



FASTGBSAR RANGER SOFTWARE

The FastGBSAR Ranger is the software for automatic real-time processing and visualization of the SAR mode FastGBSAR data, developed specifically for the mining environment and for critical structure monitoring. Thanks to its user-friendly interface, the user can obtain a complete picture of critical areas at first glance. Data analysis is simple and fast, allowing for time series analysis, 2D and 3D maps visualization, user defined alarm criteria setup for effective monitoring.

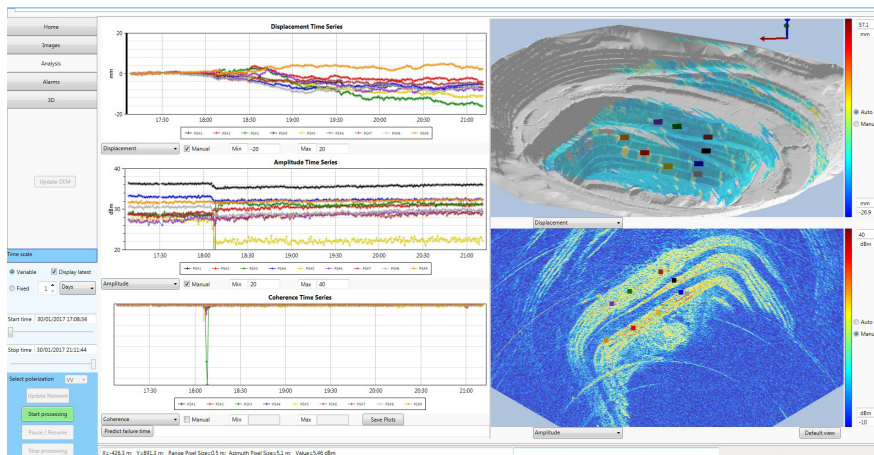


Figure 1: Analysis tab with multiple parameters time series and planar and 3D view

Multiple parameters time series can be displayed by selecting several pixels on the maps. In just a few seconds, all time series plots and all maps are automatically updated as new data are available.

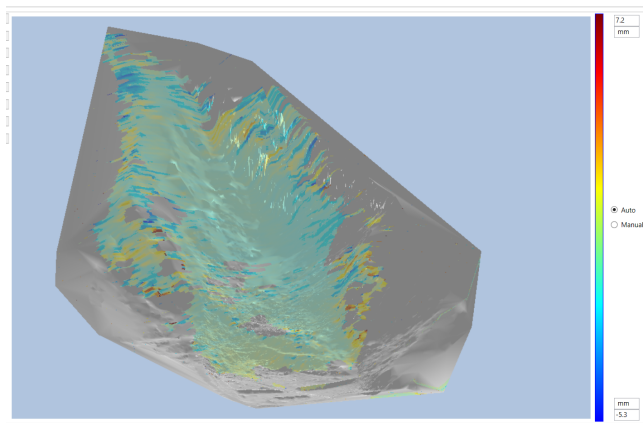


Figure 2: 3D tab with a displacement map over a DTM of the observed area.

The displacement maps can be projected on a Digital Terrain Model of the area, and displayed on the Ranger's 3D view. Several maps can be superimposed thanks to the use of layers and transparency.

Key features

- Automatic real-time processing
- Processing results available in a few seconds
- Planar and 3D view for easy data visualization on a Digital Terrain Model
- Simultaneous visualization of displacement maps, quality parameters and time series
- Displacement, velocity, inverse velocity, coherence time series
- Alarm raising based on user defined multiple alarm criteria
- Data download and storage handling
- Data export for integration with mine monitoring software
- Backanalysis

Visualization

The user can easily navigate through different tabs of the graphical interface, each one equipped with specific tools for data visualization. All plots are synchronized and can be explored by zooming and panning. Simply passing the mouse over the map will show the pixel geographical coordinates and value.

- Home: System log and information
- Images: simultaneous data quality parameter and coherency visualization
- Displacement, velocity, inverse velocity, coherence time series, 2D and 3D maps
- Alarms: alarms visualization and information
- 3D: 3D view of the displacement maps and quality parameters

Alarms

The FastGBSAR Ranger encompasses an early warning system for safe operation in the monitored surface:

- Visual alarms and e-mail alerts
- Alarm raising based on maximum displacement and loss of coherency
- Critical areas display
- Continuous update

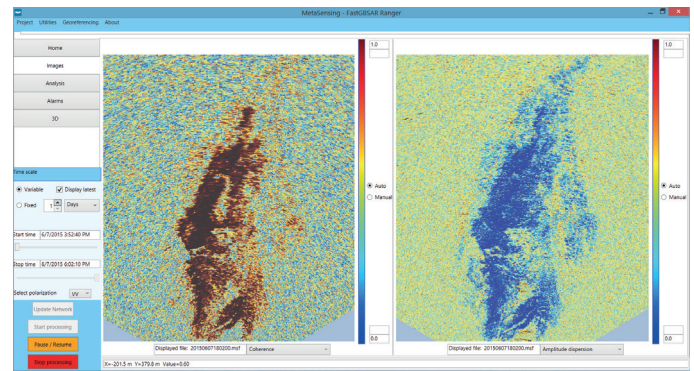


Figure 3: Images tab with multiple quality parameter on a planar view.

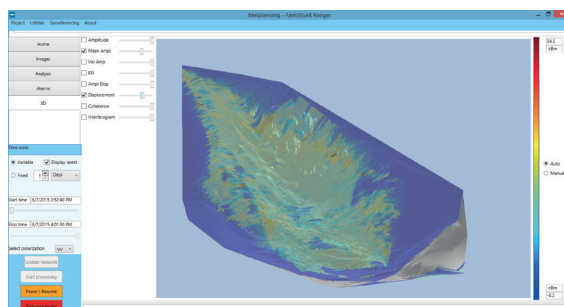


Figure 4: 3D view of Displacement over DEM

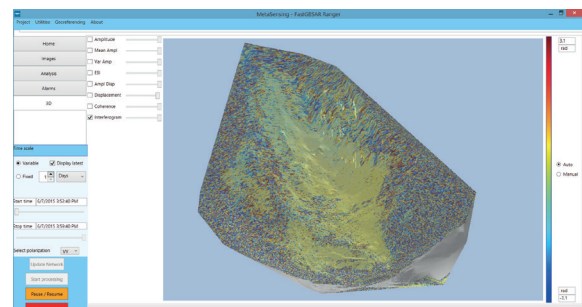


Figure 5: 3D view of Interferogram over DEM

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