Introduction: Korea Aerospace Research Institute (hereafter KARI) is carrying out development of the ground system to operate the Korean first lunar orbiter, called Korea Pathfinder Lunar Orbiter (hereafter KPLO). The Science Data Management Subsystem (hereafter SDMS) of the ground system will perform the functions of long-term preservation and the public release of scientific measured data from science instruments onboard of KPLO.

The mission payloads of KPLO will consist of several instruments to perform the science missions and technology demonstration. Three of the science instruments are being developed by Korean domestic institutes. The three instruments are a gamma ray spectrometer (KGRS), a wide-angle polarimeter (PolCam) and a magnetometer (KMAG). The science data acquired by the three science instruments will be released to the public users in order to enhance scientific achievement with international science communities. The public release of the science data will be performed through KARI Planetary Data System (hereafter KPDS) as one of modules in Science Data Management Subsystem.

Science Data Management Subsystem: SDMS is one of the subsystems of the KPLO ground system. The SDMS will perform the archive of the science data from the Korean domestic science instruments and release the science data to public users (Fig. 1).

KARI Planetary Data System: KPDS will provide the following key functions for easy science data retrieval by researchers and public users.

1. Text (keyword) query based retrieval of the science data with various meta information in XML format.
2. Management of multi-level users with accessibility
3. To archive softwares and documents for scientific analysis and processing
4. To collect the public users’ feedback about the science data processing, analysis and the related discussion in order to enhance the scientific achievement.

The Korean science data to be released through KPDS will be compiled with PDS4 standards in order to be efficiently managed, easily accessible and shared the scientific information with the world-wide science community.
Summary: The Korean science data is defined as science measurement data acquired by Korean domestic developed science instruments onboard KPLO.

The Korean science data will be released to the publics in order to promote the higher scientific achievement through sharing the data with world-wide science communities.

SDMS will also collect the public users’ feedback for scientific processing and analysis on the korean science data through KPDS.

The primary objectives of SDMS including KPDS are:

1. Efficient science data management and preservation for the developers
2. Enhancement of Science achievement for the researchers
3. Easy access to the Korean science data for the publics.

We will refer to data management and archive plans for LRO and Chandrayaan-1/M3 as lunar exploration programs, MAVEN for Mars exploration, CASSINI/Huygens for Saturn explorations in order to prepare for the KPLO science data management and archive plan.

We expect to provide the opportunity for easy access of the publics to the korean science data through KPDS. The opportunity will derive their positive requirements on science missions and scientific researches on the future space explorations.