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PDS4 – The New Infrastructure and Standards for Describing, Managing, Archiving and Sharing Planetary Science Data Across the International Community

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PDS4 is a Planetary Data System (PDS)-wide project to modernize planetary data standards and services in order to support both the acquisition and distribution of data from a wide variety of providers and users, as an international platform for planetary science archives. The goals are to enable high quality science product delivery to the planetary data archives around the world, preserve and ensure the stability and integrity of the data in the archives, enable data sharing among the archives and improve user support and usability of the data. The system is built on a distributed information services architecture that uses online registries to catalog data and web services across international archives to track and provide its holdings to the world-wide planetary science community. Based on an information model-driven architecture its operational capabilities have been configured and deployed. Six software and data standards builds have iteratively increased capability and stability of the system. The International Planetary Data Alliance (IPDA) has endorsed PDS4. Ten missions across multiple space agencies are now developing archives using the PDS4 and progress is being made towards international interoperability using the PDS4 software infrastructure. This talk will expand on PDS4 and its emergence as the science data archive for a highly diverse science community and how it builds a foundation for enabling interoperability and access to massive planetary science data holdings.