PDS4 Data Model Working Group

Status Report
to the

PDS Management Council
April 2-3, 2008

Action Items

- ✓ MC-05 (King; by 17 December): Complete Data Model white paper (Done)

- ✓ MC-06 (King; by TBD): Adjust Data Mode Working Group task schedule to match schedule leading up to the April Management Council meeting (Done)

- ❑ MC-17 (Data Model WG/King; by TBD): Develop the PDS4 Data Model independently of the PDS3 specification

- ❑ MC-18 (Data Model WG/King; by TBD): Apply Hughes' transition/cost tool to the PDS3 and PDS4 models and report the results.

Tasks and Timeline

Tasks

1. *Deliver final white paper.*
2. *Compile known issues and problems associated with the current model; determine probable cause.*
3. *Define the relationships*
4. *Define attributes for each Entity.*
5. *Vet with tech group.*
6. Draft Information Model Specification document (must include PDS3->PDS4 mapping)
7. Final report (recommendation for control authorities, partition alignment architecture decomposition)

Timeline

- 12/14 – (2, 3) Strawman relationships, attribute list with PDS3->PDS4 mapping (Todd)
- 12/17 – Deliver final white paper to Dan.
- 1/10 Discuss information model draft
- 1/24 Discuss "Problems" report. Provide feedback
- 1/31 Discuss information model draft
- 2/7 Final review of information model. Send to PDS Tech. Group
- 2/20 Review of Information Model. Tech Telecon - Regular time on Wed.
- 2/21 Discuss Tech Telecon review.
- 3/6 Review information model specification document.
- 3/20 Review final report.

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Deliveries

- Completed the PDS Information Model White Paper (Jan 2008)
- Assembled "known and relevant" PDS3 issues and problems into a single report. (Mar 2008)
  (Ed Guinness – lead)
- Captured illustrative uses of the PDS4 Information Model in a Use Cases document (Mar 2008)
  (Todd King – lead)
- Identified level 1-3 requirements which influence the PDS4 Information Model. (Mar 2008)
  (Inspired by Dick Simpson, Todd King – lead)
- Full tech review of: (Mar 2008)
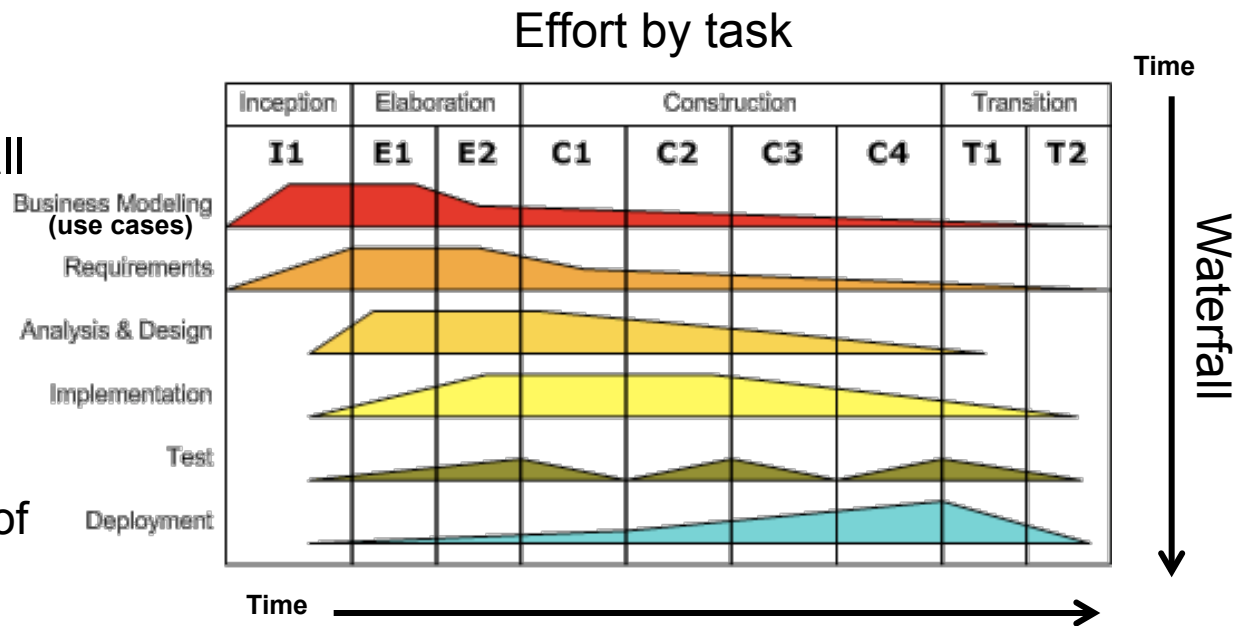 - PDS3 Issues and Problems document
  - PDS4 Information Model Use Cases

Why Not More?

- ## Life happens
  - Timeline was impacted by schedule conflicts (some unanticipated)
- ## Tasks required more effort then team members could commit.
  - None of us are full-time on PDS.
  - Other concurrent PDS activities.
- ## Formally documenting rational (PDS3 Issues, PDS4 Use Cases) impacted progress.

Perspective

- **General PDS Approach is Waterfall**
  - Each task is completed before next is started.
  - Deployment occurs last.
  - Large expenditure of effort before value realized.

- **PDS4 Data Model Approach is Agile**
  - Tasks are worked in parallel.
  - Multiple deployments.
  - Allows for "Just Enough" development practices.
  - At each step new insight feed backs to other tasks.

- **The two approaches diverge (and annoy) after Inception (I1)**

Effort by task

Time

Waterfall

Inception	Elaboration		Construction				Transition	
I1	E1	E2	C1	C2	C3	C4	T1	T2

Business Modeling (use cases)
Requirements
Analysis & Design
Implementation
Test
Deployment

Time →

Iterative (Agile)

Document Overview

PDS3 Issues and Problems

- Captures "known and relevant" issues or problems with the PDS3 information model

- Does not provide suggested solutions

- Two categories of issues:
  - Data Model/Dictionary (23 issues)
  - Standards (7 issues)

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Document Overview

Use Cases

- Illustrates the common activities, tasks and goals related to archiving and using data within PDS archive.

- Context
  - Campaign, Observation Platform, Instrument, Organization, Contact, Target
- Content (Observations)
  - Single Instance, Image, Movie, Time Series, Spectral, Event List, …
- Resources
  - Product, Collection of Products, Storage Location (Repository), Inventory of Products and Collections (Registry), new information (augmentations)
- Locate (Search)
  - Measurement Type, Time Range, Geographic Location, Resource Identifier, …
- Management
  - Preservation, Lifecycle Tracking

What's Next? - Recommendations

Continue PDS4 Information Model definition.

1. Complete requirements
2. Reconciliation assessment with PDS vision and white papers.
3. Information Model Specification document (must include PDS3->PDS4 mapping)

   All items will have a full tech review

Should be able to complete tasks this quarter.

Then..

- Proceed with Iterative approach
- Design and implement (what we have).
- Proceed to Elaboration phase.

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