

## **Building Interoperable SDIs** with Open Source Products

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## **Quick Facts**

#### Founded in late 2006

#### Expertise

- Image Processing, GeoSpatial Data Fusion
- Java, Java Enterprise, C++, Python
- JPEG2000, JPIP, Advanced visualization
- Web Based Mashups, Mobile Solutions

#### **Supporting/Developing FOSS4G projects**

- MapStore, GeoServer, GeoNetwork
- CKAN, GeoNode, GeoTools , ImageIO-Ext, JAI-Ext

#### Clients

- UN FAO (CIOK, FIGIS, NRL, FORESTRY, ESTG), UN WFP, World Bank, DLR, EUMETSAT, JRC, ARPAT, NATO CMRE
- ITT-VIS, E-GEOS, GEOSMART, BOAB, SINERGIS, City of Prato, City of Florence, County of Florence, CSI-Piemonte, NWGEO, IGEA, AMBRERO, LIBEROLOGICO, Astrium UK, Neftex, MDA, etc...

#### http://www.geo-solutions.it





## Our Offer

### **Enterprise <u>Support</u>** <u>Services</u>

- Bug Fixing
- Support
- Customizations & New Features
- 5 packages → different types of needs
- Professional <u>Training</u>
- End-To-End Projects (Integration)
  - Tell me what you need, I'll put it together for you
  - We take our core products and
    - Bend them, twist them, embed them
    - Hammer them to make clients happy
- FOSS4G Software is <u>core</u> for us
  - Not simply use but develop and support



### Industries

olutions software source geospatial open one-stop-shop for 60 5 our







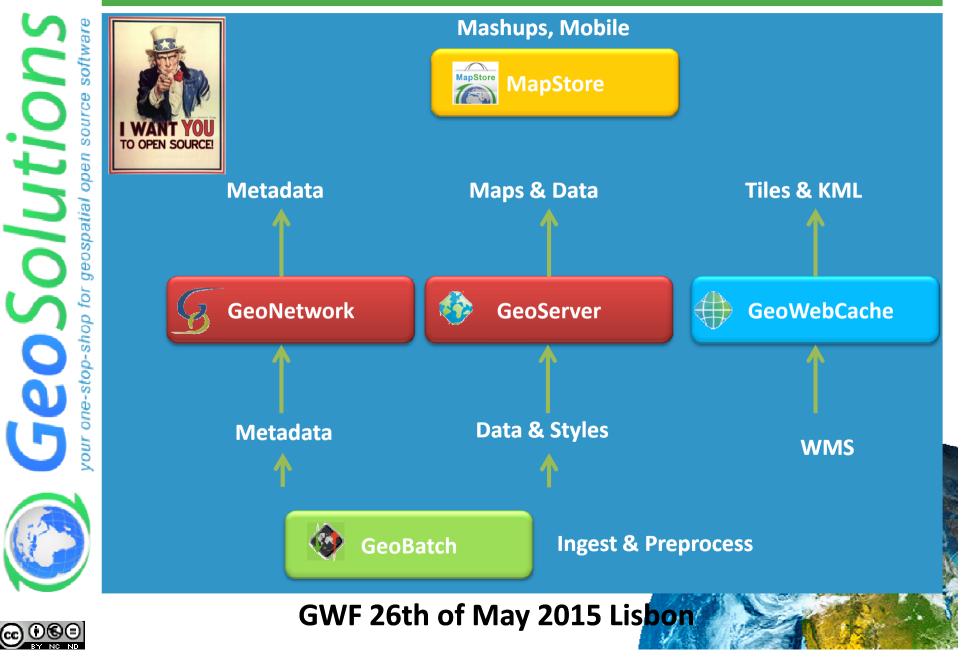


**Products** 





### **Our Products**



### GeoServer



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**GeoSpatial enterprise gateway** Java Enterprise **Management and Dissemination of raster** and vector data **Standards compliant** OGC WCS 1.0, 1.1.1 (RI), 2.0.1 OGC WFS 1.0, 1.1 (RI), 2.0 OGC WMS 1.1.1, 1.3 **OGC WPS 1.0.0** A ton of Extension available **Google Earth/Maps support** KML, GeoSearch, etc.





