

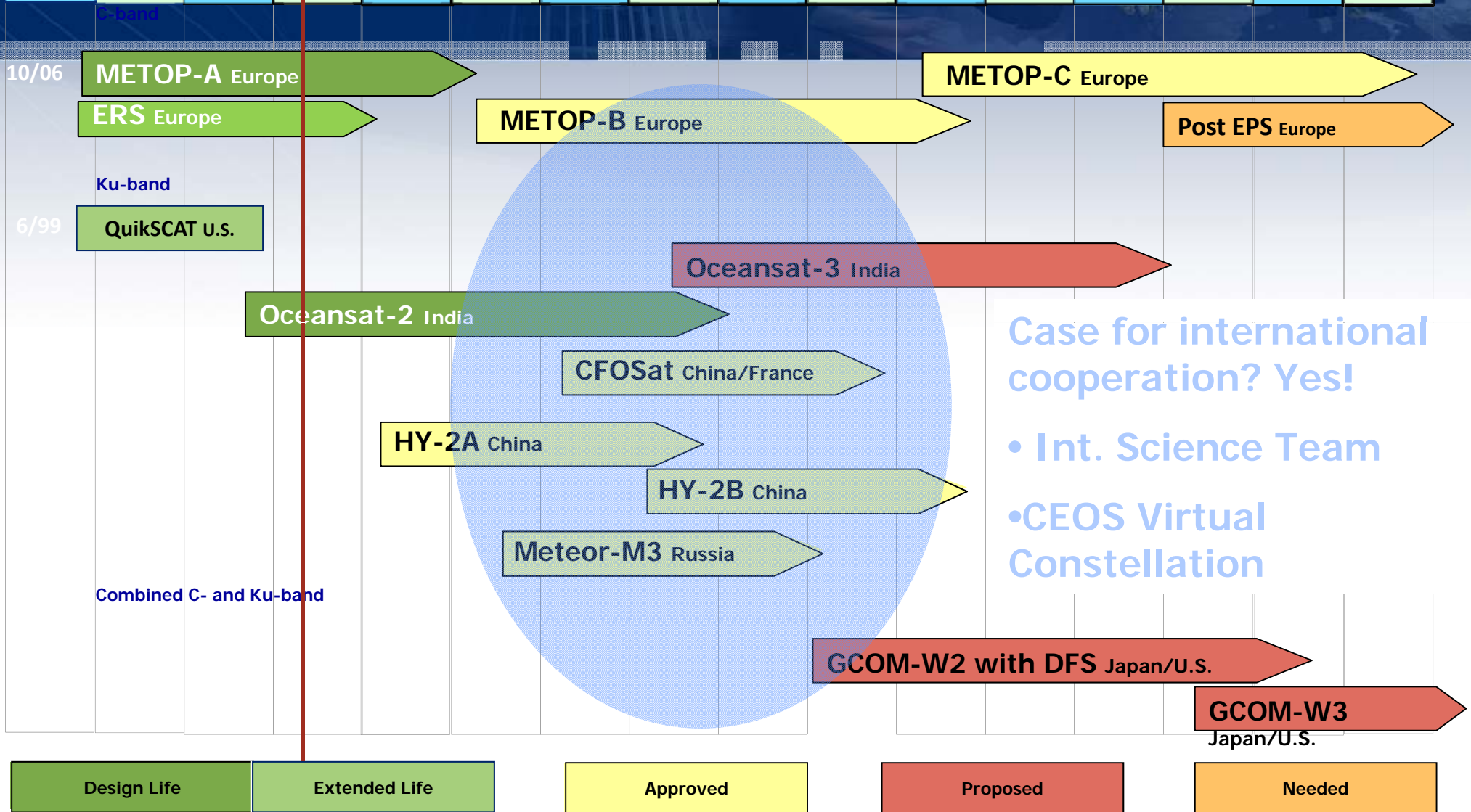


EUMETSAT's Perspective

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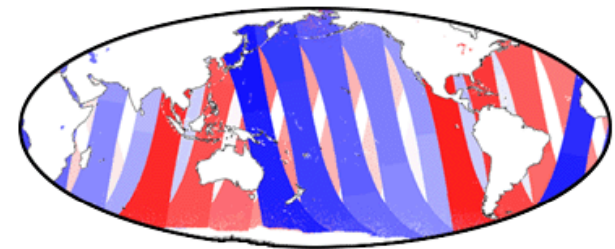
Launch Date	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
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1. IOVWST



- 2009: Boulder. Worked on Draft ToR.
- 2009: No formal programmatic imbedding in ESA/EUMETSAT.
- 2010: We have the EUMETSAT OSI SAF sponsorship and ESA participation.
- IOVWST ↔ OVW VC.
- Thank the organization!

