

A horizontal banner image featuring a sequence of celestial bodies from left to right: a blue planet with white clouds, a brown planet, a brown planet with white polar ice caps, a white planet with a blue ring, and a large brown planet with white bands. The text "Planetary Data System" is overlaid in white on the right side of the banner.

Planetary Data System

PDS4 Standards Reference

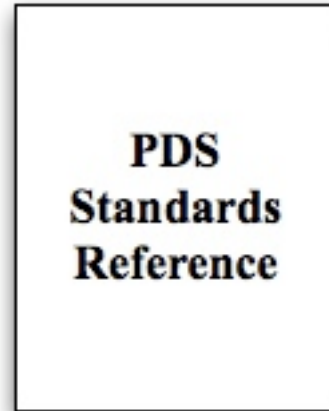
Elizabeth Rye
June 11, 2009

PDS3 Standards Reference

- Problems:
 - Plagued by internal inconsistencies
 - Time-consuming to maintain and update
 - Bulky -- difficult to use for novice users
 - Inconsistent with respect to requirements, language ranges from "must" and "shall" to "recommended" and "preferred" or even "acceptable, but not supported"

Standards Reference Document Context

PDS3



Standards Reference Document Context

PDS3

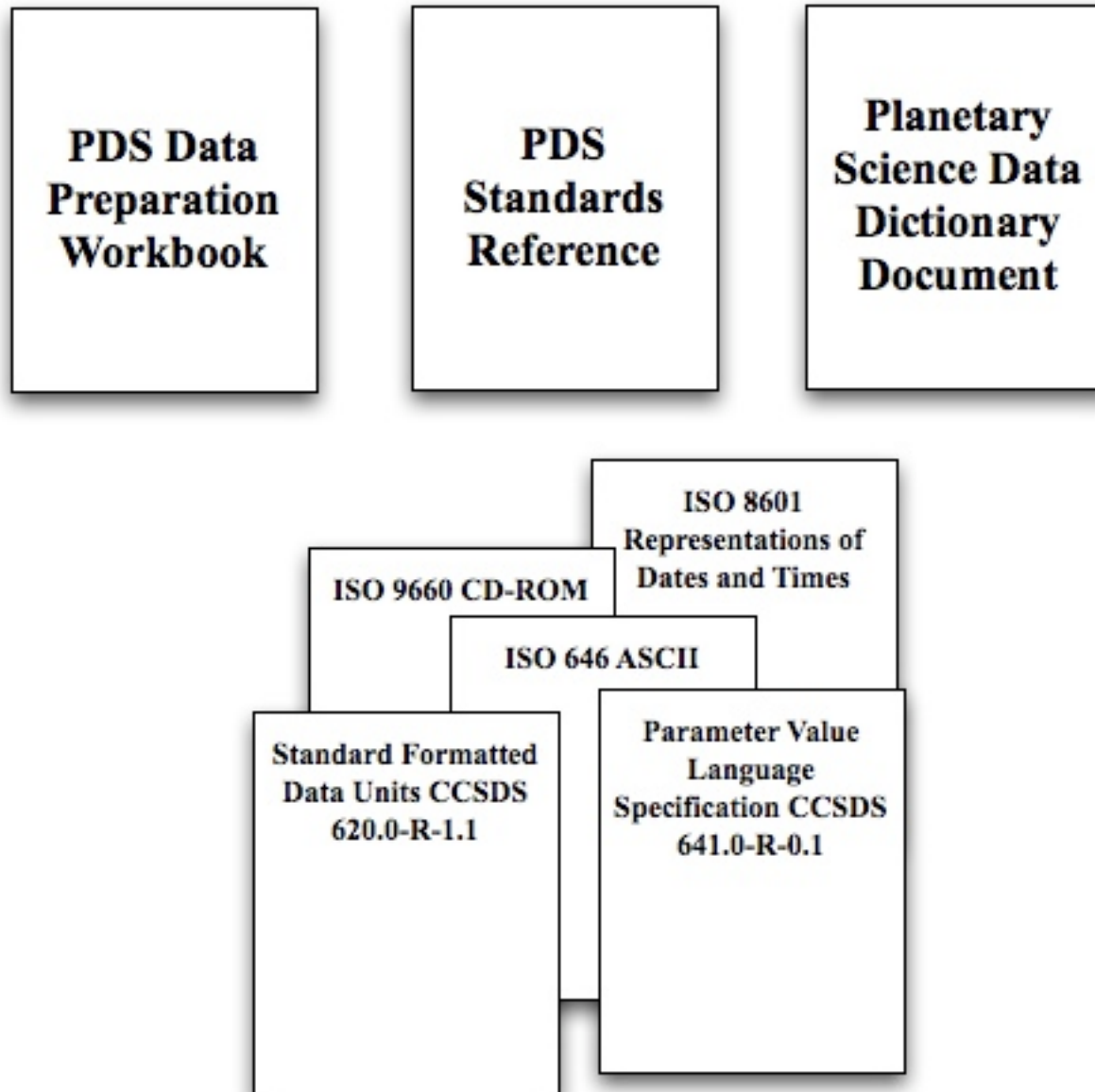
**PDS Data
Preparation
Workbook**

**PDS
Standards
Reference**

**Planetary
Science Data
Dictionary
Document**

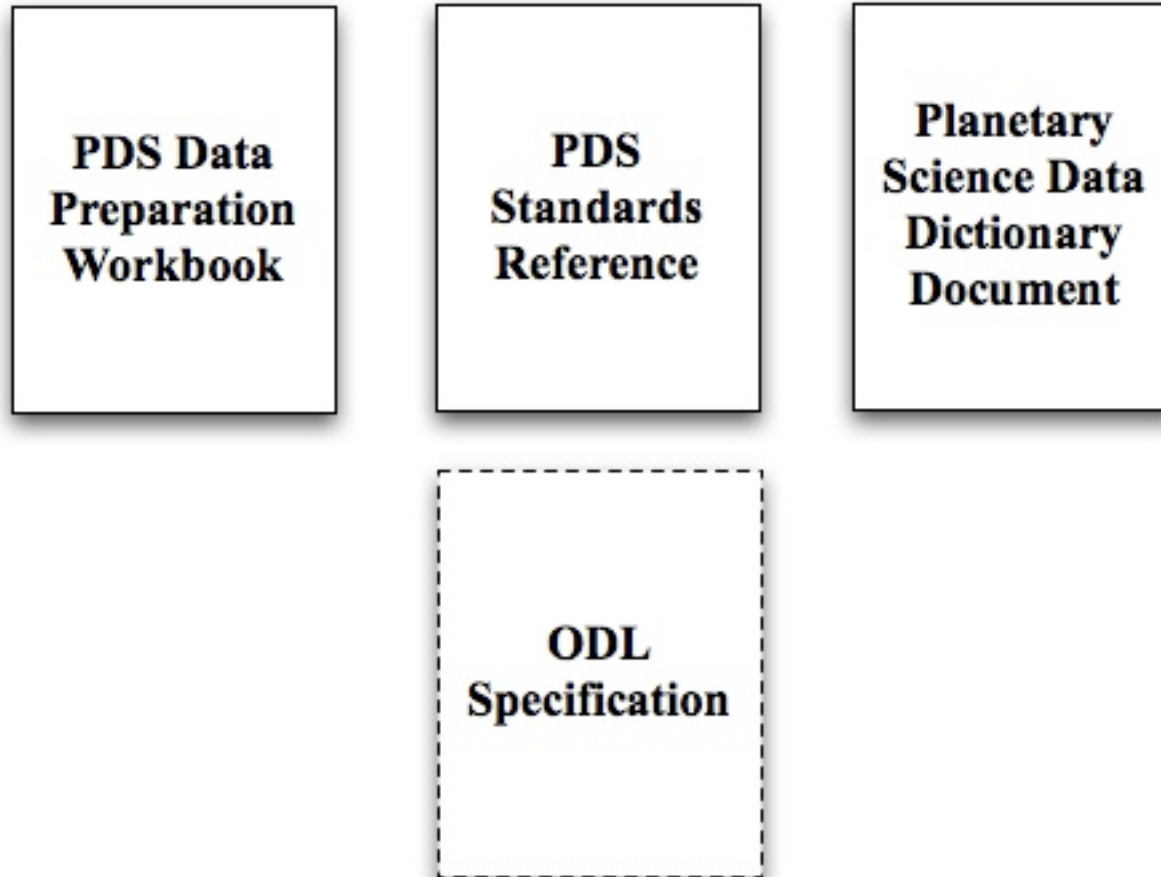
Standards Reference Document Context

PDS3



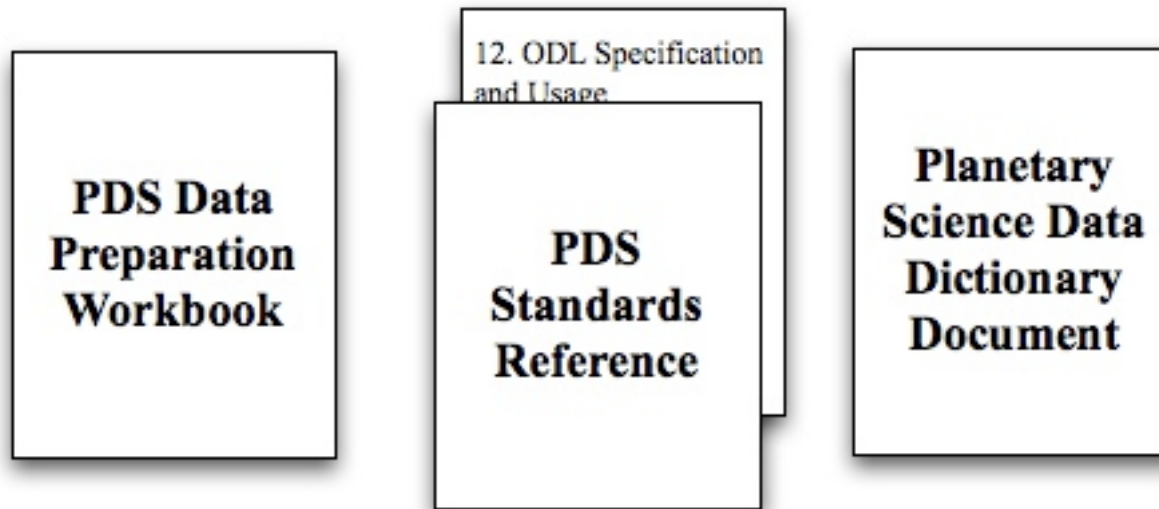
Standards Reference Document Context

PDS3



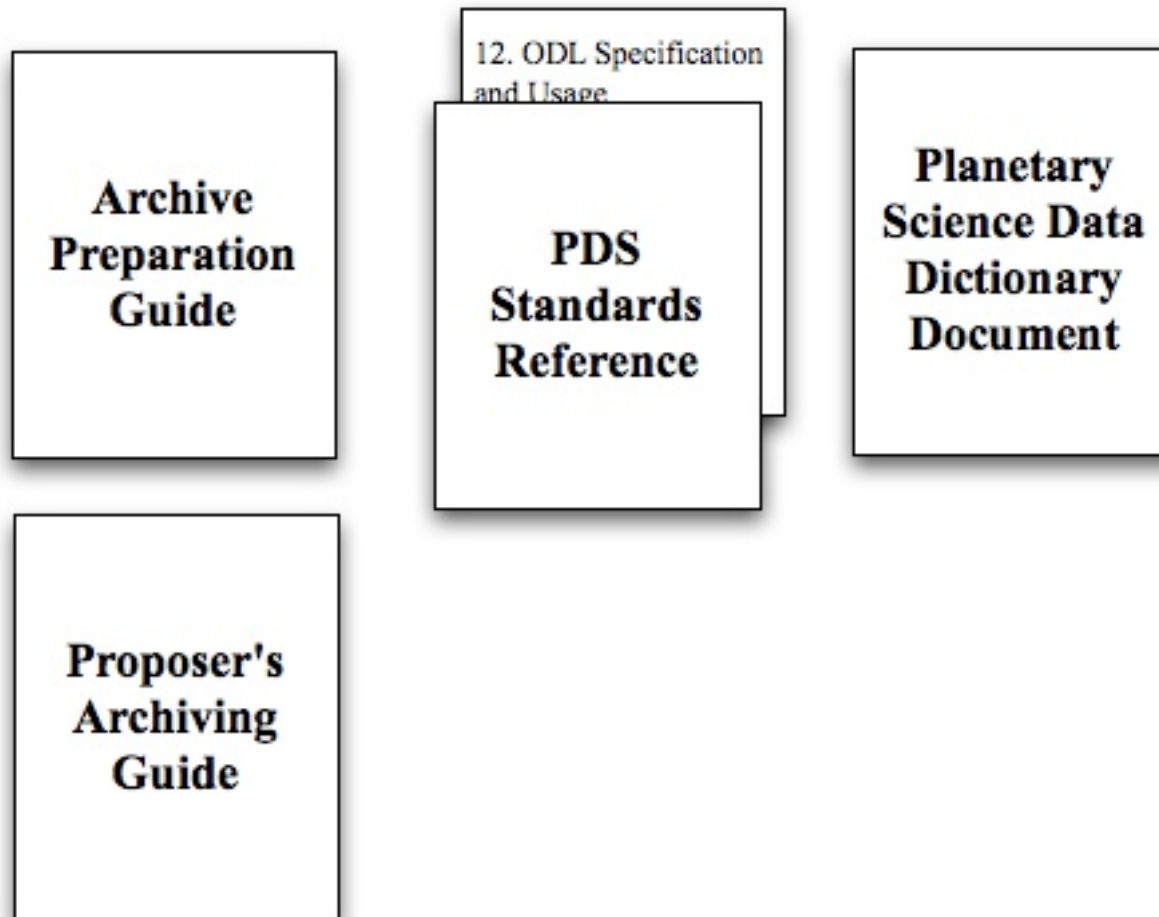
