

ALOS Kyoto and Carbon Initiative

JRC Project Status

Frank De Grandi
Ake Rosenqvist

9th K&C Science Team meeting
RESTEC HQ, Roppongi/Tokyo
Jan 21-24, 2008.



MOSAIC GENERATION - Products

50 m FBD mosaics

Africa – Geographical coordinates (un-projected lat, long)

Siberia – Albers Conical projection

Europe – Albers Conical projection

French Guyana – Geographic coordinates

50 m SCANSAR mosaics

Congo river basin - Geographical coordinates

Okavango delta - Geogr. coord.

Ob river basin - Albers Conical

MOSAIC GENERATION - Schedule

Africa 50 m FBD

Summer 2007 data

Generation during spring 2008

Siberia 50 m FBS/FBD

Winter 2006/2007 FBS mosaic CANCELLED due to lack of data

Summer 2007 - Generation during summer 2008

Europe – Albers Conical projection

Summer 2008 - Generation during autumn 2008

French Guyana – Summer 2007 - Generation during early spring 2008

Congo, Ob, Okavango ScanSAR mosaics

Generated when data become available



Data delivery status

PALSAR FBS strips

Siberia & Africa

Summer 2007

770 passes requested for full coverage (cycles 12, 13 & 14)

530 passes (69%) processed (as of Jan. 21)

ScanSAR WB1 strips

192 passes requested (up to cycle 14)

5 passes (3%) processed (as of Jan. 21)

Continuous data essential for mosaic generation!

Mosaic methodology

Method

Geocoding by solution of range-Doppler equation:

JAXA slant range 50 m HH+HV detected data + SCANSAR data

SRTM, GTOPO (Siberia lat > 60) digital elevation data

JAXA orbital data

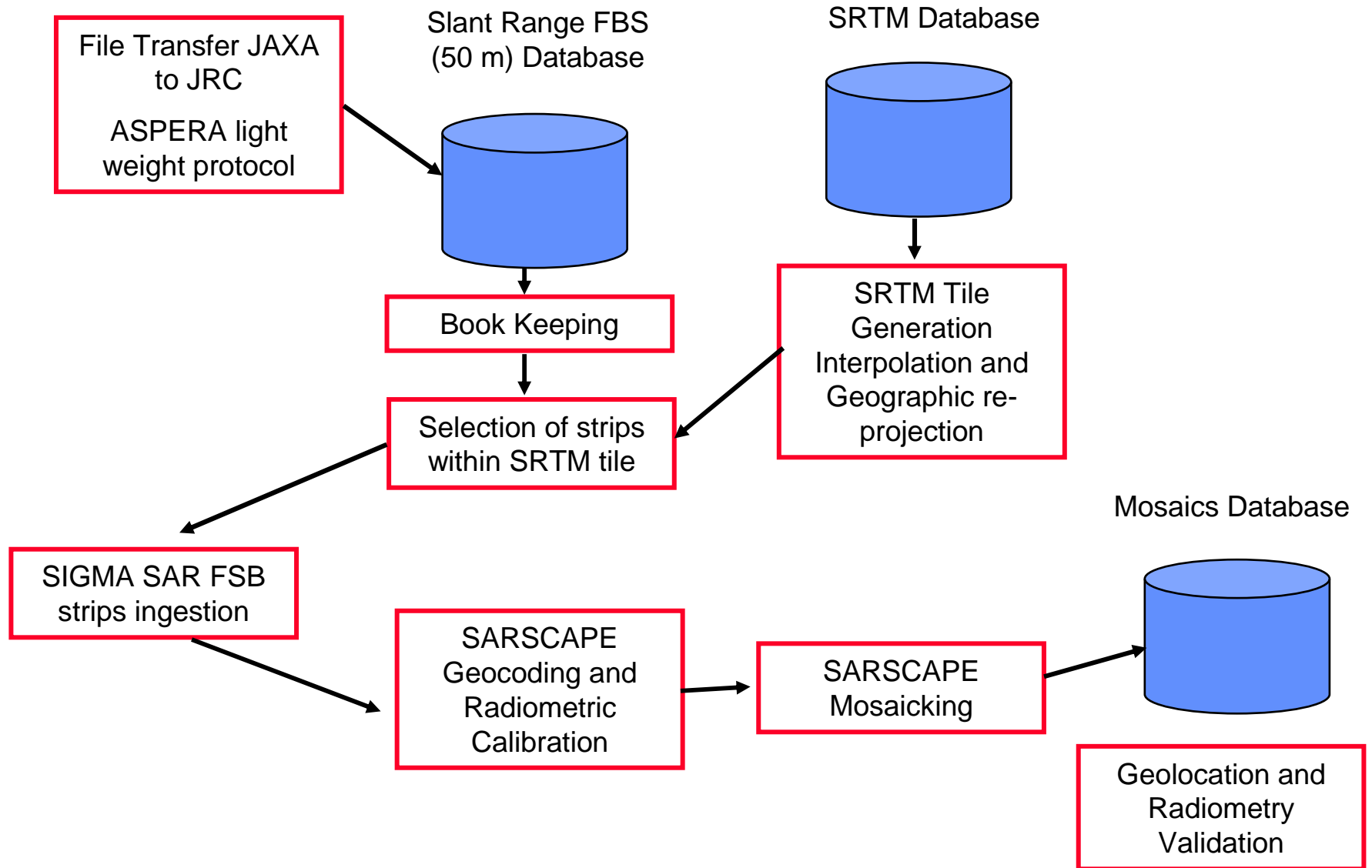
Radiometric revision (effective scattering area and spreading loss)

