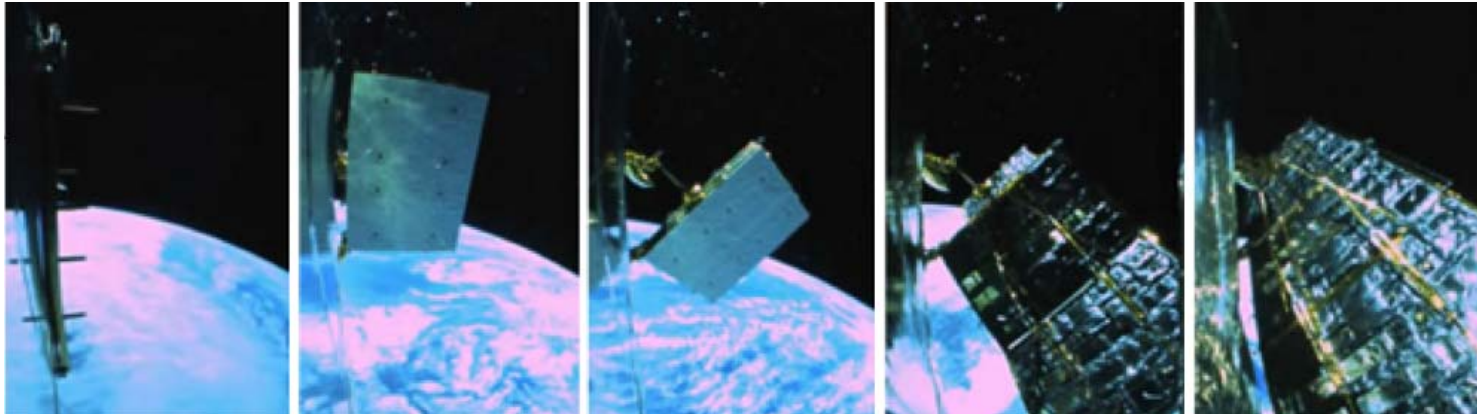# ALOS Kyoto & Carbon Initiative
7th Advisory Panel/Science Team meeting

JAXA EORC, Tsukuba, Japan
Jan 16-19, 2007

KC#7 Agenda

Tuesday, Jan.16
> **ALOS and PALSAR status**
> **Data products and formats**

Wednesday, Jan. 17 (a.m.)
> **K&C www interfaces**
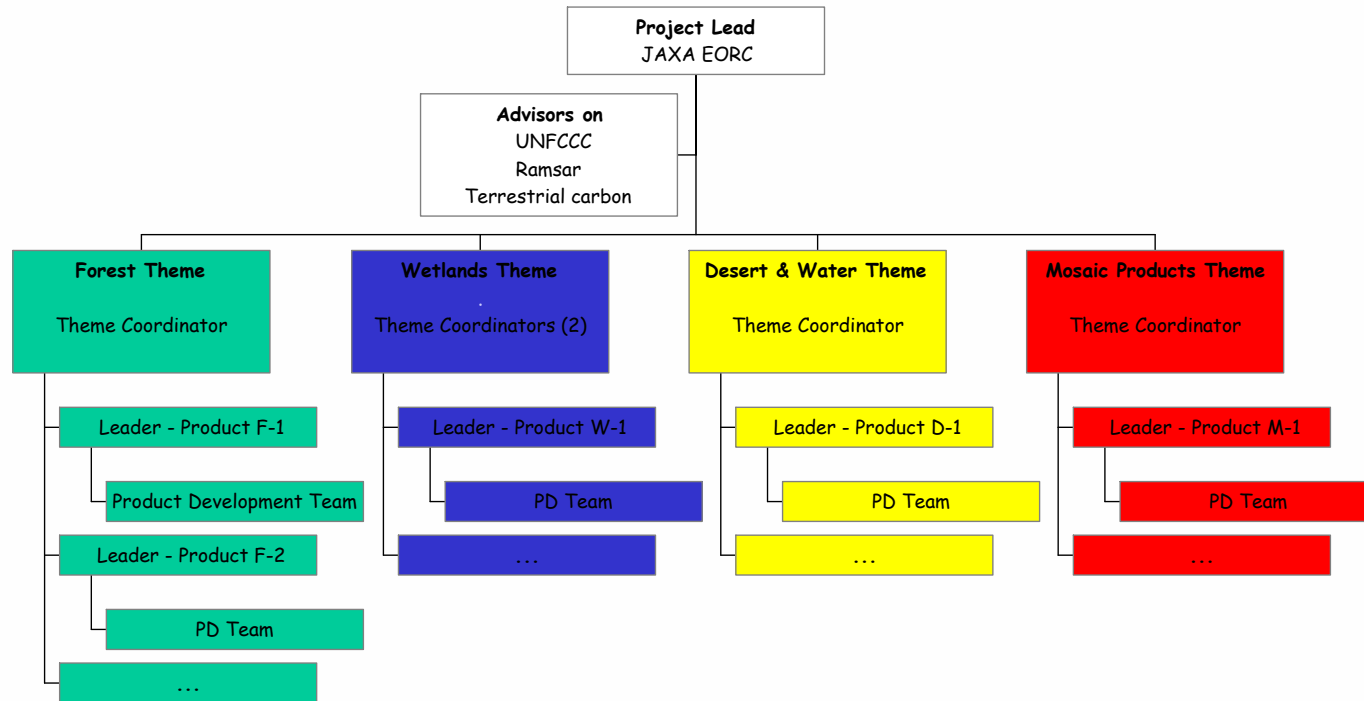> **Project up-date presentations from Science Team**

Thursday, Jan. 18
> **Project up-date presentations from Science Team**
> **External presentations**
> **Theme Work Sessions (Forest, Wetlands, Mosaic)**

Friday, Jan. 19
> **Theme Work Sessions**
> **Summary & Action Items**
> **Meeting wrap-up**

Project organisation

ALOS — Advanced Land Observing Satellite

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                        ┌─────────────────────┐
                        │    Project Lead     │
                        │     JAXA EORC       │
                        └─────────────────────┘
              ┌──────────────────────┐
              │     Advisors on      │
              │       UNFCCC         │
              │       Ramsar         │
              │  Terrestrial carbon  │
              └──────────────────────┘
```

Forest Theme Theme Coordinator	Wetlands Theme Theme Coordinators (2)	Desert & Water Theme Theme Coordinator	Mosaic Products Theme Theme Coordinator
Leader - Product F-1	Leader - Product W-1	Leader - Product D-1	Leader - Product M-1