Standards Reference Document Context

PDS3



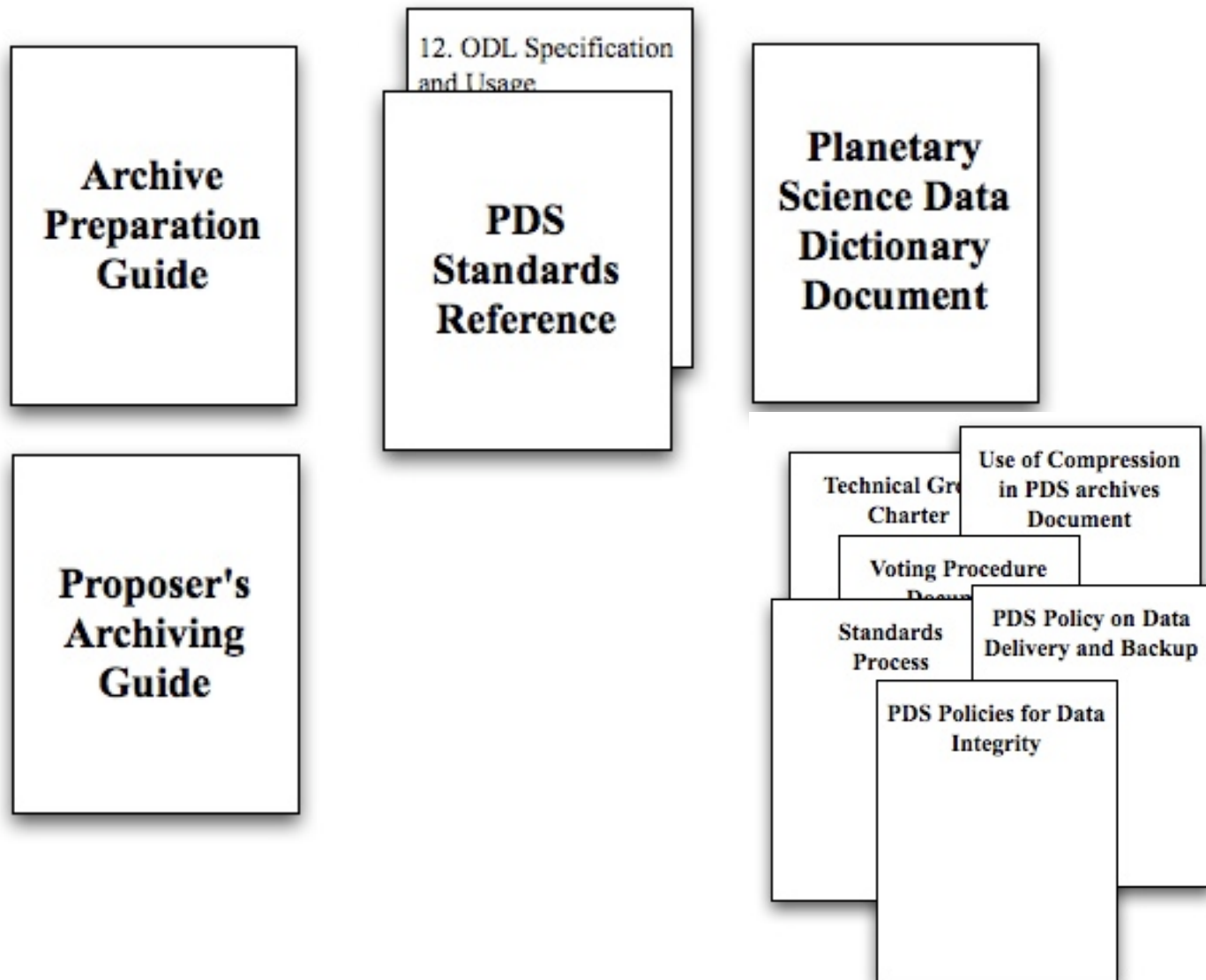
Standards Reference Document Context

PDS3



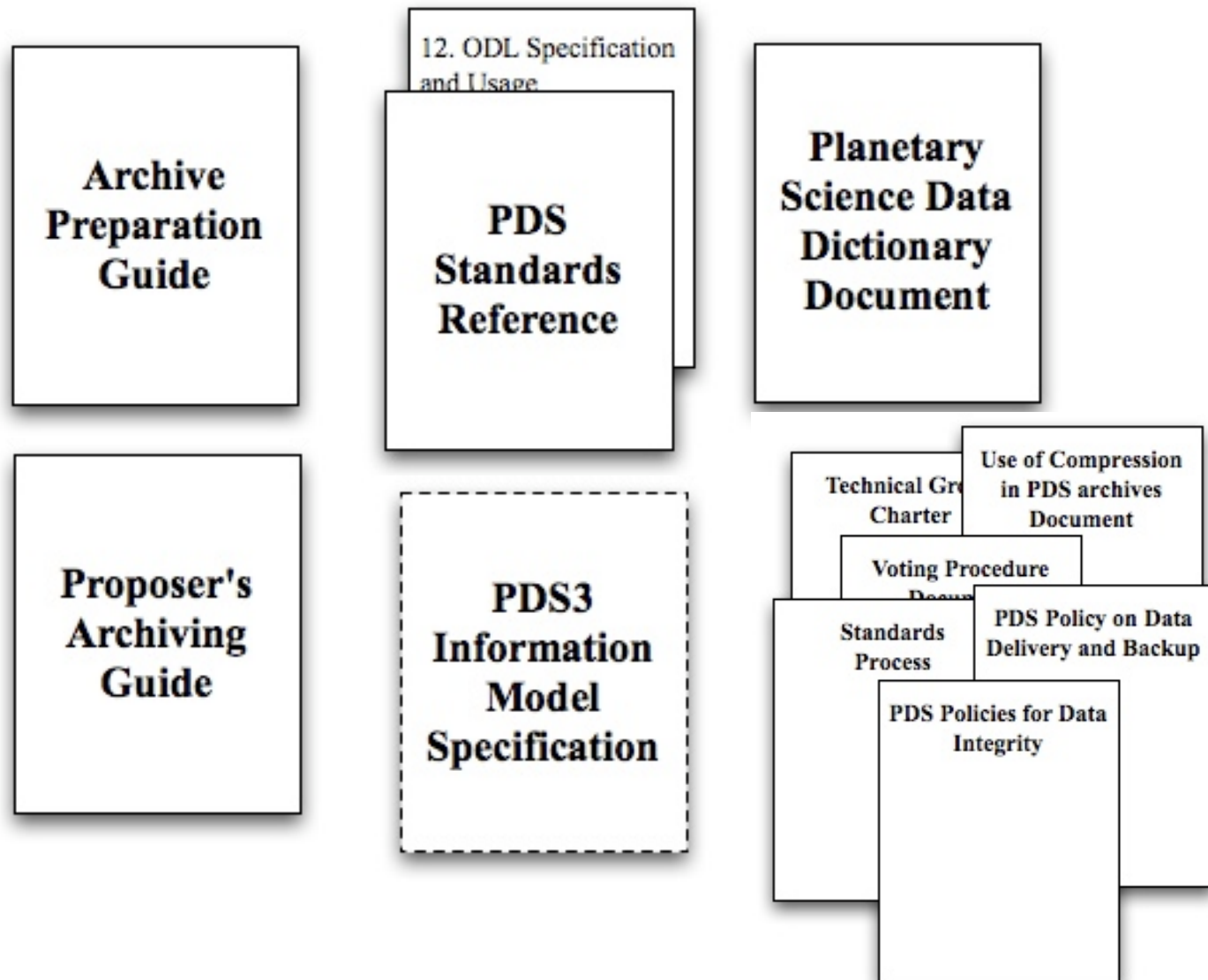
Standards Reference Document Context

PDS3



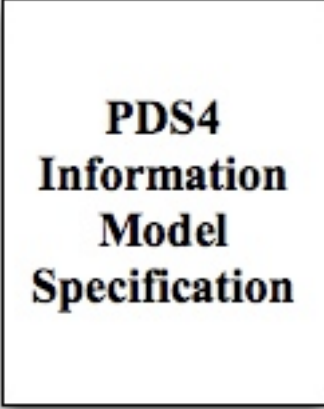
Standards Reference Document Context

PDS3



Standards Reference Document Context

PDS4



**PDS4
Information
Model
Specification**

