

The Unidata logo banner features the word "Unidata" in a large, white, sans-serif font. Below it, a smaller line of text in a black, italicized serif font reads "Providing data services, tools, & cyberinfrastructure leadership that advance Earth system science, enhance educational opportunities, & broaden participation". The background of the banner is a topographic map with contour lines and elevation markers, overlaid on a blue sky and green landmasses.

Unidata

*Providing data services, tools, & cyberinfrastructure leadership
that advance Earth system science, enhance educational opportunities, & broaden participation*

A Draft Standard for the CF Metadata Conventions

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Why a CF standard?

- To facilitate the broader use of CF conventions
- To respond to organizational needs for *de jure* standards, not just *de facto* standards
- To encourage more application support for CF
- Because interoperability benefits from open standards
- Because future data cataloguing and searching systems will be based on standards
- To clarify what CF compliance means

Why use the NASA ESDS standards process?



Standards Process Group (www.esdswg.org/spg)

- Solicits standards of value to the Earth Science community
- Uses a lightweight process: endorsement, not development
- May lead to other endorsements, such as IOOS
- Has already approved six other related standards
 - ❑ OPeNDAP DAP-2
 - ❑ OGC WMS
 - ❑ HDF5
 - ❑ HDF EOS 5
 - ❑ NetCDF classic
 - ❑ GCMD DIF

Goals of CF RFC for ESDS

- Explain the general need for standard conventions and the specific need for a CF Conventions standard
- Overview the development of the CF Conventions
- List the principles that have guided the development of the CF Conventions
- Provide authoritative references to the three primary CF standards documents
- Clarify the meaning of CF-compliance
- Explain the sense in which CF Conventions are independent of data format
- Reference descriptions of the process for continued development and maintenance of the CF Conventions

The Current Draft RFC

- Introduction
 - The need for conventions and for a CF Conventions standard
 - Development of the CF Metadata Conventions
 - Guiding Principles
- Standard documents
 - CF Metadata Conventions
 - CF Standard Names
 - Compliance: CF Requirements and Recommendations
- Format Independence of CF
- Community process for evolution of CF
 - Rules for changes to the standard documents
 - Working committees

www.unidata.ucar.edu/staff/russ/rfc-cf.doc

Issues in writing the draft RFC

- How to insulate it from frequent changes
 - Don't need another document to maintain and synchronize
 - Example: cf-pcmdi.llnl.gov versus cfconventions.org
 - Still exposes too much of potentially volatile web site organization
 - Reveals need for version-independent URLs of most recent version
- How to clarify meaning of *CF compliance* for
 - Data
 - Programs that read data
 - Programs that write or serve data
- How to explain and emphasize format independence
 - Conventions based on data model, not format
 - “netCDF classic data model” → “CF data model”
 - CF for netCDF-4, NcML, HDF5, OPeNDAP, CDM, ...
- How to handle COARDS compatibility requirement

Remaining steps in standards process

- SPG Initial screening determines track
 - Technical Note
 - Proposed Standard
- Standards Process Group editor advises on content and format
- SPG assembles a Technical Working Group
- SPG composes review questions for TWG
 - Technical specification
 - Operational readiness
 - Suitability for use
- Submitter provides Evidence of Implementation document
- Evaluation and review by TWG leads to SPG recommendation
 - approval as a standard
 - approval as a technical note
 - rejection

Concluding remarks

- Timetable depends on reviewers and SPG workload
- Standards approval not assured, may just become a Technical Note
- Experience with netCDF standardization
 - Writing a short standards document aimed at interoperability was not too difficult
 - Over 20 reviewers responses provided useful feedback
 - A technical error still slipped through, but ESDS standards process worked to correct it
 - NASA ESDS standard may lead to other endorsements and wider use
- Feedback is appreciated:
www.unidata.ucar.edu/staff/russ/rfc-cf.doc

For more information

- ESDS Standards Process Group site
www.esdswg.org/spg
- ESDS SPG approved standards
www.esdswg.org/spg/docindexfolder
- Current ESDS netCDF format standard
www.esdswg.org/spg/rfc/esds-rfc-011
- Current ESDS CF draft standard
www.unidata.ucar.edu/staff/russ/rfc-cf.doc

Questions?