

# ESDIS Standards Office (ESO)

ESO assists ESDIS in formulating standards policy for NASA Earth Science Data Systems (ESDS), coordinates standards activities within ESDIS, and provides technical expertise and assistance with standards related tasks within the NASA Earth Science Data System Working Groups (ESDSWG).

## Potential Future Standards & Practices

- Emerging standards and practices in the area of cloud computing
  - Asynchronous services and workflows
  - Paradigm changes for science data analytics
  - Ways to assimilate new data
  - Congruent spatio-temporal views
  - Cloud Optimized GeoTIFF
- Perceived Community Needs
  - JSON Encodings for Spatial Data

## ESDIS Standards Process

1. Individuals and organizations contact ESO with suggestions for existing or developing standards and practices.
2. ESO helps submitters create and refine submissions, then conducts an internal review.
3. Community input is gathered and if favorable, the document is approved for use in NASA ESDS.

## ESO Standards Interest Group

ESO leads the Standards Interest Group (SIG) to maintain broad communications among stakeholders about ESDIS standards activities. ESO hosts webinars, telecons and meetings of the SIG to exchange information, to provide standards coordination, and identify emerging standards that may be useful in NASA Earth science data systems.



<https://wiki.earthdata.nasa.gov/display/ESO/ESO+Standards+Interest+Group>

ESO maintains a list of requirements for Airborne and Satellite Mission Data Systems and a list of standards and practices approved for use in NASA Earth Science Data Systems.

## Requirements

- ISO 19115 Geographic Information Metadata Standard
- NASA Earth Science Data Preservation Content Specification
- Digital Object Identifiers (DOIs) for EOSDIS

## Standards and Practices

### Data Format

- HDF 5
- HDF EOS 5
- NetCDF Classic
- NetCDF-4/HDF5 File Format
- OGC KML
- ASCII Data Formats
  - ASCII File Format Guidelines for Earth Science Data
  - ICARTT File Format Standards (V2.0)
  - SeaBASS Data File Format
  - NASA Aerogeophysics ASCII File Format Convention
- HDF 4 (deprecated in favor of HDF 5)
- HDF EOS 2 (deprecated in favor of HDF EOS 5)

### Metadata

- Unified Metadata Model (UMM)
- GCMD Directory Interchange Format (DIF)
- Global Change Master Directory (GCMD) Keywords
- ECHO Metadata Standard
- NetCDF Climate and Forecast (CF) Metadata Conventions

### Discovery and Access

- The Data Access Protocol - DAP 2.0
- OpenGIS @ Web Map Service Version 1.1.1
- CEOS OpenSearch
- Polling with Delivery Record (PDR) Mechanism

### Interoperability

- Dataset Interoperability Recommendations for Earth Science
- Mapping HDF5 to DAP2

### Under Development or Review

- Data Quality Recommendations & Data Quality Management Plan Templates
- Dataset Interoperability Guidelines, Part 2
- GeoTIFF
- YAML Encoding ASCII format for Earth Science Data
- Search Relevance Recommendations for Earth Science