Standards Reference Document Context

PDS4

**PDS Data
Preparers
Handbook
(aka.
Hitchhiker's
Guide)**

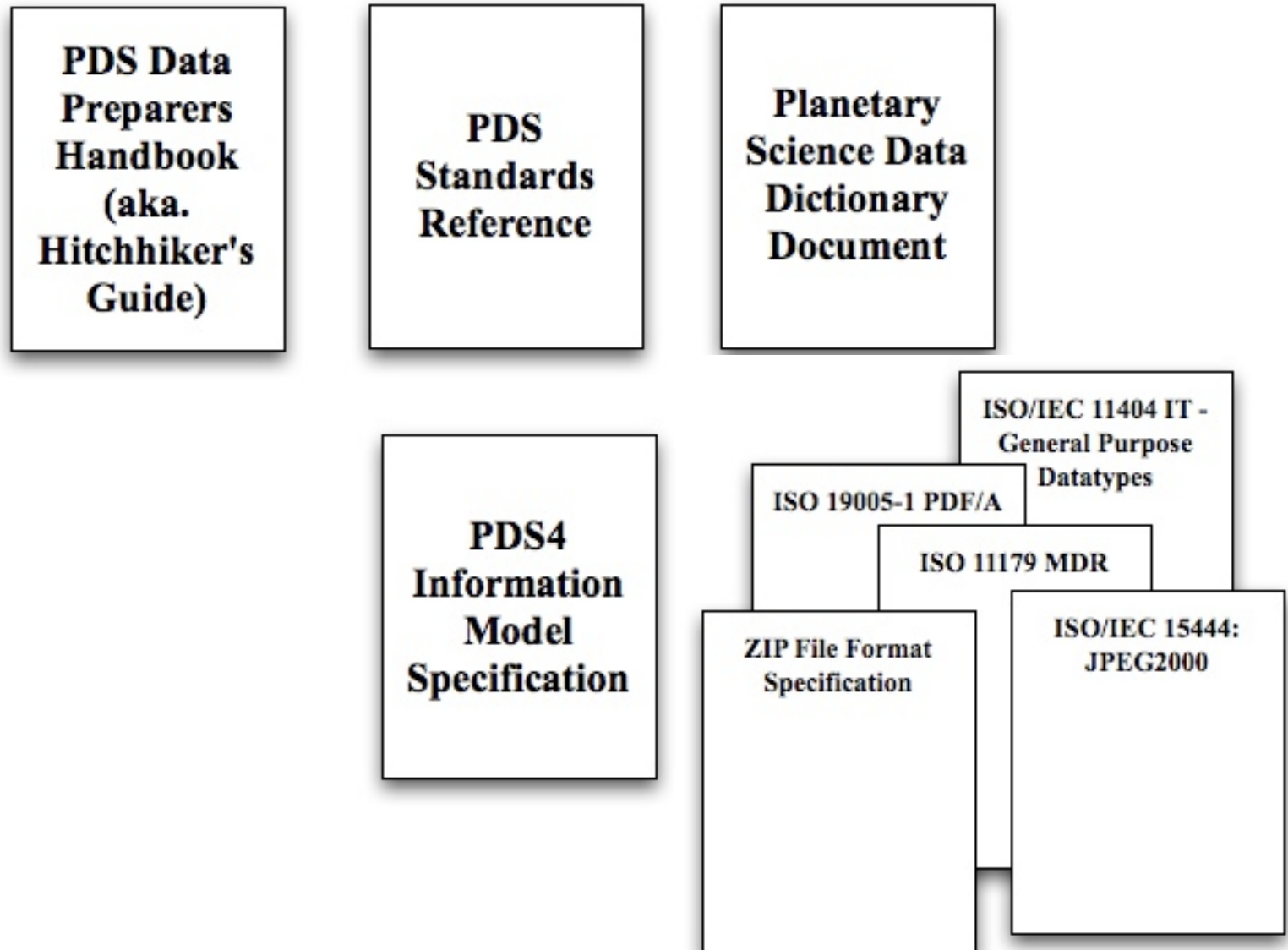
**PDS
Standards
Reference**

**Planetary
Science Data
Dictionary
Document**

**PDS4
Information
Model
Specification**

Standards Reference Document Context

PDS4



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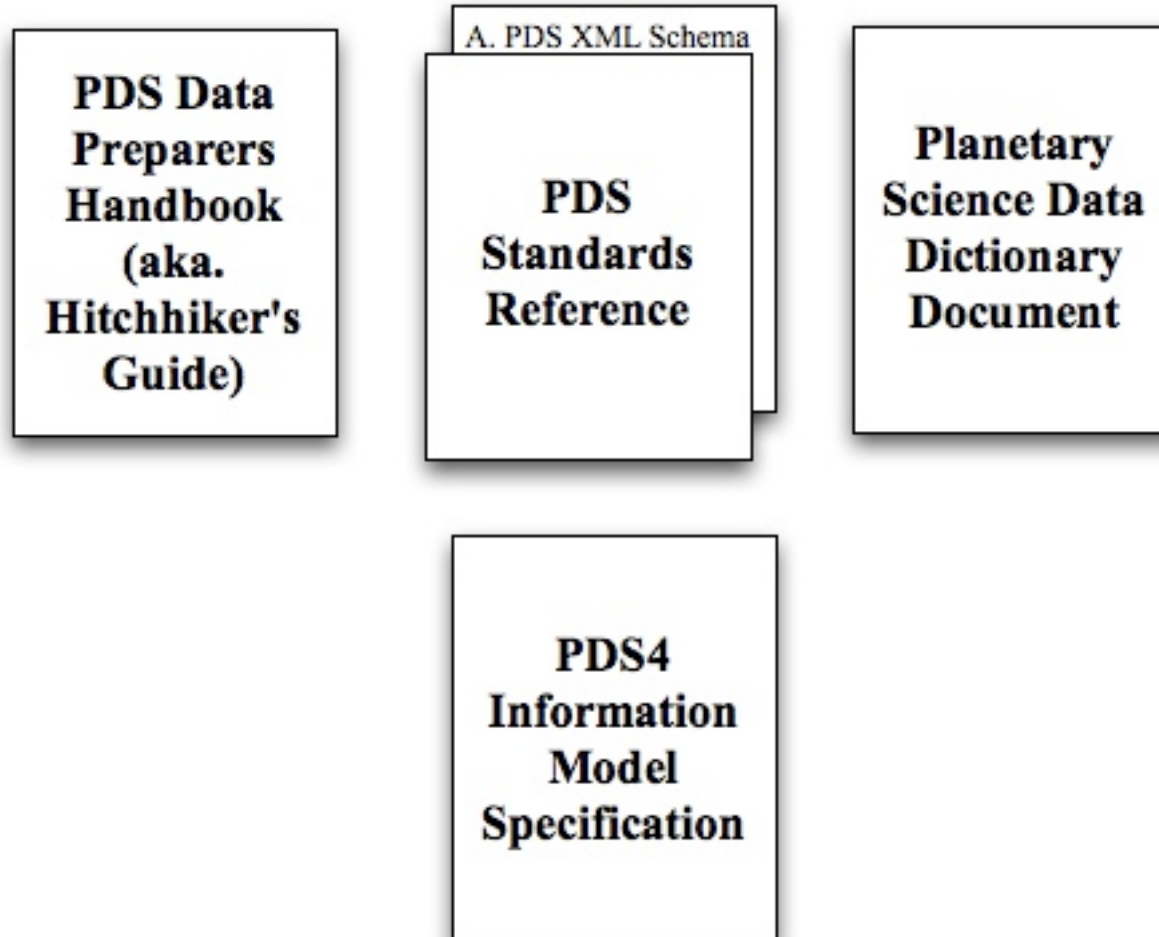
**PVL
Specification**

