



Web service activities at the IRIS DMC to support federated and multidisciplinary access

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At the IRIS Data Management Center (DMC) we have developed a suite of web service interfaces to access our large archive of, primarily seismological, time series data and related metadata. The goals of these web services include providing: a) next-generation and easily used access interfaces for our current users, b) access to data holdings in a form usable for non-seismologists, c) programmatic access to facilitate integration into data processing workflows and d) a foundation for participation in federated data discovery and access systems. To support our current users, our services provide access to the raw time series data and metadata or conversions of the raw data to commonly used formats. Our services also support simple, on-the-fly signal processing options that are common first steps in many workflows. Additionally, high-level data products derived from raw data are available via service interfaces. To support data access by researchers unfamiliar with seismic data we offer conversion of the data to broadly usable formats (e.g. ASCII text) and data processing to convert the data to Earth units. By their very nature, web services are programmatic interfaces. Combined with ubiquitous support for web technologies in programming & scripting languages and support in many computing environments, web services are very well suited for integrating data access into data processing workflows. As programmatic interfaces that can return data in both discipline-specific and broadly usable formats, our services are also well suited for participation in federated and brokered systems either specific to seismology or multidisciplinary. Working within the International Federation of Digital Seismograph Networks, the DMC collaborated on the specification of standardized web service interfaces for use at any seismological data center. These data access interfaces, when supported by multiple data centers, will form a foundation on which to build discovery and access mechanisms for data sets spanning multiple centers. To promote the adoption of these standardized services the DMC has developed portable implementations of the software needed to host these interfaces, minimizing the work required at each data center. Within the COOPEUS project framework, the DMC is working with EU partners to install web services implementations at multiple data centers in Europe.