Product Development Team	PD Team	PD Team	PD Team
Leader - Product F-2	...	...	...
PD Team			
...			

Theme Coordinators:
- **Forest Theme - Richard Lucas**
- **Wetlands Theme - Laura Hess & John Lowry**
- **Desert & Water - Philippe Paillou**
- **Mosaic Theme - Bruce Chapman**

Science Team:
- **20 organisations under contract with JAXA**

K&C contract status

Finalised

- **Applied Geosolutions (Bill Salas)**
- **BOS Foundation (Dirk Hoekman)**
- **U. Victoria (Kevin Telmer)**
- **U. Victoria (Maycira Costa)**
- **Wetlands International (Doug Taylor/John Lowry)**
- **SLU (Johan Fransson/Hakan Olsson)**
- **U. Bordeaux-1 (Philippe Paillou)**
- **INPE (Raimundo Filho)**
- **DLR (Alberto Moreira)**
- **CESBIO (Thuy Le Toan)**
- **UCSB (Laura Hess)**
- **U. New South Wales (Tony Milne)**
- **JPL (Bruce Chapman, Kyle McDonald)**
- **U. Massachusetts (Paul Siqueira)**
- **U. Wales Aberystwyth (Richard Lucas)**
- **Friedrich-Schiller University Jena (Chris Schmullius)**
- **Sarmap (Francesco Holecz)**
- **JRC (Rosenqvist/De Grandi)**

Pending
- **U. Chiba (R. Tateishi)**

K&C phases of implementation

0 - Implementation of the PALSAR observation strategy

PALSAR acquisitions in support to the K&C Initiative began in November, immediately following the completion of the commissioning and calibration/validation phases of ALOS, PALSAR data are processed by JAXA EORC and delivered to the K&C Product Leaders within one cycle after acquisition.

