

Notes on the Migration of MSL ChemCam Raw Data from PDS3 to PDS4

PDS Geosciences Node

May 21, 2024

These notes apply to the transition of Mars Science Laboratory (MSL) ChemCam raw data from PDS3- to PDS4- compliant data archives beginning with MSL PDS data release #36, and the migration of earlier ChemCam PDS data from PDS3 to PDS4.

Notes on New Releases

Beginning with PDS Release 36, August 2, 2024, new ChemCam raw data products are archived under the PDS4 standard. The older data products are planned to be migrated in the near future, but for now these data directories remain unaltered (see “Notes on Migrated Data” below).

No files have been removed from the PDS3 archive volume. The only change is the addition of PDS4 labels and documentation files. New ChemCam data products include both PDS3 and PDS4 labels.

Instead of the data sets and archive volumes in PDS3, products in PDS4 are organized into collections and bundles. A collection is a set of related products, which may be data products, document products, browse products, miscellaneous products, etc. A bundle is a set of related collections.

One PDS4 bundle has been defined for the three datasets on the ChemCam EDR volume. The ChemCam raw bundle has one data collection, two document collections, and a miscellaneous collection that holds the PDS3 index table. The tables below show the correspondence between the PDS3 volume and PDS4 bundle and PDS3 product types and PDS4 collections, respectively.

MSL ChemCam Raw PDS4 Bundles and Corresponding PDS3 Volume and Data Sets

Archive	PDS4 Bundle	PDS3 Volume	PDS3 Data Set ID
MSL ChemCam raw data	urn:nasa:pds:msl_chemcam_raw	mslccm_0xxx	MSL-M-CHEMCAM-LIBS-2-EDR-V1.0 MSL-M-CHEMCAM-RMI-2-EDR-V1.0 MSL-M-CHEMCAM-SOH-2-EDR-V1.0

MSL ChemCam Raw PDS4 Data Collections and Corresponding PDS3 Product Types

PDS4 Collection	PDS4 Collection ID	PDS3 Product Type
MSL ChemCam raw data	data	LIBS, RMI, and SOH EDRs

A bundle is identified by a file named **bundle_*.xml** in the root directory of a bundle; it describes the bundle and lists the collections that belong to it. A collection is identified by a file named **collection_*.xml** in a subdirectory. The file **collection_*_inventory.csv** is a list of the products that belong to the collection.

Every product, collection, and bundle in PDS4 has a Logical Identifier (LID) which is guaranteed to be unique throughout PDS. The LID is defined in the PDS4 label using the tag **<logical_identifier>**. For data products, the LID is analogous to PRODUCT_ID in a PDS3 label.

Not every PDS3 directory has a PDS4 counterpart. The PDS3 data, calib, catalog, document, and index directories have been made into collections, but the label and extras directories have been left unchanged. No PDS4 labels have been provided for **aareadme.txt**, **voldesc.cat**, and **errata.txt** in the volume root directories. Errata.txt has been replaced by a release notes file (in the document collection), which will be updated with each release. Note that the SIS documents in the document directory refer to the PDS3 datasets.

Notes on Migrated Data

The data products in the PDS3 ChemCam archives at the Geosciences Node are already PDS4-compliant, so there will be no need to alter the data files when the older data are migrated. In the data directories, the metadata in PDS3 labels will be copied to PDS4 labels, so that each data product will have both a PDS3 and a PDS4 label.

Document Change Log

Date	Description
May 21, 2024	Initial version