PIEUVRE

Portail pour Interprétation, Etude, Utilisation, Validation des données Radar d'Exploitation

Monitoring the french radar network and the quality of the final products
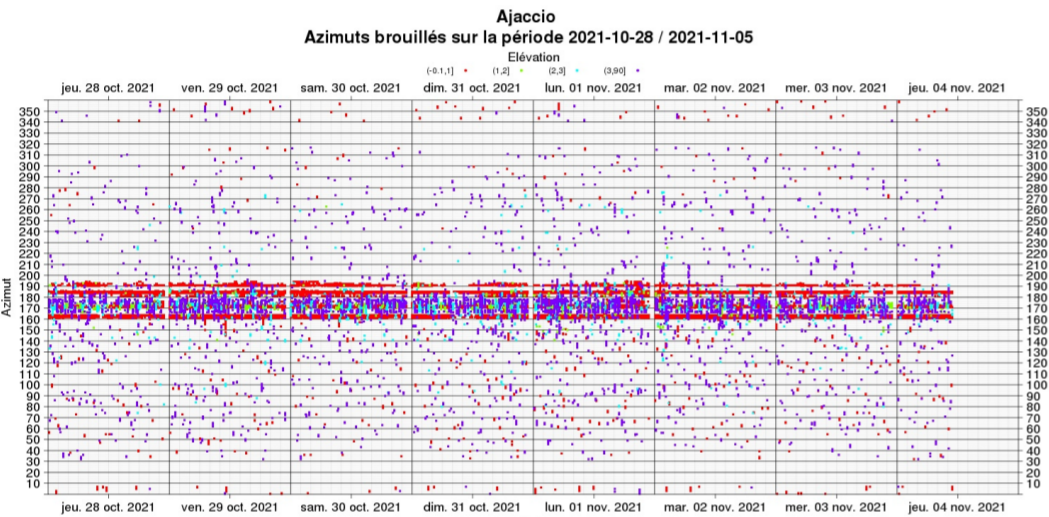