SuLaMoSA

“Subsidence and Landslide Monitoring Service Austria”
Project goal:

• The project “Subsidence and Landslide Monitoring Service Austria (SuLaMoSA)” founded from the Austrian Research Promotion Agency (FFG) **will introduce, for the first time in Austria, a national monitoring service regarding subsidence and landslide mapping based on D-InSAR-technologies.** The service will be developed by Joanneum Research and the Geological Survey of Austria and will be implemented into and operated by the EODC, Vienna.

• Definition of user needs and requirements with strong engagement of potential users.

• It will deliver unprecedented homogeneity of deformation products with an update rate of few weeks down to couple of days. Based on systematic utilization of Sentinel-1 data the service will guarantee consistent products for a very long period of time.
Observation of Surface Deformation

D-InSAR Workflow and Tasks:
• Co-registration
• De- and Reramping
• Deburring and Burst Merge
• Temporal Phase Filter
• Optimal Triangulation
• EMCF Phase Unwrapping
• Baseline Optimization
• SBAS Analysis

Cumulative Displacement
PS / DS Identification Methods

**A priori:**
- Range Index as Function of Slope, Aspect, Orientation and Incidence Angle
- Enhanced CORINE Land Cover Map

**A posteriori:**
- Coherence Mask per Epoch
- Spatial Statistical Analysis

A priori PSI Point Density

Percentage of Coherent Interferograms
Test Case under Laboratory Conditions

- Select representative test sites where a series of deformation phenomena are known (in close cooperation to potential user);
- Generate D-InSAR products with two distinct software designs
- Inter-comparison of the two generated D-InSAR products for potential inconsistencies and
- Validate the service with reference data, ground truth data (standard monitoring devices), field survey and expert feedback.