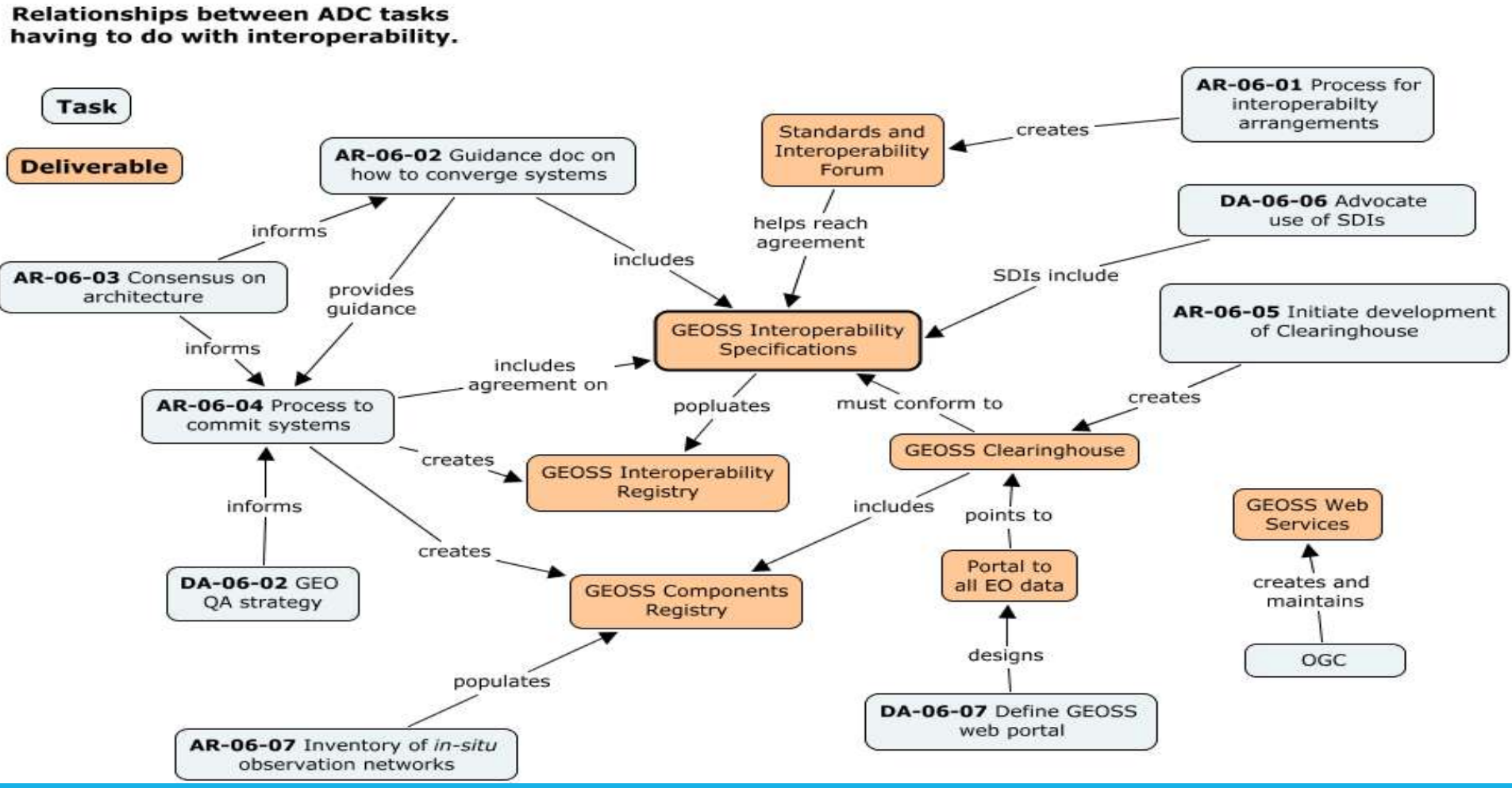
Architechure and Data Committee

GGOS Retreat, Oxnard, California, USA

February 19, 2007

Towards interoperability



Work programm 2007 2009

Data Management

Data Management	DA-06-01	GEOSS Data Sharing Principles	Invite experts to identify steps required to further the practical application of the agreed GEOSS data sharing principles.	ICSU; GEO Secretariat	Argentina; Australia; ESA; FDSN; France; IEEE; IISL; IOC; Japan; Norway; Russia; South Africa; Spain; USA; WMO
Data Management	DA-06-02	GEOSS Quality Assurance Strategy	Develop a GEO data quality assurance strategy, beginning with space-based observations and evaluating expansion to in-situ observations, taking account of existing work in this arena.	CEOS; IEEE	Argentina; ESA; FDSN; France; Germany; ICSU; IEEE; IOC/POGO; Japan; Norway; Russia; South Africa; Spain; USA; WMO
Data Management	DA-06-03	Ensemble-Technique Forecasting Demonstrations	Facilitate the development of demonstration projects promoting the wider use, in other disciplines, of ensemble-based techniques originally developed for weather forecasting.	GEO Secretariat; Greece; UK	Finland; USA; WMO
Data Management	DA-06-04	Data, Metadata and Products Harmonisation	Facilitate the development, availability and harmonization of data, metadata, and products commonly required across diverse societal benefit areas, including base maps, land-cover data sets, and common socio-economic data.	USA	Argentina; Australia; CEOS; EC; FAO; France; GCOS; Germany; GTOS; ICSU; IEEE; ISCGM; ISPRS; Italy; Japan; Norway; OGC; Portugal; South Africa; Spain; WMO
Data Management	DA-06-05	Guidance Document for Basic Geographic Data	Develop a guidance document for basic geographic data (including format, precision, accuracy, etc.), taking into account relevant national, regional and global initiatives.	Japan; ISCGM	Argentina; EC; FAO; Germany; ISPRS; OGC; Portugal; South Africa; USA; WMO
