The GES DISC World

The GES DISC Approach
- Engage Users
  - Communications must be frequent
  - Dedicated points of contact to gather/provide information are identified
- Build economically
  - Look for reuse, ways to save funds
  - Willing to take calculated risks; Otherwise low risk
- But also, build to integrate new technologies
- Engage employees
  - Ensure that employees realize the value of their contributions
  - Treat all employees equally

What We Do
- Science User/Data Support
  - Receive and disposition data, science, service requires daily
  - Understand and develop new research driven tools and services
  - Analyze metrics to address research need priorities
  - Perform Outreach, Documentation, Capturing data preservation artifacts
- Mission Support
  - Build tailored archive, distribution, service systems to requirements of new project
  - Develop IDOK, Ensure formats and metadata guidelines are met
  - Build/have systems cost effectively to spec, Interfaces work
  - Support/verify Unix/Dot/IDOKr identifiers, Landing Pages
- Software Engineering
  - Lead overall system architecture, planning/implementing
  - Implement/monitor flexible system tools and services to enhance data usability; to accomplish evolving user needs
  - Employ advanced SW Engineering techniques (Agile Methodologies)

Stewarding Mission Data

Current Operational Services/Tools
- Giovanni – Data Discovery, Visualization and Exploration
- WISER – Data search and access
- Simple Subset Wizard – Cross DISC interface to provide subsetting
- Data Recipes
- OpenDAPI & GISDS Data Server

Leadership Activities
- ESDISG Participation
  - Leader – Virtual Collections (Completed)
  - Team leader – (Current)
  - Data Interoperability (Co-lead)
  - Level 2 Data Information (Steering)
  - Atmospheric Science User Forum (Co-lead, Lead)
- Participation
  - Data Recipes (Completed)
  - Data Quality, Network Web Services Best Practices, SP/H-DAPI, Search Relevance

What We Do
- Infrastructure
  - Perform System Administration (upgrades, patches, installations, backups, etc.) for main computers and database/ops
  - Security, web, system configuration management
  - Virtual Machine to support SA
  - Implement and analyze cloud computing application prototyping
- Operations
  - Ensure data ingest, archive, and distribution
  - Apply system monitoring tools to enhance operations efficiency
- Management
  - Manage a diverse staff and set of functions: Contracts, cooperative agreements, budgets, ~60 people, new business, system ownership, etc.

Successes
- Up to date on all Mission reprocessing and documentation
- Successfully released first data products produced for newest missions: GSM, OCO-2, SNPP
- Completed transition to dynamic web page capability, driven by EMR web documentation
- Released new version of Giovanni (smoothing maps, histograms, download GeoMaps, etc.)
- Delivered the first version of Unified User Interface with support for faceted navigation
- Completed population of HRDSS data and documentation into preservation system; Other datasets in the works
- Deployed User Registration for GES DISC services and data access
- Recovered heritage data (Nimbus, others) from 1960’s vintage media
- GES DISC is now a recognized data repository by Scientific Data, an open-access, peer-reviewed journal for descriptions of scientifically valuable data sets

Best Practices
- Implement in response to user driven needs
  - LADS, but also user feedback, user surveys, science meetings
- Seek opportunities for collaboration
  - ESDISG driven, but also new standalone initiatives
- Strategically utilize technology to enhance efficiency in the face of growing archives and number of users
  - Rapidly understand/foresee looking forward relevant information technologies, but also engage science/data users and information technologies
- ‘Partner’ with users and producers
  - Remain expert in Atmospheric, Hydrology, Climate Modeling data (both NASA and others) and data management services, but also engage science research and applications users to better understand their needs, and improves GES DISC services
- Publish results for the betterment of the information science

GES DISC Vision
To enable researchers and educators maximize knowledge of the Earth by engaging in understanding their goals, and by leading the advancement of remote sensing information services in response to satisfying their goals

Conceptual Model

Earth Observation Data Products

The GES DISC is one of 12 Discipline-oriented NASA Data Centers

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Goddard Earth Science Data and Information Center (GES DISC)
http://disc.sci.gsfc.nasa.gov
Steve Kempler
NASA Goddard Space Flight Center

Who We Are: Summary of Expertise
- Science Data Management – Ph.D. scientists in applicable earth science disciplines who collaborate with researchers to develop data reduction/analysis tools to facilitate information extraction and multi-mission data coordination; Who understand how data was generated and provide user support
- Mission Support – Engineers who understand the requirements for costing and saving information management systems for new or existing missions
- Software Engineering – Engineers who understand the most effective advanced technologies to further mature data management system usability and efficiency
- Operations – I & VS (24 X 7 call) staff that understands the importance of, and ensures, continuous data ingest, processing, archive and distribution

WDS Contacts: Steven.Kempler@nasa.gov

World Data System Members’ Forum – Sept. 11, 2016, Denver, CO

WOS Contacts: Steven.Kempler@nasa.gov

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