### GeoWebCache



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• Tile Oriented Geospatial Cache Java Enterprise Maps Acceleration (10x to 100x) **Standards compliant** OGC WMS 1.1.1, WMTS 1.0 TMS WMS-C **Google Earth/Maps support** Stand-Alone or Integrated in GeoServer



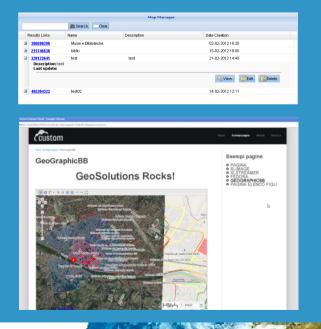
## MapStore





- Mashing-up various sources of data
- Inject markers and tracks with custom pop-up
- Embed in existing sites and portal
- Use it as a complete geoportal solution
  - **Android Mobile Client**

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### GeoNetwork

### (GeoSpatial) Catalog

- Registry of Metadata
- Repository
- **Enterprise Search Appliance**
- GeoPortal
  - SDI entry point
  - Information Broker
- **Metadata Editor**
- **Standards Based**
- **Implemented with Java Enterprise technologies**











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GeoCollect

#### You have lots of assets? GeoCollect can help!

GeoCollect has been designed with scalability and performance in mind. problems.

#### Surveys are a nightmare? **GeoCollect** can help!

GeoCollect has the concept of Surveys at its core, as such we have built a comprehensive and It can be proficiently used to manage a handfin flexible App that will allow you to work offline of asset as well as thousands of them with no carrying along all the cartographic data you need.

> In case that was not clear you can do all your work in the field being OFFLINE!

> > GeoSolutions



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### GWF 26th of May 2015 Lisbon

is proudly

made in italy

## Embracing FOSS4G

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### Select carefully the product

- Active, Large & Diversified Community
- Availability of Professional Support
- Account for resources to ramp up knowledge
- Carefully evaluate what's there and what's not
- Account for resources to join the community
- When planning developments/deployments
  - Stay away from forks & vampires
  - Interact with the community during design
  - Consider professionl support services
- Bear in mind that nothing is entirely free
  - Account for the \_costs\_ of adoption
- Check licenses carefully (then check again)





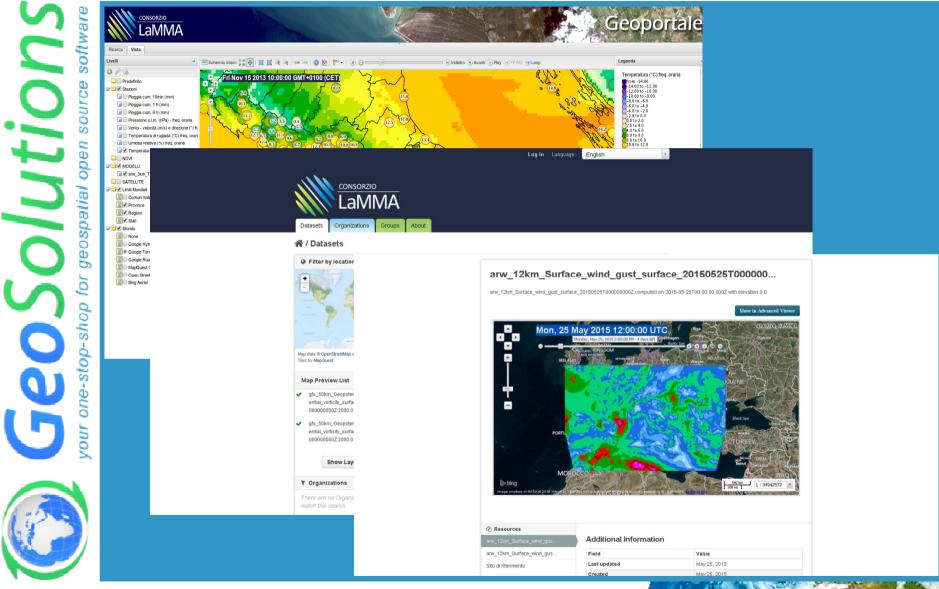


### **MetOc & EO Data Dissemination**











## LaMMa SDI

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#### Ingestion and preprocessing of

