Transition and Migration

PDS 2010 System Review
March 22-24, 2010

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Agenda

- Transition Plan
- Data Migration

Definitions

- Migration
  - Migration is the process of migrating existing data in the archive from PDS3 to PDS4
- Transition
  - Transition to a PDS 2010 system to support ingestion and distribution of PDS3 and PDS4 data

PDS 2010 Overall Transition Approach

- Analyze tradeoffs and impacts
- Complete Initial PDS4 Standard (v4.0)
  - Work with new mission startups to define PDS4 products for future deliveries (e.g., 2012)
  - Work with IPDA for adoption of the core when tools, infrastructure and standards in place
  - Validate PDS4 standard between system builds 1 and 2
- Allow for phased transition to PDS4 over time
  - Existing PDS3 pipelines will remain supported during life of mission
  - Support ingestion and distribution of PDS4 data when ready
  - Missions and IPDA partners can transition when they want to
- Ensure PDS 2010 will serve data from PDS3 and PDS4 repositories
- Migrate data sets to PDS4 as needed

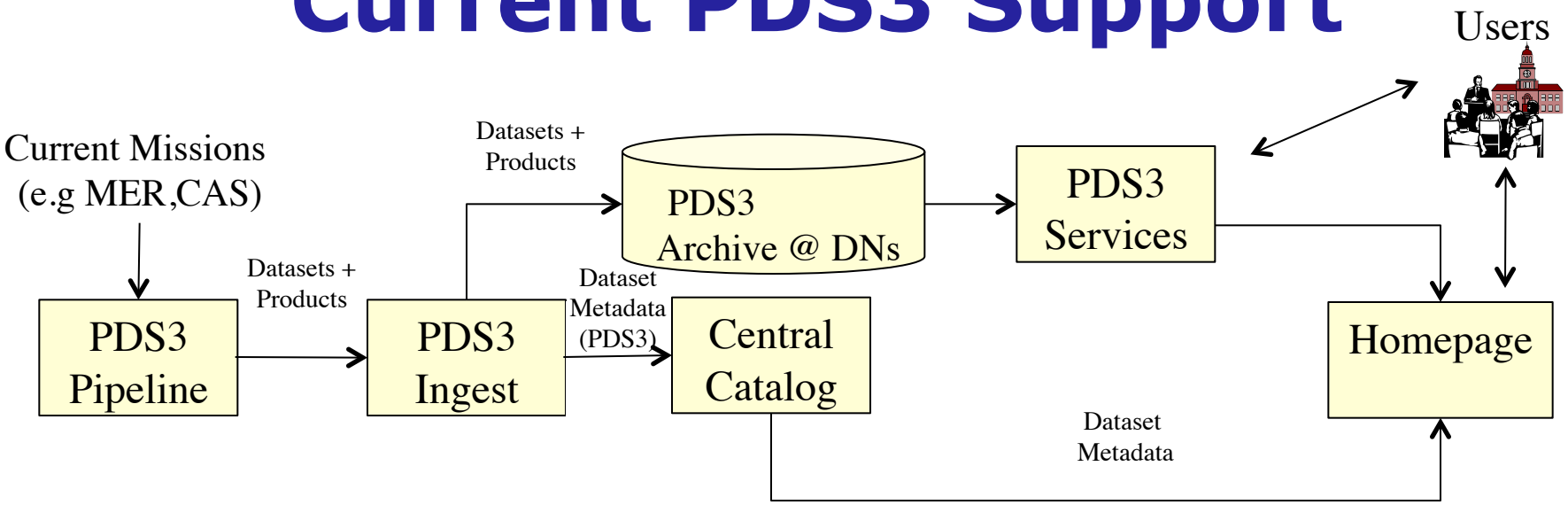
Initial PDS4 Data Standard

- Version 4.0 data standards will be baselined with the first build of the system
  - Information Model Specification
  - Data Dictionary
  - Standards Reference
  - Data Providers Handbook
  - Initial Product Schemas
  - Tutorials
- This provides a standard to
  - Support development of PDS4 products for new mission startups
  - Support and validate PDS 2010 system development