1 - Local-scale methodology development.

This work is carried out by the Product Leaders and their Product Development (PD) teams, typically using a small number of PALSAR scenes over study site(s) that are representative for the biome(s) of interest, with ample in situ data available for verification.

2 - Regional-scale prototype demonstration.

This step constitutes the essence of the K&C Initiative during the first 3 years, and which covered within this science plan. Applying the methods and algorithms developed in the previous step, "derived products" over extensive regions – described in the theme descriptions that follow below – are generated by the PD teams. All products are made available to the public and to specific target users.

3 - Review.

3 years after the launch of ALOS, JAXA performs a review of all K&C projects and the products developed, with respect to scientific significance, accuracy levels achieved, actual relevance to CCC etc., in relation to the amounts of PALSA data provided.

4 - Global-scale extrapolation.

Projects which are deemed successful and with a potential for application over different or larger regions are selected by JAXA for extension for another 2-year period.

PALSAR Ascending observation plan (Jan.'07)

Legend: HH 41.5° | HH+HV 41.5° | HH 34.3° | HH 21.5° | POL 21.5° | ScanSAR 5-beam

Default off-nadir angle changed from 41.5° to 34.3°

ScanSAR observations of 27 major river basins and wetlands.

Every 46-day satellite cycle during at least one annual cycle.

Year		2007														2008											2009				
Month		11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9
Satellite cycle		7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
West Siberia	Scan_A1																								
Lena Delta	Scan_A2																								
Volga Delta	Scan_A3																								
Amur	Scan_A4																								
East China paddy	Scan_A5																								
Tibet	Scan_A6																								
India paddy	Scan_B1																								
Mainland SE-Asia	Scan_B2																								
Insular SE-Asia	Scan_B3																								
Luzon	Scan_B4																								
New Guinea	Scan_C1																								
North Australia	Scan_C2																								