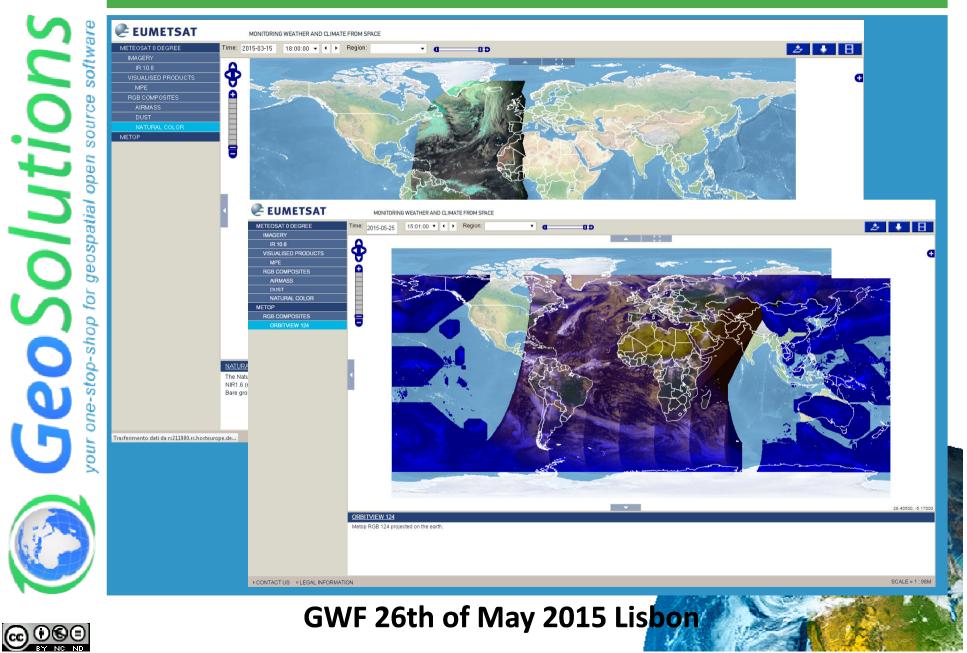
- 3 Meteorological model 2 times a day (00 & 12 UTC)
  - WRF-ARW @ 12km over MED with ECMWF initdata
  - WRF-ARW @ 12km over MED with GFS initdata
  - WRF-ARW @ 3km over Italy with ECMWF initdata
  - GFS @ 50km from ECMWF
- MeteoSat 2<sup>nd</sup> and 3<sup>rd</sup> generation data every 15 minutes
- Radar data every 5 minutes

#### **Meteorological model**

- Acquire via FTP after each run
- Transcode from Grib1 to a series of GeoTiff
- Mosaic with support for time
- Publish in GeoServer
- Prepare metadata and register in GeoNetwork