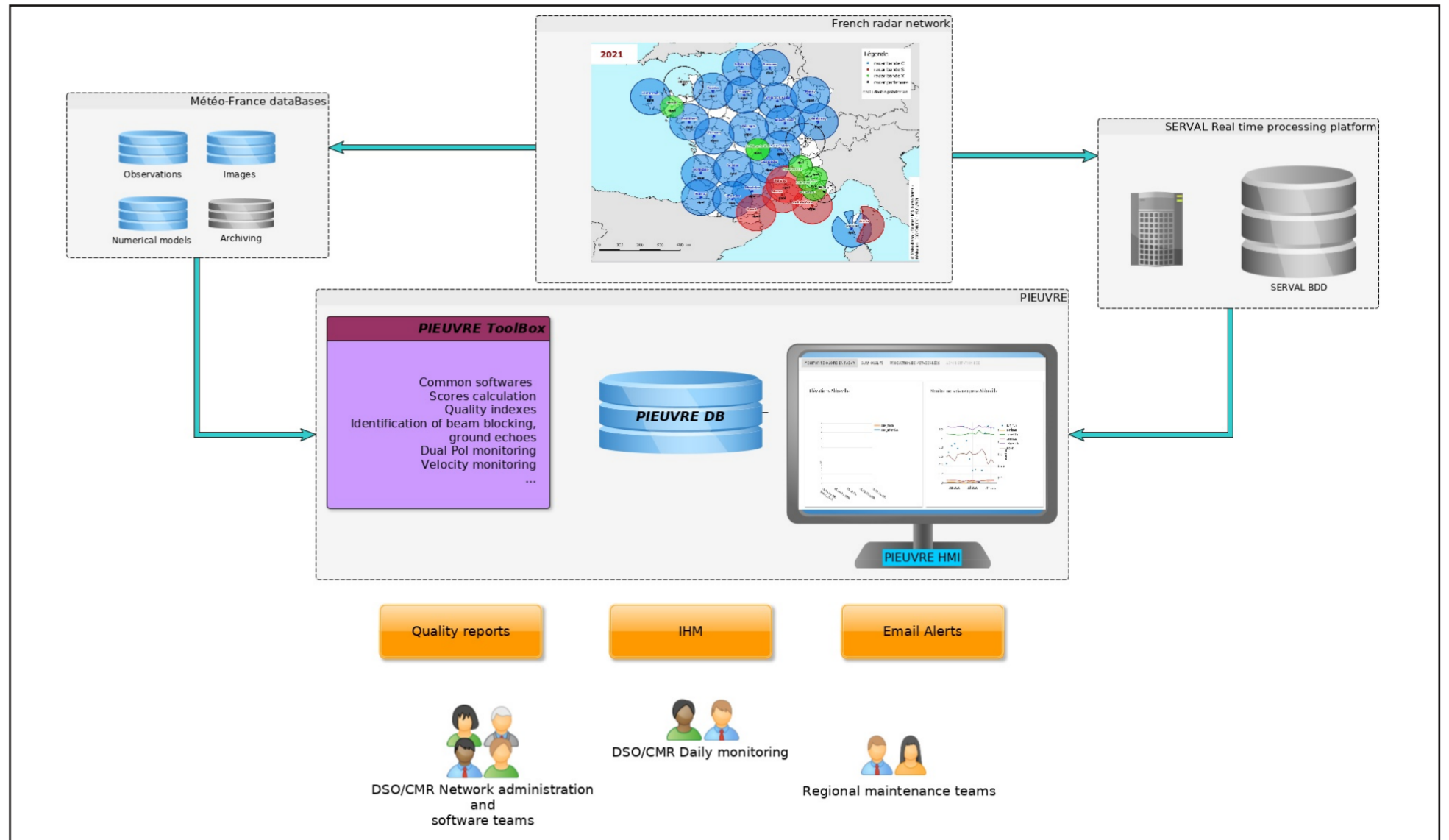
Isabelle Sanchez, Tom Nicolau, Béatrice Fradon, Nicolas Gaussiat, Jean Millet, Alexane Lovat, Dominique Raina
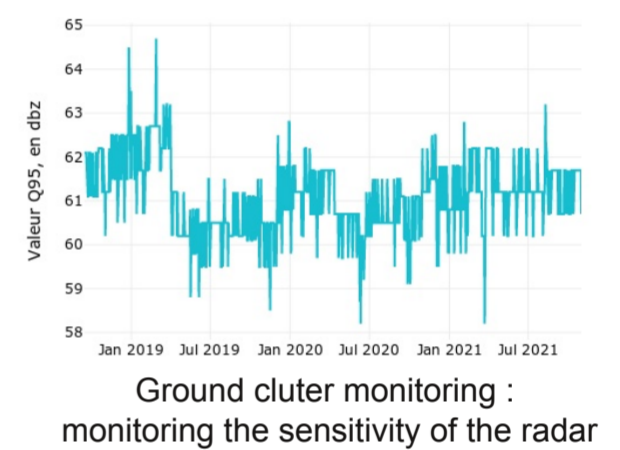
Novembre 2021