Murray-Darling	Scan_C3																								
Finland	Scan_D1																								
Pripet-Biebrza	Scan_D2																								
Tigris marshes	Scan_D3																								
Niber Basin	Scan_E1																								
Congo Basin	Scan_E2																								
Okavango-Mozambique	Scan_E3																								
Senegal wetlands	Scan_E4																								
ASF mask	Scan_F1																								
Canada W	Scan_F2																								
Quebec-Everglades	Scan_F3																								
SE USA	Scan_F4																								
Mexico	Scan_F5																								
Amazon Basin	Scan_G1																								
Pantanal	Scan_G2																								

Input to be provided
during KC#7

Draft Science Plan v.1
released July, 2005.

Post-launch up-date v.2
February, 2006.

Feed-back from KC#7
(Theme Work sessions):
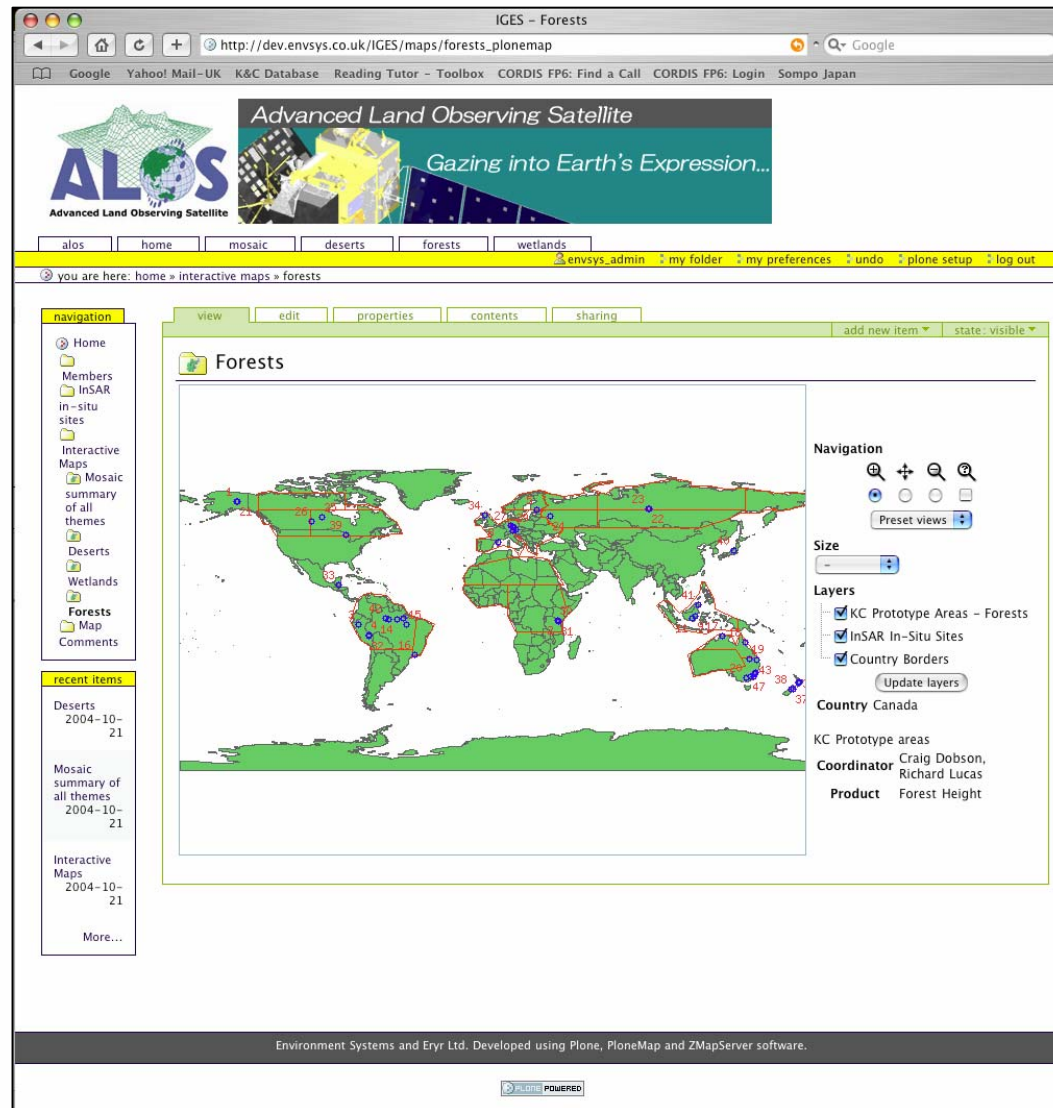
• Verification of Science
Team project descriptions

- are they still up-to date?

The ALOS Kyoto & Carbon Initiative

Science Plan (v.2.0)

February, 2006

Input to the K&C Data Base

- A resource for the K&C Science Team
- To contain updated information about the 20 K&C projects
- Full access to all K&C Science Team members.
- Limited access for general users.

- Refined input to be provided during meeting.

Up-date (41.5° -> 34.3°) of processing requests

Input requirements for EORC resource allocation for data processing and dissemination

→ **Timing, location & amounts of all K&C data requested**

→ **Processing levels and means of data distribution**

6th K&C Science meeting, Feb.28 - Mar.3, 2005

Product Leader:	Ernst Ramberg
Affiliation	Hotaheiti University
Country	Fiji
K&C Theme	Forest

Ascending mode (HH or HH+HV 41.5°)

Total #scenes	Total #passes	Average pass [km]	Data [Gbyte]
2,679	261	719	69

Summary of K&C PALSAR data requested from JAXA EORC by
Ernst Ramberg

Fill in the requested information in the empty boxes.

Descending mode ScanSAR

Total #scenes	Total #passes	Average pass [km]	Data [Gbyte]
1,051	136	2,706	231

Ascending mode
HH 41.5° & HH+HV 41.5°

Prototype area 1:	Borneo, west Java
PALSAR polygon(s)	B3
Proc. level *: SLP / GRP	
ORP-GEO / ORP-MER / MOS	SLP
Media (FTP or S-DLT)	FTP

Ascending subtotals 1

#scenes/coverage	#pass/cov	Mbyte/cov.
