EUMETCast

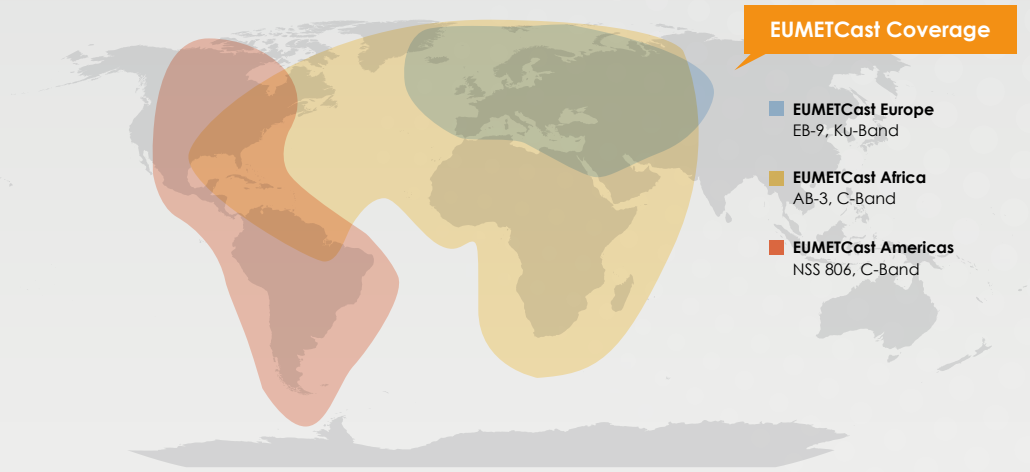
Broadcast System for Environmental Data

Introduction

EUMETCast - EUMETSAT's broadcast system for environmental data, is an environmental data and product dissemination system based on standard Digital Video Broadcast (DVB) technology. It uses commercial telecommunication satellites to broadcast data and products to a wide user community.

EUMETCast Coverage

EUMETSAT operates three EUMETCast broadcasts: Europe in Ku-band via Eurobird-9, Africa in C-band via AtlanticBird-3 and Americas in C-band via NewSkies-806.



EUMETCast and Global Monitoring

EUMETCast is Europe's contribution to GEONETCast, the Group on Earth Observations' network of dissemination systems. Within the Global Earth Observation System of Systems, EUMETCast is a contributing system for global data dissemination, and is also available for use by the Global Monitoring for Environment and Security services and other environmental data providers.

The system is used by more than ten external data providers to deliver data to Users and plays a vital role in bridging the gap between the data provider and the User. All the EUMETCast delivered data are available for data exchange within the GEONETCast system.

EUMETCast Features

- Use of off-the-shelf, commercially available, DVB reception equipment
- highly scalable system architecture
- one-stop-shop delivery mechanism allows Users to receive many data streams via one reception station
- an installed User base of over 2500 User stations
- secure delivery allows multicasts to be targeted to a specific user, or group of users, thus supporting any required data policy
- handling of any file format, allowing the dissemination of a broad range of products
- use of DVB turnarounds allows the easy extension of geographical coverage.

Services Available via EUMETCast

The following environmental data streams and products are delivered via EUMETCast:

- Space-based observations from the Meteosat, Metop, Jason-2, GOES, MT-SAT and FY2 satellites. At their most frequent, these data are delivered to Users within 5 minutes of processing
- MODIS level 1 and 2 products covering selective geographical regions
- numerical weather forecasts
- in-situ observational data
- land application products covering Europe, Africa and South America
- global and regional marine meteorological and ocean surface products
- atmospheric chemistry products.

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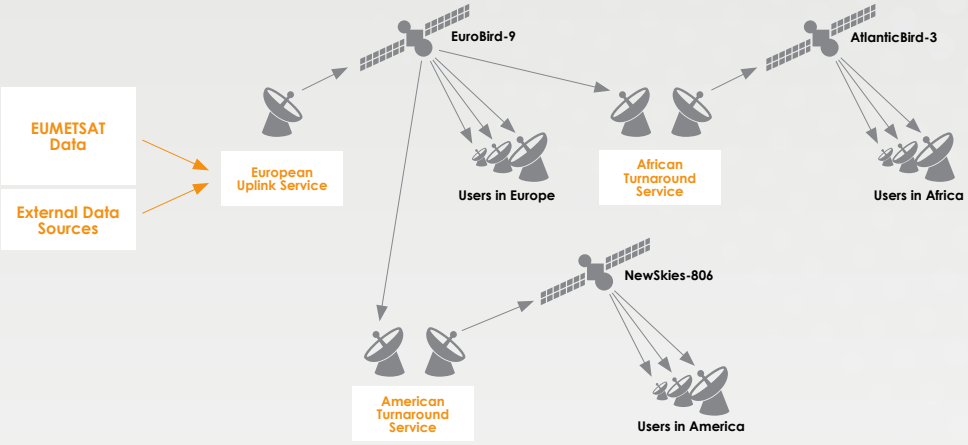
EUMETCast System Overview

Within the EUMETCast configuration, the multicast system is based upon a client/server system with the server side implemented at the EUMETCast uplink site at Usingen, Germany and the client side installed on the individual EUMETCast reception stations.

The EUMETCast system allows files to be independently targeted towards a single user, or group of users, thus enabling the secure multicasting of data at individual file and individual user level. The encryption of the data is performed by the EUMETCast uplink, and decryption by the EUMETCast Client Software installed on the reception station.

Data files generated at EUMETSAT and by other EUMETCast data providers are transferred to the uplink facility. These files are encoded and transmitted to communications satellites for broadcast to user receiving stations. Each receiving station decodes the signal and recreates the data and products, to which it is allowed access, according to a defined directory and file name structure. The two C-band broadcasts receive the Ku-band transmission and rebroadcast selected channels.



EUMETCast Product Catalogue

All EUMETCast delivered products are listed in the Product Navigator available from the EUMETSAT Web site. Additionally, the Product Navigator is disseminated via EUMETCast. For further reading on EUMETCast see the EUMETCast Technical Description, EUM TD 15.

Reception Station Requirements

A typical EUMETCast reception station comprises a standard PC with DVB card inserted and a satellite off-set antenna fitted with a digital universal V/H LNB. All components of the reception station are commercially available. The hardware costs for a single PC station for EUMETCast Europe (Ku-band) reception start at around €1,500. In addition, EUMETCast Client Software Package is required for handling the incoming DVB and storing it as data files. This package is available directly from EUMETSAT at a one off cost of €100 per station installation.

EUMETCast Reception Components

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