The PDS4 LDDTool – Information Modeling for Data Preparers. Anne C. Raugh[1] and John S. Hughes[2], [1]University of Maryland, College Park, MD, *araugh@umd.edu*, [2]Jet Propulsion Laboratory, Pasadena, CA, *John.S.Hughes@jpl.nasa.gov.*

Introduction: One of the major design goals of the PDS4 development effort was to provide an avenue for data preparers to extend the core PDS4 Information Model (IM) into their own contexts – specifically, to allow data preparers to define their own, new metadata values as needed to fully document their archive submissions. These local extensions, referred to as *data dictionaries*, must, of course, follow the same techniques, conventions, and restrictions as the core IM itself in order to be effective within the PDS4 system. Notwithstanding, expecting all data preparers to acquire expertise in information modeling, model-driven design, ontology, schema formulation, and PDS4 design conventions and philosophy is unrealistic, to say the least.

To bridge that expertise gap, the PDS Engineering Node has developed the data dictionary creation tool known as *LDDTool*. This tool incorporates the same software used to maintain and extend the core IM, packaged with an interface that enables a data preparer to create his contextual metadata using the same, standards-based framework as the PDS itself uses, and then output that metadata as the standardized set of schema files comprising a PDS4 data dictionary. Through this interface, the novice metadata developer has immediate access to the common set of PDS4 data types and unit classes for defining attributes, and a straight-forward method for constructing classes. The more experienced developer, using the same tool, has access to more sophisticated modeling methods like abstraction and extension, and can define very sophisticated validation rules. The generation of the PDS4-compliant schema files is handled entirely by *LDDTool*.

We present the key features of the PDS Local Data Dictionary tool (*LDDTool*), a tool that supports both the development of extensions to the PDS4 IM and ensures their compatibility with the IM.