306	27	600

#cov	#scenes	#passes	Tot. Gbyte
8	2,451	216	67.2

Satellite cycles during which data are requested (mark below with "1")

Year						2006											2007											2008										
Month	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
Cycle#	3	4						7	8	9	10	11	12						15	16	17	18	19	20	21	22	23	24	25	26
Req = 1							1	1				1						1	1				1					1	1

Prototype area 2:	Iceland
PALSAR polygon(s)	D2
Proc. level *: SLP / GRP	
ORP-GEO / ORP-MER / MOS	SLP
Media (FTP or S-DLT)	FTP

Ascending subtotals 2

#scenes/coverage	#pass/cov	Mbyte/cov.
76	15	149

#cov	#scenes	#passes	Tot. Gbyte
3	229	45	2.2

Satellite cycles during which data are requested (mark below with "1")

Year						2006											2007											2008										
Month	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
Cycle#	3	4						7	8	9	10	11	12						15	16	17	18	19	20	21	22	23	24	25	26
Req = 1						1				1																		1	

Prototype area 3:	
PALSAR polygon(s)	
Proc. level *: SLP / GRP	
ORP-GEO / ORP-MER / MOS	
Media (FTP or S-DLT)	

Ascending subtotals 3

#scenes/coverage	#pass/cov	Mbyte/cov.
0	0	0

#cov	#scenes	#passes	Tot. Gbyte
0	0	0	0.0

Satellite cycles during which data are requested (mark below with "1")

Year						2006											2007											2008										
Month	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
Cycle#	3	4						7	8	9	10	11	12						15	16	17	18	19	20	21	22	23	24	25	26
Req = 1																													

Comments during discussion sessions!

Provision of detailed processing requests
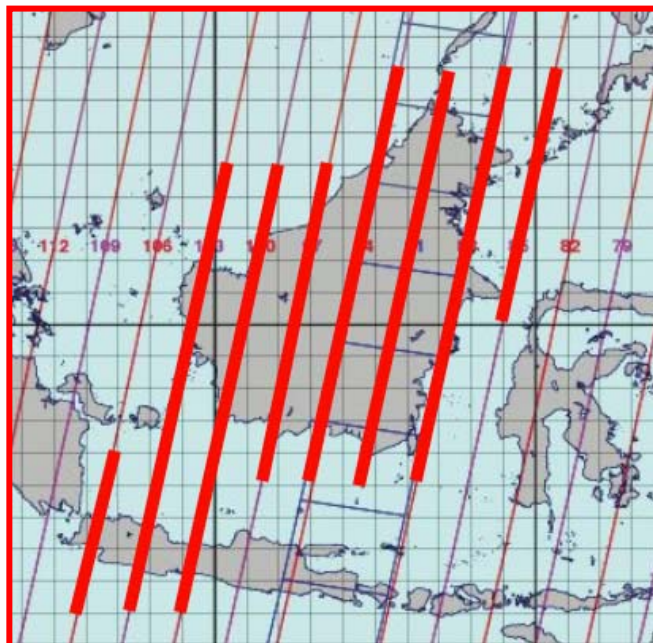
Refinement of the processing requests provided at KC#5 (Nov. 2003)

- Cyle #
- RSP#
- Latitude boundaries of data segment to be processed.

RSP#
85, 88, 91, 94, 97, 100, 103, 106

6th K&C Science meeting, Feb.28 - Mar.3, 2005

Descending mode
ScanSAR

| Product Leader: | Ernst Ramberg |
| Prototype area: | Borneo & West Java |

RSP #	88	85	82	79	76	73	70	67	64	61	58	55	52	49	46	43	40	37	34	31	28	25	22	19	16	13	10	7	4	1
N-Lat. [XX.x deg.]	8.0	8.0																												
S-Lat. [YY.y deg.]	-5.0	0.0																												
Segment length [deg.]	13.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
# scenes (/band)	4.1	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

RSP #	178	175	172	169	166	163	160	157	154	151	148	145	142	139	136	133	130	127	124	121	118	115	112	10	106	103	100	97	94	91
N-Lat. [XX.x deg.]																									-4.0	5.0	5.0	5.0	8.0	8.0
S-Lat. [YY.y deg.]																									-9.0	-9.0	-9.0	-5.0	-5.0	-5.0
Segment length [deg.]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	14.0	14.0	10.0	13.0	13.0
# scenes (/band)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	4.4	4.4	3.2	4.1	4.1

Set-up of a FTP transfer test

The majority of all PALSAR data will be processed and delivered by JAXA EORC

> 50 m Fine Beam path images
> 70 m ScanSAR path images
> RSP-based requests

FTP transfer dummy test to be undertaken during March, 2005, by RESTEC and K&C scientists.

