

---

# **ASCAT**

## **Status of Instrument And Ground Segment**

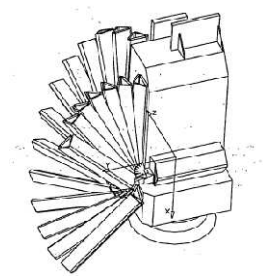
Hans Bonekamp

# Early Events

---

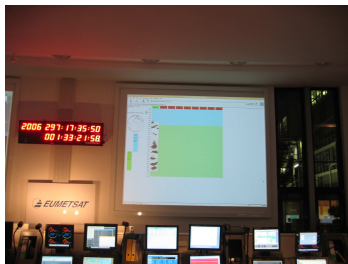


19 October 2007:  
METOP-A Launch



20 October 2006:  
RF Antenna Deployment Completed  
RA Antenna Deployment Completed

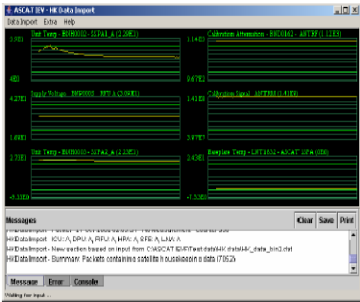
MicroSwitch signals:  
LND1115\_2 remained Red  
LND1114\_2 Green => deployment.



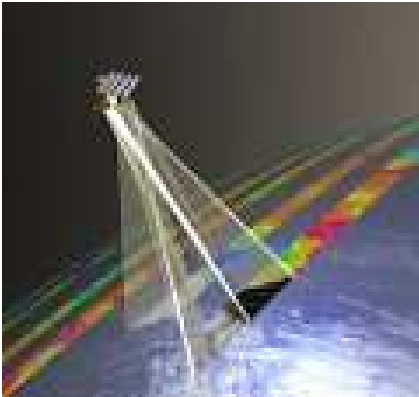
22 October 2006:  
Orbit 42, formal transfer of MetOp-A operations  
to EUMETSAT

# Early Events

---



23 October 2006:  
Orbit 52, start SIOV phase 1,  
Functional Testing



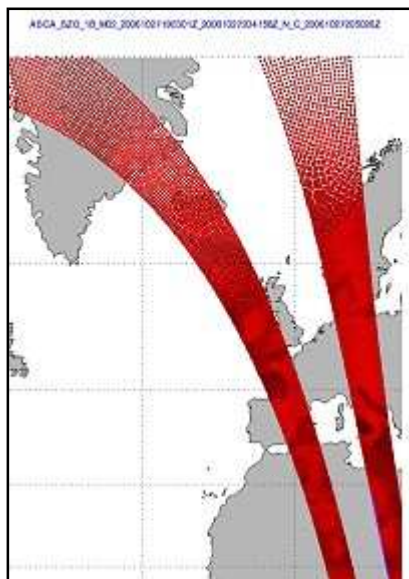
27 October 2006:  
ASCAT Instrument Switch-on and First Data

# First processing

## 27 October 2007:

PPF processing started immediately following the switch on!

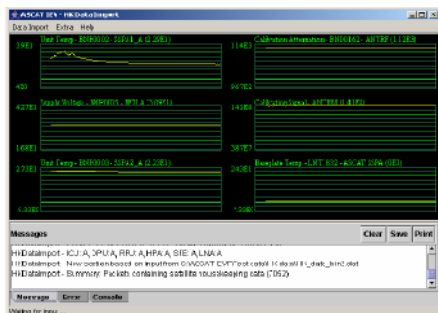
First Image: Uncalibrated Normalised Radar Cross Section  
ASCAT Left Fore and Right Fore antennae.27 October 2006  
20:20 to 20:40 UTC.



## October 31, 2006:

# SIOV: Instrument Successfully Functionally Checked.

The instrument has behaved nominally throughout all these functional tests, during which all instrument modes have been exercised.



