Using Open and Interoperable Ways to Publish and Access LANCE AIRS Near-Real Time Data

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\section*{Introduction}

The Atmospheric Infrared Sounder (AIRS) Near-Real Time (NRT) data from the Land Atmosphere Near-real Time Capability for EOS (LANCE) element at the Goddard Earth Sciences Data and Information Services Center (GES DISC) provides information on the global and regional atmospheric state, with very low temporal latency, to support climate research and improve weather forecasting. An open and interoperable platform is useful to facilitate access to, and integration of, LANCE AIRS NRT data.

As Web services technology has matured in recent years, a new scalable Service-Oriented Architecture (SOA) is emerging as the basic platform for distributed computing and large networks of interoperable applications. Following the provide-register-discover-consume SOA paradigm, this presentation discusses how to use open-source geospatial software components to build Web services for publishing and accessing AIRS NRT data, the metadata relevant to retrieving and discovering data and services in the catalogue systems, and implement a Web portal to facilitate users' consumption of the data and services.

\section*{AIRS NRT Data Services}

OGC Web Coverage Service (WCS) (\url{http://docs.oasis-open.org/wcs/1.0/errata-01/cover/cover1.0-errata-01.html}) provides common interfaces to access customised multi-dimensional and multi-temporal geospatial data as a "coverage". It supports the following operations:

- \texttt{GetCapabilities}: returns an XML document with the service metadata and brief description of the data collection.
- \texttt{DescribeCoverage}: returns a full description of one or more coverages.
- \texttt{GetCoverage}: allows retrieval of coverages with customised domain and range subsets, formats and projections.

\section*{AIRS NRT Data Registration and Discovery}

OGC WCS provides service-level metadata and information management services to capture domain knowledge and classify service instances. This specification central repository. ESIP Data Portal is a rich Web-based geographic application designed for access to, and visualization of, AIRS NRT data through OGC WCS and WMS.