### **EUMETSAT** Dissemination Platform



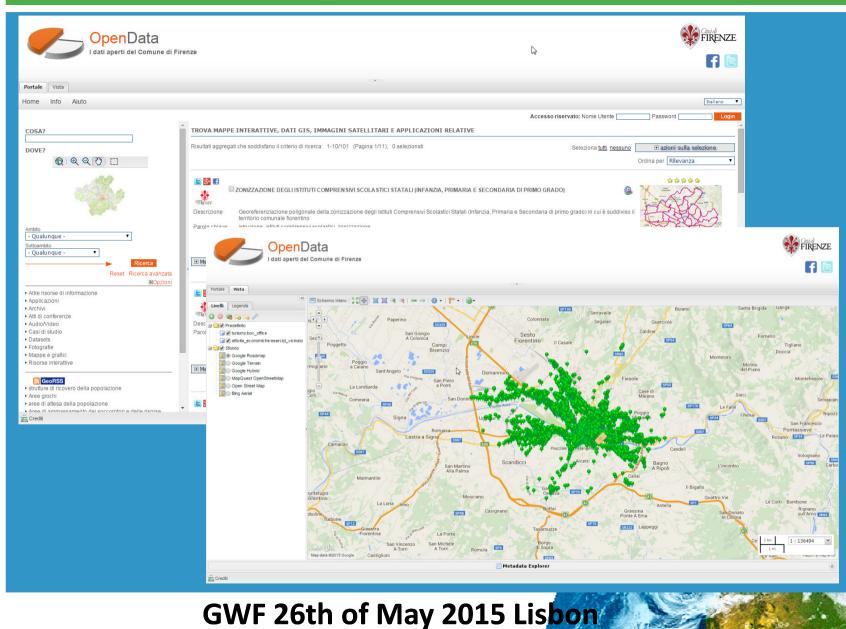




### (OpenData) GeoPortals

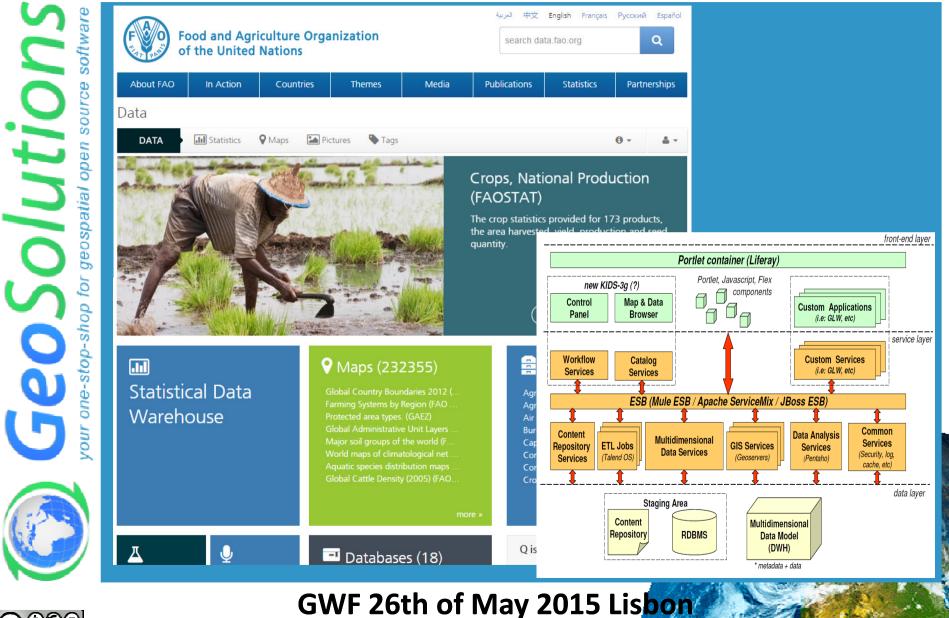


### Florence OpenGeoData Portal





## data.fao.org





### **INSPIRE Download & View Services**

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Improving Complex Schema Support

- **Automatic Configuration from HALE**
- Export in multiple formats (e.g. Spatialite)
- Automation in GeoServer for periodic ingestions
- Automation in GeoServer for periodic
- Improving WMS Support

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### **Decision Support Systems**



