



Geodesy Data and Metadata Integration Strategies for Collaborative Global Research Infrastructures

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Through multiple pathways, UNAVCO is collaborating with US and international partners to integrate geodesy-related research infrastructures. One of the earliest of UNAVCO's efforts at an integrated research infrastructure for geodesy was the Geodesy Seamless Archive Centers (GSAC) software, a web services-based data and metadata search and access system that was pioneered by UNAVCO and collaborators at Scripps and NASA. GSAC was adopted as an enabling technology in the early phases of the European Plate Observing System through the CoopEUS European and US initiative. GSAC is also a core piece of the infrastructure used in Dataworks for GNSS (Global Navigation Satellite System), a UNAVCO effort to build integrated GNSS data system components. In addition to GSAC, Dataworks has components that facilitate data download from a network of GNSS receivers, and data and metadata management. Dataworks has been deployed for capacity building in the Caribbean. The web services approach continues to be a major focus for UNAVCO and has been implemented within the NSF EarthCube Building Block project GeoWS, which takes the web services concept from an inter-domain infrastructure capability (across institutions but within geodesy) to the next level as a cross-domain (geodesy, seismology, marine geophysics) infrastructure capability through definition of common, standards-based vocabularies and exchange formats. In a separate effort focused on metadata, UNAVCO is working under the Data Centers Working Group of the International GNSS Service to establish metadata formats and exchange mechanisms using standards via the GeodesyML effort of Geosciences Australia and others for Open Geospatial Consortium web services for metadata.