The aim of this WP is to create a Grid enabled Spatial Data Infrastructure (GSDI) so that the data necessary for the assessment of GEO Societal Benefit Areas, as well as the data produced within the project can be gathered and stored in an organized form on the Grid infrastructure and distributed across the Grid in order to provide a high performance and reliable access through standardized interfaces. Using the standardized technologies of the Grid we can provide a Single Information Space for environmental data in the Black Sea Catchment.
First a gap analysis will be made by all partners to analyze the state of development of SDI in the different countries within the Black Sea Catchment under the supervision of BSC PS and ICPDR partners. The recommendations derived from the gap analysis should aim at complementing the existing geographical information systems of the ICPDR and BSC. It will serve also to bring new partners from the Black Sea countries into the project in order to fill some thematic or technical gaps.
The proposed grid enabled system will require the creation of a Spatial Direct interface to load and download spatial data in different format and projections. Partners will therefore be able to make available existing sources of data more or less publicly available (e.g. historical climate data or geographic information), or newly collected data from sensors and satellites. This system will be fully compatible will development made on interoperability standards such as INSPIRE, GEOSS, UNSDI, OGC, SensorML or TML. Grid services can be used to replicate and distribute the data from source sites to other data centers to improve the availability but also the access performance.
We intend to base our work firmly on the experience that the EGEE project (and in particular its beneficiary CERN) has acquired in similar projects, but with non-geographic data (e.g. biomedical data). CERN also collaborated with UNOSAT to store satellite images and geographic metadata on the Grid. In particular, CERN has been providing the AMGA metadata service as part of the gLite middleware of the EGEE project that allows access on the Grid to databases storing GIS information. We intend to adapt this catalog and its extensive replication and federation features to provide a unified view of all available metadata.
EnviroGRIDS GSDI will allow also distributing intensive calculations such as those needed for hydrological modeling and calibrations on the largest computer network of the world.