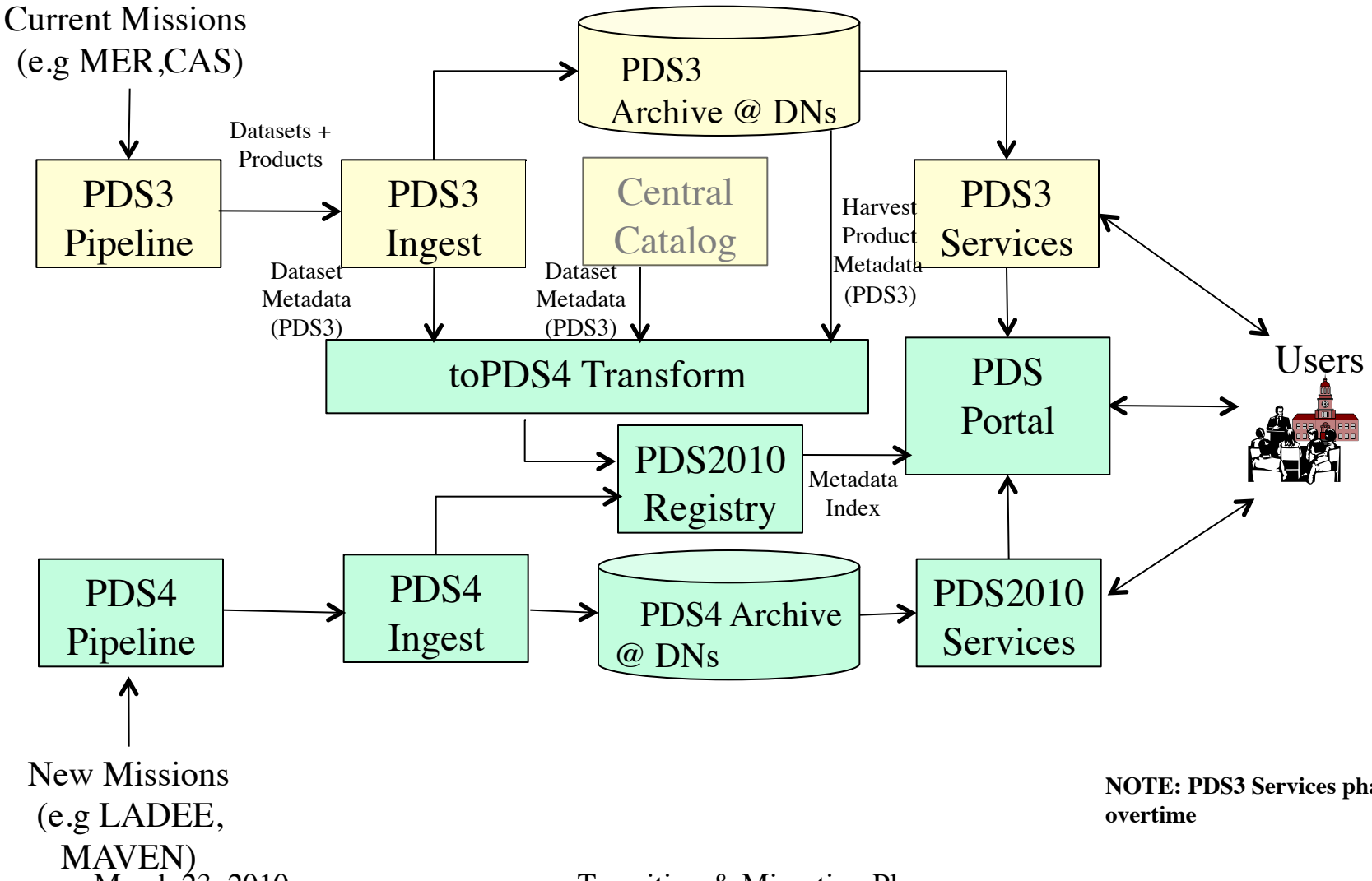
System Transition Concept

- PDS Central Catalog will be replaced with a registry system that will support BOTH PDS3 and PDS4 data collection and product registration
- Tool support for PDS3 and PDS4
- Central PDS homepage will link to both PDS3 and PDS4 resources as they are available
  - Expectation is that PDS3 resources will decrease and PDS4 will increase overtime
- Each node will execute their own transition timeline and plan to upgrade to PDS4
  - Overall plan is that existing PDS3 services will remain while new PDS4 services will be added
  - Nodes will acquire additional hardware, as needed

