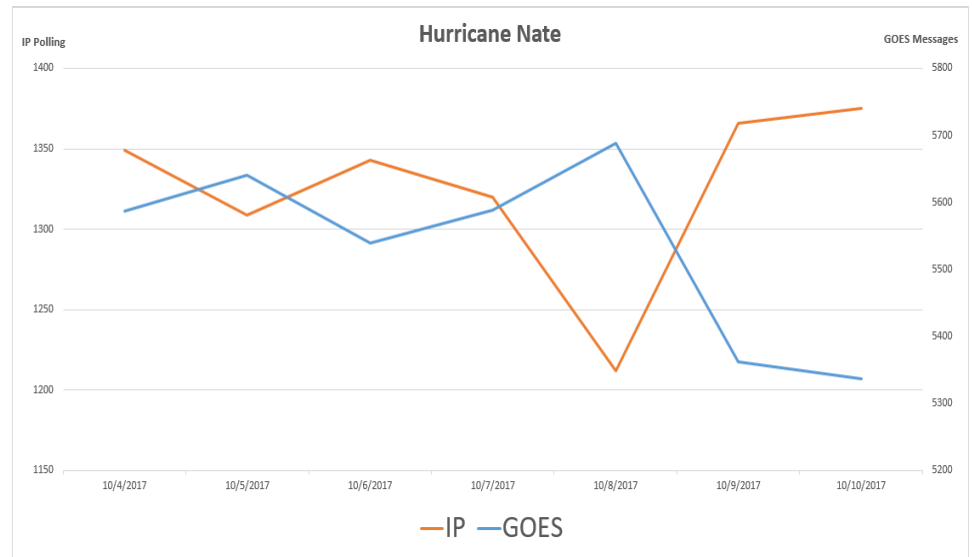
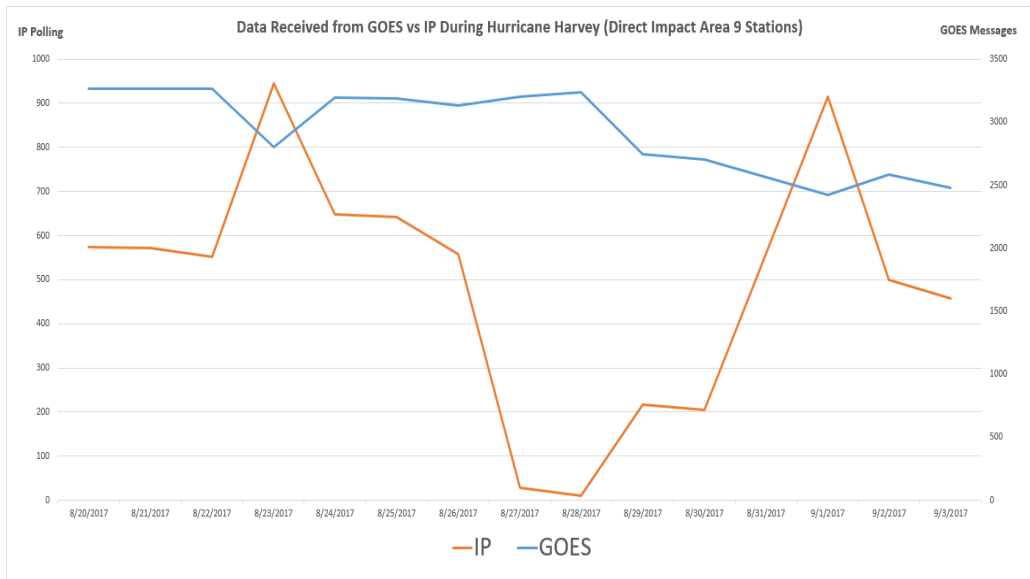
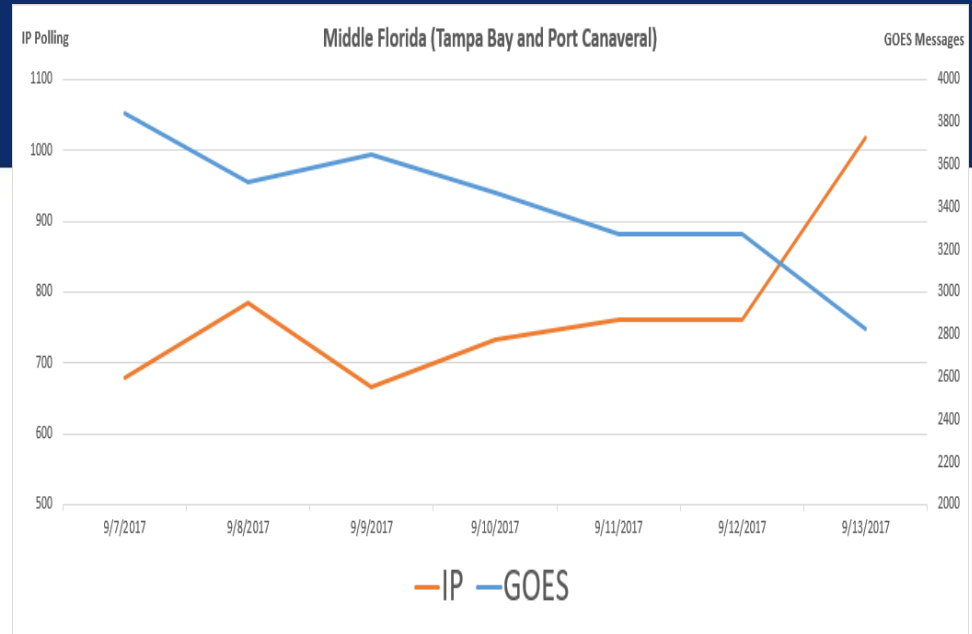
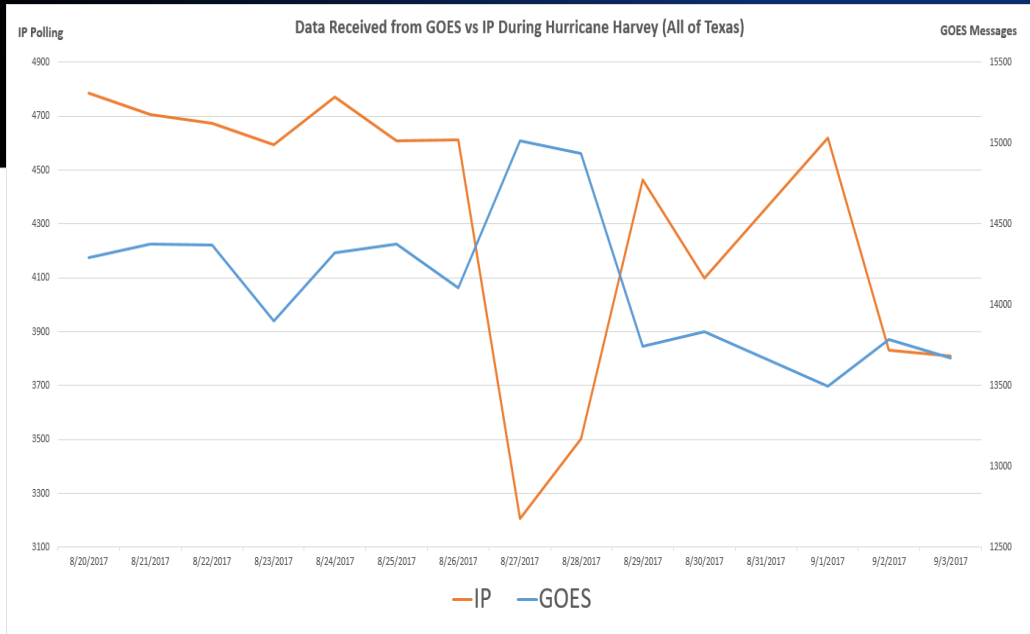
- **Satcom2016** took place at the **Meteorological Technology World Expo 2016, 27 to 29 September 2016 in Madrid, Spain**, alongside the WMO CIMO/TECO
- **Satcom2018** took place at **Meteorological Technology World Expo 2018, 9 to 11 October 2018 in Amsterdam, Holland**, also alongside the WMO CIMO/TECO. A CGMS Data Collection System Workshop was held at the same time.
- **Satcom2020** is currently being planned for 13 March in Boulder, USA
- More information: <https://wiswiki.wmo.int/tiki-index.php?page=SATCOM>

