

THEIA LAND DATA CENTRE

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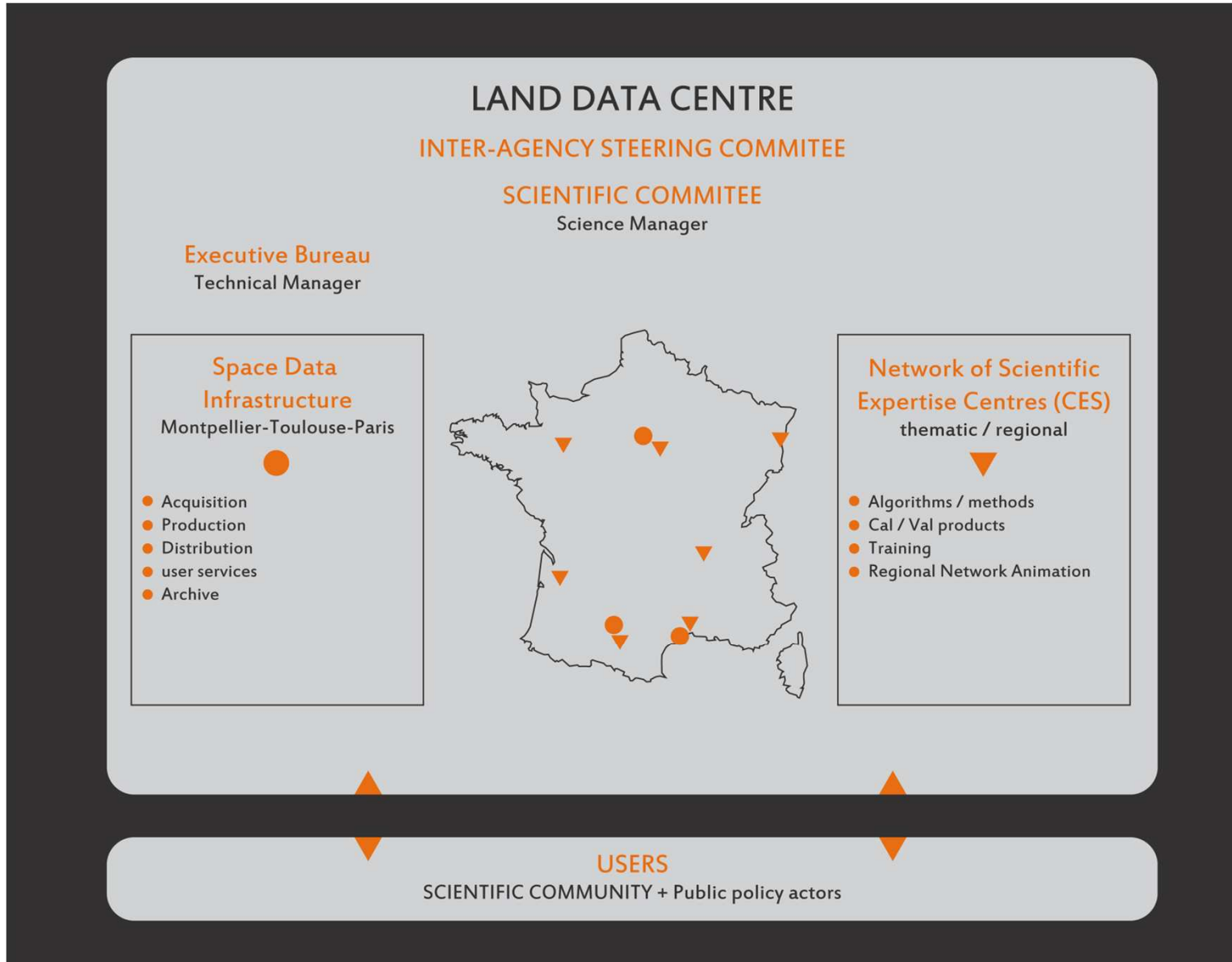
THEIA is a national structure funded jointly by 9 public institutions. Its objectives are

- ◆ to address the needs of the national scientific community in terms of products, methods and training linked to **the observation from space of land surfaces**
- ◆ to facilitate access and use of space data for a large user community (**national public actors and beyond**)
- ◆ to make national efforts **visible at European and international level**

THEIA relies on :