Mosaic compilation, stitching and seams regularization

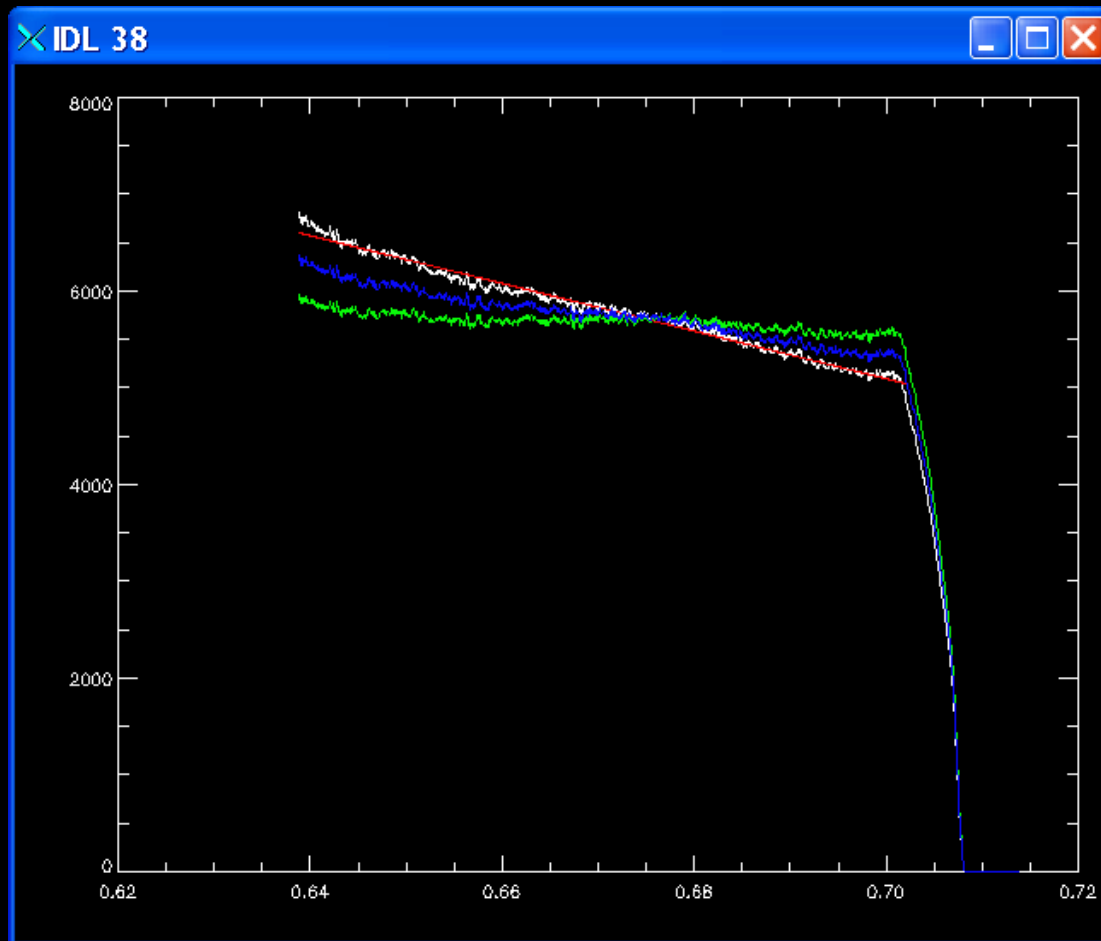
Software

SARMAP SARSCAPE + JRC proprietary code

MOSAIC GENERATION – PROCESSING CHAIN



RADIOMETRIC CALIBRATION ?