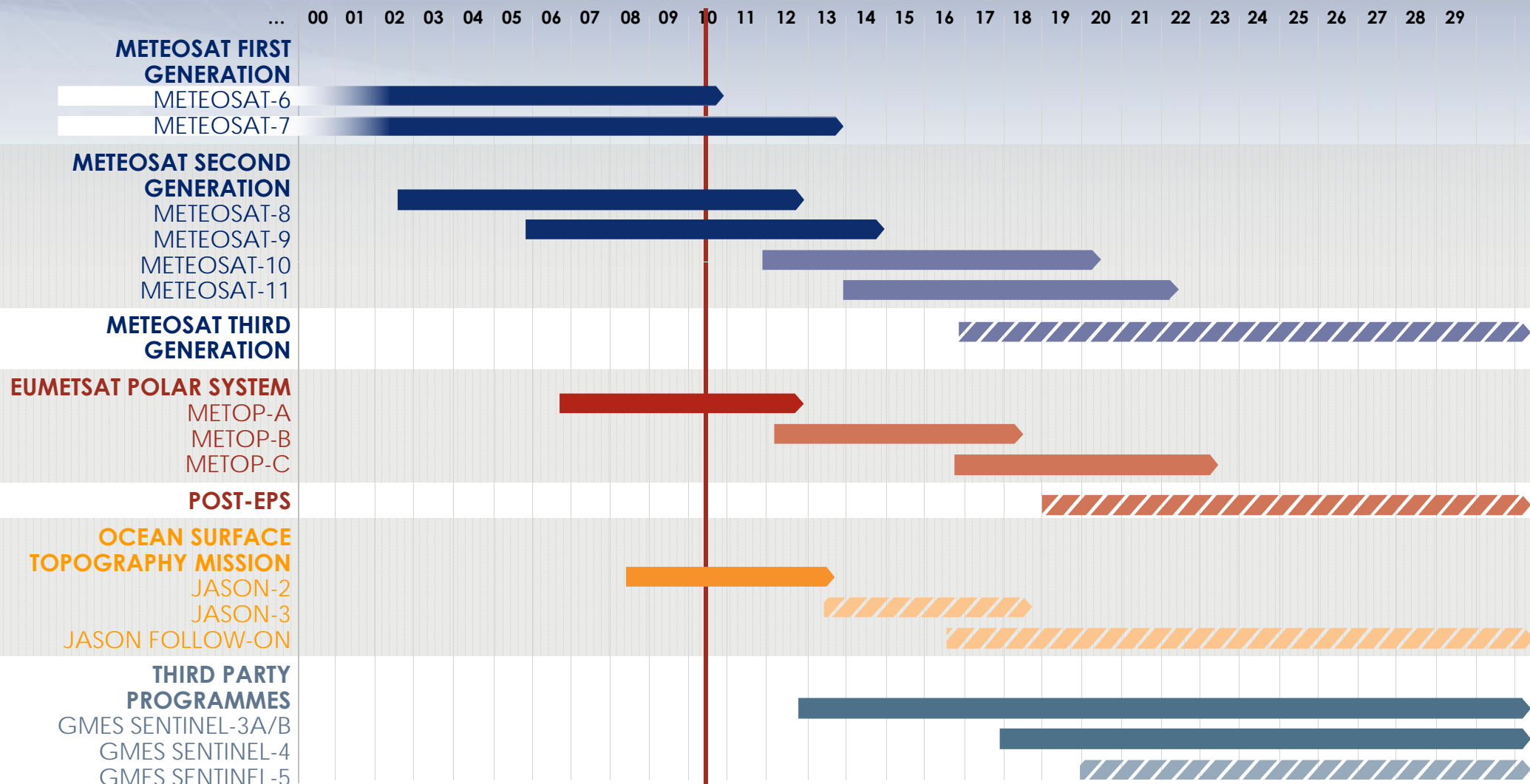


Outline

- ✓ 1. IOVW ST, OVW VC
2. EUMETSAT
3. ASCAT
4. Post-EPS
5. ERS status and plans <= Wolfgang Lengert, ESA
6. Darmstadt Conference 2011
7. OceanObs 2009 Session 4b recommendations

