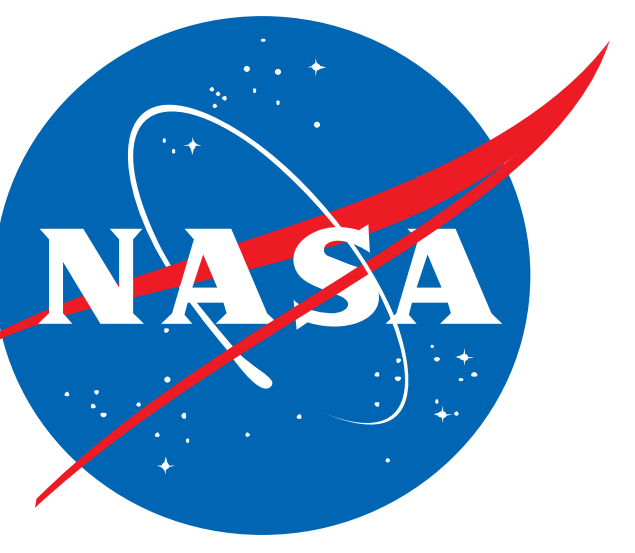


Managing Sustainable Data Infrastructures

The Gestalt of EOSDIS

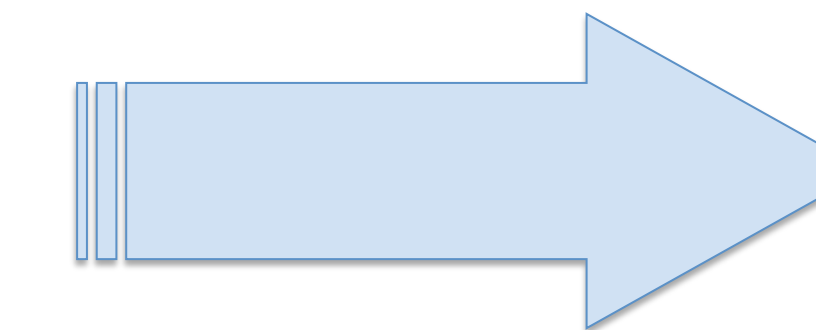


Jeanne Behnke, Dawn Lowe, Francis Lindsay, Chris Lynnes, Andrew Mitchell
 NASA Goddard Space Flight Center

Guiding Principles for Partnership

- Established configuration of partners managed by a NASA Project: Earth Science Data and Information Systems Project at Goddard Space Flight Center
- Employ formal management processes; established approach for fiscal responsibility using
- De-centralize management authority. Partners manage themselves following NASA guidelines
- Continuous risk management across program
- Loosely coupled partnership, guided by a common purpose
- Use of standards to guide data structures and services
- Use Open Source to allow software sharing and provide a EOSDIS Code Collaboration site
- Enable collaboration through communicating through telecons, face-to-face meetings, robust Earthdata WIKI and the Earthdata Code Collaborative
- Use metrics to evaluate performance
- Collaborate on development of structural elements of the system, e.g. metadata model, user support services
- Promote usage and adoption of high-utility tools across all elements
- Foster and enable common user interfaces and experiences across the system
- Plan for continuous improvement

EOSDIS is greater than the sum of its parts.



EOSDIS is developed and sustained by NASA through many partnerships, directly through contracts and indirectly through common interfaces and infrastructures. All components in the infrastructure have responsibility for some part of the whole.

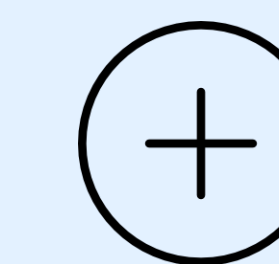


Power of Partnerships

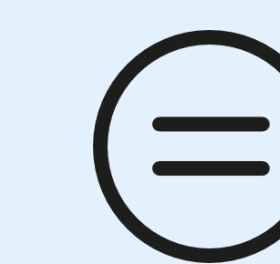
Partners	Collaboration	Super Power
Earth Observatory	Worldview Event Browser	Event database (Eonet)
Alaska Satellite Facility	Cloud storage prototypes	Cloud storage experience
NOAA, USGS	Big Earth Data Initiative	Common Framework for Earth Observation Data
GES DISC	Giovanni in the cloud	Web analysis platform with broad user base
J. Schnase	Climate Analytics as a Service	Earth science analytics expertise
International agencies	Common Metadata Repository collections	Metadata for >20,000 collections
OCIO Computer Services Service Organization	NASA-Compliant General Application Platform + cloud prototypes	NASA Authorization to Operate in Amazon cloud
European Space Agency	MERIS and Sentinel data distribution	Extended satellite coverage