**PDS4
Information
Model
Specification**

**XML
Specification**

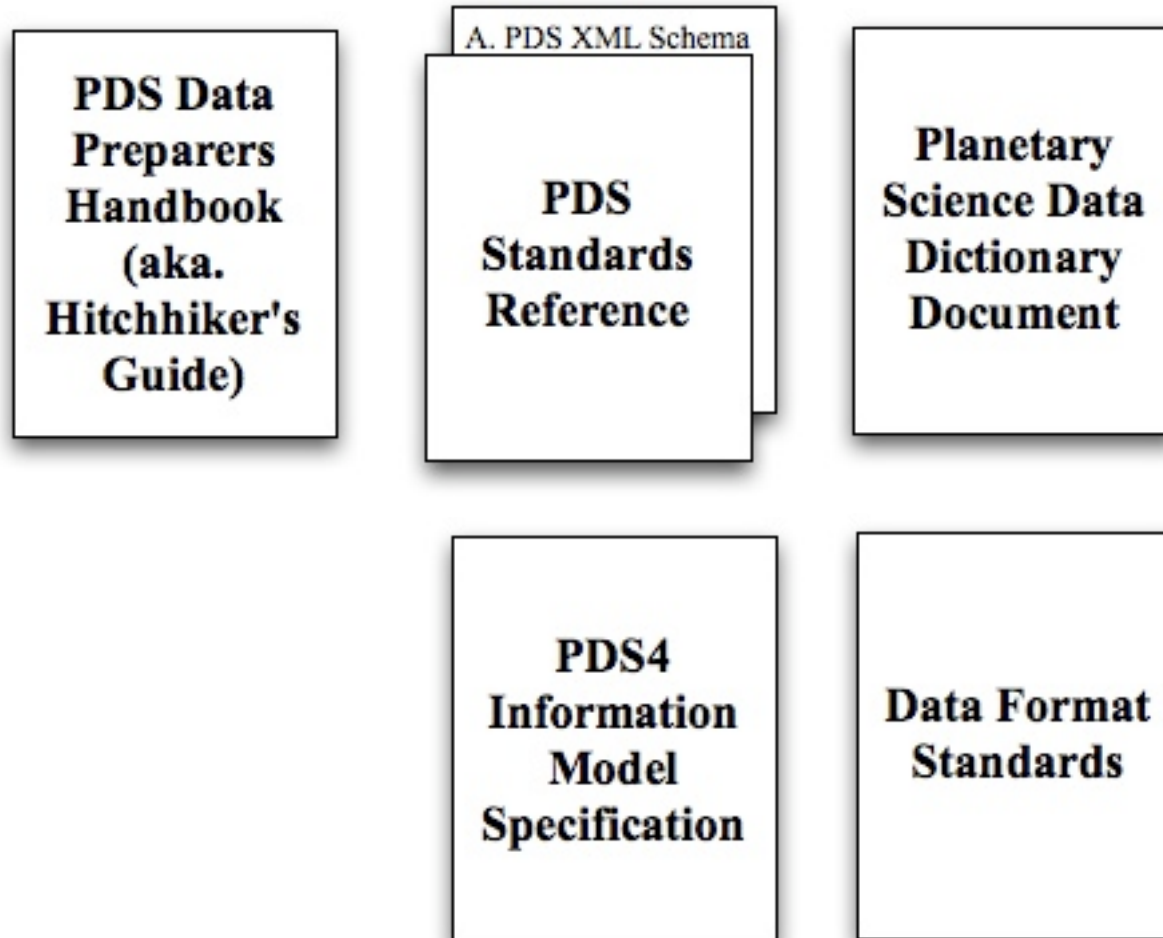
Standards Reference Document Context

PDS4



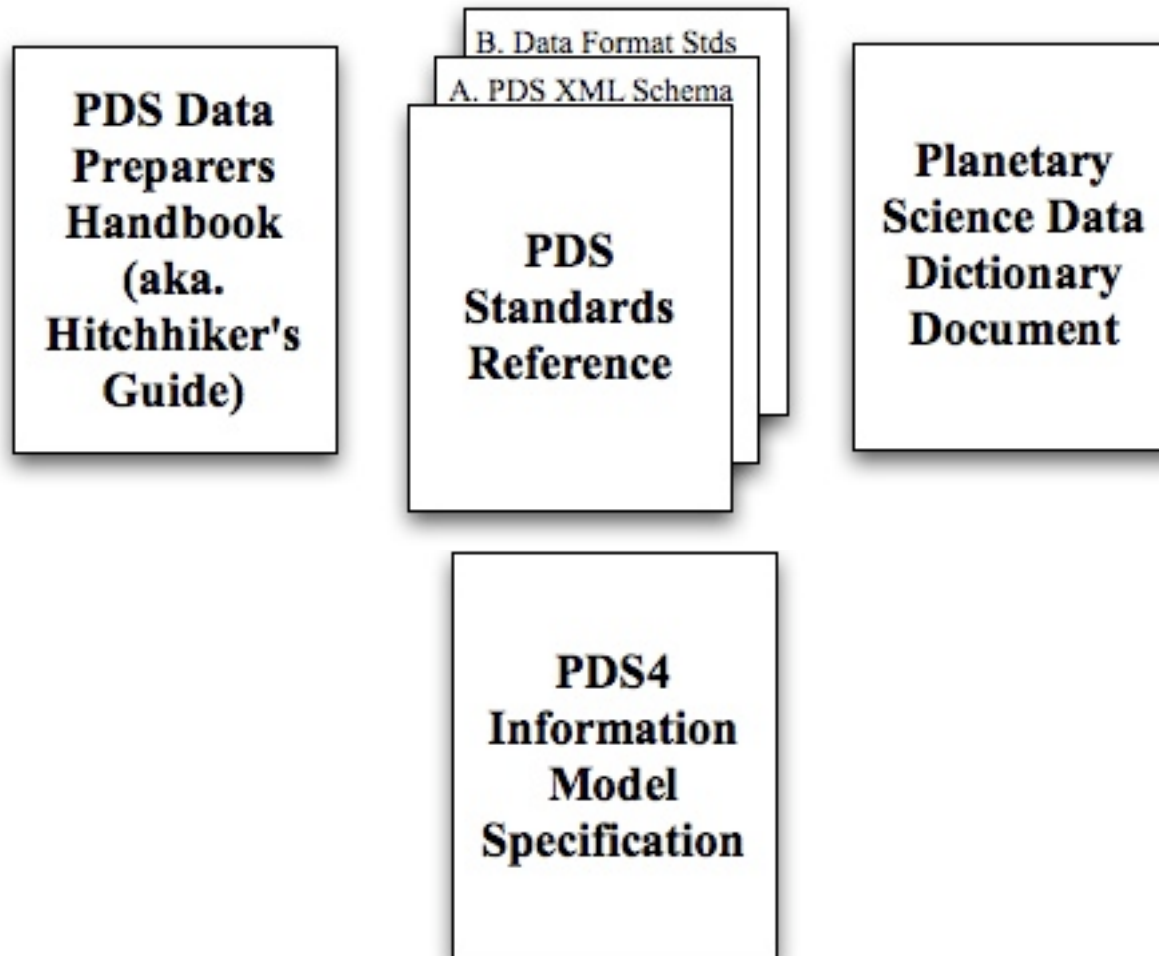
Standards Reference Document Context

PDS4



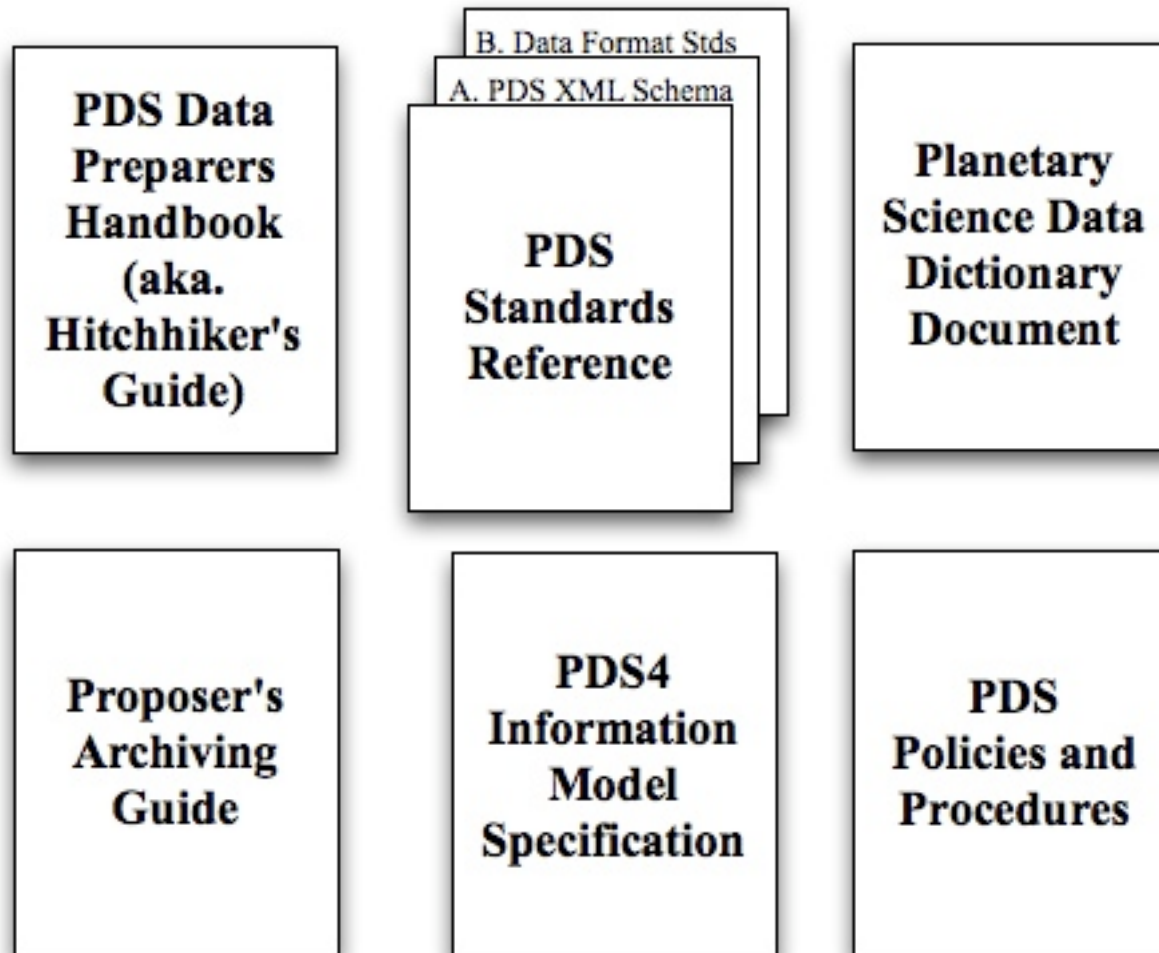
Standards Reference Document Context

PDS4



Standards Reference Document Context

PDS4



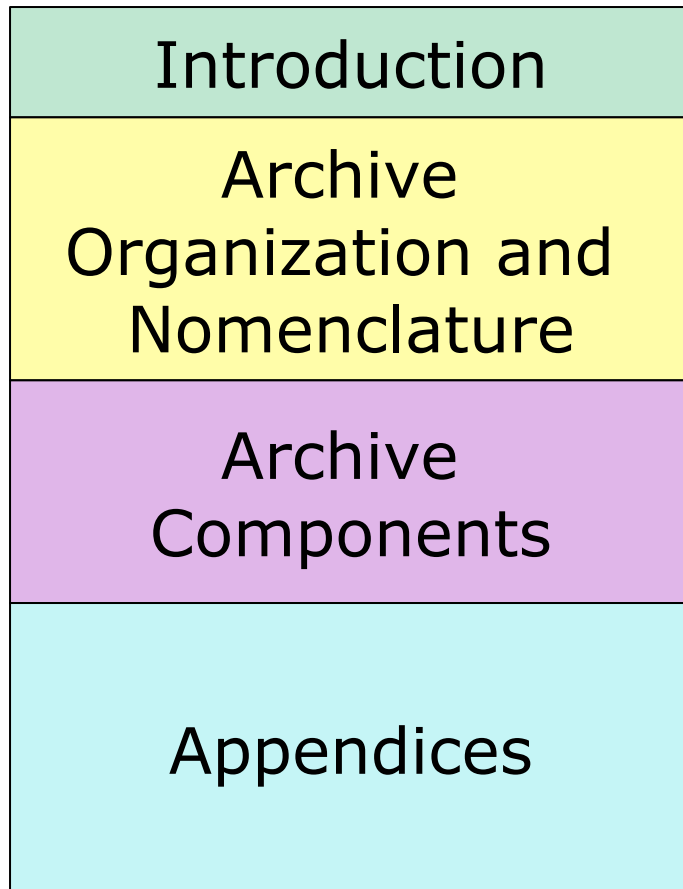
PDS4 Standards Reference

- Problems:
 - Plagued by internal inconsistencies
 - Time-consuming to maintain and update
 - Bulky -- difficult to use for novice users
 - Inconsistent with respect to requirements, language ranges from "must" and "shall" to "recommended" and "preferred"
