AMMOS-PDS Pipeline Service (APPS)

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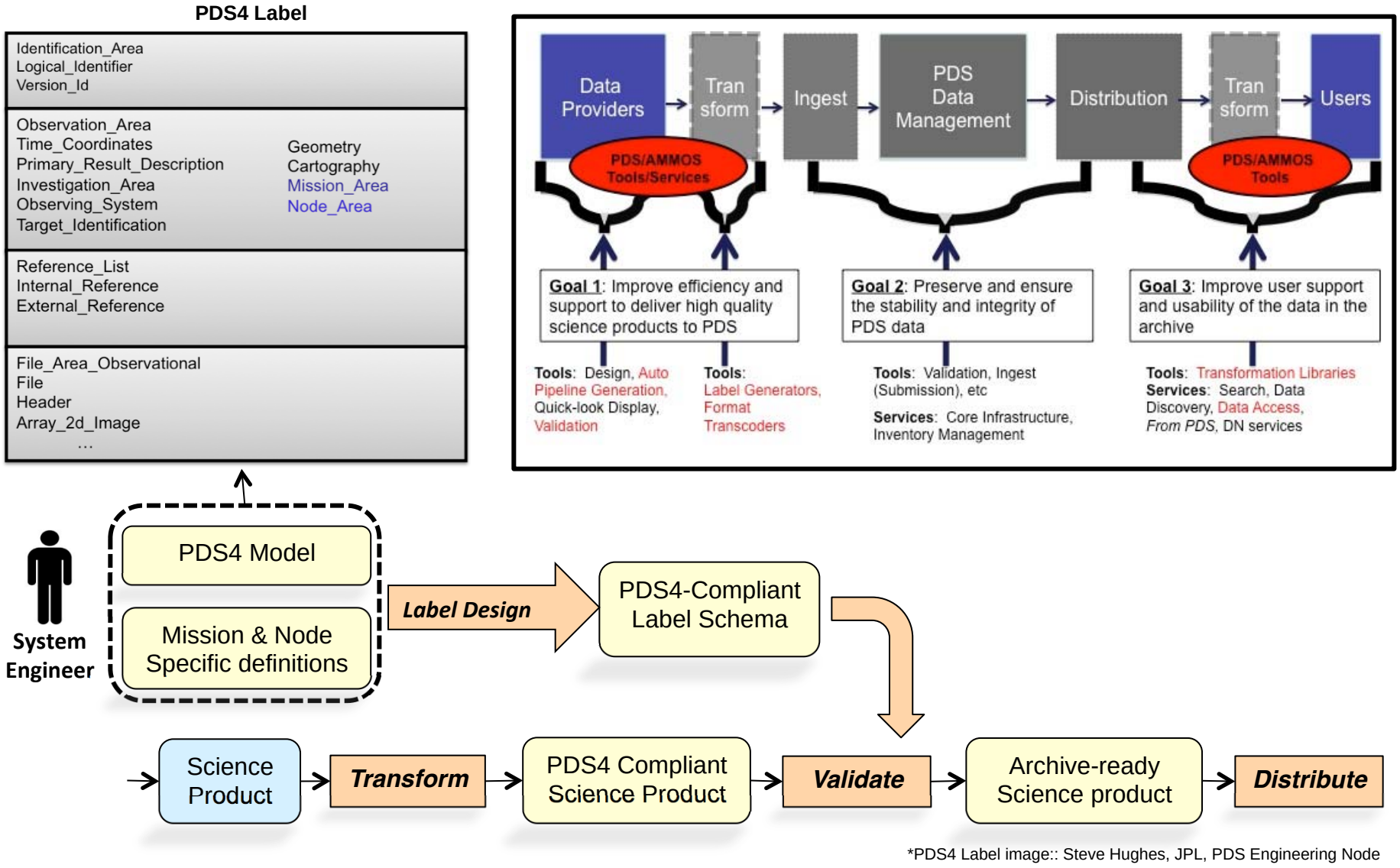
Agenda

- Overview of APPS
- System Context
- Task Status
- Demo
- Q & A

Objectives & Goals

- Objectives:
  - Streamline delivery of science data to the PDS:
    - End-to-End pipeline to do PDS Archiving.
  - Provide a multi-mission science data (instrument data + metadata/ label) transformation service which connects product generation pipelines and the PDS Archive.
  - Ensure compliance to PDS4 Standards.
- Goals:
  - Improve the efficiency (e.g. reduce cost to projects) and reliability of providing mission data to the PDS.
  - Contribute to the usability of PDS data.