Satcom Forum and Disaster Risk Reduction

- Satellite-based environmental data collection systems are independent of ground based communications infrastructure which may not be available in the case of a severe weather event
- Data Collection Systems may used with a combination of ground and satellite-based communications for both cost and resilience reasons
- The Satcom Forum users access to information about satellite systems providers including a **Satcoms Buyer's Guide:**
<https://wiswiki.wmo.int/Satcom-Guide>
- People are welcome to sign up on the mailing list.

GOES vs Terrestrial Storm Event Performance Synopsis

- Performance during Natural Disasters (Credit: Nathan Holcomb NOAA/NOS/COOPS)
 - National Ocean Service primarily uses Iridium and GOES to ingest data
 - Also employ IP modems and phone lines
 - Large decrease in data coming from terrestrial connections immediately before, during and after hurricanes
 - Large increase in GOES messages received during storm events
 - GOES messages continued when IP modems and other terrestrial infrastructure dependent methods failed
 - GOES message count decreased as batteries failed; no electricity and/or damaged solar panels
 - The statistics collected for have been used for further outreach to stress the need for essential data collection systems
 - Important to estimate impact had there been no data during storm events



Satcom Forum - Communications service providers

- CGMS meteorological data collection systems
 - NOAA's GOES Data Collection System
 - Meteosat Data Collection System
 - JMA Data Collection System
- Argos Data Collection & Location System
- Iridium satellite network
- Orbcomm satellite network and services
- Globalstar, Inmarsat, Thuraya and VSAT
- Inmarsat BGAN M2M