PIEUVRE : Work in progress !

- *PosgreSql database* containing a long term history of monitoring parameters : radar operating conditions, quality indicators, statistical scores...
- Modernized *toolbox* , mainly developed using *Python and C++* libraries, producing :
  ➤ metadata for real-time data processing,
  ➤ scores and quality indices
  ➤ hourly, daily, monthly... monitorings
- *HMI (Metwork / java-scripts / django)*
  ➤ linked to the database
  ➤ interactive graphic plots
  ➤ database administration ...

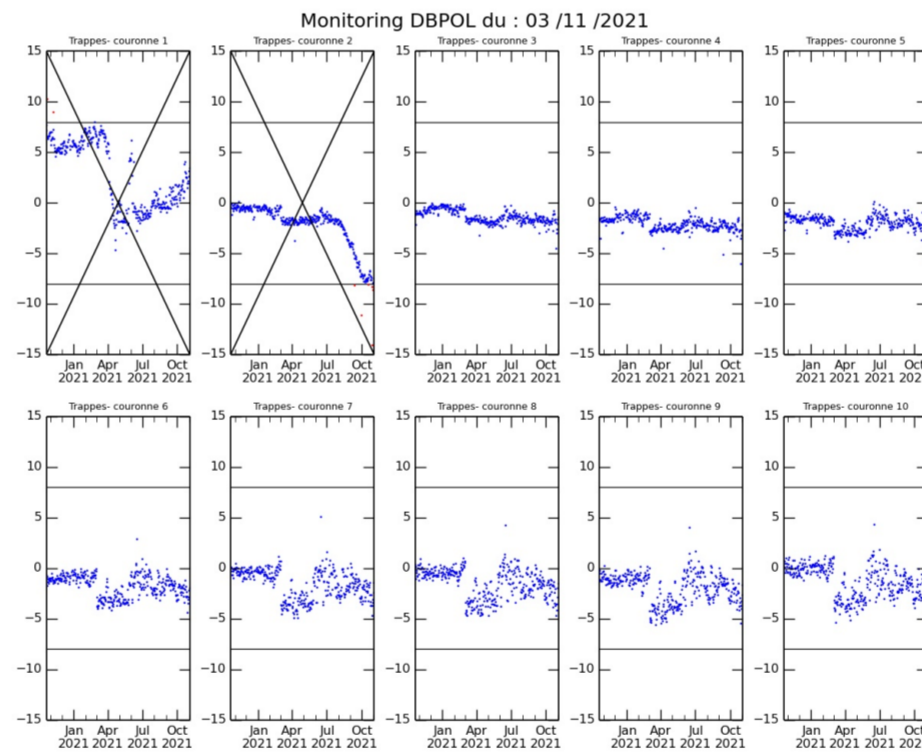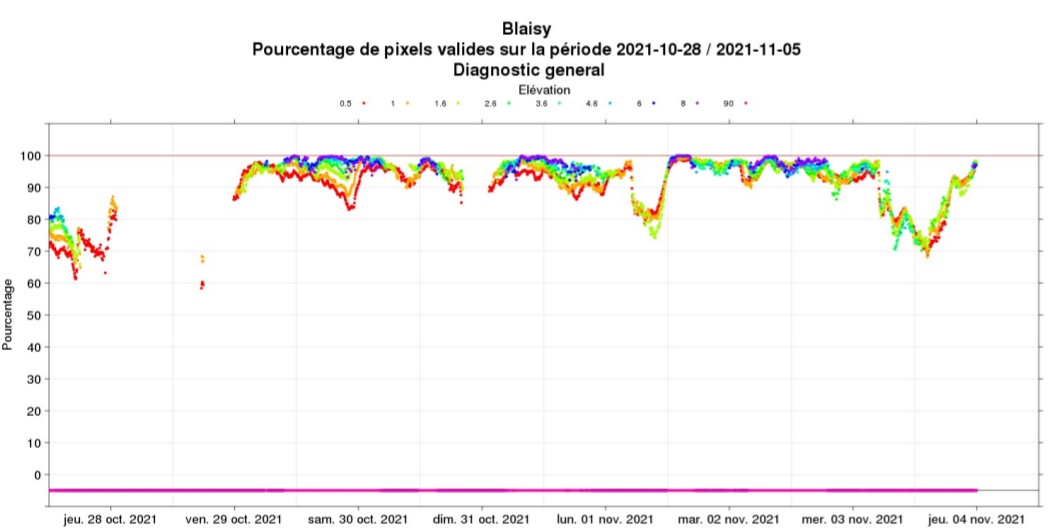Interference detection based on the correlation between consecutive rays

Monitoring the network

- Ground cluter intensity
- Interferences detection
- Radial velocity monitoring
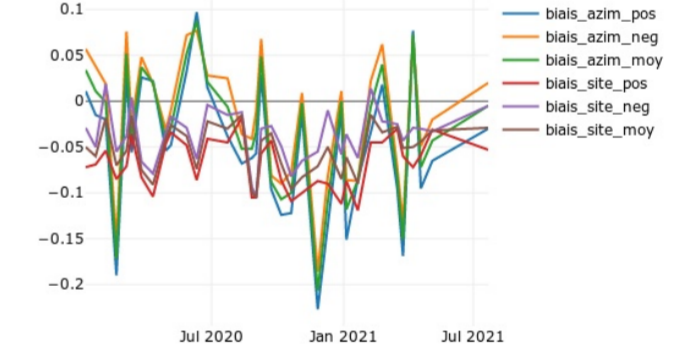- Dual Polarimetry monitoring
- Solar monitoring

