



New Collaboration Among Geodesy Data Centers in Europe and the US Facilitates Data Discovery and Access

Fran Boler (1), Stuart Wier (2), Nicola D'Agostino (3), Rui R.M. Fernandes (4), Athanassios Ganas (5), Carine Bruyninx (6), and Benedikt Ofeigsson (7)

(1) UNAVCO, Geodetic Data Services, Boulder, United States (boler@unavco.org), (2) UNAVCO, Geodetic Data Services, Boulder, United States (wier@unavco.org), (3) Istituto Nazionale di Geofisica e Vulcanologia, Rome, Italy, (4) Instituto D. Luiz, University of Beira Interior, Covilha, Portugal, (5) National Observatory of Athens, Athens, Greece, (6) Royal Observatory of Belgium, Brussels, Belgium, (7) Iceland Meteorological Office, Reykjavik, Iceland

COOPEUS, the European Union project to strengthen the cooperation between the US and the EU in the field of environmental research infrastructures, is linking the US NSF-supported geodesy Facility at UNAVCO with the European Plate Observing System (EPOS) in joint research infrastructure enhancement activities that will ultimately advance international geodesy data discovery and access. (COOPEUS also links a broad set of additional EU and US based Earth, oceans, and environmental science research entities in joint research infrastructure enhancement activities.) The UNAVCO Data Center in Boulder, Colorado, archives for preservation and distributes geodesy data and products, including hosting GNSS data from 2,500 continuously operating stations around the globe. UNAVCO is only one of several hundred data centers worldwide hosting GNSS data, which are valuable for scientific research, education, hazards assessment and monitoring, and emergency management. However, the disparate data holdings structures, metadata encodings, and infrastructures at these data centers represent a significant obstacle to use by scientists, government entities, educators and the public. Recently a NASA-funded project at UNAVCO and two partner geodesy data centers in the US (CDDIS and SOPAC) has successfully designed and implemented software for simplified data search and access called the Geodesy Seamless Archive Centers (GSAC). GSAC is a web services based technology that is intended to be simple to install and run for most geodesy data centers. The GSAC services utilize a repository layer and a service layer to identify and present both the required metadata elements along with any data center-specific services and capabilities. In addition to enabling web services and related capabilities at the data center level, GSAC repository code can be implemented to federate two or more GSAC-enabled data centers wishing to present a unified search and access capability to their user community. In Europe, several institutions that are part of EPOS including University of Beira Interior (Portugal); Istituto Nazionale di Geofisica e Vulcanologia (Italy); National Observatory of Athens (Greece); RENAG, GeoAzur (France); Vedurstofa Islands (Iceland Meteorological Office), and EUREF Permanent Network Central Bureau (Belgium), each host data from GNSS station networks. These EPOS members have all implemented GSAC at their respective data centers for internal testing and/or public utilization. In the US, GSAC has been successfully used in both repository and federated implementations at three data centers, each maintaining their own local information architecture to manage their respective data and metadata holdings. These capacities of GSAC will also be utilized in the EPOS context. Lessons have been learned through the GSAC installations so far that show the way for augmenting data center information architecture to both maximize the capabilities of GSAC to allow unified data and metadata presentation for search and access.