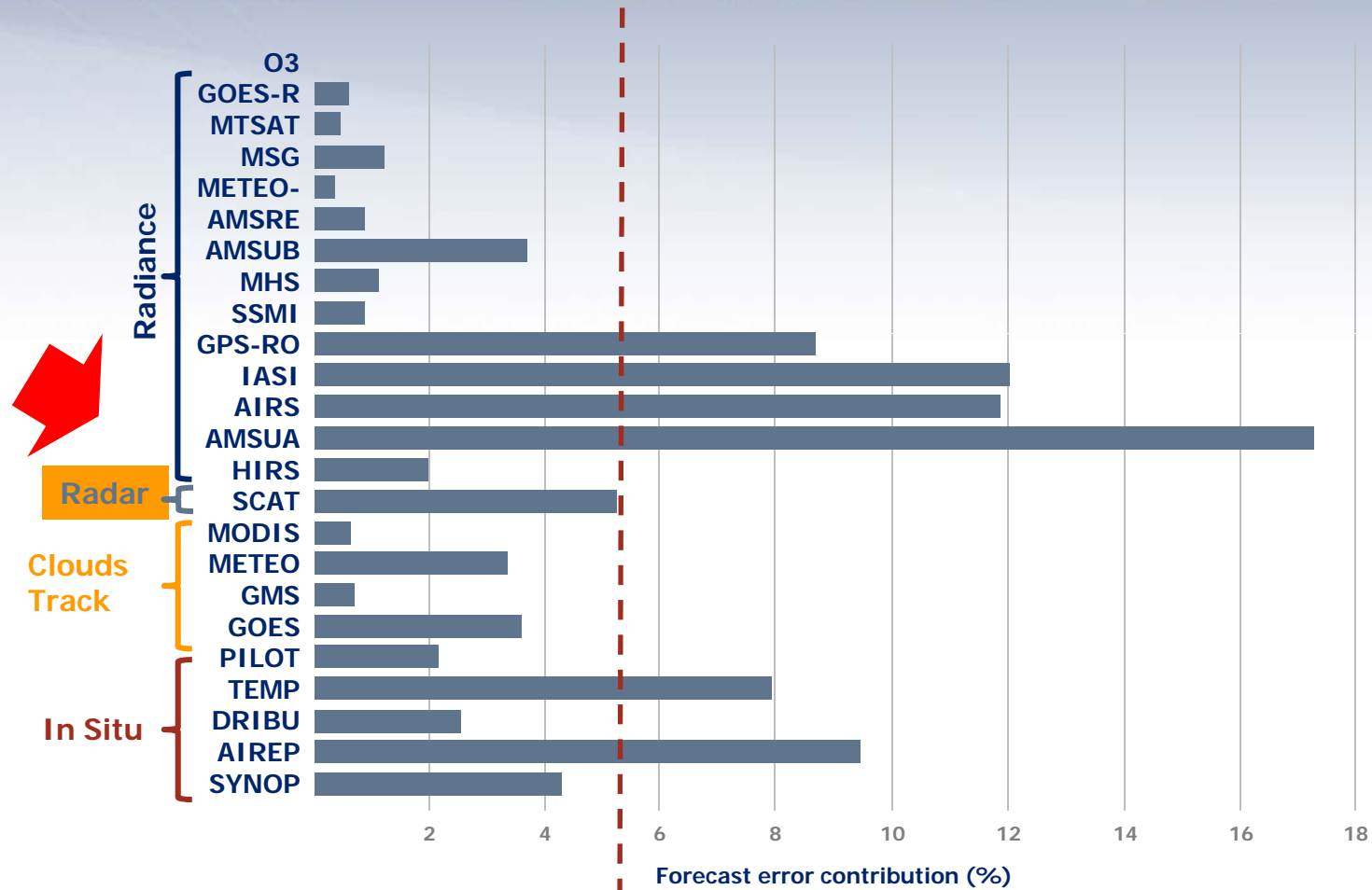


2. EUMETSAT space segment





2. Instrument contribution to Numerical Weather Prediction error reduction



Forecast sensitivity to observations

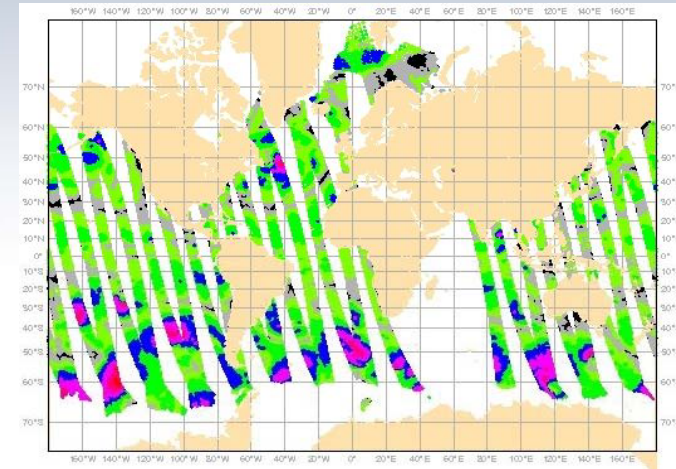
24-hour forecast error contribution (%) of the components (types) of the observing system during September – December 2008.

(Source: ECMWF)



3. Summary Status ASCAT on METOP-A

- Instrument is stable and in good health.
- Operational products nominal, reprocessing activities ongoing (presentations by Julia Figa, KNMI team)
- Transponder Campaign (presentation by Craig Anderson)
- Day 2 development: Emphasis on Higher Resolution and coastal products.





3. ASCAT on METOP-B

System Milestone

Ground Segment Design and Implementation Review

System Integration, Validation and Verification Readiness Review

System Integration, Validation and Verification Review

Launch and Operations Readiness Review

Launch of Metop-B

Date

June 2010

November 2010

August 2011

December 2011

April-June 2012

(Nominally 2 April 2012)

ASCAT

Commissioning team in place.

Cal Val Plan Updated.





4. Sca on Post-EPS

Payload	Single Satellite	Two Satellites		Rationale for Payload Allocation
VII	X	X		
LLI	X	X		Day/Night band in VII requirements