Satcom Forum: Equipment Manufacturers

- Many equipment manufacturers, also exhibiting at the Met Expo, and the Association of Hydro-Meteorological Equipment Industry (HMEI) supported the meetings
- Presentations included:
 - How the Satcom networks can best serve scientific equipment manufacturers
 - Telemetry meets Water: Reliable Data for Measuring and Monitoring Tasks in Early Warning Systems (Surface Water, Groundwater, Water Quality)
 - Satellite M2M communication service

- Presentation included:
 - The challenges of accessing Antarctic meteorological data in near real-time
 - Development of the Global Cryosphere Watch (GCW)
 - Support to nowcasting and real time reporting

Satcom Forum: Ongoing initiatives

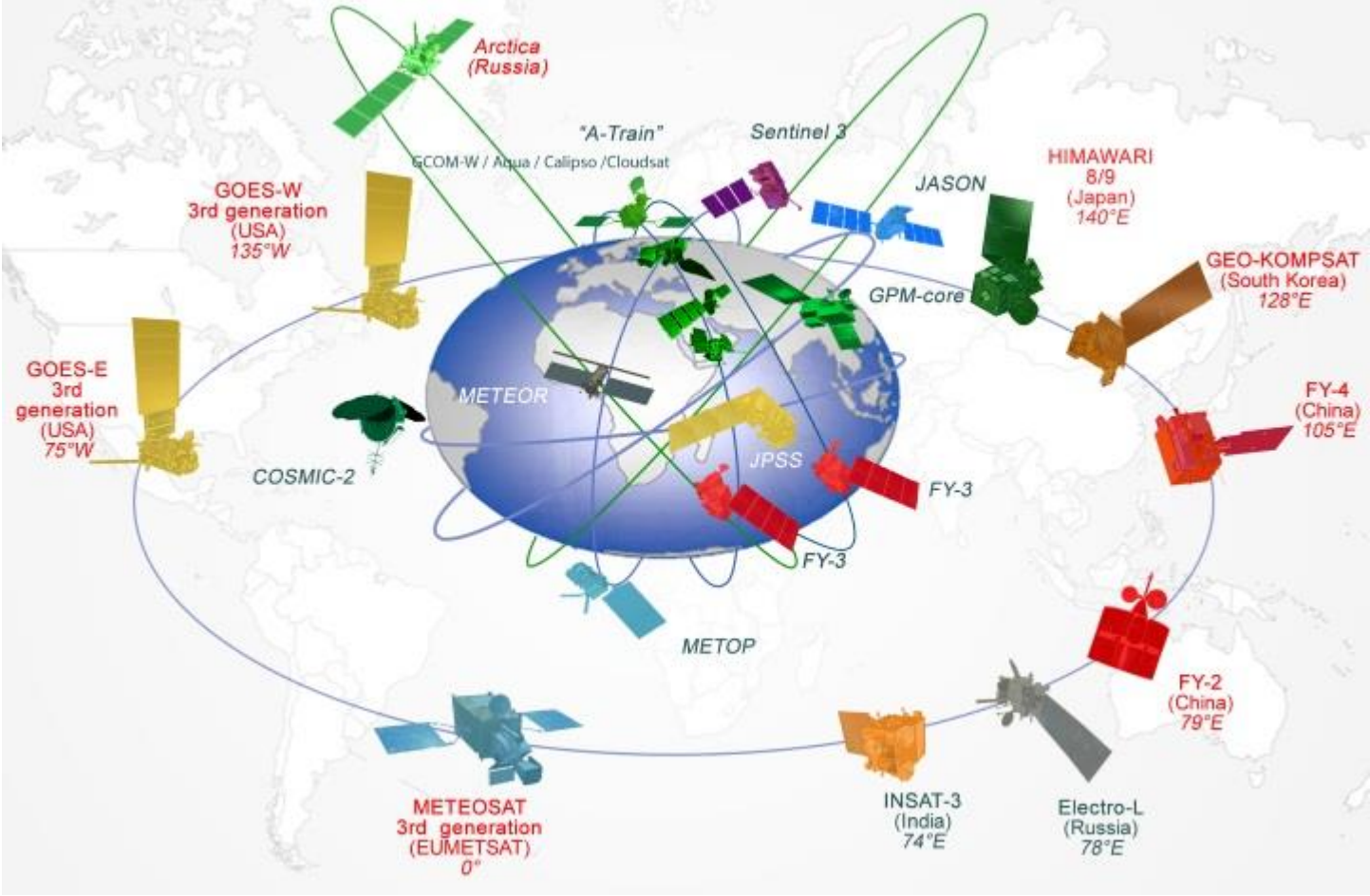
- Explore the possibility of establishing a “WMO branded disaster alerting tariff” considering hydrological community (flood warnings) as a test case and find candidate projects. Establish contacts with networks at senior level (use WMO brand) and try and build a consensus.
- Update of the **Satcom Buyers Guide**.
- Training and outreach

