NASA Earth Observing System Data and Information System (EOSDIS)

Mission of EOSDIS
- Process, archive, and distribute Earth science satellite, suborbital, field campaign and other data
- Implement NASA’s free and open data and information policy
- Ensure access to data to enable the study of Earth from space to advance Earth system science to meet the challenges of climate and environmental change.
- Promote interdisciplinary use of EOSDIS, including data products, data services, and data handling tools by a broad range of existing and potential user communities

EOSDIS Distributed Active Archive Centers (DAACs) are World Class Data Centers
- Discipline Oriented (e.g., Atmospheric Composition, Cryosphere, Ocean Biology)
- Co-located with science facilities and mission instrument teams at NASA centers, other government agencies, and universities according to their expertise
- Store Earth science mission data as well as field campaign data, and socioeconomic data - in a variety of measurements, resolutions, and formats
- Provide reliable, robust services to users whose needs may cross the traditional boundaries of a science discipline, while continuing to support the particular needs of the users within the discipline communities.
- Communicate frequently through wikis, telecons, meetings
- Provide mechanisms for community involvement
- Coordinate specific data and services

Successes
- Serving a large (>2.5 Million), diverse, world-wide community of users
- Managing 12 DAACs and 12 Science Investigator-led Processing Systems (SIPS) (Established 5 new SIPS in 2015 to process EOS-continuity products from Suomi National Polar Partnership (SNPP) satellite data)
- Earthdata website (http://earthdata.nasa.gov)
  - Comprehensive, sustainable, and evolvable
  - Unified view of NASA’s Earth science data system resources
  - Links to various ways to access data , related content and external sites
- Common User Registration System across DAACs
- Consistently high customer satisfaction
- Well-established process for DOI assignments
- GIIS/Worldview – Open Source Software; averaging >100K views/month
- Webinar series – 63 webinars; 1,000’s of attendees; >10,000 viewers of youtube recordings

Challenges
- Big data – volume, variety, velocity, veracity
- Serving diverse user community
- Accommodating diverse data providers
- Encouraging the use of standards
- Preservation and stewardship for missions that age
- Resource control across diverse organization
- Responding to changing technology landscape

Best Practices
- Annual user surveys – American Customer Satisfaction Index
- DAAC User Working Groups
- Clear interface specifications and configuration management process
- Earth Science Data System Working Groups provide community inputs to EOSDIS evolution (10 WGs active during 2016-2017)
- Commercial Cloud Prototyping
- Cross-DAAC collaborative projects, weekly telecons, technical interchange meetings (e.g., User Needs, System Engineering)
- EOSDIS Standards Office – assess standards; maintained approved list for use in NASA Earth Science Data Systems
- Preservation Content Specification adopted as requirement for new missions
- Data Citations and Acknowledgements – guidance to DAACs and users - https://earthdata.nasa.gov/earth-observation-data/data-citations-acknowledgements
- Collection of Data Recipes for helping users - https://earthdata.nasa.gov/user-resources/data-recipes

Find out More
EOSDIS Website: https://earthdata.nasa.gov

NASA Headquarters
Earth Science Division at NASA HQ
Earth Science Data and Information System Project at NASA Goddard Space Flight Center
Distributed Active Archive Centers (DAACs)

Organization

World-wide Distribution – Free & Open
Large & Growing Archive & Distribution Volumes
Successes
- High Customer Satisfaction
- World-wide Distribution
- Data Transformations to Suit End-User Application Needs

Challenges
- API
- Other Clients
- Other Clients

Best Practices
- Global Imagery Browser System (GIBS)/WorldView – Full Resolution Browse

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More
NASA Earthdata - https://www.nasa.gov/earthdata
NASA Earthdata - https://twitter.com/NASAEarthdata
Search for NASAEarthdata
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World Data System Members’ Forum – Sept. 11, 2016, Denver, CO
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