# Start Cal Val

---



1 November 2006:

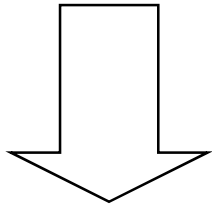
Attempts to use the Sorgun (Eastern) ASCAT Transponder For External Calibration (SIOV phase 2) started.

1 November 2006 - ...:

- Checking Processor
- Checking Configuration
- Cal/Val Testing

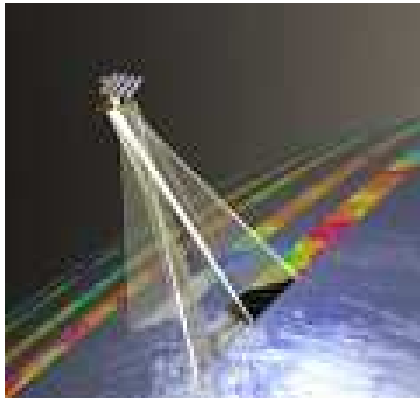
Presentation  
Craig





4 November 2006:

X-band transmissions (LRPT failing)  
All instruments switched in safe mode.



20 November 2006:

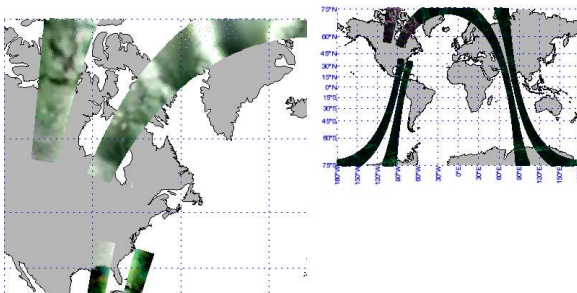
ASCAT switch-on and measurement mode



December 2006:  
Collection of Transponder Data Set  
(28 passes over Transponder)

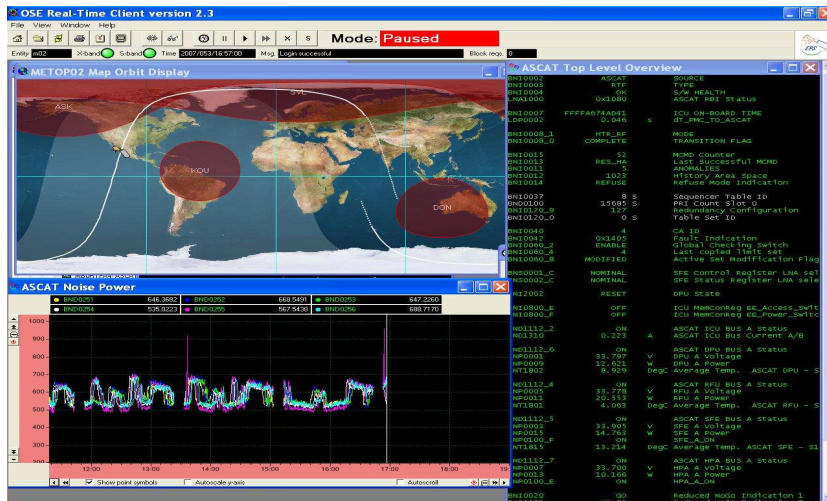
January 2007:  
First External Calibration with one transponder

ASCA\_SZO\_1B\_M02\_20070222164203Z\_20070222164757Z\_N\_O\_20070222168748Z



31 January 2007:  
Start of trial dissemination\_

# ASCAT Status



22 February 2007:  
ASCAT went to Heater refuse mode  
at 16:56:34 last night, day 053

Switch-on on 23 February 2007 !

27 February 2007:  
ASCAT again entered Heater-refuse  
mode at approximately 08:17.

Switch-on on 1 March 2007 !

=> ASCAT Instrument is fine!