Vision



*PDS4 Label image:: Steve Hughes, JPL, PDS Engineering Node

PDS Label Transition

PDS3 Label

PDS4 Label

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PDS_VERSION_ID = PDS3
FILE_NAME = "SP240603.IMG"
RECORD_TYPE = FIXED_LENGTH
RECORD_BYTES = 1024
FILE_RECORDS = 5634
LABEL_RECORDS = 2
^IMAGE = 3
SPACECRAFT_NAME = MARS_GLOBAL_SURVEYOR
MISSION_PHASE_NAME = "SPO-2"
TARGET_NAME = MARS
INSTRUMENT_ID = "MOC-NA"
PRODUCER_ID = MGS_MOC_TEAM
DATA_SET_ID = "MGS-M-MOC-NA/WA-2-DSDP-L0-V1.0"
PRODUCT_CREATION_TIME = 1999-02-24T21:56:51
SOFTWARE_NAME = "makepds 1.4"
UPLOAD_ID = "moc_p406_v1.sasf"
PRODUCT_ID = "SPO-2-406/03"
START_TIME = 1998-07-04T15:02:50.12
IMAGE_TIME = 1998-07-04T15:02:50.12
STOP_TIME = 1998-07-04T15:03:07.41
SPACECRAFT_CLOCK_START_COUNT = "584031789:182"
SPACECRAFT_CLOCK_STOP_COUNT = "N/A"
FOCAL_PLANE_TEMPERATURE = 248.7 <K>
GAIN_MODE_ID = "8A"
OFFSET_MODE_ID = "19"
LINE_EXPOSURE_DURATION = 3.070000 <MILLISECONDS>
DOWNTRACK_SUMMING = 1
CROSSTRACK_SUMMING = 1
EDIT_MODE_ID = "512"
RATIONALE_DESC = "WEST EDGE OF SMOOTH SURFACE UNIT IN CENTRAL SINUS MERIDIANI"
OBJECT = IMAGE
LINES = 5632
LINE_SAMPLES = 1024
LINE_PREFIX_BYTES = 0
LINE_SUFFIX_BYTES = 0
SAMPLE_TYPE = UNSIGNED_INTEGER
SAMPLE_BITS = 8
SAMPLE_BIT_MASK = 2#11111111#
CHECKSUM = 16#35AFC6F7#
END_OBJECT = IMAGE
END
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<?xml version="1.0" encoding="UTF-8"?>

<?xml-model href="http://pds.nasa.gov/pds4/pds/v1/PDS4_PDS_1101.sch"
    schematypens="http://purl.oclc.org/dsdl/schematron"?>

<Product_Observational
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    xmlns:img="http://pds.nasa.gov/pds4/img/v1"
    xmlns:mgs="http://pds.nasa.gov/pds4/mission/mgs/v0"
    xmlns:pds="http://pds.nasa.gov/pds4/pds/v1"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://pds.nasa.gov/pds4/pds/v1
                        http://pds.nasa.gov/pds4/pds/v1/PDS4_PDS_1101.xsd

                        http://pds.nasa.gov/pds4/img/v1
                        http://pds.nasa.gov/pds4/img/v1/PDS4_IMG_1100.xsd

                        http://pds.nasa.gov/pds4/mission/mgs/v0
                        http://pds.nasa.gov/pds4/mission/mgs/v0/PDS4_MGS_0001.xsd">