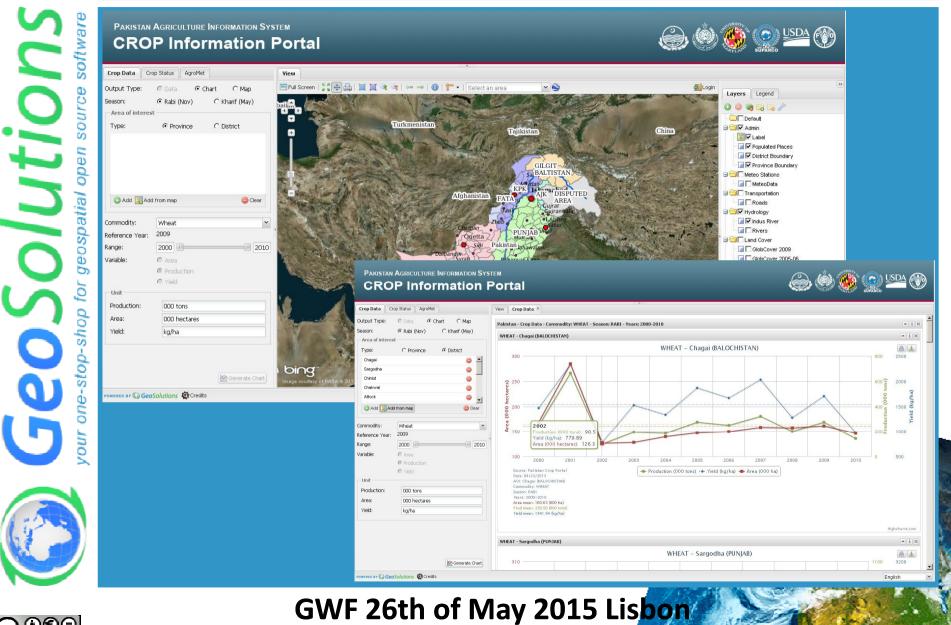


### **UN FAO VME Database**



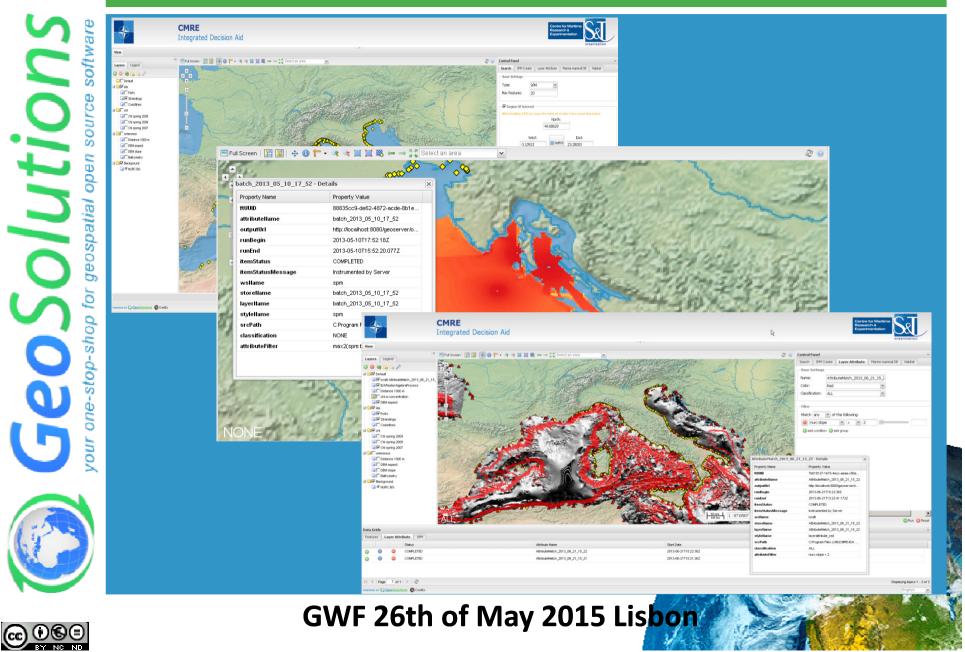


## **UN FAO Crop Information Portal**

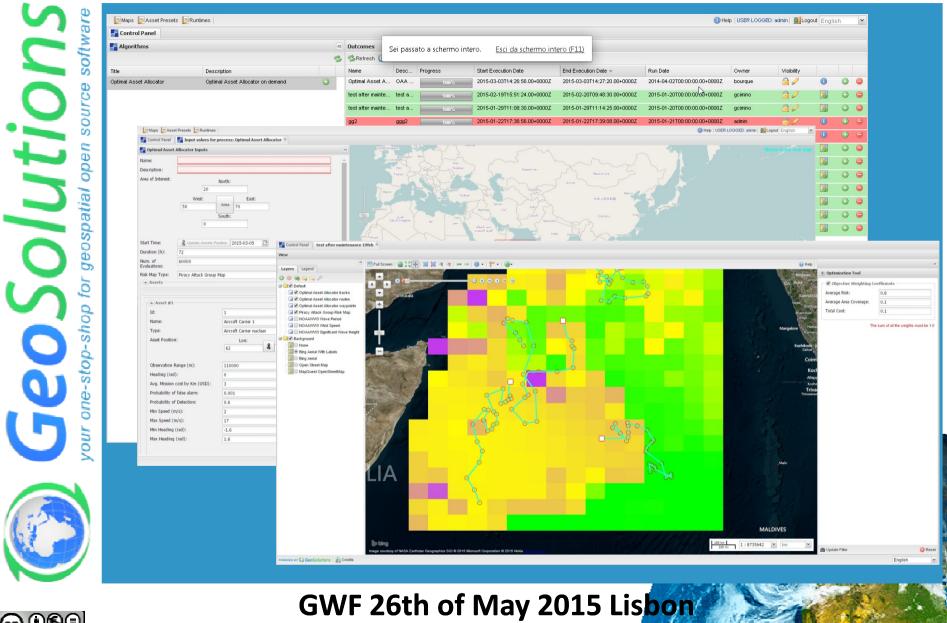




### NATO STO CMRE - IDA



### NATO STO CMRE Asset Allocator





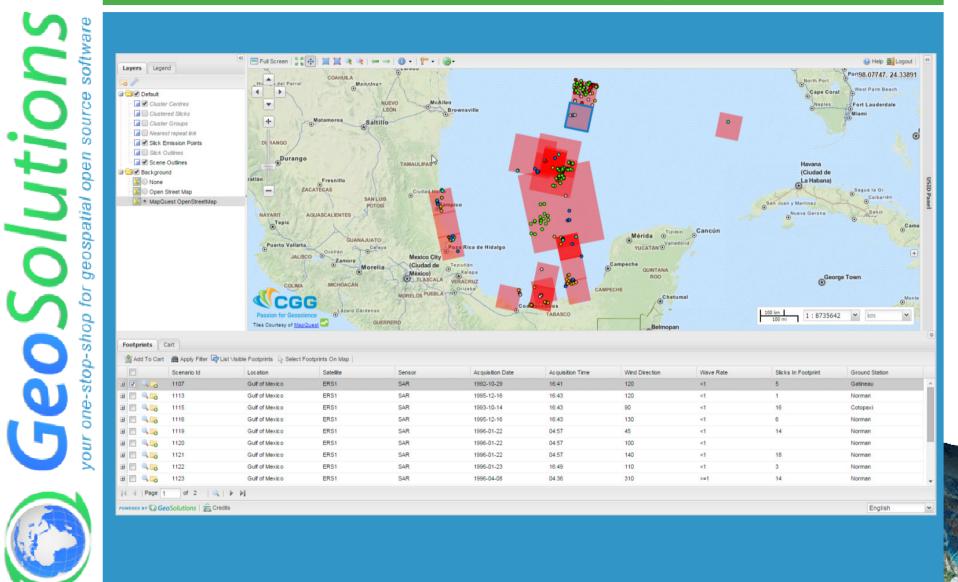




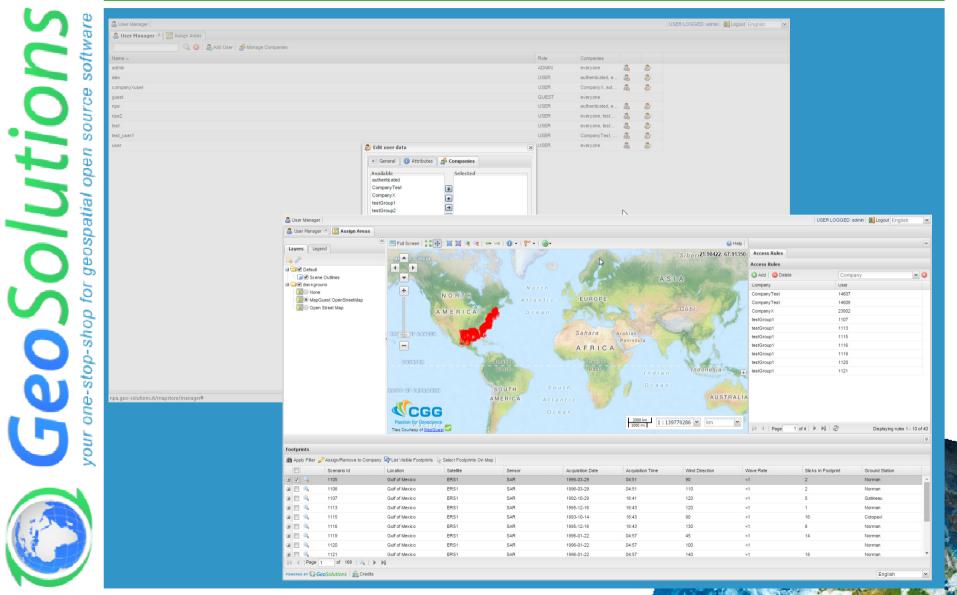
### **Subscription Based Geoportals**



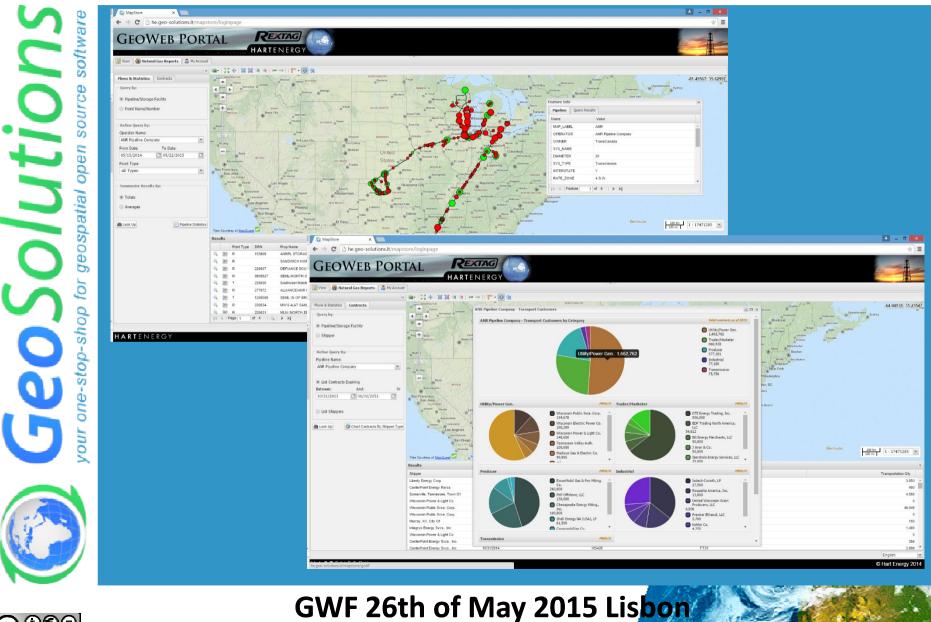




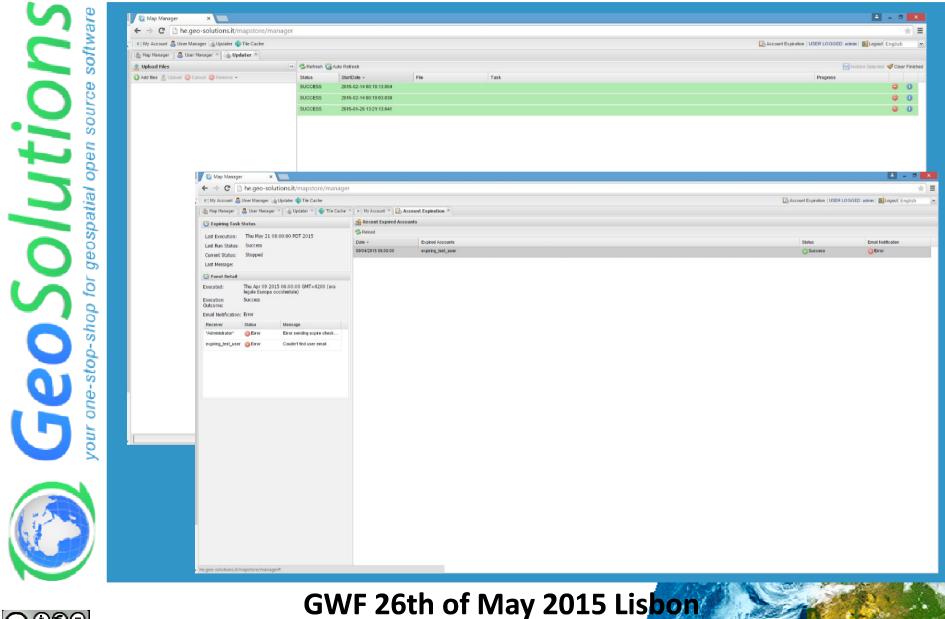


















### **Smart Mobility**





### **Destination+ Project**







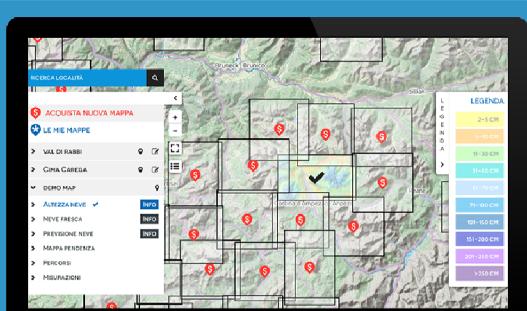