Solution to Building Sustainable Data Infrastructures

Distributed Responsibility

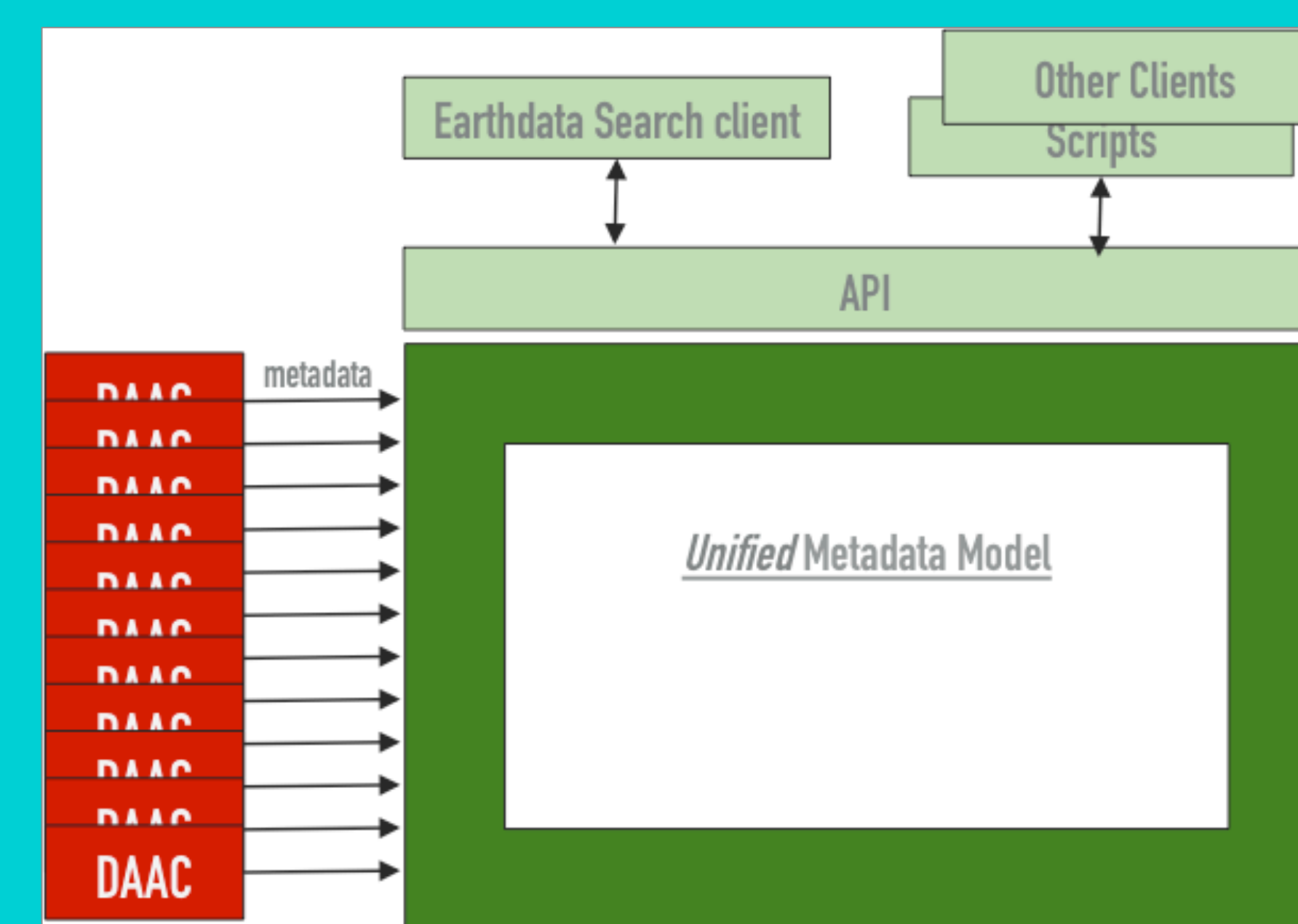


Common Frameworks

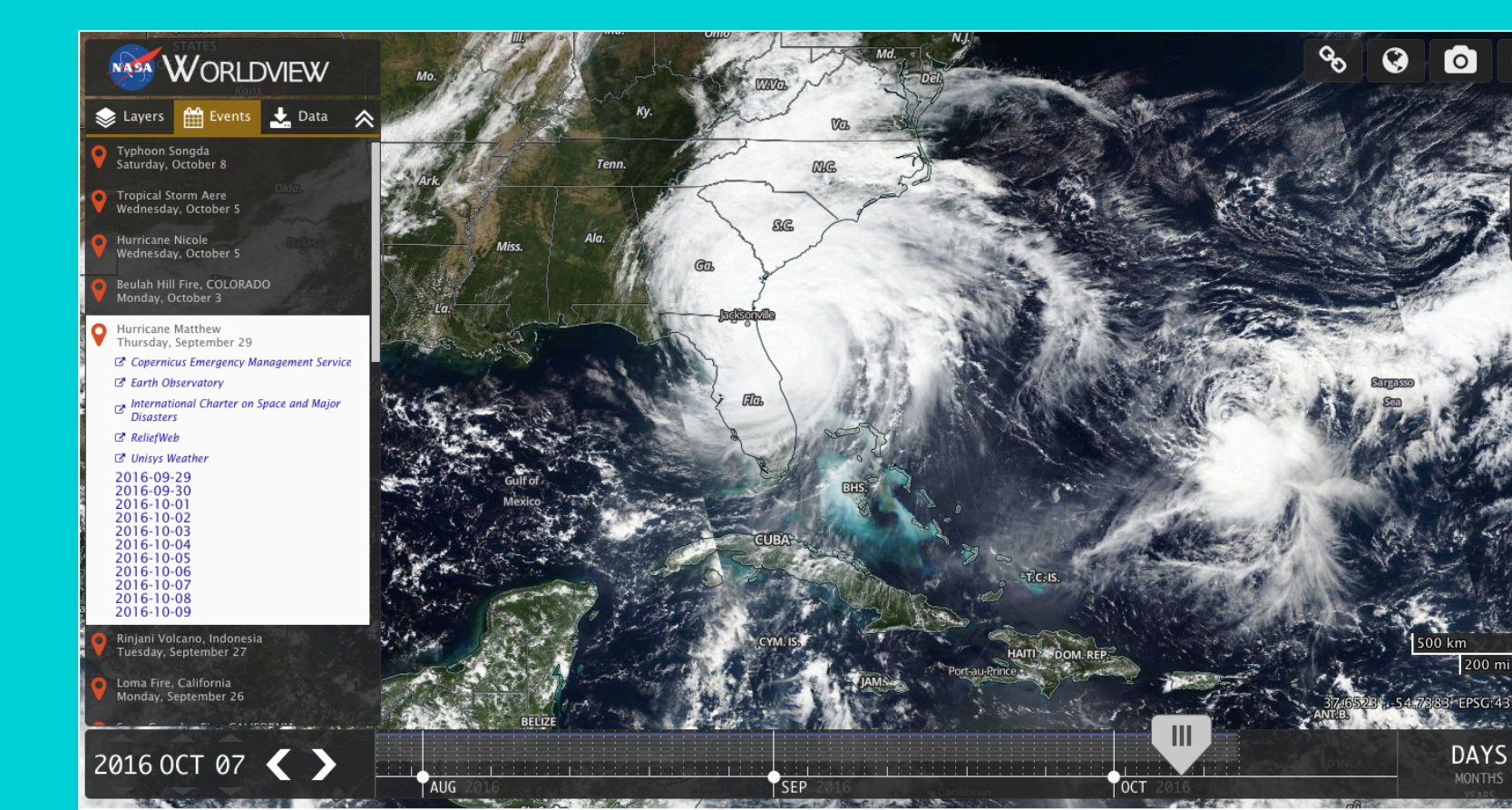


Federation

Common Metadata Infrastructure



Cross-system Technologies: GIBS



Category	Item	Imp.	Pub	TEBOS	ASDC	ASIF	COOH	GES DISC	GHRC	LAADS LP	NSIDC	OB	ORNL	PO	SEDAC
Cloud	ASDP	0.8	10%	R	R	R	R	R	R	R	R	R	R	R	R
Cloud	CATEES	0.5	36%												
Cloud	Cumulus	1.0	8%	R	R	R	R	R	R	R	R	R	R	R	R
CMR	UIMC Population	1.0	90%	C	R	R	R	R	R	R	R	R	R	R	R
CMR	UIMC Population	1.0	97%	C	C	C	C	C	C	C	C	C	C	C	C
CMR	NET	0.8	9%	R	R	R	R	R	R	R	R	R	R	R	R
CMR	Client	0.9	31%	C	C	C	C	C	C	C	C	C	C	C	C
CMR	Metadata Quality Improvement	1.0	7%	R	R	R	R	R	R	R	R	R	R	R	R
Communication	EOSDIS Slack	0.7	67%	C	C	C	C	C	C	C	C	C	C	C	C
DAAC Ingestion	Earthdata Drive	0.8	3%												
DAAC Ingestion	Giovanni	0.8	37%	C	C	C	C	C	C	C	C	C	C	C	C
DAAC Ingestion	Single Subject Wizard	0.6	15%	C	R	R	R	R	R	R	R	R	R	R	R
DAAC Ingestion	USGS	0.6	9%	R	R	R	R	R	R	R	R	R	R	R	R
DAAC Ingestion	App/EASIS	0.8	8%	C	C	C	C	C	C	C	C	C	C	C	C
Earthdata	Conduct	0.3	2%	R	R	R	R	R	R	R	R	R	R	R	R
Earthdata	Search Portals	0.8	9%	R	R	R	R	R	R	R	R	R	R	R	R
Earthdata	Developer Portal	0.8	2%	R	R	R	R	R	R	R	R	R	R	R	R
Earthdata	Signin	0.7	62%	C	C	C	C	C	C	C	C	C	C	C	C