The Coordination Group for Meteorological Satellites (CGMS)



- The objective of the Coordination Group for Meteorological Satellites (CGMS) is the **global coordination** of the operational **meteorological satellite systems**, including protection of in orbit assets, contingency planning, improvement of quality of data, support to users, facilitation of shared data access and development of the use of satellite products in key application areas. The coordination is pursued from an end-to-end perspective, through development of multi-lateral coordination and cooperation across all meteorological satellite operators **in close coordination with the user community** (WMO, IOC-UNESCO and other user entities).
- One area that CGMS works closely with meteorological satellite operators is **Data Collection Systems including Geostationary and Low Earth Orbit Systems**. This presentation will give an overview of the various systems coordinated by CGMS.
- <https://www.cgms-info.org/index.php/cgms/index>

Coordination of Meteorological Satellites



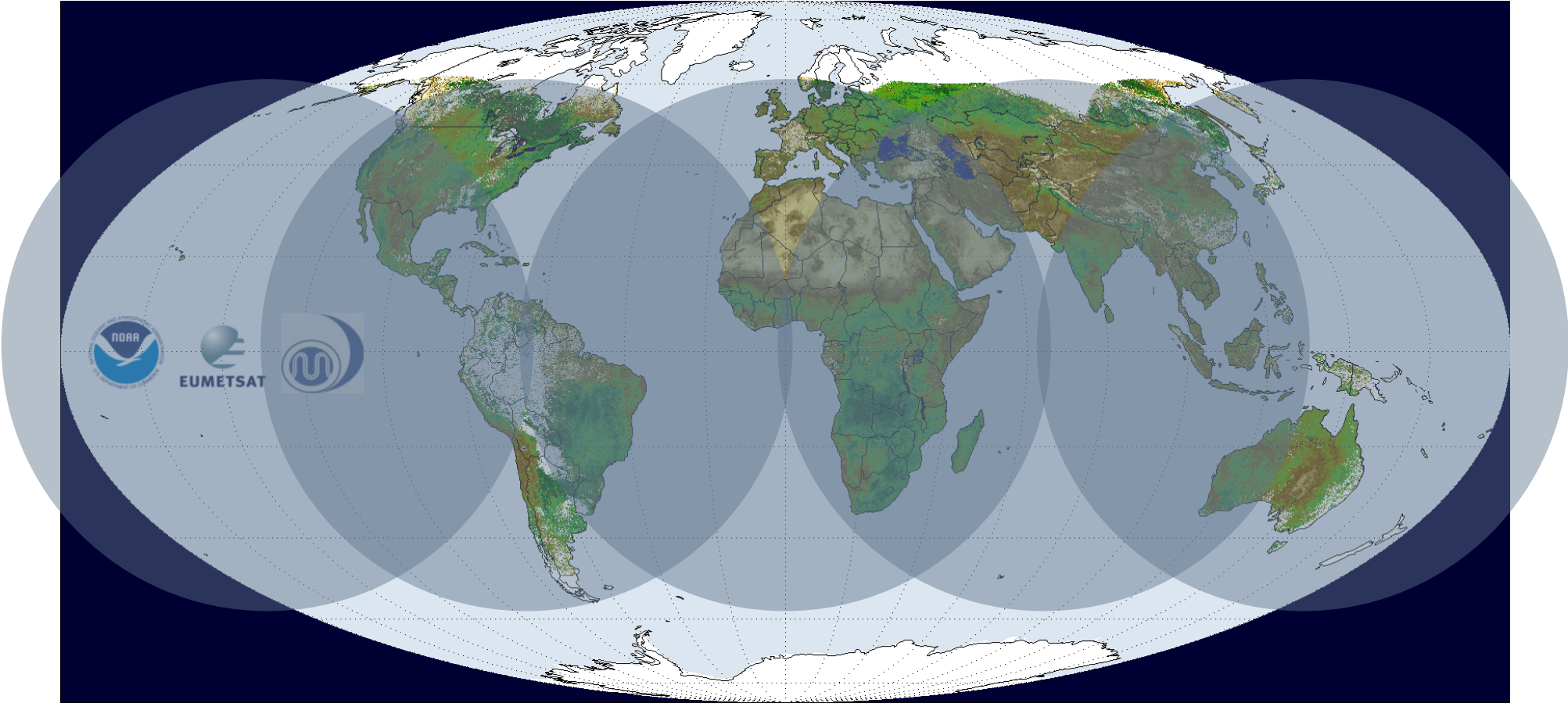
Meteorological Satellites Data Collection Services

- DCS are operated by:
 - EUMETSAT – Meteosat satellites
 - NOAA (USA) – GOES satellites
 - Japanese Meteorological Agency (JMA) – Himawari
- These DCS are coordinated by the Coordination Group for Meteorological Satellites (CGMS)

