Augmenting Basic Web Services with Middleware Services and Interfaces

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Application Users
Application users are general users looking for information and knowledge derived from LP DAAC data sets. They will interact with high-level, web-based user interfaces.

Behind the scenes, the application pages will utilize the Data Analysis Service layer and the Data Interface layer to power the applications. The Applications will allow for general public users and educational institution users to see the value of LP DAAC data when investigating Earth Science data gathered through all the Earth observing satellites which archive data at the LP DAAC.

Data Analysis Services Users
Data Analysis Services users are looking for information derived from the foundational data. Users in this tier want to know specifics about the measurements of the data and less about its structure and arrangement.

Data Analysis Services will deliver information which has been processed, analyzed, formatted, and structured in ways specified by the users through the higher-level service layers. Data Analysis Services users need to know scripting, programming, and HTTP service interaction details, but these services will be simpler to interact with and require less low-level information to return information the users request.

Application User Interface
- Browser Based Applications
- Anomaly Detection Tool
- Data Extraction Tool

Service Interface (Web API)
- Multiple Service Endpoints
- Used to fulfill data requests
- Used fulfill product requests

Data Interface Level Users
Data Interface Level users are users comfortable working directly with low level services like OPeNDAP. They can formulate the complex URLs required to retrieve and format data from OPeNDAP for utilization in their science and analysis. Using these low level services requires knowledge of scripting, programming, HTML request formatting and execution, and the valid data definitions and values.

Science Programmers, Data Scientists, and Software Engineers are potential LPDAAC Data Interface Level users. The main form of interaction at this level will be automated machine-to-machine interaction to dynamically pull and format data for deep query analysis and product development.

Data Pool
- OPeNDAP Cluster
- LP DAAC Data Pool
- Other EROS data resources

Service Layer
- Software Development Kit (SDK)
  - Scripts
  - Libraries
  - Various Tools

End Point
- OPeNDAP
- Data Interface
- Load balanced cluster
- LP DAAC Data Pool
- Other EROS data resources

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