    <Identification_Area>
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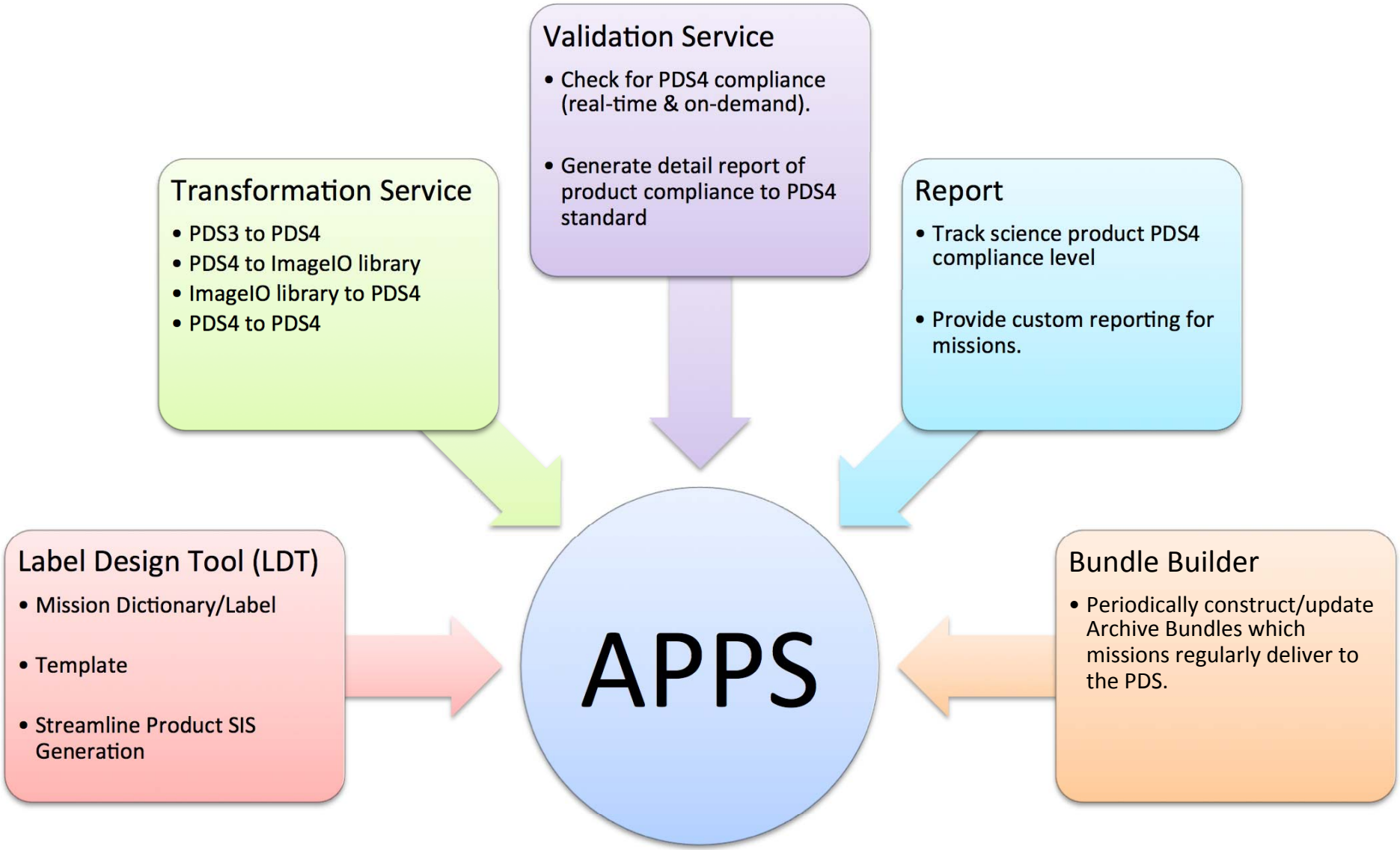
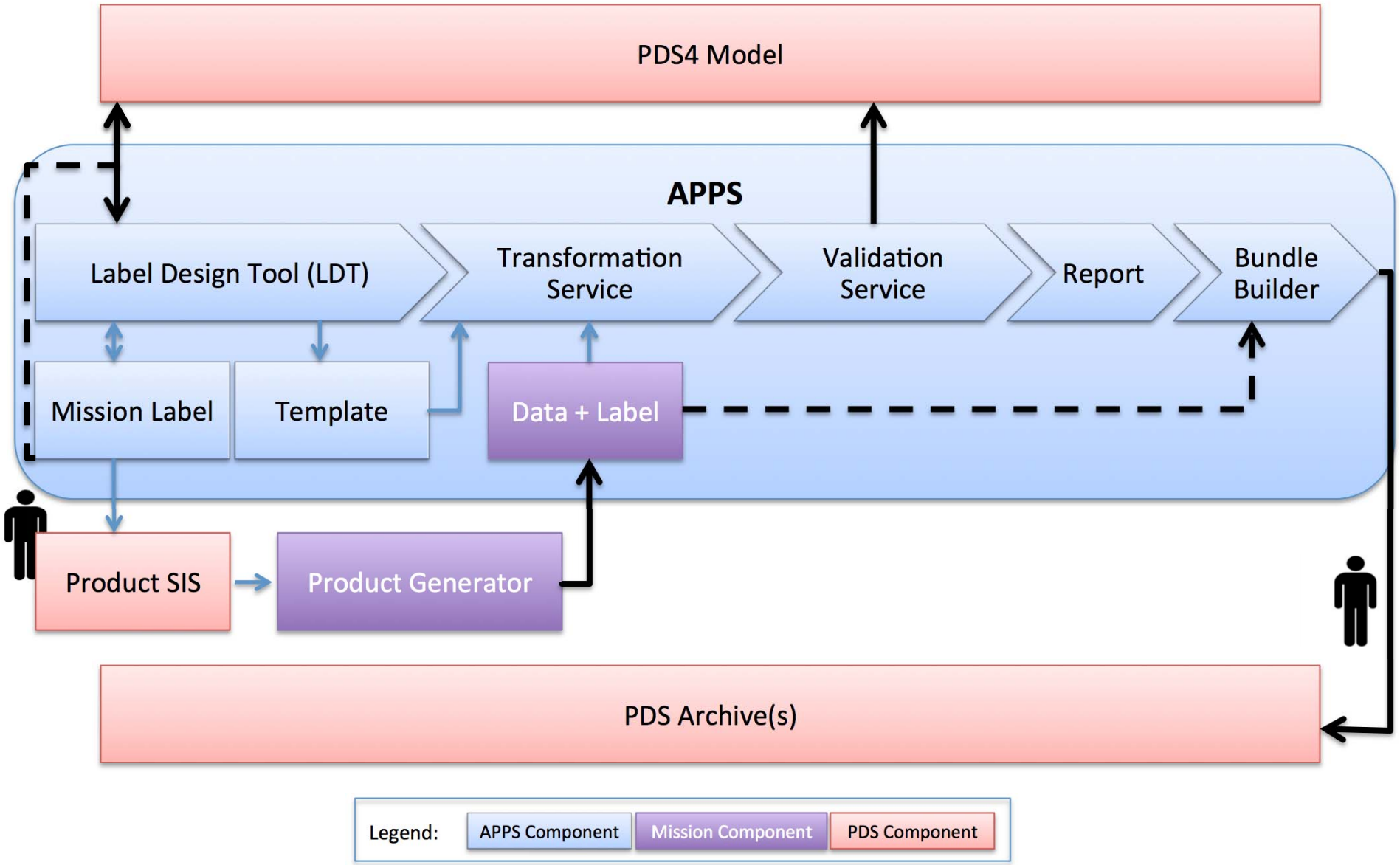
System Components