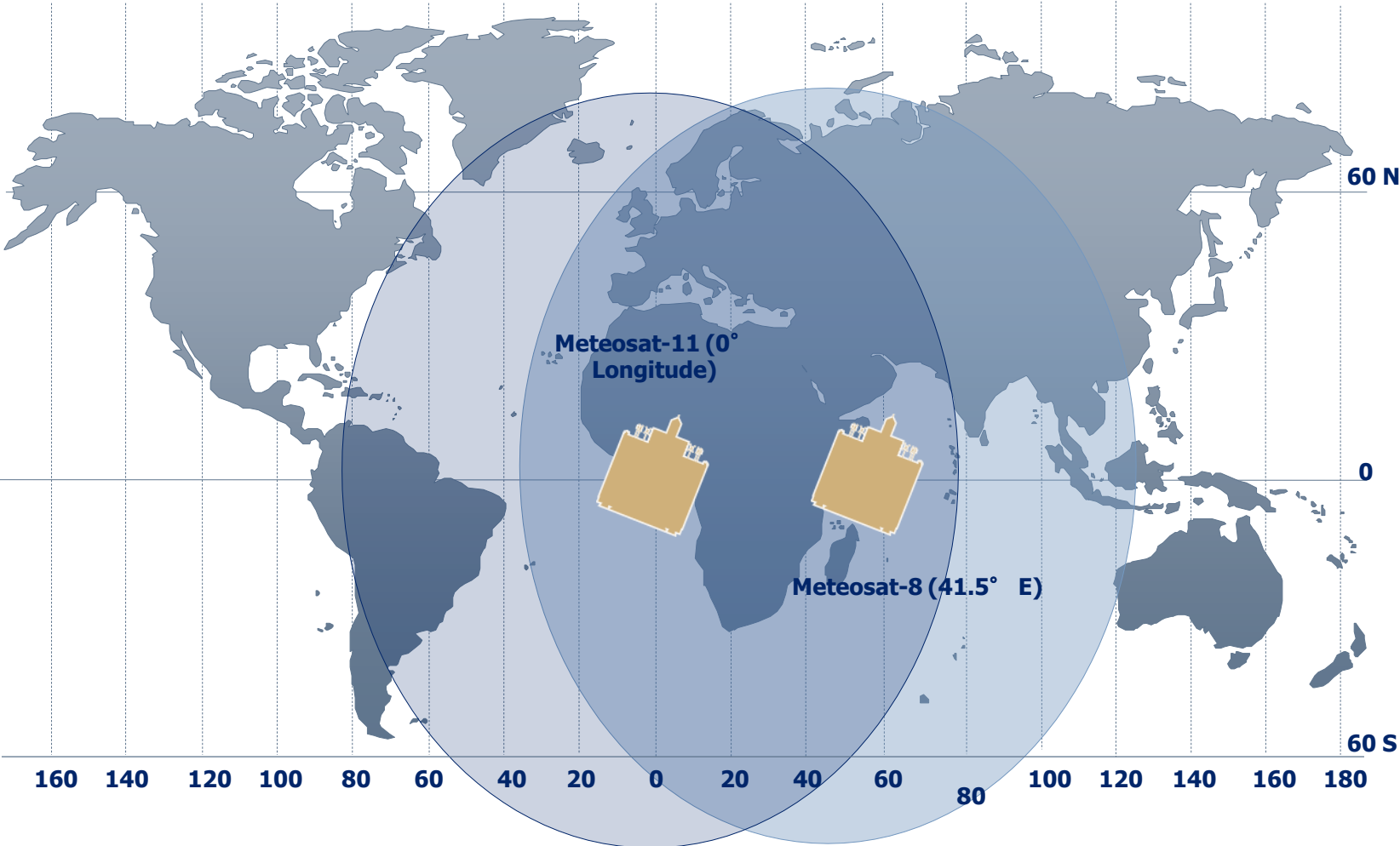
Access to DCS is typically free for environmental data use

- DCS are also operated by:
 - Chinese Meteorological Administration (CMA) – Fen Yung
 - Indian Space Research Organisation (ISRO) – INSAT
 - Roshydromet (Russia) – GOMS satellite Elektro L N2

