

# The Common Framework for Earth Observation Data

US Group on Earth Observations  
Data Management Working Group

# Agenda

- USGEO and BEDI background
- Concise summary of recommended CFEOD standards today
  - Full document in preparation
  - Will include suggestions for implementation, testing, and metrics
- Will have time for individual comments and questions from audience at end
- Hope to have more formal opportunity for written comments on full document in future

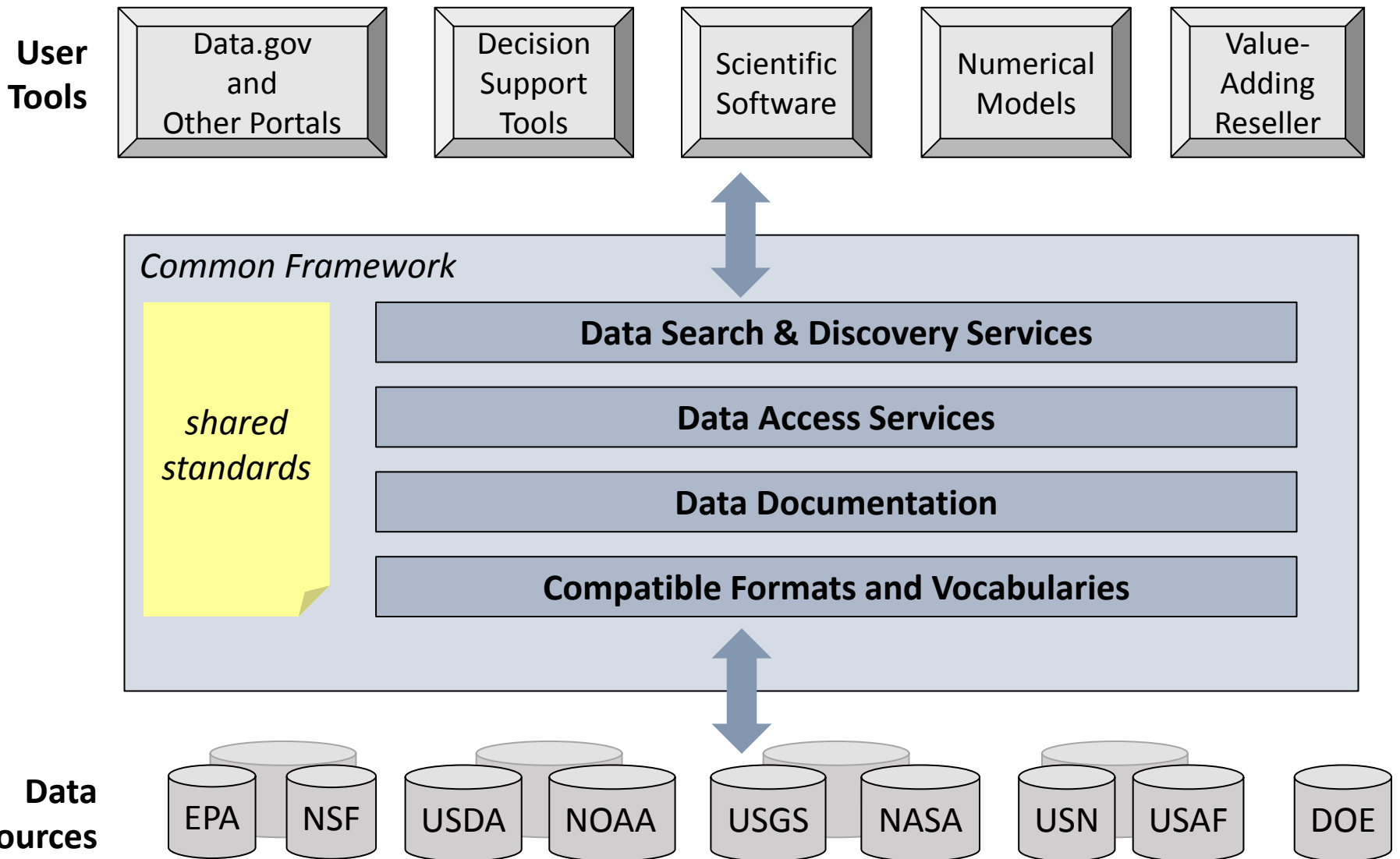
# Background - USGEO

- Chartered as a Subcommittee of the Committee on Environment, Natural Resources, and Sustainability
- Chaired by OSTP; vice-chaired by NASA, NOAA, USGS
- Three working groups: The Assessment Working Group, International Activities Working Group (IAWG) and the Data Management Working Group (DMWG).
- Tasked with coordinating civil Earth observations across Federal agencies
- Published the *National Strategy for Civil Earth Observations* in 2013 and the *National Plan for Civil Earth Observations* in 2014.
- Both can be seen at <http://usgeo.gov>

# Background – Big Earth Data Initiative

- BEDI supported by OSTP and OMB
- Originated out of 2013 *National Strategy for Civil Earth Observations*
- Goal is to improve:
  - Discoverability
  - Accessibility
  - Usability
- Encompasses activities at many USGEO agencies, and includes targeted funding at NASA, NOAA, USGS

# Conceptual Model



# Common Framework Purpose

- Establish criteria for meeting the goals of BEDI
- Promote interoperability of Earth observations data
- Serves as guidance, not a mandate
- Establish recommendations to make data more readily usable by portals and tools
- Promote practices and standards that meet both BEDI Goals and the Data Management Principles of the *National Strategy*

# Data Search & Discovery

- Catalog search API for digital geospatial data:
  - OGC Catalog Service for the Web (CS/W)
  - OpenSearch
- Indexing/search engine support: schema.org tags on dataset pages
- Data Citation, credit, and usage tracking: Digital Object Identifiers (DOIs) assigned to data

# Data Access (1/3)

- Raster imagery/maps of data:
  - OGC Web Map Service
  - OGC Web Map Tile Service
- Regularly gridded data:
  - Data Access Protocol (DAP)
  - OGC Web Coverage Service
- Irregularly gridded data:
  - Data Access Protocol
- Tabular data:
  - TableDAP



# Data Access (2/3)

- In situ data at one or more stations:
  - Data Access Protocol (DAP)
  - OGC Sensor Observation Service (SOS)
  - OGC Web Feature Service (WFS)
- In situ data from moving sensors:
  - DAP, SOS
- Geographic features (boundaries, roads, other vector data):
  - OGC Web Feature Service (WFS)
  - OGC KML

# Data Access (3/3)

- Miscellaneous types or file-level download:
  - HTTP, HTTPS
  - FTP, SFTP
  - GridFTP

# Data Documentation

Metadata	
Model	Encoding Schema
ISO 19115-2	ISO 19139-2
ISO 19115	ISO 19139
ISO 19115-1 + 19157 (for quality)	ISO 19115-3

- *Note: FGDC CSDGM is accepted but considered deprecated*
- *Note: Still discussing for instrument descriptions:*
  - *SensorML*
  - *ISO 19130 (-2)*

# Data Formats and Vocabularies

- Numerical data:
  - NetCDF4
  - HDF5
- Imagery:
  - GeoTIFF
- Vector data, in situ observations:
  - GML
  - specific GML profiles in particular areas
    - e.g. WaterML2.0, WXXM/WXXS
- Vocabularies (*topic still under discussion*)
  - CF Standard Names
  - Global Change Master Directory (GCMD)

# Questions or comments?