### **Mobile Data Collection & Fusion**

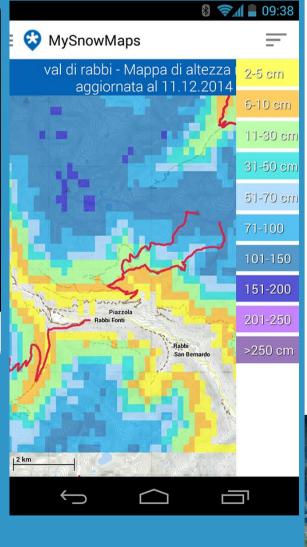


## MySnowMaps



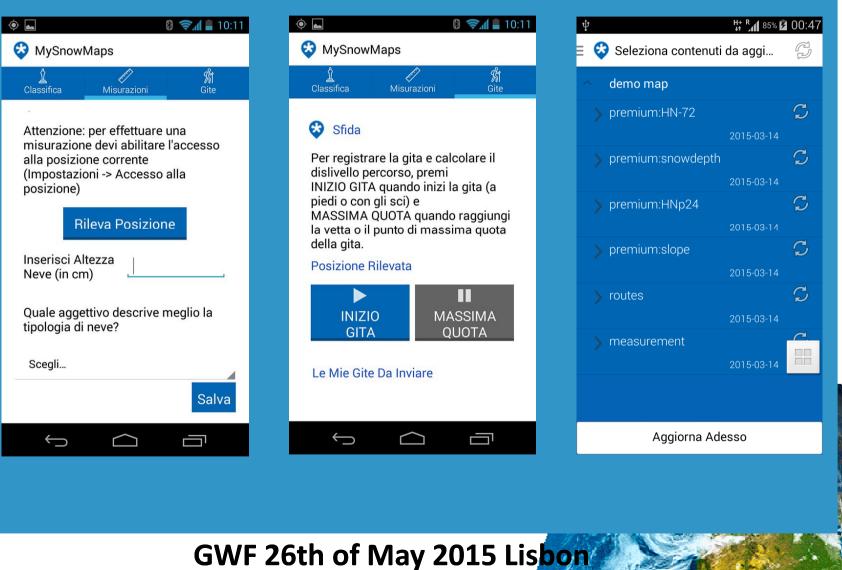


### When the snow is calling, Be prepared!



## MySnowMaps<sup>®</sup>





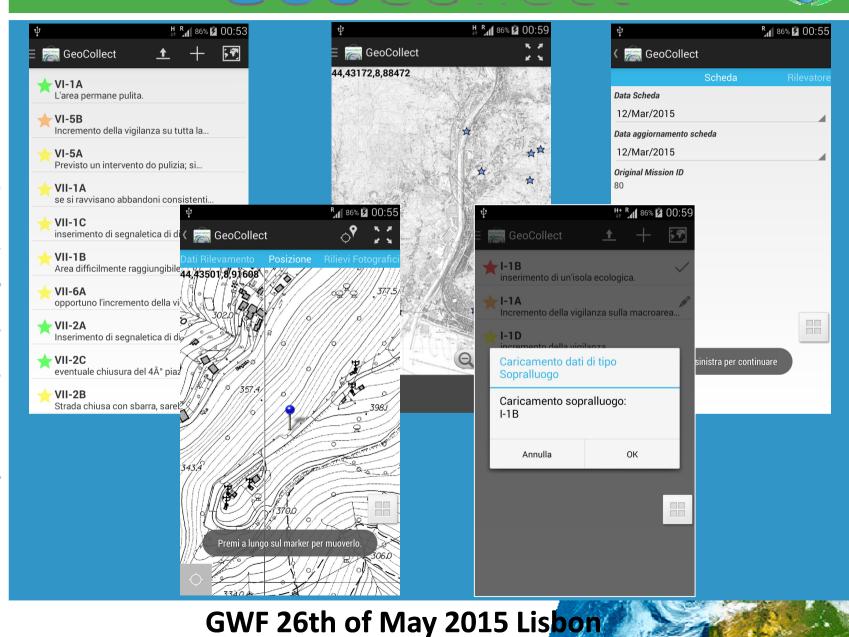




# software Solution source open geospatial one-stop-shop for our









## Conclusions

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We work for the clients Clients ask for more data & services rather than more regulations **Open Source is getting a lot momentum**  No upfront costs is fostering adoption But generating somewhat wrong expectations Free and Open Source is not completely