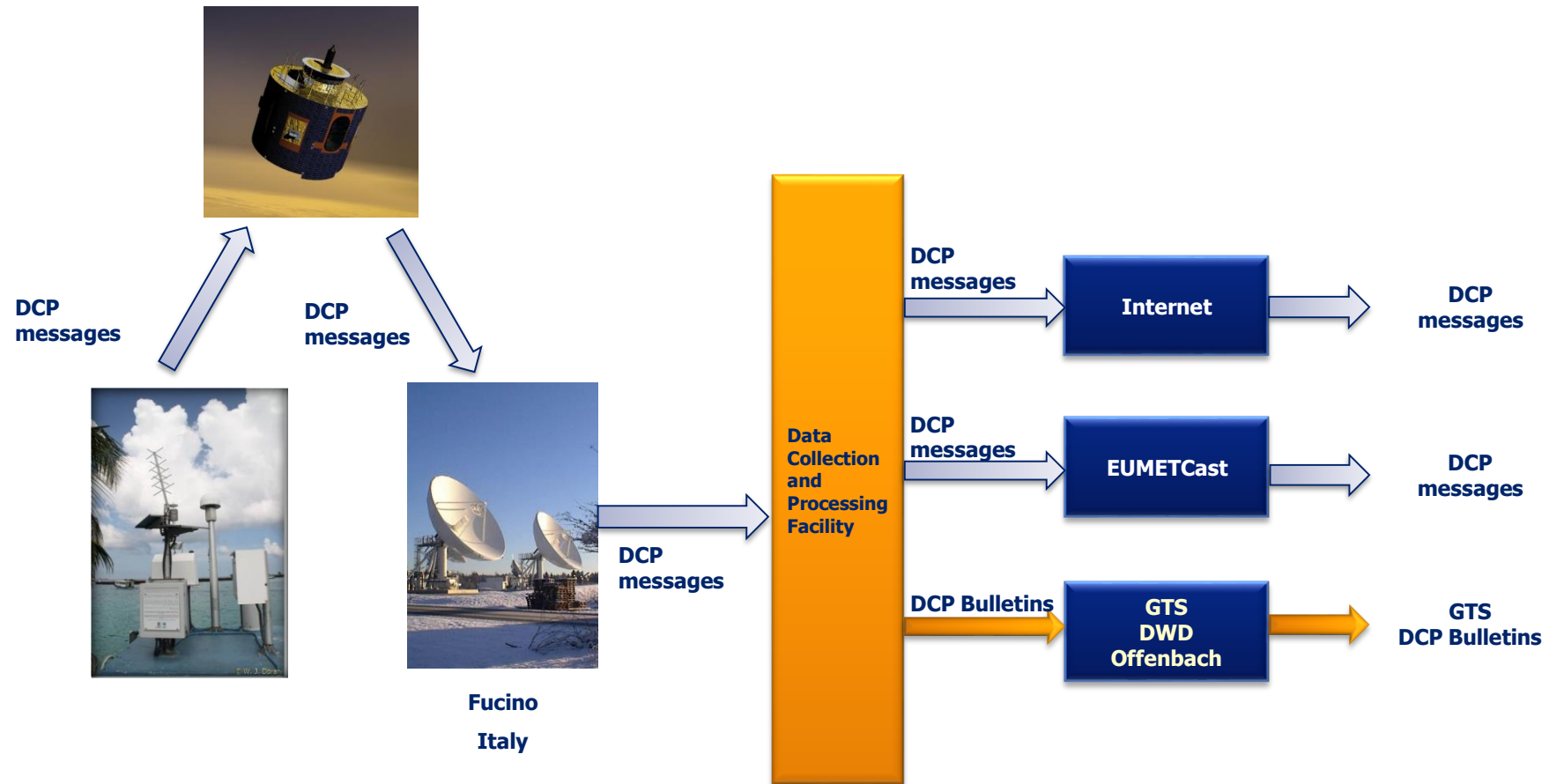
CGMS DCS Systems – Global Coverage



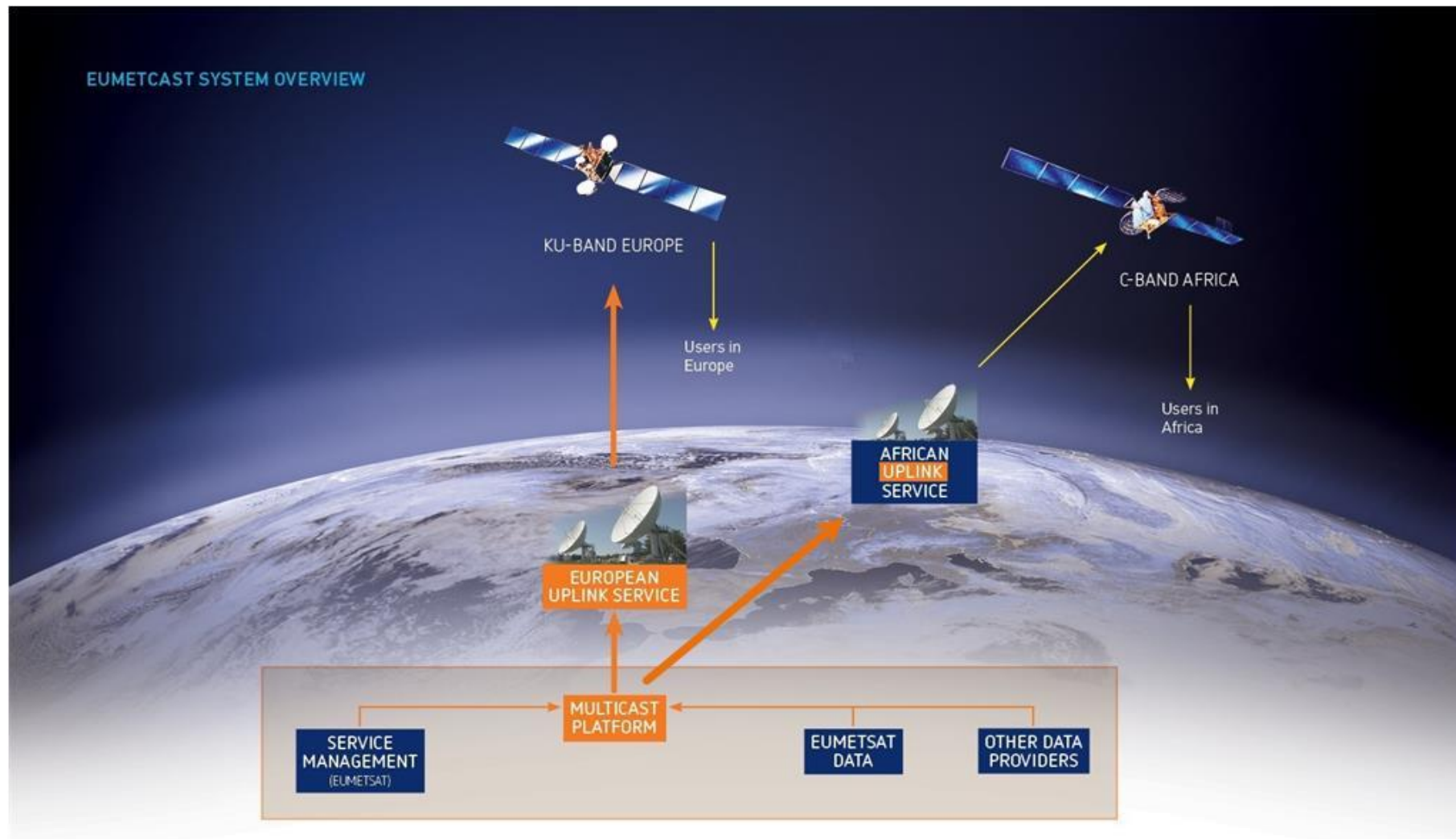
Total Meteosat DCS System Coverage