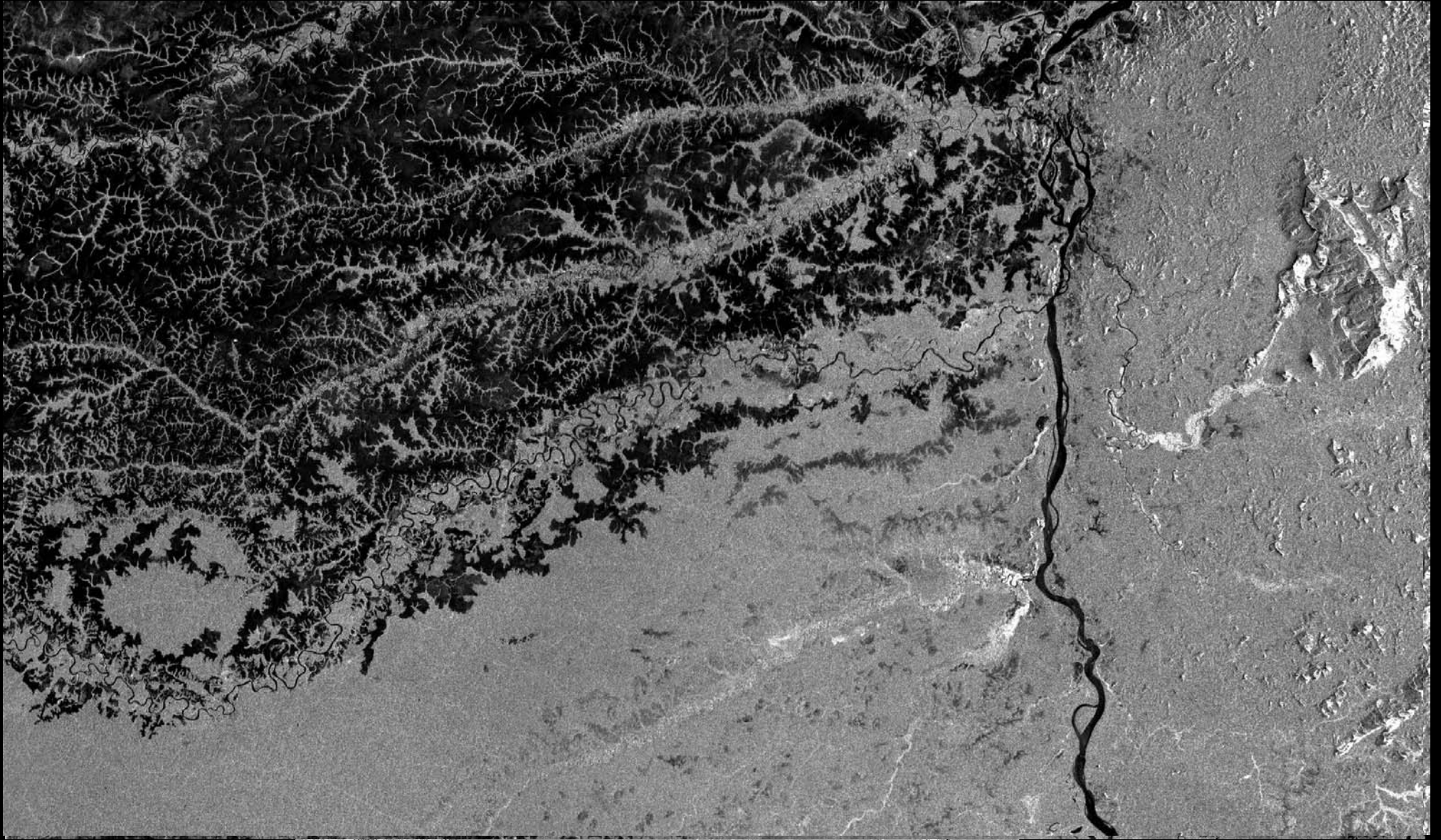


— original
— power
— amplitude

$$A_{\text{cal}} = \sqrt{A^2 \frac{\sin(\vartheta)}{\sin(\vartheta_{\text{ref}})} \frac{R^3}{R_{\text{ref}}^3}} \quad \text{OR}$$

$$A_{\text{cal}} = A \frac{\sin(\vartheta)}{\sin(\vartheta_{\text{ref}})} \frac{R^3}{R_{\text{ref}}^3}$$

Prototype SCanSAR MOSAIC – Venezuela test



Institute for Environment and Sustainability
Global Environment Monitoring Unit



Prototype FBD Mosaic - West Africa





SUMMARY

SCHEDULE

Siberia FBS Winter - Cancelled

Africa FBD; Siberia FBD; French Guyana FBD, Europe FBD

During spring, summer & autumn 2008

Radiometry

Amplitude data assumed - additional calibration applied

-> excellent radiometry

Geometry

Better than 1 pixel geolocation for both FBD and ScanSAR

Data processing

69% / 5% of FBD / ScanSAR processed (until cycle 14)

Data unavailability major bottleneck for mosaic generation

WHAT'S NEXT



...collapse