- Solutions:
 - As much as possible, will be derived directly from the data model, which enforces logical relationships and internal consistency
 - Target audience will be narrowed: advanced users and programmers
 - Will strictly document requirements, not preferences

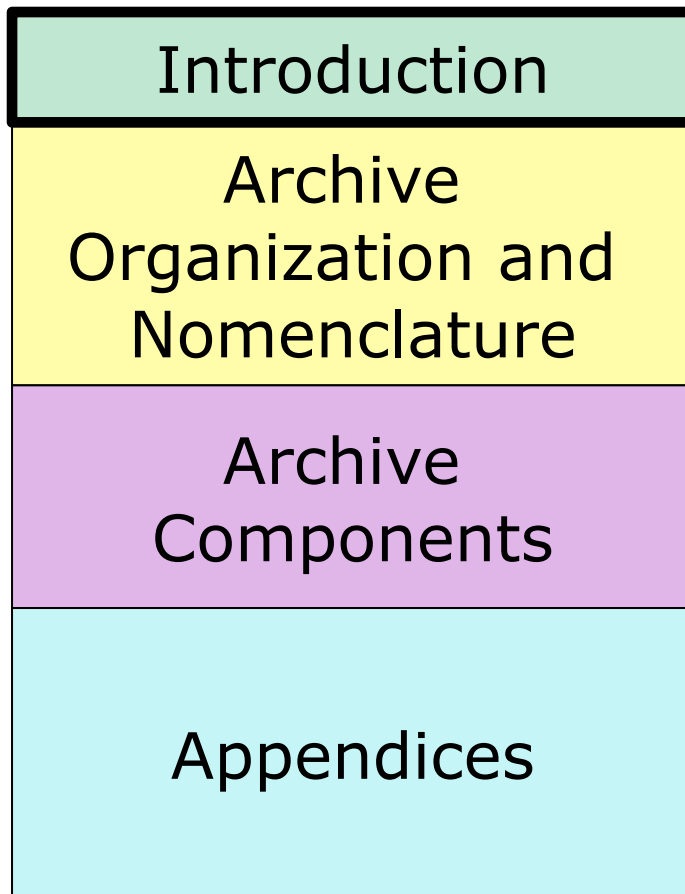
PDS4 Standards Reference

- Designed to be a “reference”, not a teaching text
 - Organization will not be methodological or temporal
 - Organization will be as a reference or encyclopedia
- Will assume a working knowledge of PDS
- Will state requirements unambiguously
- Will be exhaustive (include all “user” classes)