APPS Context Diagram



AMMOS-PDS Collaboration

- Label Design
  - Requirements and design for the tool contributed to by the Imaging Node.
  - Software for Mission Dictionary validation provided by the Engineering Node.
- Transformation
  - Software for PDS3 to PDS4 label conversion provided by Engineering and Imaging Nodes.
  - In turn, AMMOS is contributing improvements to the software and provides PDS with PDS3 image conversion software.
- Validation
  - Service-wrapped software for PDS3 and PDS4 validation provided by the Engineering Node.

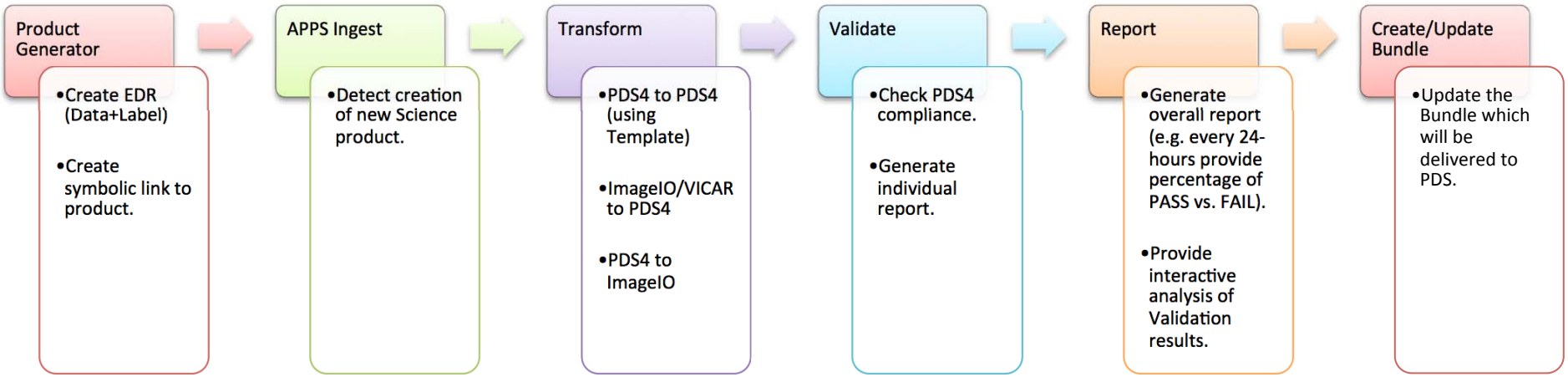
Task Status

- APPS System will be complete by 9/30/2014:
  - Engineering delivery of the Label Design Tool (LDT) to InSight by 3/3/2014.
  - Transformation, Validation, Reporting, and Bundle Builder ready for I&T by 6/27/2014.
  - Enhancements and documentation by 9/30/2014.

Demos

1. Label Design Tool (LDT) (avail. for InSight on 3/3/2014)
   - https://jpltube.jpl.nasa.gov/details.aspx?ID=1646

2. APPS Pipeline (up to the Bundle Builder – still UD)
   - https://jpltube.jpl.nasa.gov/details.aspx?ID=1647



Q & A

- Thank you.