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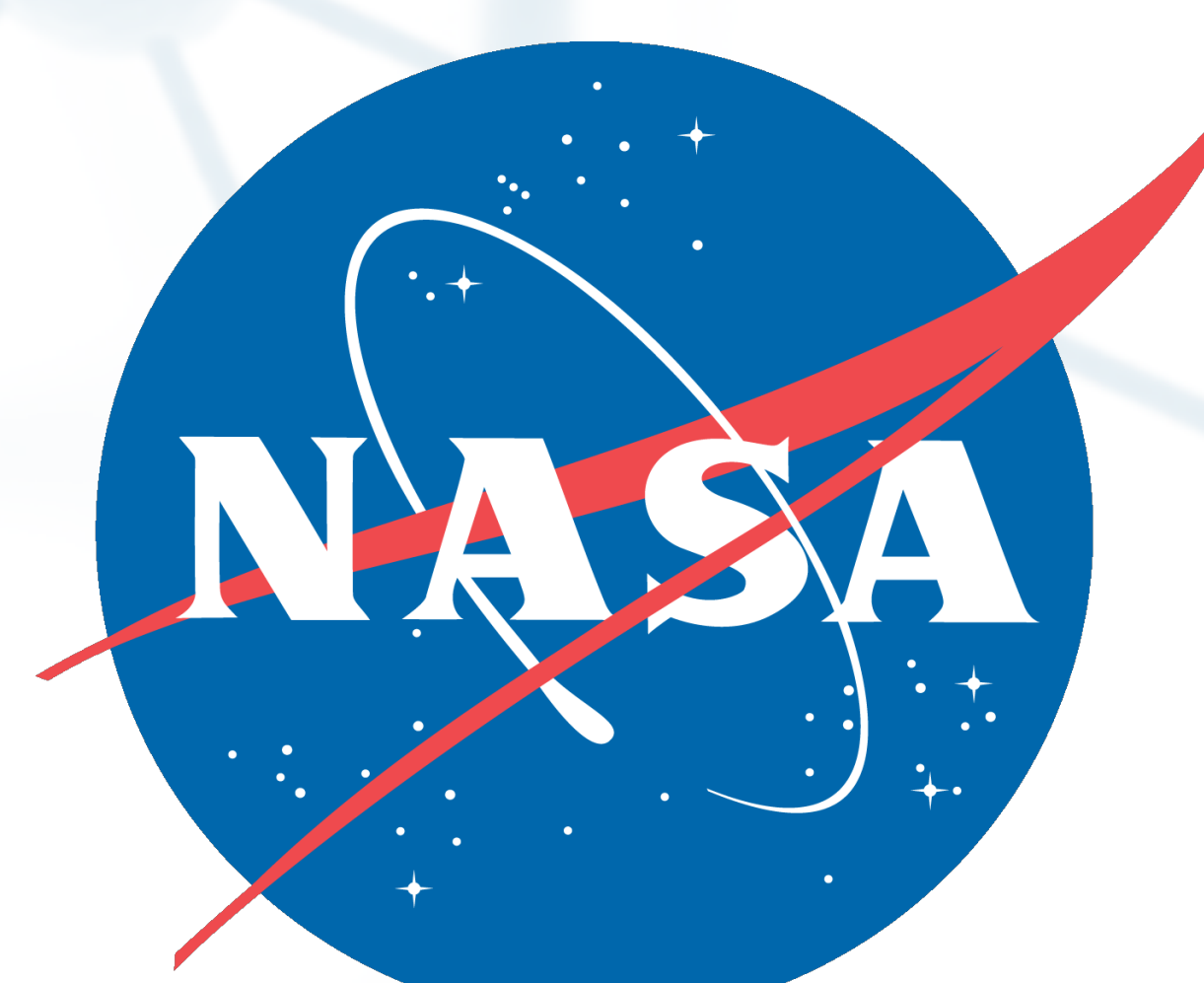
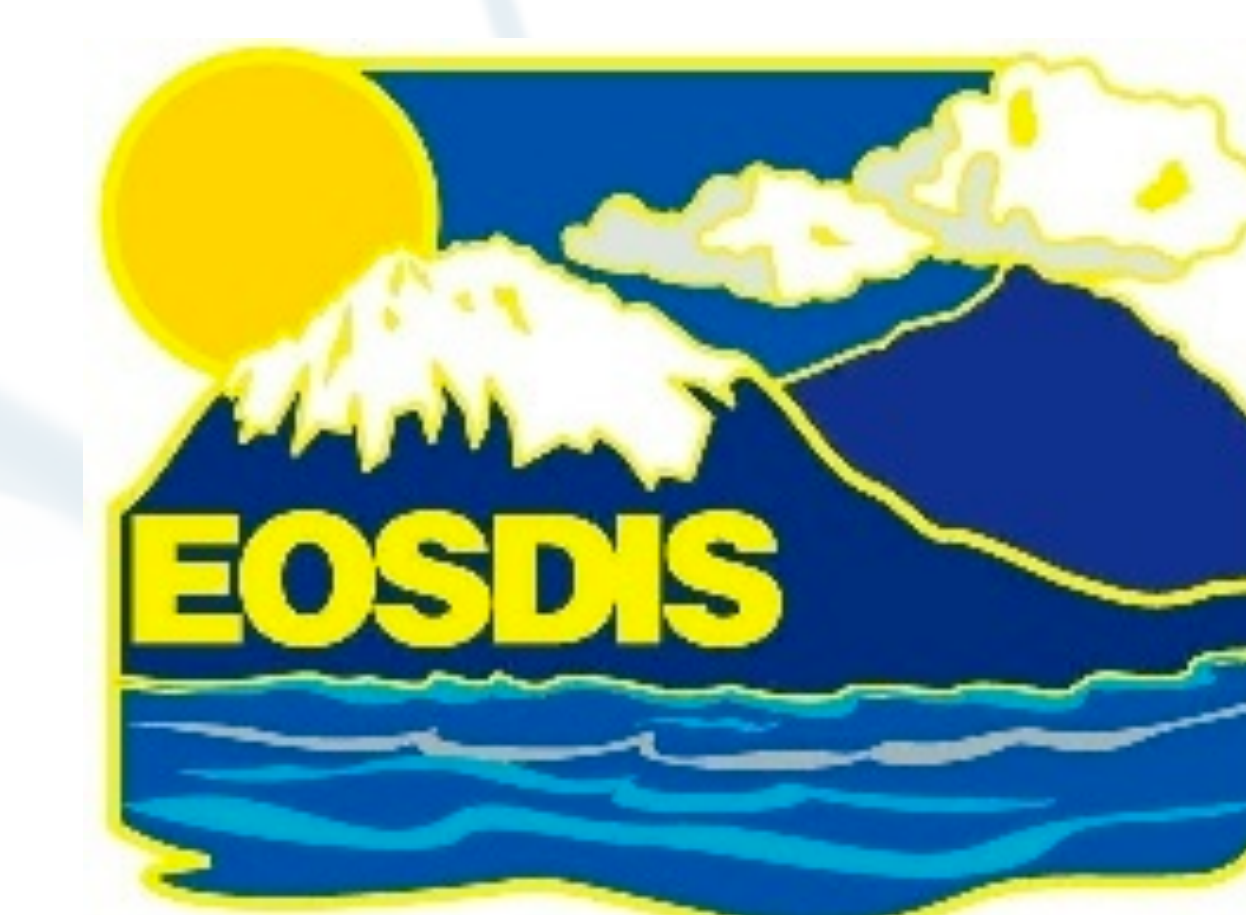
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<https://earthdata.nasa.gov/eso>