# Status Ground Segments

---

GS3: Experimenting

ASCAT PPF 4.2.12

GS2: Testing, Validating

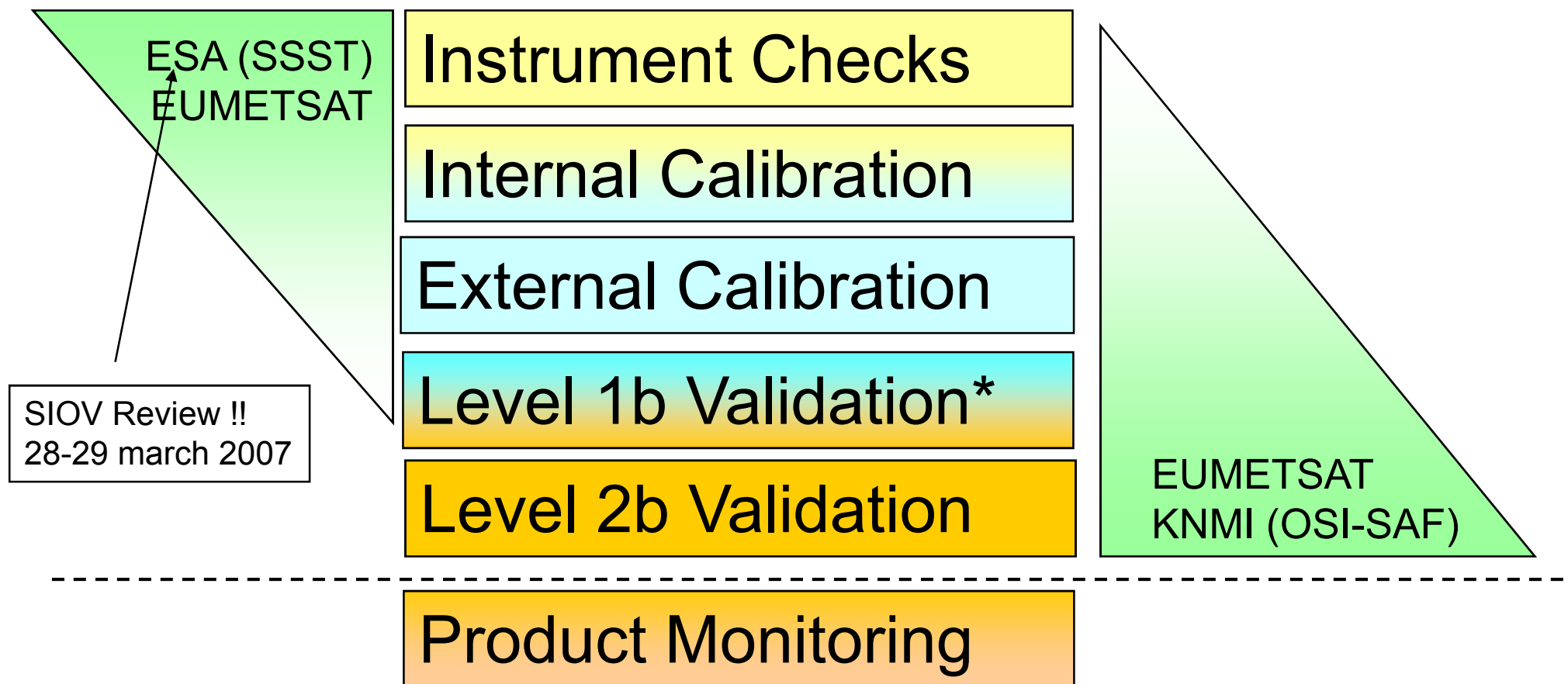
ASCAT PPF 4.2.11

GS1: Producing

ASCAT PPF 4.2.10

ASCAT PPF development => EUMETSAT taking fully over from DJO.