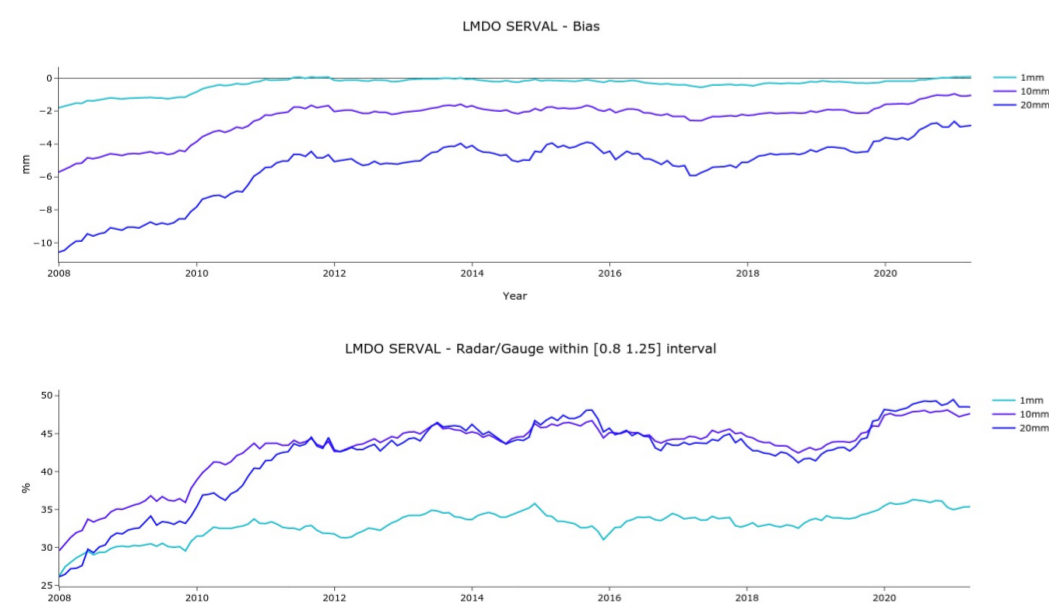Ground cluter monitoring : monitoring the sensitivity of the radar

Monitoring radial velocities : consistency in the neighboohood

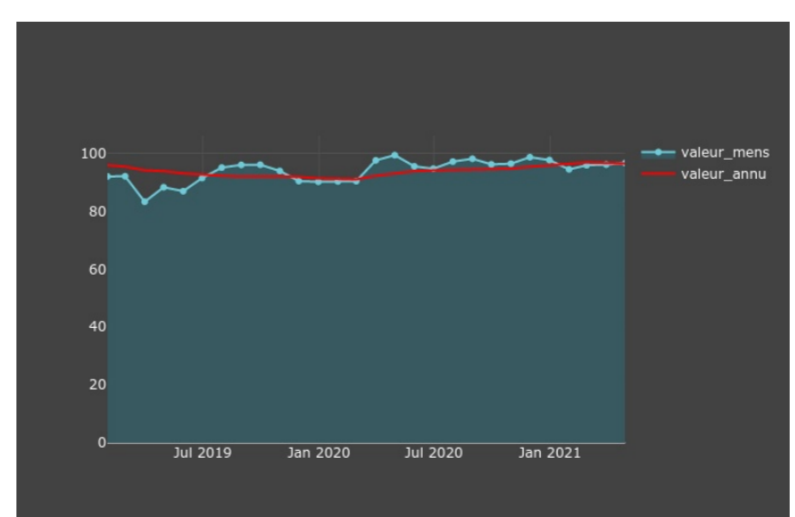
Monitoring of TR tube health : averaged ZDR amongs 1km rings

