



GDM: a ForM@Ter service for ground deformation monitoring

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ForM@Ter is a French solid Earth thematic data pole project. It was launched in 2012 by the French national space agency (CNES) and the National Centre for Scientific Research (CNRS), with the active participation of the National institute for geographical and forestry information (IGN). Currently, it relies on the contributions of scientists from more than 20 French Earth science laboratories. Its perimeter, designed with the scientific community, focus on the determination of the shape and movements of the Earth surface (ForM@Ter: Formes et Mouvements de la Terre) with the objective to federate a wide variety of scientific areas (earthquake cycle, tectonics, morphogenesis, volcanism, erosion dynamics, mantle rheology, geodesy) and to offer many interfaces with other thematic, such as glaciology or snow evolution. The project aims at providing a national cooperative platform to facilitate data access, provide processing tools and value-added products with support for non-expert users. However its challenge in the evolving context of the current and forthcoming national and international e-infrastructures, is to design a non-redundant service based on interoperations with existing services, and to cope with highly complex data flows due to the granularity of the data and its associated knowledge. For this purpose, the services offer by the pole will be built based on the needs expressed by the scientific community. This is the case of Ground Deformation Monitoring (GDM) service which we will present here. This service will be based on a CNES computing infrastructure hosting Sentinels products, and will offer catalogue access, HPC facilities and thematic computation services on inSAR and optical imagery. Computation services will give scientists access to DTM, displacement map times series, quality indicators and modelling tools. GDM is aimed at serving a wide panel of scientific fields, such as earthquake cycle studies, tectonics, volcanism, erosion dynamics, or anthropogenic deformations. It will contribute to the ESFRI EPOS research infrastructure implementation with an implication in the WP 12 -Satellite data-.