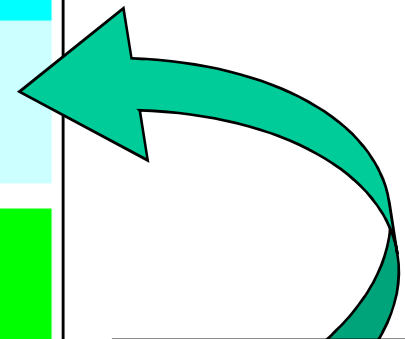
# ASCAT Cal Val: Activity Overview



\* Partly executed for Calibration Purposes

# Cal/Val Test Overview

TEST	SUB TEST	Name	WBS	CVP	remark	responsibilit
		<b>Instrument Health Assessment</b>	242245110			
ASCAT_CVT_010		instrument telemetry assessment	242245111	B01	int. cal.	EUM
ASCAT_CVT_020		TX filter shape and pulse assessment	242245112	B02	int. cal.	EUM
ASCAT_CVT_030		Receiver Gain tuning	242245113		int. cal.	EUM
		<b>Instrument characterization and calibration</b>	242245120			
ASCAT_CVT_040		<b>Internal Calibration Assessment</b>	242245121	B03	ext. cal.	EUM
ASCAT_CVT_050		<b>External Calibration</b>	242245122	B04	ext. cal.	EUM
	ASCAT_CVT_051	Generation of AGPO, NT and DK in the CGS		B04	ext. cal.	EUM
	ASCAT_CVT_052	Generation of AGPO, NT and DK in the CVF		B04	ext. cal.	EUM
	ASCAT_CVT_053	Generation of Cal. Products with IEVF (GPP)		B04	ext. cal.	EUM
	ASCAT_CVT_054	Comparison and assessment of AGPO, NT and DK		B04	ext. cal.	EUM
	ASCAT_CVT_055	External calibration monitoring with transponders		B04	ext. cal.	EUM
	ASCAT_CVT_056	Preliminary assessment of the NT and DK		B04	ext. cal.	EUM
		<b>Level 1b Product Validation</b>	242245130			
ASCAT_CVT_060		Spatial ambiguity assessment	242245131	B05	Level 1b	EUM
ASCAT_CVT_070		Localisation accuracy assessment	242245132	B06	Level 1b	EUM
ASCAT_CVT_080		Swath geometry assessment	242245133	B07	Level 1b	EUM
ASCAT_CVT_090		Radiometric resolution assessment	242245134	B08	Level 1b	EUM
ASCAT_CVT_100		Rad. accuracy and inter-beam rad. stability assessment	242245135	B09	Level 1b	EUM
	ASCAT_CVT_101	rain forest analysis		B09	Level 1b	EUM
	ASCAT_CVT_102	ocean analysis		B09	Level 1b	EUM
	ASCAT_CVT_103	sea ice analysis		B09	Level 1b	EUM
	ASCAT_CVT_104	ERS-2 - ASCAT cross-calibration assessment		B09	Level 1b	EUM
	ASCAT_CVT_105	Comparison and assessment results		B09	Level 1b	EUM
ASCAT_CVT_110		Full performance swath assessment	242245136	B10	Level 1b	EUM
ASCAT_CVT_115		Localisation Stability Assessment			Level 1b	EUM
ASCAT_CVT_120		L1b quality flags assessment	242245137	B11	Level 1b	EUM
		<b>Calibration and Validation of Level 2 product</b>				
ASCAT_CVT_130		Extended CMOD5 validation (OSI SAF)		B12	Level 2	OSI-SAF
ASCAT_CVT_140		Triple Collocation (OSI SAF)		B13	Level 2	OSI-SAF
ASCAT_CVT_150		Level 2 Quality flag assessment (OSI SAF)		B14	Level 2	OSI-SAF
		<b>End-to-end Product Validation</b>	242245140			
ASCAT_CVT_160		L1b rad. assessment over ocean using SAF L2 product	242245141		end-to-end	EUM/OSI-SAF
ASCAT_CVT_170		Tuning/correction/modification of all product generation facilities		B15	end-to-end	EUM/OSI-SAF
ASCAT_CVT_180		Overall accuracy assessment		B16	end-to-end	EUM/OSI-SAF