Data Management	DA-06-09	GEOSS Best Practices Registry	Establish GEOSS Best Practices Registry by a request for proposals from GEO organizations willing to maintain/update GEOSS Best Practices Registry. The registry should also include existing cost-benefit sharing mechanisms and examples (data sharing, cooperative data acquisition, joint development, joint flight, collaborative sciences, etc).	IEEE	CEOS; GTOS ; INCOSE; IOC; POGO; South Africa; USA; WMO
Data Management	DA-07-01	DEM Interoperability	Facilitate interoperability among Digital Elevation Model (DEM) data sets with the goal of producing a global, coordinated and integrated DEM	Japan, CEOS	IAG
Data Management	DA-07-02	Global Land Cover	Utilize global and regional high-resolution land cover datasets and earlier 1-km resolution land cover data sets to implement production of a high-resolution global land-cover change dataset	USA	GTOS
Data Management	DA-07-03	Virtual Constellations	Advocate rapid development of the "CEOS Constellations Concept", where observations from a virtual constellations would provide better temporal, spatial, and spectral resolution and related data management and dissemination	CEOS	
Data Management	DA-07-04	Sensor Web Enablement for In-Situ Observing Network Facilitation	Develop scenarios or study cases that demonstrate the value of Sensor Webs for ground based sensing networks in support of GEOSS Societal Benefit Areas	OGC, South Africa	IEEE
Data Management	DA-07-05	Higher Level Data Product Tools	Develop tools enabling the establishment of higher-level data products (level-3/4) from either virtual constellations and/or Sensor Webs, thus yielding frequent information update through enhanced coverage, as well as the production of higher product level time series and global maps		USA, Japan, ESA, CEOS
Data Management	DA-07-06	Data Integration and Analysis System	Coordinate data management approaches that encompass a broad perspective of the observation data life cycle, from input through processing, archiving, and dissemination, including reprocessing, analysis and visualization of large volumes and diverse type of data.	Japan	Japan

