

Web services-based access to SRS

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The continuing increase in the volume and diversity of life sciences data poses a considerable challenge to scientists and informaticians alike, particularly when data is widely distributed and accessed in different ways. This problem is addressed by the SRS data integration platform (Etzold, T., et al., in «Bioinformatics: Managing Scientific Data», Lacroix, Z. and Critchlow, T. (eds), Morgan Kaufman, 2003), which provides a flexible and extensible architecture for integration of heterogeneous data sources and analysis tools. As supplied, SRS currently supports access to over 70 data sources and 150 analysis tools, including the EMBOSS package, but can be extended to other sources.

Access to data sources and analysis tools using SRS is both rapid and highly flexible, allowing queries to be composed across and between data sources, and data from heterogeneous, linked sources to be retrieved in user-defined data structures. Since SRS 8, a web services architecture has been used to provide access to this functionality from a variety of client applications. The current SRS client-server architecture will be described in the context of the JSP-based web interface and the SRS WSOjects client API package.

The web services interface provided by SRS has been designed to provide fast and flexible access from the web interface and from SRS WSOjects-based applications. This does not always fulfil the requirements imposed by the many possible usage scenarios, or for access by third party applications. As an extension of the current

architecture, research efforts are underway to develop an infrastructure for development and deployment of novel web services interfaces for specific applications. A standards-based approach is proposed that uses web services technology and additional supporting services to provide a fast, flexible way of creating tailored, domain-specific access to SRS. This will be discussed in the context of the EMI-CD research project, which aims to develop a systems biology platform using SRS as an information layer (<http://www.molgen.mpg.de/~EMI-CD/>; funded by the European Commission within its FP6 Programme, under the thematic area "Life sciences, genomics and biotechnology for health", contract number LHSG-CT-2003-503269).