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The Rainbow Scientific Tool: to better monitoring and studying the weather radar data

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The use of weather radar in a network for quantitative measurement such as the quantitative precipitation estimation becomes essential for the most national meteorological services around the world. One of the most important conditions for a correct quantitative estimation and mosaicking is to have well calibrated and coherent radars in a heterogeneous weather radar network.

To meet these conditions and to facilitate the use and the manipulations of the radar data by researchers and scientists, Selex ES GmbH developed an ensemble of functions in a package named "The Rainbow Scientific Tool". The main contents of this tool are:

- · Rainbow Data Interface which supports reading and writing volumetric and product data.
- Graphical viewer function to navigate through PPIs, analyze, as well as to choose the radar overlapping region manually.
- Inter-comparison function to detect common pixel from neighbored radars above a chosen overlapping area. This function will accept different data formats.

The geographic tool includes a graphical interface to browse Rainbow volumetric files, displaying its structures, pictures tables (cells) in separate windows (tabs). The manipulation of the data (choosing area, zooming, showing information values, graphical position, coordinates, etc) is via the mouse cursor.

The inter-comparison function extracts all the moments viewed by both radars above a chosen area, write them in a table, and offers options to calculate some statistical parameters such as the correlation constant, the biases or the regression.

All the documented source code (C++ / python) will be made available in using Doxygen style.