PDS GLOSSARY

Accept (verb) - To accept a resource is to agree to store it on the system.

Administer - The System function that enables system administrators to monitor, backup, repair, upgrade, and reconfigure the System.

ancillary information - Information deemed critical to understanding, interpreting, or processing a specified data set. In the PDS, this typically takes the form of calibration information, documentation, or software. A file containing ancillary information is referred to as an **ancillary file**.

archive (verb) - To preserve data sets and ancillary files in a PDS compliant volume structure on long-term storage media, such as CD-ROM and DVD (see data set, ancillary file, and volume).

Archive, The - The collection of all resources that are preserved as part of the PDS mandate.

access (verb) - To access a resource is to view or download a representation of that resource (see **representation**). A resource that can be accessed is **accessible**.

associated information - Information deemed related to a specified resource. The relationship between the associated information and the resource is completely at the discretion of the party making the association. The relationship could simply be that the "information is associated with the resource." Ancillary information is a special case of associated information (see **ancillary information**). A file containing associated information is referred to as an **associated file**.

attribute - A property (characteristic) that has a name and a value. For example, the Cassini mission has an attribute named "MISSION_NAME" with the value "Cassini".

authenticate (verb) - To determine whether a user logging into the system can access restricted resources.

available - A resource is available when it is accessible (see **access**). A repository or catalog is available when it is online and the resources contained in them can be accessed.

body (planetary) - A general way to refer to planets, moons, asteroids, comets, and other physical objects in the solar system.

browse (verb) - To view resources online through a web browser.

browse product - A resource representation created for viewing (see **resource representation**).

catalog (noun) - A database containing an organized collection of attributes used to select and locate resources.

catalog (verb) - To save the contents of a resource description in a database.

CHRONOS - A NAIF-supplied tool for handling transformations from one time system to another.

client - A program used to access the System from a user's computer. The most common client is a web browser. Computation done by client is referred to as being done clientside.

Core System, the - The part of the System that supports only the essentials of distribution and archiving. It ensures that PDS products are properly stored in the system and that they can be found through attribute searches, downloaded by the user, and transferred to physical media for long-term archiving.

correlate - To correlate an attribute is to determine whether it is valid to directly compare values of that attribute from two different data sets. For example, if the keyword LONGITUDE is used in the labels of data products from two different data sets, LONGITUDE is correlated if exactly the same definition of LONGITUDE is used in both data sets.

curating node - The PDS data or discipline node responsible for distributing a specified data set.

data - The raw or processed results of scientific observations.

data node - An organization outside the PDS that distributes PDS data through the System. The organization is typically an instrument team, for example the Mars Odyssey THEMIS team, which manages the THEMIS data node at Arizona State University.

Data Mining function - The System function that extracts and uses information from the data product itself, rather than the attributes of that product.

data product - A resource consisting of a PDS compliant label and one or more files containing data. The label provides a resource description of the data files (see **data** and **label**).

data provider - The organization responsible for delivering mission archives to the PDS (see **mission archives**).

data set - A collection of related data products. The data products typically (but not always) come from a series of observations from an instrument and have been processed in the same manner (see **data product**).

Data Set Catalog, the - The PDS catalog that allows resources to be located through association with a specific data set (see **data set** and **catalog**).

data set collection - A collection of related data sets. A data set collection is an aggregation of several data sets that are related by observation type, discipline, target, time, etc. The data sets within the data set collection are treated as a single unit; that is, they are intended to be archived and distributed together (see **data set**).

deep archive - The collection of PDS archive volumes held by the National Space Science Data Center (NSSDC).

deliver data (verb phrase) - To submit mission archives to the PDS (see **submit** and **mission archive**). Typically, for large data sets, only a portion of the mission archive is submitted in a single **delivery**.

Display function - The System function that provides viewable representations of resources.

distribute (verb) - To distribute a resource is to enable users to locate and download it, along with all associated resources.

Extended System, the - The part of the System that improves the usability of the system and data, especially for science users. It calls for advanced interfaces, correlative search across data sets, geometric calculations, on-the-fly data processing, and the use of information embedded in the data.

failover - The ability of the System to route requests from a component that has failed (e.g., a hard disk that has crashed) to one that can provide the same functionality or resources (e.g., another disk with the same contents).

gazetteer - A database that associates the topographical features of a body with their location on the body's surface (see **body**).

Geometry Function - The System function that deals with the geometric relationships between instrument hosts, instruments, and targets of observation. The Geometry Function works with properties including location, orientation, instrument pointing, time systems, ephemerides, and illumination angles.

