

Satellite component enhancement – 2-y term

Objectives :

- Carry out a joint experiment for crop area indicator/estimate and monitoring to build CoP sharing and comparing methods and products (including existing ag. systems outputs)
- Demonstrate the effective acquisition performances of the existing EO systems for ag. area applications in various contexts

Community of Practices could be a common framework for experience reporting

(here as defined in June 08 in Italy) :

- Description of the statistical theoretical background
- Accuracy assessment mainly based on field obs.
- Timing of information delivery
- Portability of the approach to other areas
- Cost analysis (including investment and recurrent cost)
- Operational robustness (including limitations related to data sources reliability)
- Fitness of products to decision making process (ToR, Users type, actual info integration with other info)
- Pre-processing standards
- Technical capacities requirements
- Added-value of EO contribution to existing systems
- Description of the quality control procedure of each process steps

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Requirements for the joint experiment :

- Intensive data acquisition over few selected sites for 2010 ag. year (starting in Sept 09 ?)
- Open/multi-user EO data licence for the acquired data set
- Preprocessing of the acquired data to the TOA reflectance by a single team
- Field data to be collected by already working field team ready to share to the ag. Community
- Shared existing methods in the CoP

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Selection of sites (500 x 500 km)

(criteria : existing fieldwork plan, diversity of landscape structure and crop types)

Top candidates

- **China Huabei**
- **Argentina summer/winter crops**

Possible candidate (from June 08 discussion in Italy)

- Ethiopia
- Brazil summer/winter crops
- India
- France-Belgium
- Russia winter crops
- Countries of Africa (tbd) – Geoland-2
- + any sites with already existing rich field and EO data set (Ottawa,..)

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Data requirements for the joint experiment :

Top priority GEO request from the most suitable sensor currently available

Very high res. instrument: **ALOS 2,5m sensor**
Resourcesat VHR sensor

Wide swath instrument: **AWifs**
HJ-1

Coarse instrument: **FR MERIS**

SAR instrument: **ENVISAT ASAR**
ALOS PALSAR

Also included but systematically acquired

MODIS
SPOT-VEGETATION
LANDSAT

Formal invitation to the other providers to participate

RADARSAT-2, TerraSAR, DMC, CBERS, SPOT HRV, Rapideye

Satellite component enhancement – long term

Top priority

**Daily 10 m (vis, nir, swir, thermal) observation
for all ag. land at the global**

Ranking of EO improvement priority

1. Acquisition frequency
2. Spatial resolution
3. Spectral bands

TBC by future R&D

X,C and L-band multipolarisation SAR 1 m every 5 day observation

10 m C-band? 1-day interferometric coherence

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Global 300-250 m Cropland Map

Preparation of global croplands area products
+ possible improvement thanks to Landsat mid-decadal data set

Reference data set to validate this global croplands product to be jointly
compile