



## **A Serviced-based Approach to Connect Seismological Infrastructures: Current Efforts at the IRIS DMC**

Tim Ahern and Chad Trabant

IRIS, Data Management System, Seattle, United States (tim@iris.washington.edu)

As part of the COOPEUS initiative to build infrastructure that connects European and US research infrastructures, IRIS has advocated for the development of Federated services based upon internationally recognized standards using web services. By deploying International Federation of Digital Seismograph Networks (FDSN) endorsed web services at multiple data centers in the US and Europe, we have shown that integration within seismological domain can be realized. By deploying identical methods to invoke the web services at multiple centers this approach can significantly ease the methods through which a scientist can access seismic data (time series, metadata, and earthquake catalogs) from distributed federated centers.

IRIS has developed an IRIS federator that helps a user identify where seismic data from global seismic networks can be accessed. The web services based federator can build the appropriate URLs and return them to client software running on the scientists own computer. These URLs are then used to directly pull data from the distributed center in a very peer-based fashion.

IRIS is also involved in deploying web services across horizontal domains. As part of the US National Science Foundation's (NSF) EarthCube effort, an IRIS led EarthCube Building Block's project is underway. When completed this project will aid in the discovery, access, and usability of data across multiple geoscience domains.

This presentation will summarize current IRIS efforts in building vertical integration infrastructure within seismology working closely with 5 centers in Europe and 2 centers in the US, as well as how we are taking first steps toward horizontal integration of data from 14 different domains in the US, in Europe, and around the world.