Overall Structure

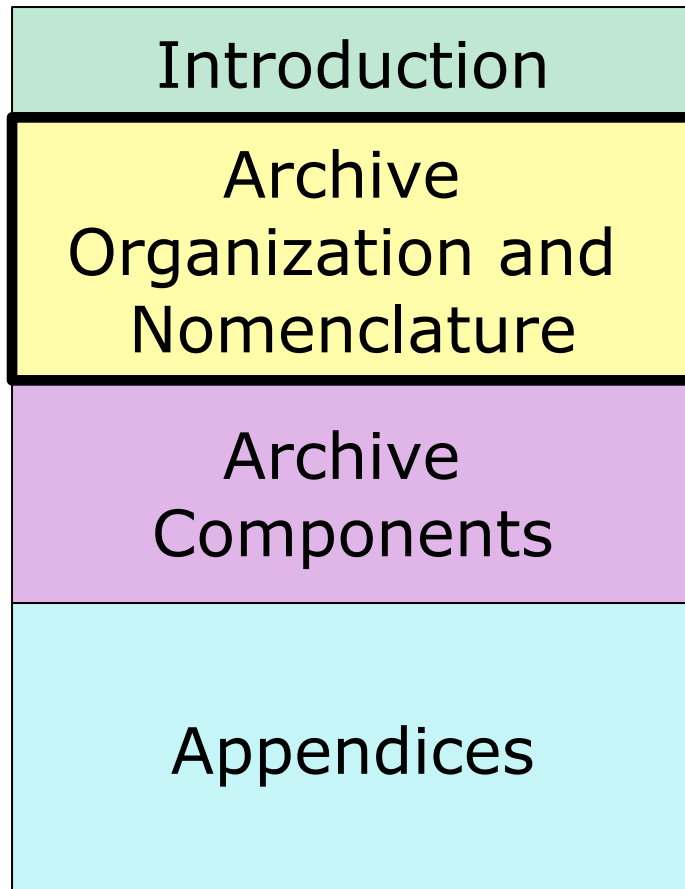


Overall Structure



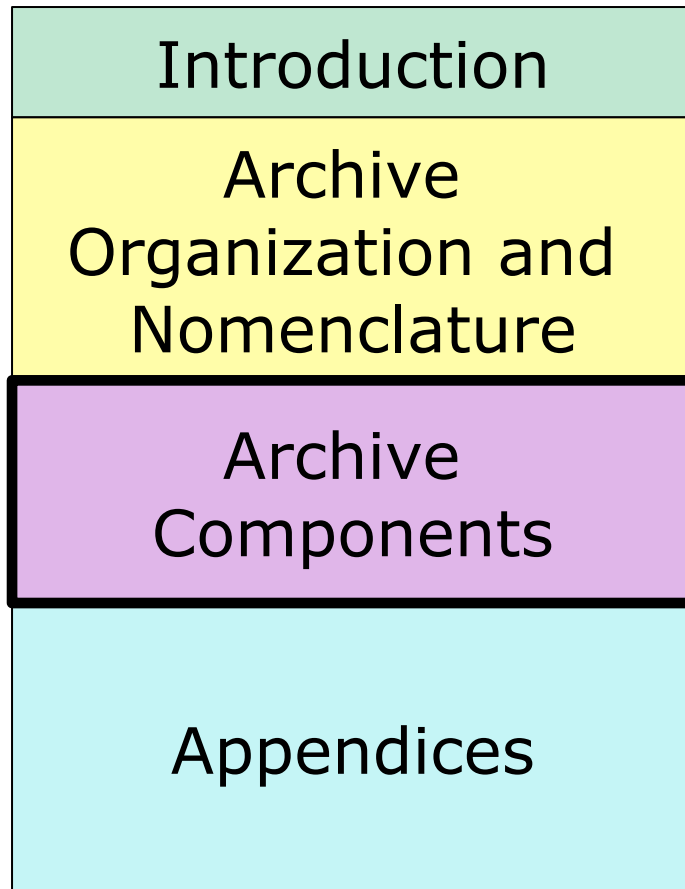
- Brief
- Will point novice users to Data Provider's Handbook
- Will include overview of document and where to find what

Overall Structure



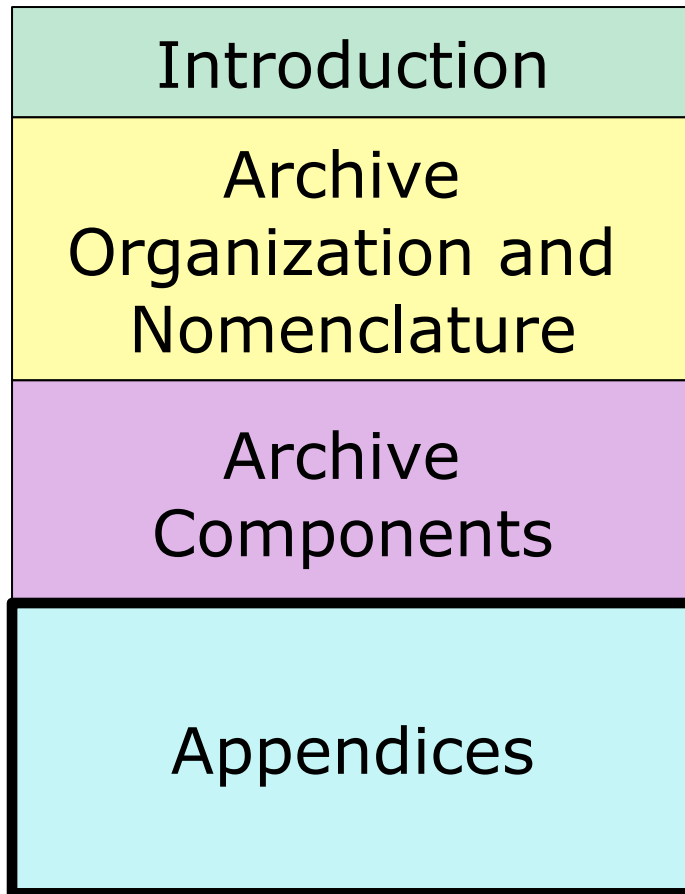
- Directory structure, volume size / media limitations, etc., pertaining to the organization of the archive
- Nomenclature rules for: data sets, products, software, documentation, keywords, data dictionary files, indices, etc.

Overall Structure



- Browsers
- Calibration
- Catalog information (?)
- Data
- Dictionaries
- Documentation
- Gazetteers
- Geometry
- Indices
- Labels (?)
- Software

Overall Structure



A. Grammar

- PDS XML schema, or
- PDS implementation of PVL

B. Data Format Standard

C. User classes

- Descriptions
- Templates / schema
- Examples

Archive Component Details

- One major section for each archive component
- Browse / Extras
 - Do we have minimum requirements for browse products?
 - Dependent on product type? (Is useful unit of data downloadable?)
 - If browse products included, do we levy requirements on them?
 - Based on product type? (images, tables, etc.)
 - Example

Archive Component Details

- Calibration
 - State under what circumstances required
 - State requirement for calibration files vs. calibration data
 - Minimum standards for adequate calibration capabilities spelled out
- Catalog
 - State explicit requirements for catalog files
 - Sub-section for each catalog file
 - State information requirements
 - Provide example

Archive Component Details

- Data
 - State what types of data must be archived (including processing levels?)
 - State what external standards apply to specific data types (ex. Cartographic products)
 - For each type of data, state explicit requirements for meta-data information to be included
- Dictionaries
 - State explicit requirements for dictionary files (to include that portion of the global and local dictionaries that applies to the data set)
 - Example

Archive Component Details

- Documentation
 - Provide exhaustive list of all documentation required
 - Provide list of rules governing “permitted” documents
 - Rules for labeling documents
 - Sub-section for each type of required document
 - Examples (both simple and complex)
- Gazetteer
 - State explicit requirements for gazetteer files, including under what circumstances they’re required (if any)
 - Example

Archive Component Details

- Geometry
 - Statement of what geometry required for inclusion based on data type
 - State external standards (if any) that apply to geometry information (ex. Reference coordinate systems)
 - Rules for labeling geometry files
 - Sub-section for each type (ex. Pointing information, camera models)
 - Examples

Archive Component Details

- Indices
 - State explicit requirements for information required in index files:
 - Searching for and locating data
 - Science analysis of data (here vs. labels?)
 - Examples
- Labels
 - Under what circumstances (if any) are “include” files permitted?
 - Examples

Archive Component Details

- Software
 - State explicit requirements for minimum software required (data conversion, display, calibration???)
 - Documentation requirements
 - Sub-section for each type (?)
 - Examples
- Other Files
 - Aareadme, errata, voldesc, etc.
 - Explicit requirements
 - Examples

Plan

- Schedule
 - September 30, 2009 – first draft of v4.0
 - September 30, 2010 – first version of v4.0 published