Work programm 2007 2009

Architecture

Architecture	AR-06-11	Radio Frequency Protection	Assess the potential impact of interference on Earth Observations applications and in particular Satellite measurements necessary for the GEOSS and prepare a series of appropriate coordinated advocacy activities in association with Member countries, including representations to the International Telecommunication Union (ITU) and other bodies in charge of frequency management. This also include a support to GEO Members in influencing their national and regional frequency management bodies. In particular, the case of passive bands, essential for Earth observations, will be monitored with the highest care (For example, evaluation of challenges presented by the automotive short-range radars (SRR 24 GHz) applications and their implications). To this respect, it is also important to link with Scientific Committee on Frequency Allocations for Radio Astronomy and Space Science (IUCAF).	WMO	Australia IEEE, Ne
Architecture	AR-07-01	Interoperability Arrangements for GEOSS	The core architectural principles in GEOSS, which had previously been initiated through AR-06-01, AR-06-02, AR-06-03 and DA-06-06. Not including the initial implementation in itself this overarching task will provide useful guidelines and tools to support GEO Members and Participating Organizations in the establishment of GEOSS.	Japan, USA, IEEE, Architecture and Data Committee	CEOS, E
Architecture	AR-07-02	Interface Implementation for GEOSS	Facilitate the implementation of information system interfaces, to solicit an official GEOSS Web Portal and Clearinghouse search facility to be able to access GEOSS components and to development of services accessible through GEOSS Interoperability Arrangement to support the GEOSS Societal Benefit Areas.	USA, ESA, OGC	IEEE, CE Committ
Architecture	AR-07-03	Global Geodetic Reference Frames	Ensure the availability of accurate, consistent, homogeneous, long-term stable, global geodetic reference frames as a mandatory framework and the metrological basis for Earth observation.	IAG, GCOS	CEOS
Architecture	AR-07-04	GEOSS Components Commitment Process	Establish a process for GEO Members and Participating Organizations to commit component systems to GEOSS, and advocate specific initial commitments of contributed systems and other components.		

Enabling Deployment of a GEOSS Architecture

- Provide and update guidelines on linkage of GEOSS components.
- Implement and maintain the process for the Standards Interoperability Forum responsible for interoperability arrangements including special arrangements and standards.
- Prototype and validate the implementation of the “Core” GEOSS infrastructure (registries, Clearinghouse, Web Portal) and the processes for contributing and linking systems using the Interoperability Process Pilot Projects.

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GEOSS Architecture Implementation Pilot

- Lead the incorporation of contributing components consistent with the GEOSS Architecture using a GEOSS Web Portal and a GEOSS Clearinghouse.
- Search facility to access services through GEOSS Interoperability Arrangements in support of the GEOSS Societal Benefit Areas.
- Interoperability arrangements will be the main method for incorporating components into a pilot implementation of GEOSS Architecture.

Clearinghouse Testcases

Responding Organization	Comments on Architecture	Components offered
BNSC/Infoterra	Yes	Web Map Service (WMS)
Canada/GeoConnections	Yes	GeoConnections Discovery Portal
EC/JRC	Yes	INSPIRE EU Geoportal Catalogue
ESA	Yes	EO-Portal ESA Service Support Environment ADEN/AADN ALOS Interoperability
GEONETCast	-	GEONETCast metadata
Germany	Yes	**Geoportal Bund** **(IERS partner in Geoportal Bund)**
IGOS-Geohazards	-	IGOS GeoHazards Catalogue
Japan/JAXA/Univ. Tokyo	-	JAXA Metadata Catalogue WTF-CEOP (WGISS Test Facility for CEOP) JAXA Prototype System
UNGIWG/FAO/UNEP	Yes	(yes)
US/FGDC/USGS/IEEE	-	SOA Registry Clearinghouse gateway
US/NASA	Yes	Earth Science Gateway (ESG)