Geo-referenced - Pertaining Where every pixel in an image is mapped to coordinates on the surface of a body in a specified map projection (see **body**).

Interface Control Document (ICD) - A document in which an instrument team

describes all the mission archives that will be produced from their instrument and the schedule by which these will be delivered to the PDS (see **mission archives**).

index - Refers to a PDS index table, a fixed-field-length, comma-delimited table, where each row contains a product ID and the set of attributes describing that product. The attributes are typically the same ones found in the product's label (see **label** and **product**).

Ingest function - The System function that receives, stores, and catalogs resources (see **receive**, **store**, and **catalog**).

keyword - An element of the Planetary Science Data Dictionary (PDSDD) that defines a named property of an object. The keyword plus its value is an attribute (see **attribute** and **object**).

keyword-value- A keyword-value can be a single value, an ordered sequence of values, or an unordered set of values. All keyword-values conform to an ODL representation as defined by the keyword definition within the Planetary Science Data Dictionary (PDSDD) (see **keyword** and **standard values**).

label (product label) - A resource description stored in a file. If the label is in the same file as the resource, it is called an **attached label**. If it is in a separate file, it is called a **detached label**.

lifecycle - The lifecycle of a resource is the set of distinct changes that a resource undergoes from its creation to its final place, if any, on the System and in the Archive.

local data dictionary - The set of definitions for all attribute names that are valid for use in resource descriptions, in a specified context. For example, all the attribute names that can be used only in the context of the Rosetta mission. In the PDS, local data dictionaries are implemented as separate namespaces in the Planetary Science Data Dictionary (see **Planetary Science Data Dictionary**).

location - The location of a resource on the System is its Uniform Resource Locater (URL).

Management Council (PDS) - The governing body of the PDS, consisting of the project manager, project scientist, project engineer, mission interface lead, and managers of all the PDS discipline nodes.

metadata - In the general sense, metadata is any information about data that is not the data itself. In the PDS, metadata refers specifically to the resource description.

namespace - A set of names that are all unique relative to each other. Typically,

there is a single “controlling authority” that controls the names in the namespace. For example, a mission or discipline node may control all the names in a local data dictionary (see **local data dictionary**).

metrics - Useful statistics about the operation of the System, for example, the number of bytes downloaded from each repository, average data rates for downloads, which products were accessed most often, etc.

mirroring (verb) - Setting up a duplicate repository on the network, in case the original repository fails or becomes overloaded.

mission archive - A data set, along with all its ancillary files, organized in a PDS-compliant volume structure (see **data set**, **ancillary information**, and **volume**).

nearline storage - Computer storage that can be placed online on demand, for example a robotic tape system that can load and unload tapes. Near-line storage is used by data warehouses as an inexpensive, scalable way to store large volumes of data.

non-functional requirements - Requirements that describe characteristics of or constraints on the System.

Notify function - The System function that enables users to receive an email informing them when selected resources have been added or modified.

Object Access Library (OAL) - A library of C language routines for reading, writing, and manipulating PDS labels and objects (see **label** and **object**).

object - An element of the Planetary Science Data Dictionary (PDSDD) that names and defines a resource (see **Planetary Science Data Dictionary**).

offline storage - Computer storage that is not accessible through the System, for example a library of DVDs.

on demand - A System function is available on demand when a user can start, stop, and control that function from the user's computer.

online - A resource is online when a user can access it from the user's computer (see **access**).

package (noun) - A set of retrievable resources and resource descriptions collected into a single file, typically for download.

physical media - Computer storage media that can be removed from a computer system and physically transferred and stored in another location. Examples are CD-ROM , DVD, and magnetic tape media. If the physical media is

approved for long-term storage of PDS archives, it is refered to as **archive media**.

Planetary Science Data Dictionary (PSDD) - The set of definitions for all attribute names that are valid for use in resource descriptions, across the PDS. Note that the PSDD has been implemented as part of the PDS Data Set Catalog.

PDS compliant - A resource is PDS compliant when it adheres to all applicable PDS standards for that resource. Resources for which PDS compliance is particularly important are volumes, products, index tables, and labels (see also **validation**).

PDS node - A generic way to refer to any of the PDS data nodes, discipline nodes, or central node.

pointing information - Information giving the position and orientation of an instrument so one may determine its field of view.

policy - A rule that governs some aspect of PDS operations.

process (noun) - Computer code that can be called or executed by the System.