- ◆ a Space Data Infrastructure distributed on several sites whose components are developed at CNES, IGN and in the framework of GEOSUD
- ◆ a network of Scientific Expertise Centers
- ◆ a programmatic, scientific and technical organisation
- ◆ a Web site giving access to THEIA products and services (www.ptsc.fr)

STRUCTURE



PRODUCTS 2013 - 2016

Type	Products	Free access to	Processing
Images Very High Spatial Resolution	Pléiades images on ~100 cities France 2012-2015	National Public actors	Orthorectification
	Direct Reception images type Spot 6/7 after 2015	National Public actors	Programming capacity + real time
Images High Spatial Resolution	Yearly cover France 5m res. 2009-2015	National Public actors	Orthorectification + mosaics (+ direct receipt. Landsat 8)
	Series 2000-2012 Spot images and others on 4 sites	National Public actors	Orthorectification + Atmospheric correction
	Take 5 : Spot 4 images every 5 days, Feb - June 2013, 45 sites	All users	Orthorectification + Atmospheric correction
	Spot World Heritage Program : 400 000 images over the world 1986-2008	All users for a non-commercial use	Orthorectification
	S-2 France + other areas (10 times France) + Landsat 8 France	All users	Atmospheric corrections + monthly composites
Bioheophysical products, global	Global LAI, fAPAR, albedo : 30 years AVHRR & VGT	All users	Biogeophysical processing
	Water level, lakes and rivers : Jason and others	All users	Biogeophysical processing

PTSC ...

PTSC PRODUCTS ACCESS TO PRODUCTS SPOT4 (TAKE5)

NEWS

- FIRST SPOT 4 / TAKE 5 IMAGES AVAILABLE**
A first 5" exper...
- SP**
The las exper... It is wi...
- OP**
PTSC
The PTSC Web site has been opened to the public, under the address www.ptsc.fr, on April 15, 2013...

LAND DATA CENTRE (PTSC)

The Land Data Centre (PTSC) is a national inter-agency organization designed to foster the use of images coming from the space observation of land surfaces.

- Access to products & services : www.ptsc.fr
- Interoperability with other portals (GEOSUD, IGN Géoportail)
- Visualisation
- Download
- Perspectives: services of on-line processing (computer and software ressources)

To achieve this goal the Centre develops, generates and makes available to the national scientific community, images, products, methods and services related to the space observation of land surfaces, from the ecosystem and territory scale to the global scale. The Centre relies on an infrastructure producing spatial data, the Management and Data Processing Centre (CGTD), built around EQUIPEX GEOSUD and Muscate production centre at CNES, and on scientific expertise centres located in different areas.

The **products and services** offered by the PTSC are quality controlled and cover large territories and long time periods: annual satellite coverage of the national territory, surface reflectance time series at high or very high resolution, time series of bio geophysical products on a global scale (e.g. biomass, water heights, surface moisture...), tools to assist the data visualization and processing, processing methods and algorithms and validation

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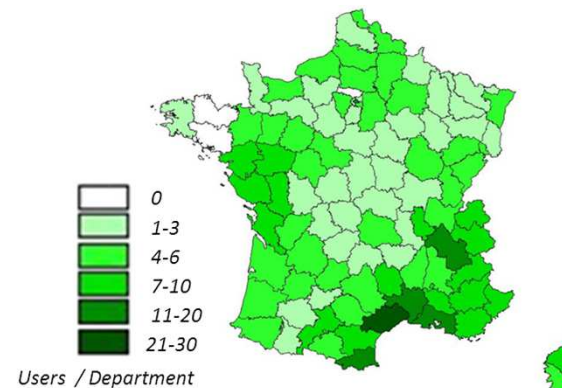
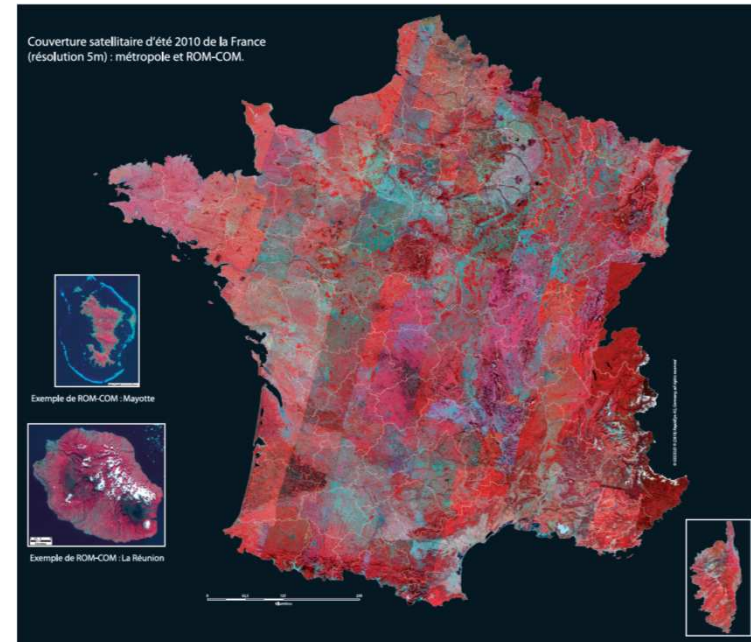
CEOS, cirad, cnes, CNRS, IGN, INRA, IRD, METEO FRANCE