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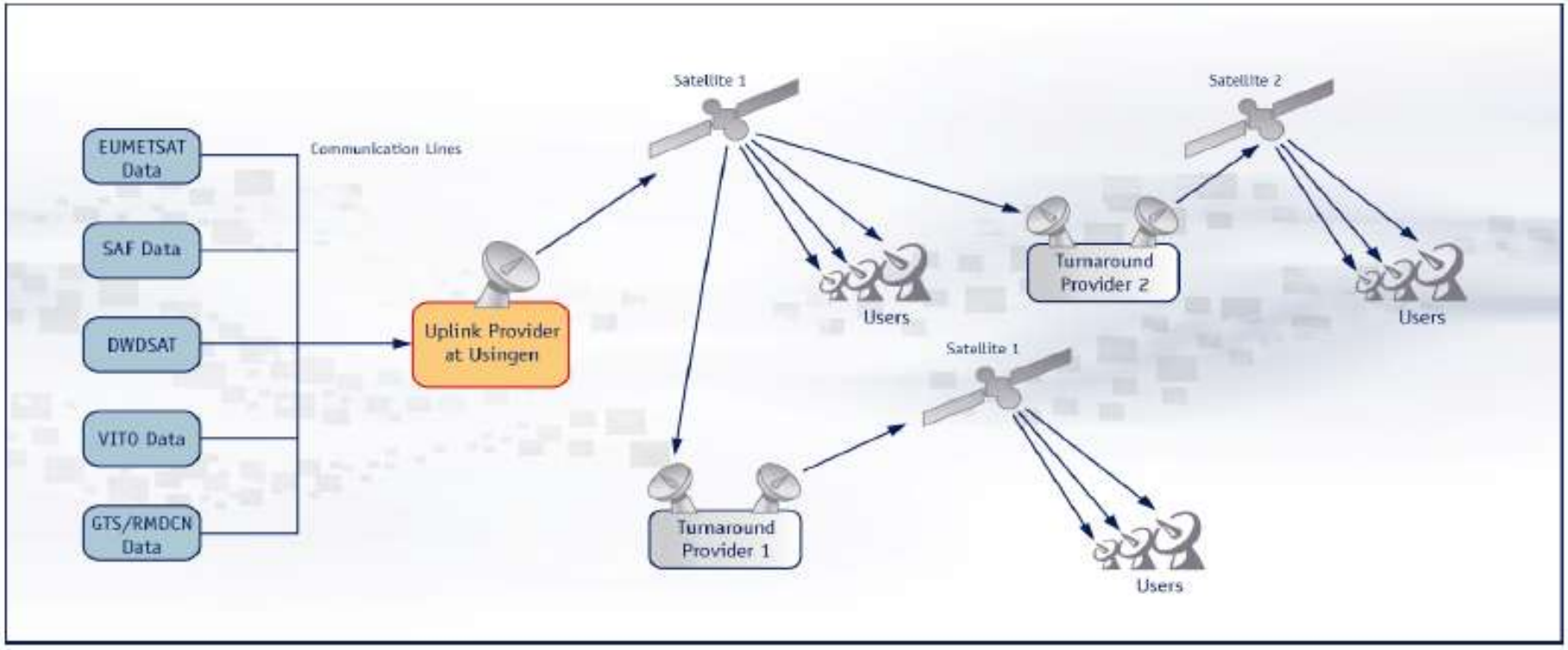
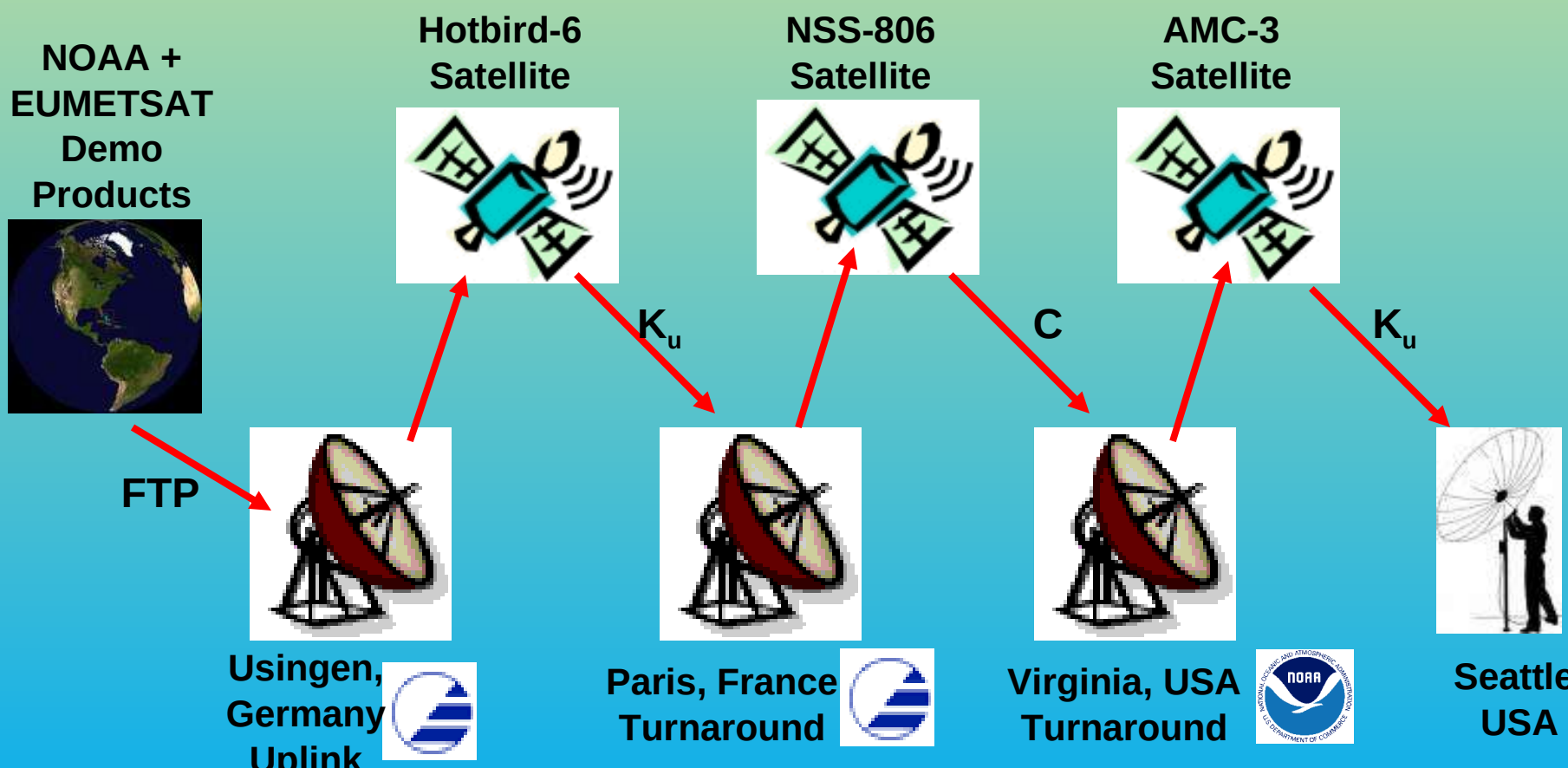
- Demonstrate advanced data communication and dissemination technologies to encourage contributions of various types of data for global usage