Earthdata	EUJ	0.5	9%	R	R	R	R	R	R	R	R	R	R	R	R
Earthdata	Light	1.0	51%	C	C	C	C	C	C	C	C	C	C	C	C
Earthdata	Kayaks	0.5	64%	C	C	C	C	C	C	C	C	C	C	C	C
Earthdata	Forum	1.0	32%	R	R	R	R	R	R	R	R	R	R	R	R
Earthdata	Stac Cloud	1.0	67%	C	C	C	C	C	C	C	C	C	C	C	C
Earthdata	Wiki	1.0	22%	C	R	R	R	R	R	R	R	R	R	R	R
Code Collab	GitHub	0.5	15%	C	R	R	R	R	R	R	R	R	R	R	R
Code Collab	Jira	0.5	66%	C	R	R	R	R	R	R	R	R	R	R	R
Code Collab	Java	0.1	20%	C	R	R	R	R	R	R	R	R	R	R	R
Code Collab	Open Scouting	1.0	25%	C	R	R	R	R	R	R	R	R	R	R	R
EOSDIS	Time Series	0.5	4%												
EOSDIS	Open Scouting	0.8	44%	C	C	C	C	C	C	C	C	C	C	C	C
EOSDIS	Customer Relationship Mgr	0.5	39%	C	C	C	C	C	C	C	C	C	C	C	C
EOSDIS	Customer Relationship Mgr	0.5	47%	R	R	R	R	R	R	R	R	R	R	R	R
EOSDIS	Standard Data Formats	0.5	27%	C	C	C	C	C	C	C	C	C	C	C	C
EOSDIS	Search Relevancy	0.5	39%	C	C	C	C	C	C	C	C	C	C	C	C
EOSDIS	Software Catalog	0.5	27%	C	C	C	C	C	C	C	C	C	C	C	C
Focus Group	Data Transformation	1.0	4%												
Infrastructure	Customer Relationship Mgr	0.5	4%												
Infrastructure	Metadata	1.0	62%	C	R	R	R	R	R	R	R	R	R	R	R
Interoperability	EOSDIS Standards Office	1.0	0%	C	C	C	C	C	C	C	C	C	C	C	C
Interoperability	Standard Data Formats	1.0	65%	C	R	R	R	R	R	R	R	R	R	R	R
Interoperability	OPeNAP	0.8	52%	R	R	R	R	R	R	R	R	R	R	R	R
