IPDA Prototyping Exercise

Basic Guidelines

Exercise Objectives

- Primary – Attempt to produce XML labels for one or more observational data products.
- Primary – Report on the process.
- Secondary – Produce XML labels for a Bundle, a Collection, a Document Product, attempt pipeline set up.

The Process

1. Choose a data set.
2. Design an observational data product.
3. Outline the Archive Bundle design.
4. Design and produce an observational data product label.

1. Choose a data set

1. We recommend a familiar, simple data set.
   - ASCII tables or grayscale images.
   - Pick one, simple product to start with

2. Design observational data products

- Determine data storage type, product class, and schema.

Data	Structure	Schema (_0300e.xsd)
ASCII table	Fixed Width Table	Product_Table_Character
Grayscale image	N-D Array	Product_Array_2D_Image
Image header	Parsable Byte Stream	Header

3. Archive Bundle Design

- Collections
  - Types and Names
- Directory structure
- File naming conventions
- Bundle and Collection LIDs

4. Observational Data Labels Normal Flow

- PDS DN
  - Selects a "generic" schema
  - Edit that schema to produce a "tailored" schema

- Data Provider
  - Edit tailored schema to produce a "specific" schema
  - Use specific schema as pipeline input

or

  - Use specific schema to generate XML label template
  - Use label template as pipeline input

4. Observational Data Labels This Exercise (1)

- Edit a generic schema to produce a specific schema.
- Generate a label template.
- Hand edit the template to produce one product label (or a few product labels).

4. Observational Data Labels This Exercise (2)

- If you have time, try any of the following:
  - Make a bundle label,
  - Make a collection product,
    - Label plus inventory table,
  - Make a document product label,
  - Explore pipeline options.

4. Observational Data Labels Considerations (1)

- Getting from the tailored schema to final label generation is an iterative process.
- Edits made to the specific schema are preserved from one iteration to the next.
- Edits made to the template must be redone from one iteration to the next.

4. Observational Data Labels Considerations (2)

- In a schema
  - You may indicate the number of times an xml element repeats
    - (e.g., the number of columns in a character table)
  - You may not actually repeat the element.

- In the XML template
  - You may repeat xml elements
    - (e.g., separate entries for each table column)

4. Observational Data Labels Typical Edits (1)

- Schema
  - Add Discipline Node specific classes.
    - Some Atmospheres, Imaging, Rings, and SBN classes available.
  - Add mission specific classes.
    - Requires generating a mission data dictionary schema.
    - One mission dictionary available (MRO).
    - If trying this, discuss with us early.
  - Insert values for items which are fixed.

4. Observational Data Labels Typical Edits (2)

- Schema
  - Set up handling of 'optional' XML elements (those with minOccurs = 0).
  - One approach, for optional XML elements which
    - are always going to be present in the labels, set minOccurs = 1,
    - are never going to be present in the labels, set maxOccurs = 0, or delete the XML element.
    - will be used sometimes, the entry in the schema is not changed.

4. Observational Data Labels Typical Edits (3)

- XML Editor preferences for template generation:
  - Include optional elements,
  - Exclude elements with maxOccurs = 0,
  - Set repetitions to 1.

- Generate the XML Template

4. Observational Data Labels Typical Edits (4)

- Template
  - Insert the appropriate number of repetitions for XML elements which are repeated in the label.
  - Insert values for items which are fixed.
- Template is now ready to be a pipeline input.
- For this exercise:
  - Insert values into a copy of the template to make it a label for a specific product.

Now What?

- If have time, try some of the optional activities (see slide 9)

- Prepare report.

Resources

- Ron Joyner – Ron.Joyner@jpl.nasa.gov
- Mitch Gordon – mgordon@seti.org

http://pds.jpl.nasa.gov/build1creview/

Username: ipda

password: 1cReview

  - Data Preparer's Handbook
  - Examples

Additional Contacts

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