GEO-NETCast – a system for real-time data dissemination

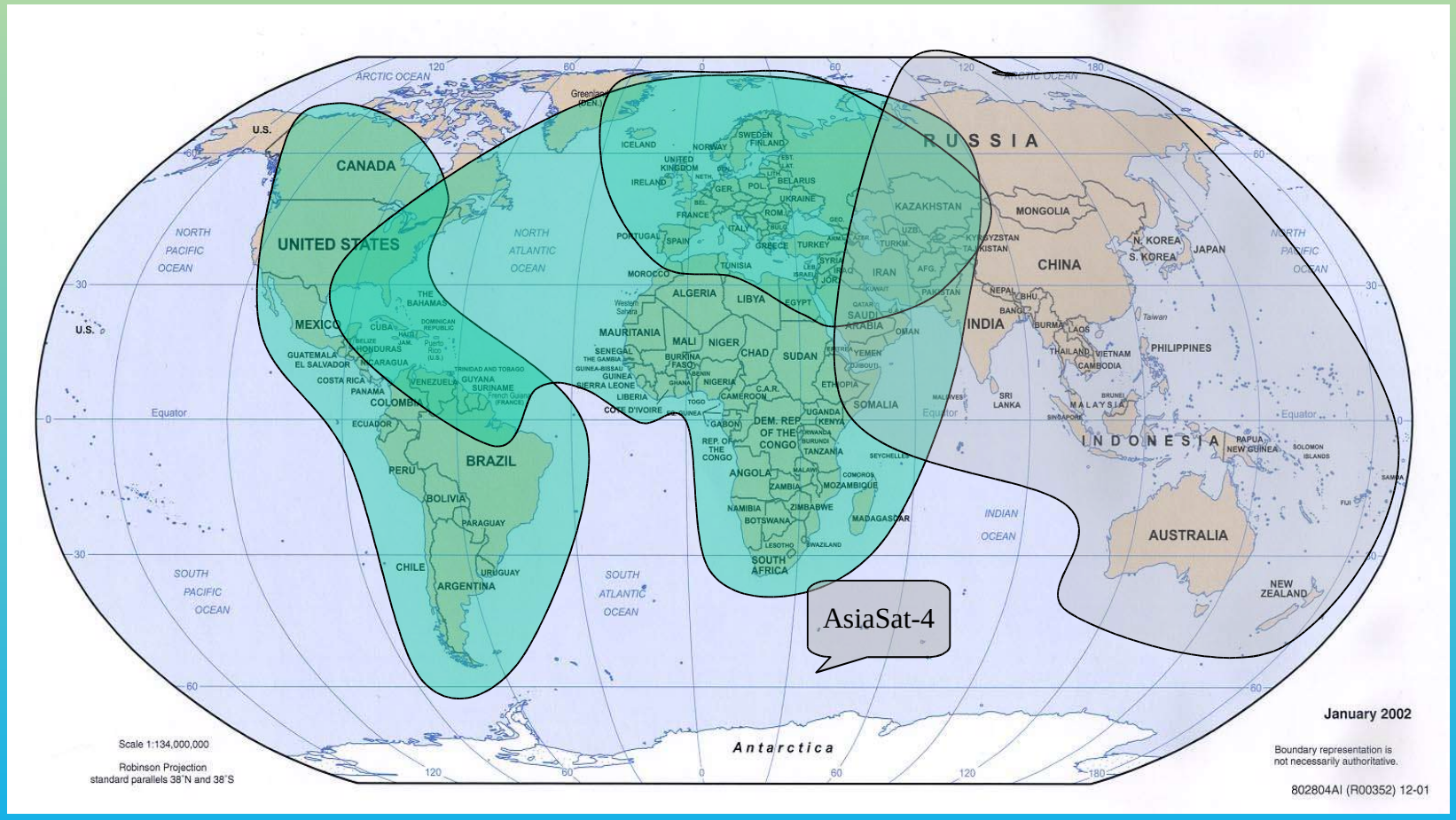
System based on EUMETCast: distribution system for meteorological data and products



The data stream flows via different satellits and ground segments of various operators (standard technology)



On the way of global coverage



Standard satellite receiver, payable for everybody

- Standard PC > 800 €
- Standard satellite antenna (1-3 m) 200 € -1000 €
- DTH receiver as box > 200 €

AR-07-03: Global Geodetic Reference Frame

- Ensure the availability of accurate, consistent, homogeneous, long-term stable, global geodetic reference Frame as a mandatory framework and metrological basis for Earth observation
  - User requirement coordination: Establish a comprehensive GEOSS database of user requirements concerning georeferencing and geodetic reference frames by identifying, describing and establishing links to relevant user communities in the nine societal benefit areas and conducting appropriate surveys.
  - Georeferencing: Ensure the availability of appropriate global geodetic reference frames for GEOSS.

  lead: IAG, GGOS

GEO Development

- Established in 2004 in Bruxelles
  - 66 countries + European Commission + 40 participating organisations
  - Secretariat hosted at WMO
  - Work program 2006
  - 3. Plenary meeting, Bonn, November 28/29
  - Work program 2007 – 2009