PRODUCT EXAMPLE : YEARLY NATIONAL COVER 5M RESOLUTION

A user oriented product line :

- 256 registered users (Public authorities) (July 2013)
 - ◆ 65 laboratories
 - ◆ 88 governmental entities
 - ◆ 62 local and regional entities
 - ◆ 41 « other » actors (public interest associations, education entities, ...)

- distributed all over France
 - ◆ with some particularly dynamic regions
 - ◆ more than 10 users from overseas department and regions



To fully exploit the S-2 potential we intend to operate systematically

- atmospheric corrections and cloud screening (level 2A)
 - » With MACCS multi temporal and multi spectral method
- monthly time compositing (level 3A)
- coverage : 10 times France area
- industrial development to be started in 2014
- framework : ESA Collaborative Ground Segment



Niveau 1C:

Niveau 2A:

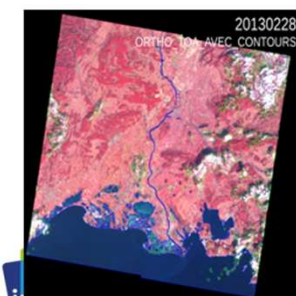
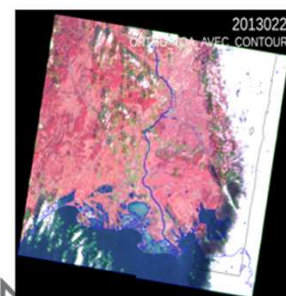
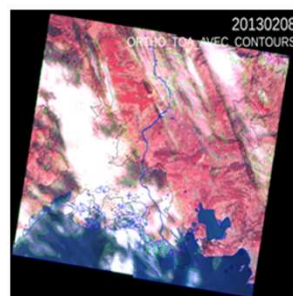
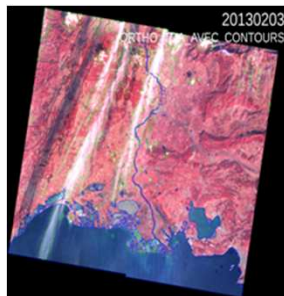
Niveau 3A:

PRODUCT EXAMPLE : TAKE 5 EXPERIMENT

- Need for Sentinel-2 simulated time series
 - ◆ To help users prepare their methods and applications
 - ◆ Learn to use dense time series of HR images
 - ◆ Learn to handle large areas, with data gaps due to clouds

- SPOT4's orbit was lowered by 2 km, for 5 months (February-June 2013)
 - ◆ To put it on a 5 days repeat cycle orbit, to simulate S2
 - ◆ To observe 45 large sites every 5 days

- Data processed to Level 1C and 2A (with MACCS)
- Data set freely available from THEIA website (www.ptsc.fr)



- Provide controlled quality data covering large areas and long periods
- Contribute to important science and social challenges :
 - ◆ Environment, agriculture, climate hazards / global change, biodiversity, fires, pollution
- Offer a platform of concertation to elaborate jointly national strategies
 - ◆ Use of Sentinel data (in particular Sentinel-2)
 - ◆ Use of Pléiades and Spot 6/7 data
 - ◆ Promotion of Spot heritage
- Get involved in European and international initiatives
 - ◆ Copernicus, Horizon 2020
 - ◆ Geoglam, Jecam ...