Solar monitoring : check the antenna pointing
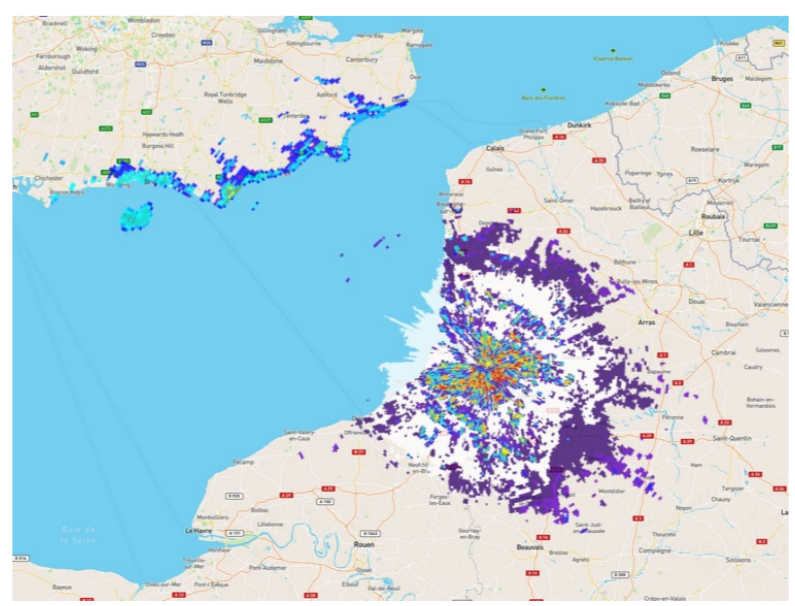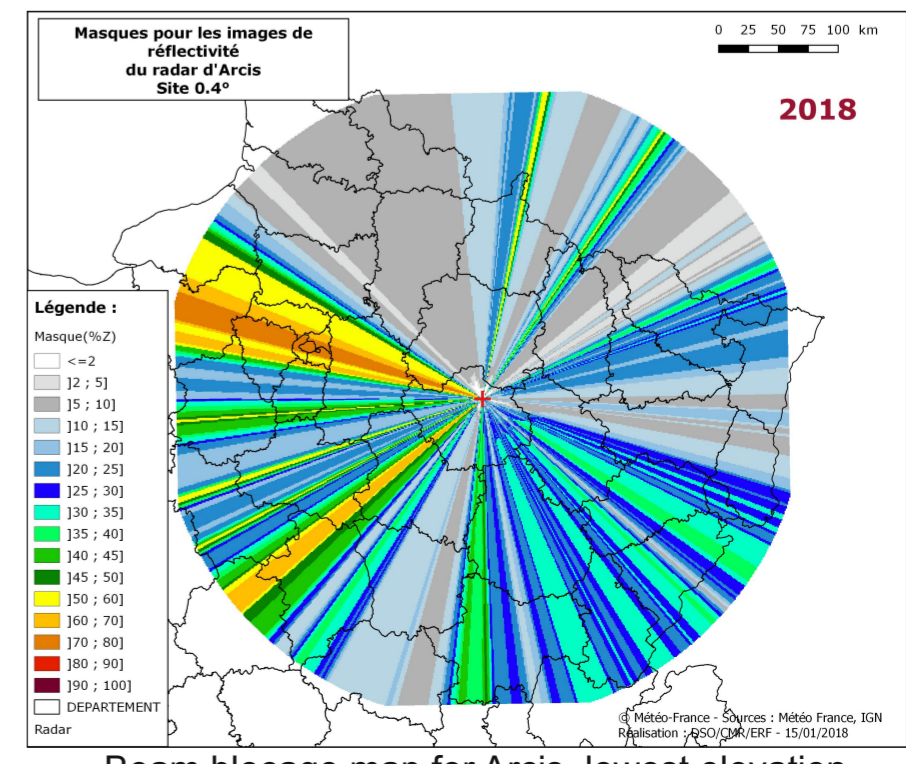
Quality indices and scores

- Raw data production rate
- Maintenance response time
- Frequency of scheduled visits
- Percentage of receiver calibrations ...
- Accuracy, Bias, Probability Of Detection, False Alrm Rate...

Quality improvements on radar estimations : Bias and Percent correct

Availability rate of raw data

Metadata production for corrections by real time process SERVAL

- Ground clutter identification
- Beam blockage map
- Mean adjustement factor to rain-gauges

Ground clutter identification for Abbeville

Beam blocage map for Arcis, lowest elevation