Data for the InSAR and Pol-InSAR groups (DLR, U-Mass, Sarmap), which will be processed and delivered by JAXA EOC in Hatoyama

> Standard products, Single-Look Complex
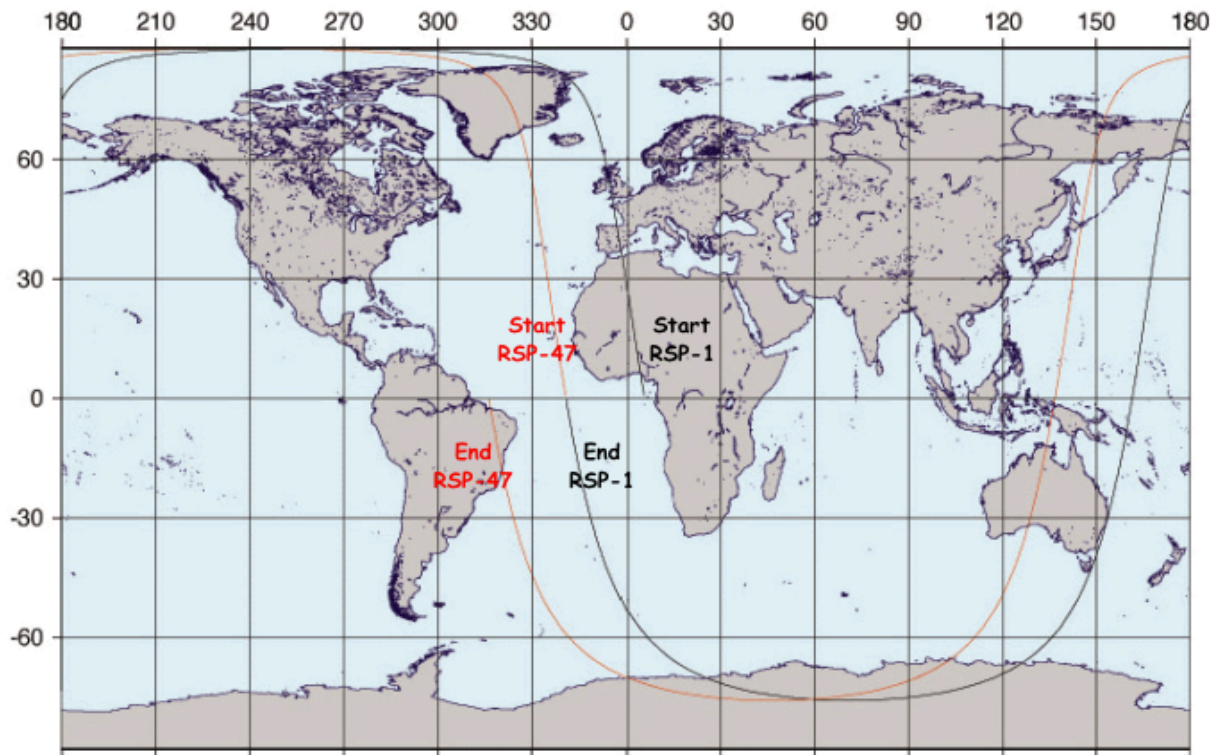> Requests via the EOC www order system
> Orders based on traditional GRS grid
> Maximum 100 scenes/year

RSP - the orbit Reference System for Planning

RSP - an orbit-based system based on the actual footprint of the observation swath will to be used within the K&C Initiative for pass identification
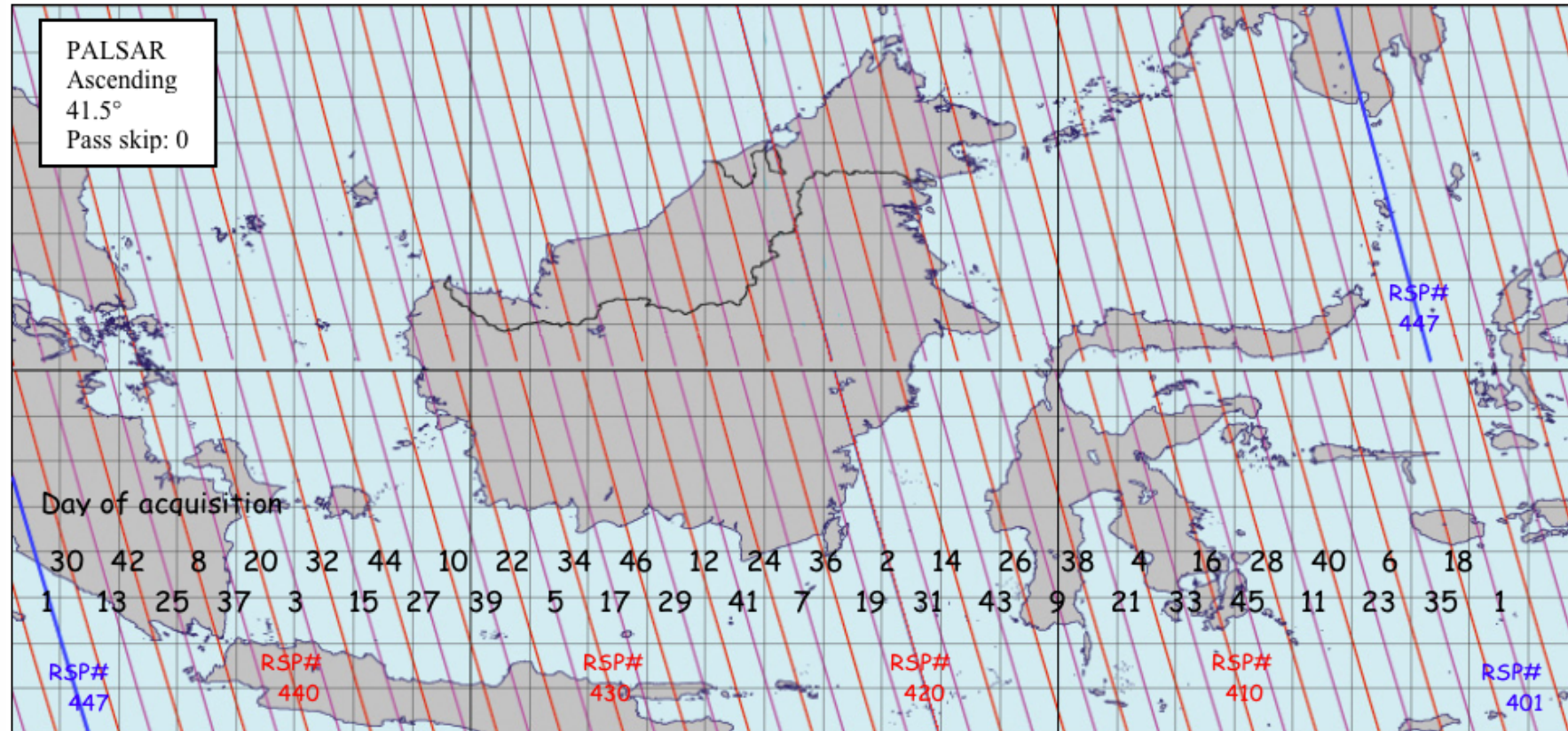

671 ALOS orbits within a 46-day cycle.

• A RSP pass is defined to start at the Equator in ascending mode, resulting in a "jump" in the numbering (n+46) with every ascending equator crosssing (CAUTION!)

ALOS observations - temporal characteristics
Fine Beam mode (HH/HH+HV @ 41.5°)

- RSP sequential numbers from 1-671, increasing westwards (i.e. not chronological)
- 17 and 29 days' time difference between neighbouring passes in Fine Beam mode
  (17-17-29-17-17-29-17-17-29 -…)
- Above N 60° , every 2nd pass acquired. Pass time difference: 12 and 34 days.

