K&C ALOS: Water prospecting in arid Africa

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Agreement status: Signed
Project objectives:
1) Use penetration capabilities of L-band SAR to map subsurface geology in arid Africa: identification and spatial location of unknown geological features (paleo-rivers and lakes, faults, tectonics, impact craters) as a basis to new water prospecting plans.
2) Use dual-pol 50m resolution calibrated PALSAR path images to produce a mosaic of Sahara (Prototype Area 1) and Arabia (Prototype Area 2) registered to SRTM 1°x1° squares, and accessible through Google Earth interface (?).
3) Generation of subsurface radar (HH, HV/HH) maps (2007-2008)
4) Generation of 1-year subsurface change map (2008)
Product example: subsurface map
Location of Prototype Areas

Water prospecting in arid Africa
**Data acquisition schedule**

**Cycle 12:** June 07, HH+HV 34.3, Areas E1+E2+D8  
**Cycle 13:** July 07, HH+HV 34.3, Area E3  
**Cycle 20:** June 08, HH+HV 34.3, Areas E1+E2+D8  
**Cycle 21:** July 08, HH+HV 34.3, Area E3

**K&C Product Deliverables (before end of Year 3)**

1.1 Radar mosaic (HH+sub) over Sahara and Arabia (December 2007)  
1.2 Ratio mosaic (HV/HH+sub) over Sahara and Arabia (February 2008)  
2.1 Radar mosaic + 1 year change map over Sahara and Arabia (December 2008)

**Prospects for Years 4-6 (assuming agreement extension)**

Extension to other arid regions on Earth:  
- Gobi (part of A7), South Africa (E6 + E7), Australia (part of C3)
First results over E3 region: 84 PALSAR scenes
Comparing PALSAR to JERS-1: we can see deeper
Comparing SIR-C to PALSAR: very good
Status

Mosaicking software (+WMS / GE) close to be ready
Tests being performed on PALSAR sample strips (radio+geom)
First acquisition over Sahara & Arabia: now!
CNES support for 2006-2008

Plans

PALSAR/JERS-1 comparison to be presented at IGARSS'07
First Sahara & Arabia mosaic ready for end 2007
Airborne SAR (Sethi – ONERA) + fieldwork in Egypt (February 2008)