A possible future configuration of these components

**Motivation**
- One component of a potential GEOSS-AI system, in the continuum between observations and end point research, applications, and decision making, would be one that enables transparent data discovery and access by users. Such a component might be effected via the system’s “data agents.”
- Presumably, some kind of data cataloging has already been implemented, e.g., in the GEOSS Common Infrastructure (GCI).
- Both the agents and cataloging could also leverage existing resources external to the system.
- The system would have some means to accept and integrate user-contributed agents.
- Another component would be one that facilitates browsing/visualization of the data, as well as some basic analyses, i.e., “visualization agents.”

**Three ongoing projects at the NASA Goddard Earth Sciences Data and Information Services Center (GES DISC) provide possible proto-examples of potential data access and visualization components of a cloud-based GEOSS-AI system.**

**Proto-examples of GEOSS-AI Components**

**Data Rods Project**
- Original Data Archive
- Reorganized Data Rods, pre-generated and on-the-fly (OTF)
- Removed longstanding barrier to accessing NASA data (i.e., accessing archived time-step array data as point-time series) for selected variables of the North American and Global Land Data Assimilation Systems (NLDAS and GLDAS, respectively) and other NASA data sets.

**Data Rods via GEOSS Project**
- Leveraging GEOSS and as part of GEOSS Water Services Project, to help provide access to data rods for non-NASA users.

**Federated Giovanni Project**
- Giovanni currently provides Web-based exploratory analysis for GES DISC data.
- Federated Giovanni extends this to 4 other EOSDIS Data Centers.
- Giovanni curators selectively import other data variables (database and data) from Giovanni peers.
- Standards and conventions enable federated sharing of any data compliant with
  - OpenSearch
  - OPeNDAP
  - Climate-Forecast
- On-demand Giovanni instantiation in the cloud

**Notional Configuration of GEOSS-AI Components**

**LP DAAC**
- Giovanni User
- GEOSS User
- MODAPS
- BAGS
- OBP
- PO.DAAC
- OBPG
- LP DAAC

**Data Analysis Component**
- Data Rod
- Data Curtains
- Data Cube
- WGISS Integrated Catalog
- Common Metadata Repository
- Data Analysis Component
- Data Modeling Component
- Data tower
- Data Analysis Service

**Web map for time series**
- Giovanni currently provides Web-based exploratory analysis for GES DISC data.
- Federated Giovanni extends this to 4 other EOSDIS Data Centers.

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