Current PDS3 Support



Transition to PDS4 Support



NOTE: PDS3 Services phased out overtime

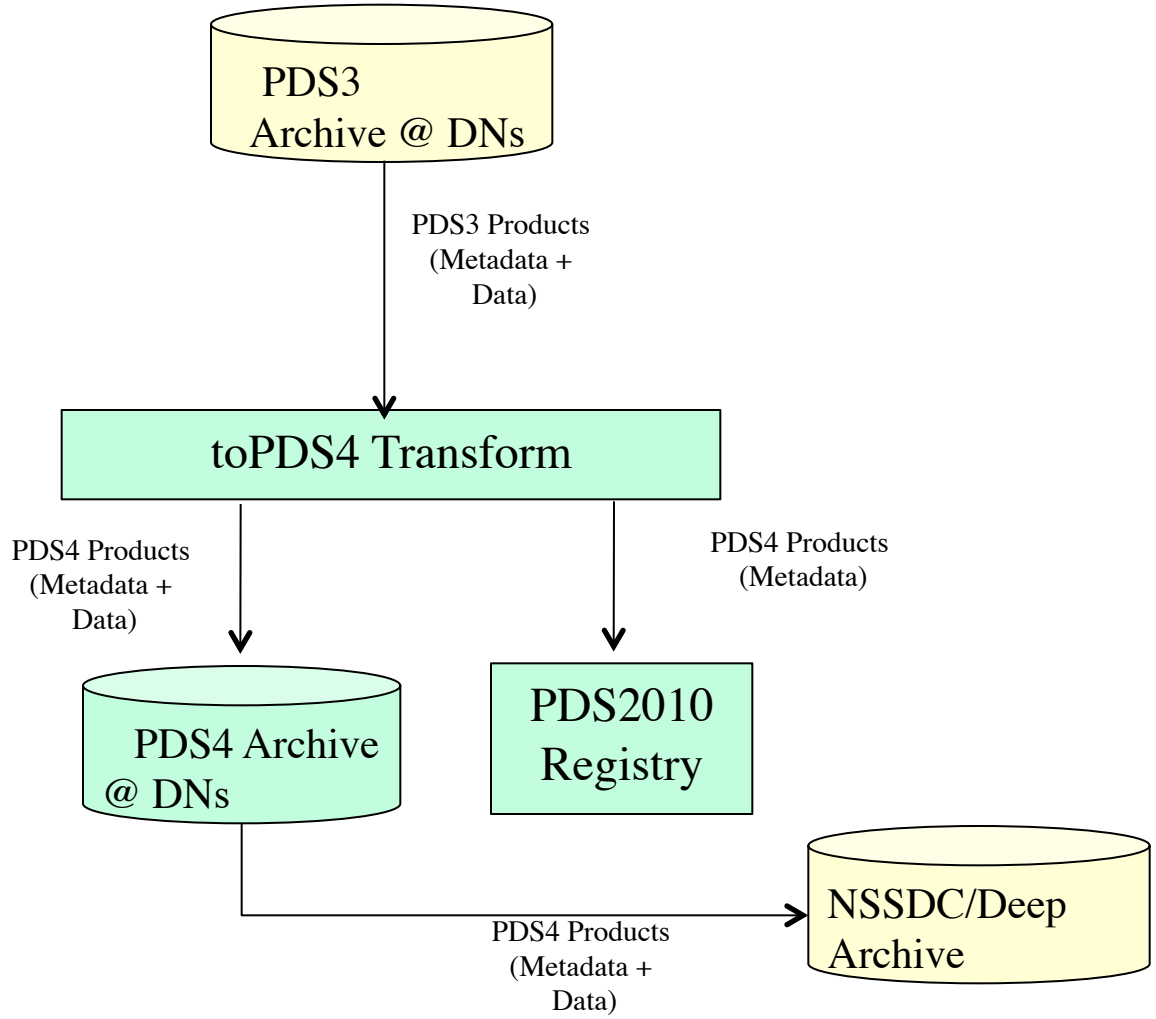
Transition Tradeoffs

	Resources	Training	Usability	Efficiency
Big Bang	Resources will be fixed, however, the schedule can scale which can delay the release of PDS 2010	Not a major transition issues	If all services are in place first, then this will increase usability. However, deployment of PDS 2010 could be delayed longer affecting the ability to put PDS4 model in place	Less efficient of the two approaches since it delays rolling out PDS 2010
Incremental	Resources and the timeline can be scaled with PDS budget (whether overguide is provided or not)	Not a major transition issues	Critical capabilities are put in place earlier, but the trade off is number of functional capabilities that must be supported prior to ingestion/distribution	More efficiency of the two approaches since it allows for delivery of increasing capability and the MC can then determine functional capabilities required in order to accept and distribute PDS4 data

Transition Impact on Stakeholders

	Data Providers	Data Users	Discipline Nodes	Engineering Node
Big Bang	Capabilities and services are delayed, however, greater functionality would be in place when they begin to deliver PDS4 data	Data users would get data in PDS4 format later, but could potentially have more tool support	Larger impact on the nodes if all nodes need to put services and capabilities in place first	Larger impact on the Engineering Node to put services and tools in place and ensure PDS-wide readiness to accept data for all new missions in PDS4 at once
Incremental	Capabilities can be put in place earlier and begin flow of PDS4 data and support	Data users would get data in PDS4 format earlier, but would possibly have less tool support	Less impact on the nodes if data is accepted in stages	Less impact on the Engineering Node and improved project performance since results can be realized earlier and PDS can deploy services and train over time

Migration Concept



NOTE: Deliveries to the Deep archive will be performed if actual data has been transformed.

Migration Decision Made

No Migration

- Users continue to have access to PDS3 and PDS4 data
- System in place to support both PDS3 and PDS4

On-demand Migration

- Users continue to have access to PDS3 and PDS4 data
- System in place to support both PDS3 and PDS4
- Some data sets migrated and redelivered to NSSDC

Full Migration