Free!!! Support, Training, etc... not free **Open Source & Open Data** are fostering innovation **INSPIRE is slowing getting into focus**  Knowledge is somewhat lacking **Real world moves fast** Open Data & Open Source provides momentum, let's use it!

### The End





## Thanks for not sleeping (loud)!

simone.giannecchini@geo-solutions.it





## Team – Key Members

- Ing. Simone Giannecchini
  - Founder, GeoServer PSC, GeoTools PMC, ImageIO-Ext Architect, JAI-Tools founder, GeoBatch founder

#### Ing. Alessio Fabiani

**Founder, GeoServer PSC, GeoTools Committer, MapStore Committer** 

#### Ing. Andrea Aime

GeoServer PSC, GeoTools PMC, JAI-Tools Lead, ImageIO-Ext committer

#### Ing. Daniele Romagnoli

GeoServer Committer GeoTools PMC, ImageIO-Ext Lead, JAI-Tools Committer

#### Ing. Emanuele Tajariol

- GeoServer Committer, GeoTools Committer, GeoNetwork PSC
- Ing Mauro Bartolomeoli
  - GeoServer Committer, GeoTools Comitter, GeoBatch Committer, MapStore Committer



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## Cultura Italia - MuseiD Portal

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Inject custom markers and tracks with custom HTML pop-up

- Mobile Enabled Version
- Link-back to managed
- resources
  - Example <u>here</u>