IRS	X	X		Essential co-registration with VII
MWS	X	X		Same need date as VII and IRS
MWI-P	X		X	
MWI-C	X		X	
SCA	X		X	
3MI	X	X		Essential co-registration with VII
S5/UVNS	X	X		co-registration with VII and IRS
RER	X	X		Essential co-registration with VII
RO	X	X	X	to increase number of occultations
ARGOS	X		X	Could be on either satellite
S&R	X		X	Could be on either satellite
SEM	X		X	Could be on either satellite



Third party missions

- OCEASAT-2:
Negotiations with ISRO and K-SAT are ongoing.
Steps:
 1. Implement data links to forward the L2a (sigma-0) data from Shadnagar (India) and disseminate via EUMETCAST.
 2. Create Test-installation for backup processing.
- CFOSAT:
 - Science team membership, dissemination NRT on GTS (TBC)



4. Sca on Post-EPS

Priority of requirements:

Horizontal resolution

Dynamic range

Coverage

Baseline Concept:

**ASCAT type with 3 antenna-pair
assemblies (= 6 antennas)**

Driving Requirements:

- Horizontal resolution: ≤ 25 km
- Coverage: $\geq 97\%$ (Breakthrough) in 48 hrs.
- Geometry: ≥ 3 azimuth views, ideally separated by 45° each
- Dynamic range: 4 –25 m/s (threshold); 1 –25 m/s (Breakthrough)
- Radiometric resolution:
 $\leq 10\%$ (Threshold); 3% (Breakthrough) at 4 m/s cross-wind
- Radiometric stability: ≤ 0.1 dB
- Polarisation: VV + HH (Objective)