- Users have access to data in PDS4 data format only
- Users Software/Tools only support PDS4
- All data migrated and redelivered to NSSDC

Data Migration Decision Criteria

	Resources	Training	Usability	Efficiency
No Migration	No impact on resources to convert data, however, PDS software will need to support PDS3 and PDS4	Users will need to be capable of working with PDS3 and PDS4 data	Limited support for working with PDS3 data in the future	Most cost-effective solution
On Demand Migration	Impact on conversion of a subset of critical data sets; PDS software will need to support PDS3 and PDS4	Users will need to be capable of working with PDS3 and PDS4 data	Limited support for working with PDS3 data in the future; critical data sets will be converted to PDS4 to improve usability	More costly than "No Migration", however, improves usability following a pragmatic approach
Full Migration	Substantial impact in converting data, redelivering to NSSDC, and developing supporting software	Users will ultimately need to only be familiar with PDS4	Usability would be improved since PDS data will be brought up to date	Substantial costs in migrating all data

Data Migration Impacts

	Data Providers	Data Users	Discipline Nodes	Engineering Node
No Migration	No impact	Users will need to be familiar with PDS3 and PDS4 data formats	Nodes will need to continue to provide support for PDS3 data	Engineering Node must continue to provide software support for PDS3 and PDS4
On Demand Migration	No impact	Users will need to be familiar with PDS3 and PDS4 data formats. However, critical data sets can be migrated to enhance usability.	Nodes will need to continue to provide limited support for PDS3 data; minor impact in migrating critical data sets	Engineering Node must continue to provide software support for PDS3 and PDS4
Full Migration	No impact	Data users will need to eventually only learn PDS4	Substantial impact in migrating and redelivering all data to PDS4	PDS3 tools and services can be retired once migration is complete

Summary

- The PDS 2010 project plan allows for transition over time
  - This will allow for increasing stability of the PDS4 standard as well as development of the software infrastructure and necessary tools
- The PDS 2010 migration plan allows for migration over time
  - Migration will be driven by need. PDS will continue to serve PDS3 data, however, newer tools and formats may be useful
  - An output format of PDS4 transformation is also backward compatibility to PDS3 to use existing tools

Backup