ALOS PALSAR data assimilation at INPE’s Brazilian Amazon Deforestation Monitoring Program (PRODES and DETER)

Phase 2 – Extension Plan

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Extension Phase Proposal
Evaluate the accuracy of ALOS/PALSAR to detect deforestation in the Brazilian Amazônía

Objective 1:
- Incorporate ALOS-PALSAR K&C imagery into the validation process of DETER deforestation alerts

Study area:
- Brazilian Amazon Region – forested area usually monitored by DETER (excluding “cerrado” and other non-forest physiognomies)

Project plan:
- Development of a methodological procedure to generate ScanSAR imagery products useful to deforestation detection.
- Evaluate ALOS-PALSAR K&C data as a DETER validation data considering seasonal variability of deforestation and forest backscatter
- Enlarge DETER data validation using K&C imagery
Extension Phase Proposal
Evaluate the accuracy of ALOS/PALSAR to detect deforestation in the Brazilian Amazônia

Definition of deliverables
• Image processing methodology – radiometry and geometry
• Alos-Palsar K&C Reference Data - ScanSAR mosaic for Amazônia – 2008 (based on UTM tiles)
• Methodology for DETER polygons validation based on Alos-Palsar K&C
• Operational use of Alos-Palsar K&C for DETER validation

Data requirements
• **ScanSAR**
  Acquisition strategy requirements
  • Cycles 25-30
  Processing requirements
  • Slant range
  Spatial resolution; processing level
  • 50 m
Extension Phase Proposal
Evaluate the accuracy of ALOS/PALSAR to detect deforestation in the Brazilian Amazônia

Objective 2:
- ALOS-PALSAR K&C imagery assimilation into DETER deforestation alerts over clouded areas

Study area:
- Brazilian Amazônia – forested area usually monitored by DETER

Project plan:
- Methodological procedure to generate ScanSAR imagery products useful to deforestation mapping. – Multi-temporal approach
- Evaluate ALOS-PALSAR K&C deforestation mapping considering DETER as validation data
- Extend DETER alert over cloud covered areas using K&C imagery
Extension Phase Proposal
Evaluate the accuracy of ALOS/PALSAR to detect deforestation in the Brazilian Amazônia

Definition of deliverables
- Image processing methodology – multi-temporal approach to deforestation mapping
- Mapping accuracy – field work and ancillary data
- Operational use of Alos-Palsar K&C to detect deforestation, complementary to DETER alerts

Data requirements
- **ScanSAR**
  Acquisition strategy requirements
  - cycles 25-30
  Processing requirements
  - **Slant range**
  Spatial resolution; processing level
  - **50 m**
Deforestation

Annual Deforestation Rate - Amazônia Legal

YEAR

km²/year

Consolidated
Estimated

2008
Thank you!

INPE sincerely thanks JAXA for the support and continued opportunity to develop very relevant SAR application project for the Brazilian Satellite Based Amazon Monitoring Program.