DCS System Overview - DCP Data Flow

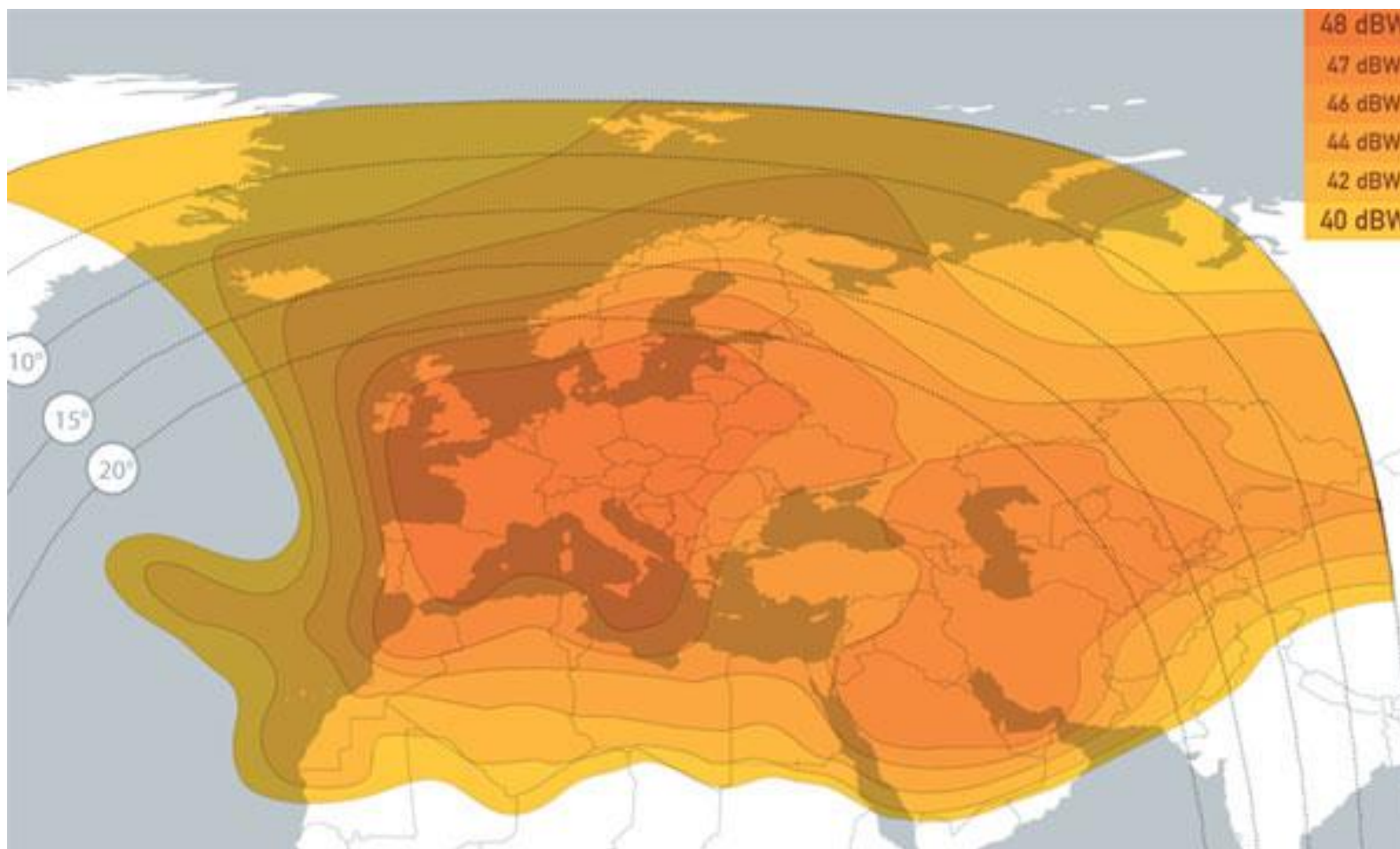


DCP via – EUMETCast



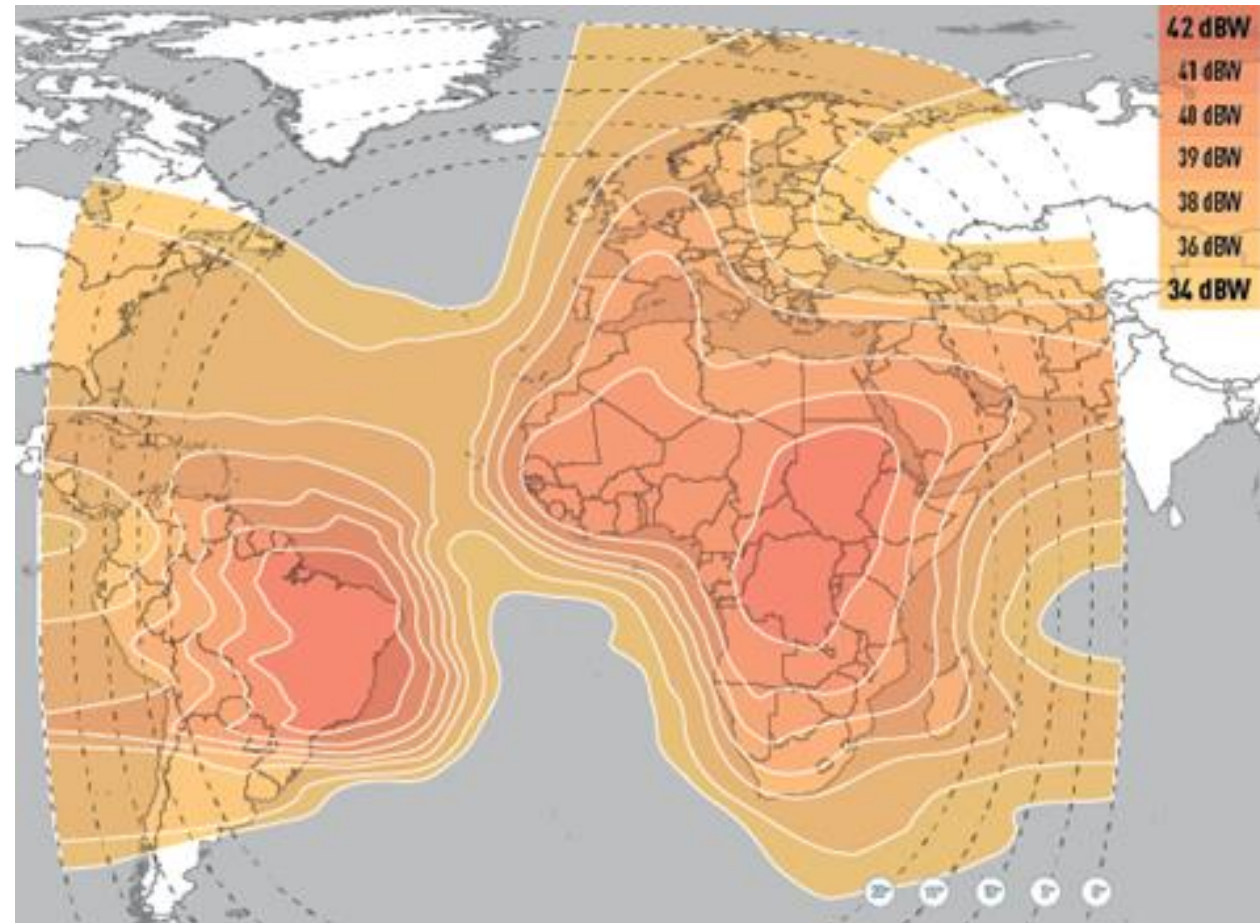
DCS – EUMETCast Europe Coverage

EUTELSAT 10A



DCS – EUMETCast Africa Coverage

- **EUTELSAT-8 West**
- **Typical antenna sizes in Africa 2.4 m**



Thank-you!