French Forecasters Workstation Synergie-Next: Synopsis Project

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Overview

- Operational tools for “upstream” forecasting at Météo-France
- Synopsis project
Operational tools at Météo-France

- At the present time, two systems for three levels of forecast

- **SYNERGIE**
  - *National and regional* forecasting (metropolitan and overseas)
  - Worldwide usage outside of Meteo France

- **OPPIDUM**
  - *Local departmental* forecasting ("Prévi-Surveillance" application)
  - Outside of Meteo France. ("Meteo+" application)
Synergie in one slide
Synergie: A little history

- First stages of Synergie development started in 1989
- First operational release in 1993
- More than 17 operational versions since 1993
- Several Operating System changes

Today:
- Linux only
- More than 1.5 million lines of code
- A sum of 180 man-year of development
- A software patchwork of the best tools and libraries of Météo-France and ECMWF
- More than 120 operational client workstations at Météo-France
- More than 200 operational workstations in 60 other countries
Synergie implantation

MFI Customers
SYNERGIE users
Towards Synergie-Next

- More than one year Pilot project:
  - OGC (Open Geospatial Consortium)
  - SOA (Service Oriented architecture)

Météo-France direction has decided to go forward in partnership with Meteo France International

- A single workstation for “advanced forecasting” OS independent
- A “light” workstation (Web-Based) for other needs
- Sharing the same business server components …

No or slight changes for end-users
New needs of forecasters

- Zooming and panning in any area as seen in any common web tools, with GIS functionalities
- Reduce delay between end of development and availability on forecaster’s desk
- New data available on forecaster’s desk, in less than one month after their arrival in central data bases
- Adjust automatically GUI to data available on server and useful for a specific forecaster.
- Easier User customisation
- Open to interoperability with other meteorological layers

Synergie Technologies not fitted to take these new requirements into account.
Synopsis project

Specific team in Météo-France IT and forecast divisions, and MFI (Meteo France International)

- Review of actual specification
- At present, first services available on server for:
  - lightning visualization;
  - Radar and satellite images;
  - Basemap with road and so on …. as in a GIS
- Roadmap:
  - In progress: review ergonomic of actual tools and continue smart client developments;
  - June 2011: First operational servers with radar and satellite;
  - Mid 2013: all observations data, images (radar, satellite), numerical models available on smart client and used by all forecaster in Météo-France;
  - Mid 2015: principal production tools ready.
Synergie-Next specifications

- Client OS independent and auto installation (eg. java-web-start);
- Server on Linux to:
  - Benefit of ECMWF developments on: Magics++, GRIB API, ..
  - Use software development of Synergie
  - Use Open source library
Use of many Open Source components

- **Language**: Python, C, Java;
- **Basic Tools**: Apache and Gnome projects
- **Data base**: PostgreSQL, PostGIS
- **Bus, caching**: Redis
- **Web**: Django, Nginx
- **Specific tools**: Mapserver, Proj4, GDAL, Magics++, GRIB API
Synergie-Next specifications

- Client OS independent and auto installation (eg. java-web-start);
- Server on Linux to:
  - Benefit of ECMWF developments on: Magics++, GRIB API, ...
  - Use software development of Synergie
  - Use Open source library
- Cluster or standalone system;
- Easy installation on client and server;
- OGC standards and SOA (Service oriented architecture) for interoperability of forecasters tools.
SOA and OGC ....

Synergie

Webservices OGC

Clients

Servers
From Synergie to Synergie-Next

- SynSyn strategy

- All services Synergie Next will be available for Synergie …

... and other OGC clients
From Synergie to Synergie-Next

- **SynSyn strategy**

- All functionalities of **Synergie** will be available for **Synergie Next** clients (if they run on the same computer)
Synergie-Next in Météo-France

- Météo-France forecast reorganization
- First deployment of SynSyn strategy (Synergie-Next) in Local departments Centers between fall 2011 and end of 2012
- SYNERGIE is in National and regional forecasting centers
Thank you

Any Question?