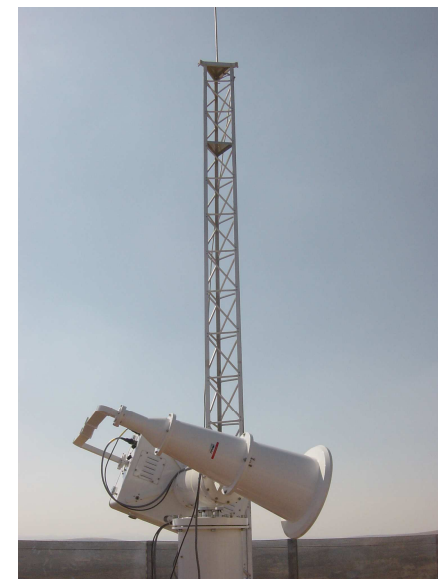


Iteration:  
From  
Pre-calibration  
to  
Full Calibration

# ASCAT Transponder Status

---

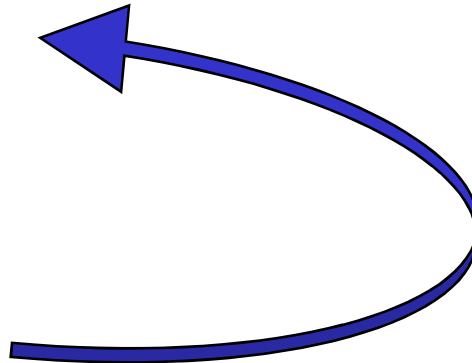
- **Transponder Instrument Testing in UK using the Metop satellite was due to be finished 23 March 2007. One transponder units (RFU) has not passed test. More testing with satellite to be expected.**
- **The central site ready first week of May 2007**
- **If the above testing can be completed quickly it should be possible to deploy other two transponders in May.**
- **=> Full External Calibration campaign not to be finished before end of June 2007!**



# Central Facilities and KNMI

---

- EUMETSAT:
  - Level 1b generation
  - Level 1b calibration
  - *Level 1b validation*
  - Level 1b product flags
- OSI-SAF (KNMI):
  - Level 2 generation
  - *Level 1b validation*
  - Level 2 (vector wind) calibration
  - Level 2 validation
  - Level 2 product flags



CMOD5 Cone Analyses  
Ocean Calibration

Bias Corrections

=> Stability for Level2  
Product

# Calibration and Validation

---

- **Revisit External Calibration Algorithms, April-May 2007**
- **Prepare for Formal HandOver to Operations, end April 2007**
- **Full External Calibration, June 2007**
- **Completion of tests according to Cal/Val Plan (Kp Checking, Products Flags etc.)**
- **Adaptations of processing for Non-Frozen Orbit**

## EUMETSAT ASCAT Commissioning Sub-Team

---

**Craig Anderson**  
**Hans Bonekamp (Team leader)**  
**Julia Figa**  
**Arthur de Smet**  
**Julian Wilson**  
**Colin Duff**

### **TASKS:**

- **Generation and maintenance of plans/specs/procedures**
- **Procurement / development of test tools**
- **Generation of simulated test data sets**
- **Co-ordination of activities within EUMETSAT and with external partners**
- **Execution of tests, analysis of results and generation of test reports**
- **Involvement in acceptance tests / acceptance reviews**

# Cal/Val Communication

---

1. <b>Comm Team</b>	<b>WIKI</b>	<b>email*</b>	<b>extranet</b>	<b>internet</b>
2. <b>OGS 'users'</b>		<b>email*</b>	<b>extranet</b>	<b>internet</b>
3. <b>Cal/Val users (RAO)</b>			<b>extranet</b>	<b>internet</b>
4. <b>General Users</b>				<b>internet</b>

- [Forum.eumetsat.org](http://Forum.eumetsat.org)
- Email: [ascat\\_calval@eumetsat.int](mailto:ascat_calval@eumetsat.int)
- WIKI           EUM internal
- Extranet       (TBU)
- Internet       (TBU)