Web Services at the IRIS DMC
Tim Ahern, Linus Kamb, Joanna Muench • IRIS Data Management Center

IRIS has always been a leader in advancing the use of enabling technologies within the seismological community, including the development and adoption of a comprehensive data file format and tools, web browser-based access mechanisms, distributed archive access, and CORBA-based programmatic interfaces into the archive. The IRIS Data Management Center continues in that role with the development of web services-based interfaces and services.

The adoption of web services answers two important demands in the current scientific research environment. While the Internet has made numerous positive changes in the ways in which scientific efforts are carried out, the prevalence of malicious software threatens to dampen this expansion by limiting many types of Internet access in the form of firewalls. Web services play an important role in by enabling programmatic interfaces over the typically less-restricted http protocol. In addition, web service clients can be built in a wide variety of computer languages and don’t require advanced programming skills to successfully implement. Due to these factors, we feel that web services are the components on which a broader community-oriented service framework can be built.

Current efforts at the DMC include a web service front-end to the CORBA-based Data Handling Interface (DHI-WS), a framework to support time-series processing (seismoproc), and the Uniform Product Distribution System (UPDS). The DHI-WS service provides a subset of the DHI interface to provide the commonly accessed DHI functionality to clients behind firewalls. Seismoproc enables the publishing of seismic data processing algorithm implementations for use by external client applications. UPDS will provide a coherent web services-based system to manage the submission, searching, and access of USArray XML-based Data and Informational Products.