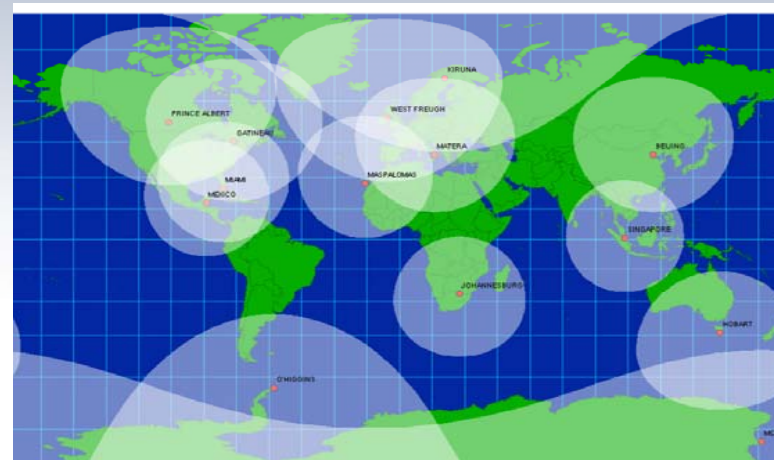
4. POST-EPS Roadmap

Phase 0	Mission Analysis	2005 – 2009
Phase A	Feasibility	2010 – Q3 2011
Phase B	Preliminary Definition	Q4 2011 – Q3 2013
Phase C, D	Detailed Definition, Production (may extend for those missions with need date of 2020)	Q4 2013 – 2018
Phase E	Utilisation	from 2018/2020

5. ERS-2 Scatterometer Mission overview



- **ESA holds a Global C-Band Scat data set from 1991 – 2003**
- **Since Mid 2003 ERS-2 Scatt data are regional (see plot)**
- **NRT latency of 30 -45 minutes of North Atlantic coverage**
- **2001 Gyroless piloting disturbed the mission for 6 month**
- **2003 new processor is coping with Gyroless piloting mode**





5. ERS Scat products



Reprocessing of Mission life time data set is on-going:

ERS-2 data have been ERS-2 data form 01/09/1997 to 17/02/2003 have been reprocessed and are on-line available (new users please contact EOHelp@esa.int)

ERS-1 data are being re-transcribed and will be reprocessed from Mid 2010 onwards

ASPS L2 and ECMWF first-guess winds are systematically compared by ECMWF

ERS Soil-moisture product (25 KM) is under procurement. Homogeneity with ASCAT Soil Moisture product will be ensured

Latest QC reports can be found at:

http://earth.eo.esa.int/pcs/ers/scatt/reports/pcs_cyclic/wscatt_rep_156.pdf



5. GCOS - ERS-2 / METOP cross calibration



“GCOS principles (http://www.wmo.int/pages/prog/qcos/documents/GCOS_Climate_Monitoring_Principles.pdf)

A suitable period of overlap for new and old satellite systems should be ensured for a period adequate to determine inter-satellite biases and maintain the homogeneity and consistency of time-series observations.”

ESA and EUMETSAT are collaborating to ensure that ERS-2 Scatt and METOS ASCAT mission are complying to the GCOS principle.

ESA has a contract in place with Royal Military Academy (RMA- Belgium) to derive a “cross calibration strategy” which has been presented and agreed by the joined “Science Advisory Group”.

Phase1: definition of methodology considering different:

spatial resolution (hence, different PSF),

spatial grid (even if the spatial resolution is the same, the grid will not be identical),

acquisition geometry (incidence angle, look angle,...),

temporal difference between the data acquisitions of the compared instruments and,

central frequency (e.g., C-band vs. Ku-band).

Phase 2: Apply methodology on ERS-1/2 and METOP/ASCAT to validate the methodology.



EUMETSAT/ESA Scatterometer Conference

www.cms.eumetsat.int/Home/Main/News/Conferences_and_events

Darmstadt, 11-13 April 2011 (see leaflet)

Follow on of 1998 ESA/EUMETSAT Workshop on emerging scatterometer applications

Goals:

- highlight the successes achieved with ASCAT on Metop and the Active Microwave Instrument on ERS
- assess current and future challenges of processing, calibration and validation;
- provide guidance on reprocessing, climate issues and intercalibration of the sensors with other scatterometers;
- address scientific issues of the proposed ASCAT follow-on mission;
- discuss applications in a multi-mission scatterometer context;
- involve a wider scientific and user community.





Ocean Obs 2009 recommendations

Session 4b on operational satellites:

1. Implementation of the plans for new and sustained satellite missions in the coming decade is critical to maintain the integrated ocean observing system.
2. Operational and R&D agencies and institutes are working on **one** sustained observing system. A close cooperation is mandatory to address the climate monitoring and other science issues in need of sustained and continued measurement.
3. Enhance mandate for climate in R&D agencies.
4. Enhance science support in operational agencies.
5. Enhance internal and cross cutting cooperation between the standard data product communities.

IOVWST will be of great support!



THANKS !