Process function - The System function that calls or executes computer code, using resources or resource descriptions as input.

product - A retrievable resource and its resource description.

priority - A measure of the importance of a requirement.

radiometrically corrected - The relative brightness of pixels in an image have been corrected to the proper values.

referential integrity - A database has referential integrity if it is always true that when a record in a table refers to a corresponding record in another table, that corresponding record exists.

release (noun) - A subset of a mission archive that is delivered to the PDS and made accessible to the public as a single unit (see **mission archive**).

release (verb) - To make a resource accessible to the public (see **access**).

receive (verb) - The PDS receives a resource when a PDS node is given physical media containing the resource or when the resource is transferred over the network to a PDS node (see **submit**).

repository - mountable computer storage media that contains retrievable resources.

representation (of a resource) - The actual bits and bytes returned by a computer program that mediates between the user and the resource. For example, a program that lets the user request an image, might return a byte stream containing the image data, a zipped file containing the image, or a JPEG formatted image for display in a browser. Technically speaking, the phrase "the user views or downloads a resource" really means "the user views or downloads the representation of a resource."

resource - Anything that can be described by a set of attributes. Resources in the PDS include data, software, documents, web services, spacecraft, and personnel.

resource description - The set of attributes describing a resource. In the PDS, all attributes must be defined in the Planetary Science Data Dictionary (PSDD).

Retrieve function - The System function that enables the user to download resources to the user's computer.

review - The process of determining whether the content of a resource is scientifically usable and the description is sufficient to support its use. **Peer review** is the process of reviewing a data set.

role based authentication - Access to restricted areas of the System is determined by the user's assigned role. In the PDS, roles may include Subscriber, Data Engineer, System Administrator, etc.

search (verb) - To compare cataloged attributes, within or across contexts, to locate resources that meet user criteria. Searching includes, for example, locating a subset of data products from within a data set, as well locating data products across instruments or missions. A search may be direct, correlated or calculated. A **direct search** ignores issues of context and compares only cataloged values. A **correlated search** will correlate the attributes to be tested before performing the the search. A **calculated search** involves computing one or more of the search criteria.

Search function - The System function that supports the location of resources based on their cataloged attributes (see **search**).

SPICE System - A means for providing scientists with ancillary observation geometry data and events, and related tools, useful in the planning and interpretation of science instrument observations returned from planetary spacecraft. SPICE stands for Spacecraft, Planet, Instrument, C-Matrix, and Events (see **Geometry function**).

status (of a resource) - The attributes that represent the state of a resource at a given point in time. Any set of attributes can be defined for this purpose and thus

be “tracked” by System. However, it is natural to use the _STATUS keywords, which define the state of a resource with respect to a given lifecycle. For example, the ARCHIVE_STATUS of a data set tells which phase of the archive lifecycle the data set is in (see **lifecycle** and **Track Function**).

standard value – Some, but not all, keywords have keyword-values that are constrained to a prescribed set of values (see **keyword-value**).

store (verb) - To place a resource on computer storage media in the System, so that it can be used.

submit (verb) - An organization submits a resource to the PDS when it sends physical media containing the resource to a PDS node (to **submit physically**) or transfers the resource over a network to a computer belonging to a PDS node (to **submit electronically**). Note: a special case of submitting resources is **delivering data** to the PDS (see **deliver data**).

subscribe (verb) - To subscribe to a resource means to request email notification whenever that resource is released or updated. Typically, users will subscribe to be notified when new data from a selected instrument are released.

System, the - The integrated hardware and software used to support the essential functions of the PDS.

tool - A computer program that is distributed by the System, but executes on a user's computer, independent of the System. This is in contrast with a client, which communicates with the System (see **client**).

Track function -The System function that reports on the status of a resource, starting from the time it is submitted to the PDS and continuing throughout its lifecycle (see **status** and **lifecycle**).

Transfer function - The System function that makes resources available to remote systems or writes it to removable storage media.

user - Any person who uses or accesses resources on the System.

Validate function - The System function that determines whether resources received by the PDS are PDS compliant (see **PDS compliant** and **validation**, below).

validation - The process of determining whether a resource and its description is PDS compliant. Typically, this means it is well-formatted, complete, and capable of being stored or cataloged and made accessible. A resource that passes validation is also said to be **validated** (see **PDS compliant**).

view (verb) - To view a resource is to look at a representation of the resource

through a browser, another client, or display tool (see **representation**).

volume - A directory structure for storing data sets and ancillary files. A **PDS compliant volume** is one that is consistent with the structure defined in the PDS Standards Reference. Note that a volume may reside in an online repository, where it is referred to as an **online volume**. Or it may be written to archive media, where it is referred to as an **archive volume**.