



EOSDIS

NASA'S EARTH OBSERVING SYSTEM
DATA AND INFORMATION SYSTEM

NASA Airborne and Field Data Workshop

Role of Standards in Airborne Data

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ESDIS Standards Coordination Office (ESCO)

NASA ESDIS Standards Coordination Office (ESCO)

- Organized within ESDIS and managed by ESDIS, with contractor support.
 - The ESCO team includes representatives of ESDS program components (e.g. DAACs, IMPACT).
- Maintains a [list of standards approved](#) for use in NASA Earth Science Data Systems
- Manages the [ESDIS Standards Process](#) for identification of appropriate standards and practices and their subsequent adoption for use in NASA Earth science data systems
- Leads the formation of technical working groups that are responsible for reviewing candidate standards and technical notes that may be brought forward by ESDSWG, ESDIS, or others in NASA's Earth science community
 - Also works with ESDIS and external standards organizations to identify future candidate standards
- Responsible for communicating information about approved and emerging standards to the NASA Earth Science community

Existence and Role of ESCO

ESCO provides

- Standards guidance and leadership for EOSDIS via a dedicated staff.
- Expertise in the development, review and maintenance of ESDIS-approved standards & practices for use in NASA Earth science data systems.
- A coordination function by managing a standards repository, web presence and by providing support for community engagement.

ESCO assists NASA's Earth Science Data and Information System (ESDIS) project in

- Formulating the standards policy for NASA ESDS
- Coordinate standards activities within ESDIS, and
- Provide technical expertise to standards related ESDSWG tasks.

Why Standards and Standardization Are Important

- Standards come into play at all stages of the data lifecycle
 - The acquisition, processing, storage, distribution, interpretation and reuse of data all depend on established technical specifications
- The Value of Standards
 - Fosters development of ecosystems of tools, services (e.g., netCDF ecosystem, XMosaic)
 - Enables interoperability amongst disparate parties: V0 IMS
 - Sets expectations and fosters trust in the broad community

Standards are critical enablers of community development.

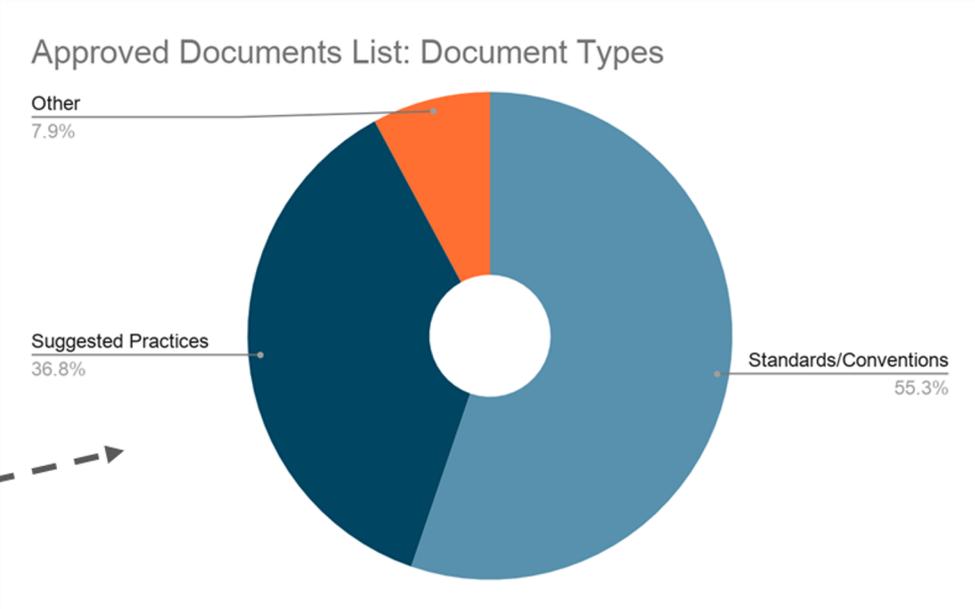
ESDIS Standards for Airborne and/or In Situ Data - 1

- Relevant General Recommendations
 - Data Product Development Guide for Data Producers
 - Dataset Interoperability Recommendations
 - Comprehensive & High Priority Data Quality Recommendations
- Data Formats
 - ICARTT
 - ASCII File Format Guidelines
 - NetCDF-4
 - HDF 5
 - GeoTIFF
 - OGC KML

ESDIS Standards for Airborne and/or In Situ Data - 2

- Metadata
 - ISO 19115
 - UMM
 - GCMD Keywords
 - NetCDF CF Metadata Conventions
 - GCMD DIF
- Under Review: Atmospheric composition variable standard name recommendations
 - Will improve usability, standardization, and machine-readability of data in ICARTT 2.0
- Coming: Cloud native/optimized/friendly formats and content organization schemes

Community Standards Process



Inside the Process

ESO

Initial Screening

- Apply ESO document template
- Convene **Technical Working Group (TWG)**
- Announce public comment period

COMMUNITY

Community Review

- Comments sought on **technical content** and **operational readiness**

ESO

Post Review

- Authors edit document based on community comments
- Document is provided to ESDIS along with summary of comments

Document added to ESO Document List

How to Get Involved

- Email us at esco-staff@lists.nasa.gov
- Join us at ESIP or ESDSWG meetings (virtually for now)
- Let us know about best practices, lessons learned, and specifications that are important to your mission, data providers, data consumers, partner organizations.
- Do you wish there were a spec for something but it's not on the list? Let us know.
- Be a reviewer or volunteer to be on a Technical Working Group. Tell us what your areas of interest/expertise are.
- Use what is already on the list of approved documents
- Join the [#eosdis-standards](#) channel on EOSDIS Slack

Conclusions

- Standardization is a science enabler, particularly in the era of big data and interdisciplinary research
 - This holds true especially for the airborne and in situ data communities due to the heterogeneity of data produced
- The airborne community has shown leadership in this with ICARTT and the Atmospheric Composition Variable Standard Names
- The ESCO and NASA's Earth Science research community will benefit from your participation in the standards/best practices approval process
- Contacts
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Thanks!

Questions?



Backup