ALOS observations - temporal characteristics
ScanSAR
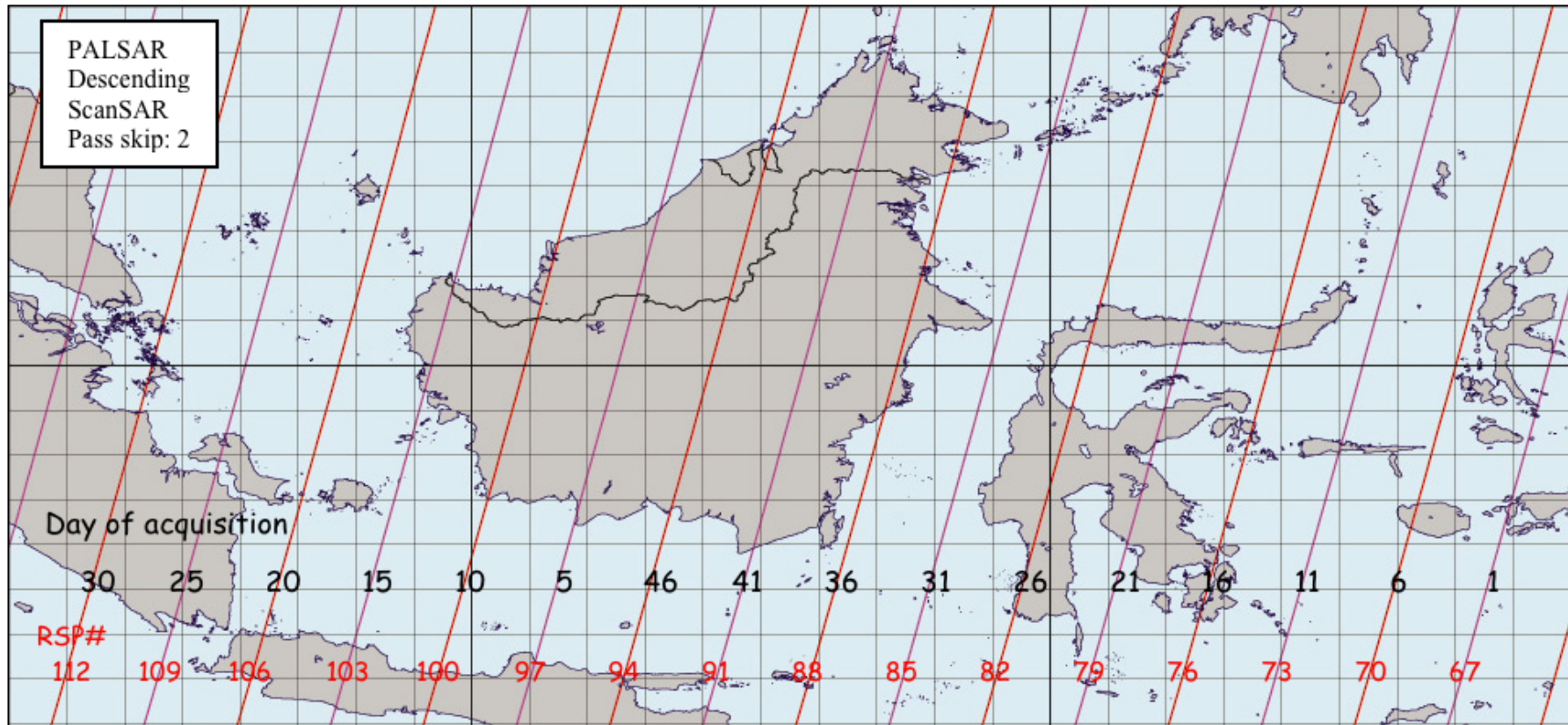
- In ScanSAR mode (350 km swath), acquisitions limited to one in every 3 passes;
- 5 and 41 days' time difference between neighbouring passes
  (5-5-5-5-5-5-5-5-5-41-5-5-5-5-5-5-5-5-5-41…)