

## **A Distributed Component Framework for Science Data Product Interoperability**

Daniel Crichton, Steven Hughes  
Dan.Crichton@jpl.nasa.gov Steven.Hughes@jpl.nasa.gov  
~~NASA~~ Jet Propulsion Laboratory  
California Institute of Technology  
4800 Oak Grove Drive  
M/S 171-264  
Pasadena, California 91109

*Abstract* - Correlation of science results from multi-disciplinary communities is a difficult task. Traditionally, data from science missions is archived in proprietary data systems that are not interoperable. The Object Oriented Data Technology (OODT) task at the Jet Propulsion Laboratory is working on building a distributed product server as part of a distributed component framework to allow heterogeneous data systems to communicate and share scientific results. These components communicate using a standard metadata interchange language. This provides an excellent vehicle for turning data into information and allowing for data in unique formats to be correlated and exchanged. Advances in Internet and distributed object technologies provide an excellent framework for sharing data across multiple data systems. The product server component of the OODT framework allows for results to be interchanged between native data system formats and the framework using an XML-based query language. The product server component wraps data system interfaces, which abstracts away the data system unique interfaces, and provides a scalable architecture by providing query handlers that facilitate the interchange of queries and results. This paper, the second in a series on the OODT task, focuses on the development of the product server component using the Planetary Data System (PDS) as an example system. This continues the discussion of an enterprise framework that allows for data system interoperability across multiple science disciplines.