Interoperability	Service Reliability	1.0	4%												
Metrics	EMS	1.0	100%	C	C	C	C	C	C	C	C	C	C	C	C
Metrics	Metrics Dashboard	0.7	19%												
Metrics	Service Metrics	0.9	4%												
Planning	Tool Development	1.0	13%	C	C	C	C	C	C	C	C	C	C	C	C
Planning	Cost Governance	1.0	100%	C	C	C	C	C	C	C	C	C	C	C	C
Requirements	User Needs Analysis	1.0	63%	C	C	C	C	C	C	C	C	C	C	C	C
Requirements	CMR	1.0	100%	R	R	R	R	R	R	R	R	R	R	R	R
Requirements	Classic Views	1.0	4%												
UX	Common Subject Interface	1.0	3%												
UX	UX Consistency	0.7	2%												
UX	Documentation	1.0	4%												
UX	UX Consistency	1.0	1%												

Common Frameworks

EOSDIS Federation Dashboard

NASA's Earth Observing System Data and Information System (EOSDIS)

- Has provided public access to NASA Earth Science data since the 1990s
- Delivered over 1.5 Billion data products to over 2.9 Million science users from around the world has over 17 Petabytes of Earth science data archived
- Provides data services for NASA and related missions from orbiting, airborne, field campaign and related investigations
- Has a robust stewardship program for maintaining NASA's data assets

The centralized entrance point to the NASA Earth Science data collection can be found at : <http://earthdata.nasa.gov>