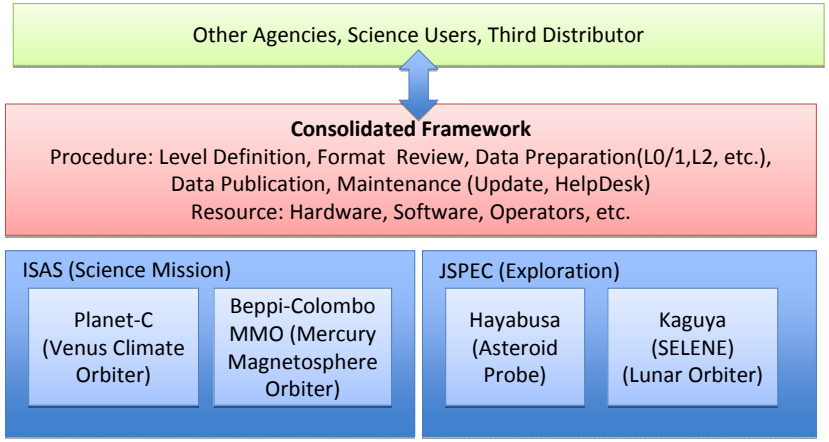
JAXA Strategy of Planetary Data Archive

4th IPDA meeting, Rome

Plan for Interoperability and Consolidated Framework

Different Missions, Different Policies, Different Cultures, Different Architectures in the same system

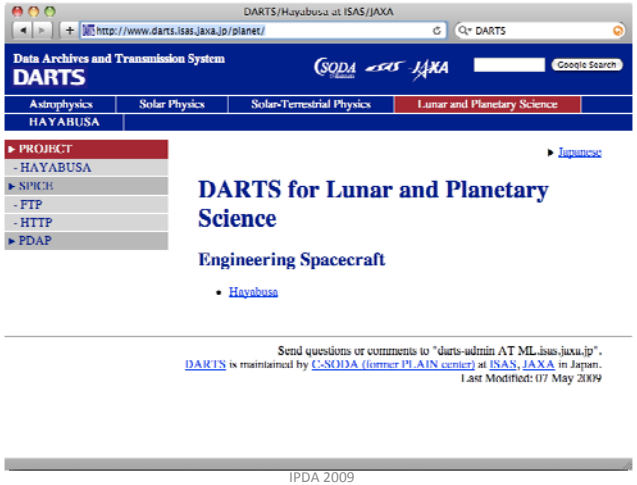


Current Activities and Next Targets

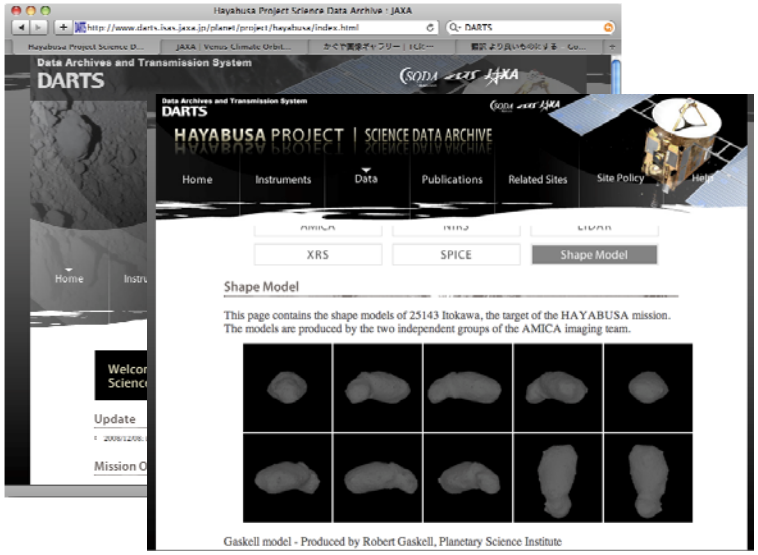
- Activities in 2008-2009
  - DARTS Planet (The first step of consolidated framework)
    - Lunar and Planetary section was built in DARTS (Data Archives and Transmission System)
  - SPICE HTTP/FTP sites (http://spice.isas.jaxa.jp)
    - SPICE kernels can be obtained in this sites
  - Hayabusa PDAP
    - Implementation of flyby product
  - SPICE training program
    - For Planet-C (April, 2009, only in Japanese members)
    - For All Japan (September 2009?)
  - Ancillary data workshop in JAXA (Winter ?)
    - Earth Observation Satellite, Astronomical satellites (AT-Function), and planetary exploration(SPICE)
  - SELENE (Kaguya) open in November 2009 (Project finished on Jun 11th,2009)
    - Level 2 product will open from Kaguya L2DB system.
  - Trial Implementation using Colum-base Database
    - To find out capability of Column-base database, pilot project started.
- Next Target
  - PDAP Applications
    - Crater database for crater chronology
  - PDAP Capability
    - Apollo Lunar Seismic data
- TBD
  - Interoperability of sample-return missions, for instance, between STARDUST and HAYABUSA
  - Publication of SELENE HDTV data is now under discussion.

DARTS Lunar and Planetary Science

http://www.darts.isas.jaxa.jp/planet/



DARTS Hayabusa

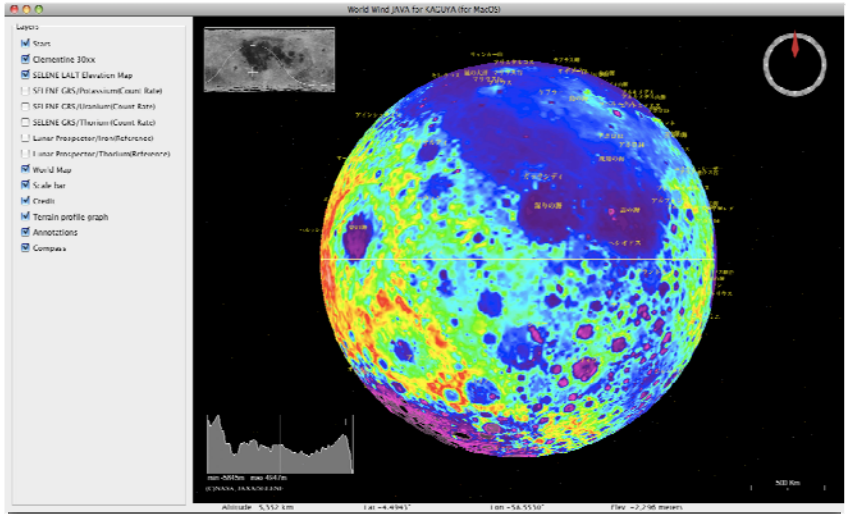


SELENE data open in November 2009

Collaborations of Data Archives and Other Systems

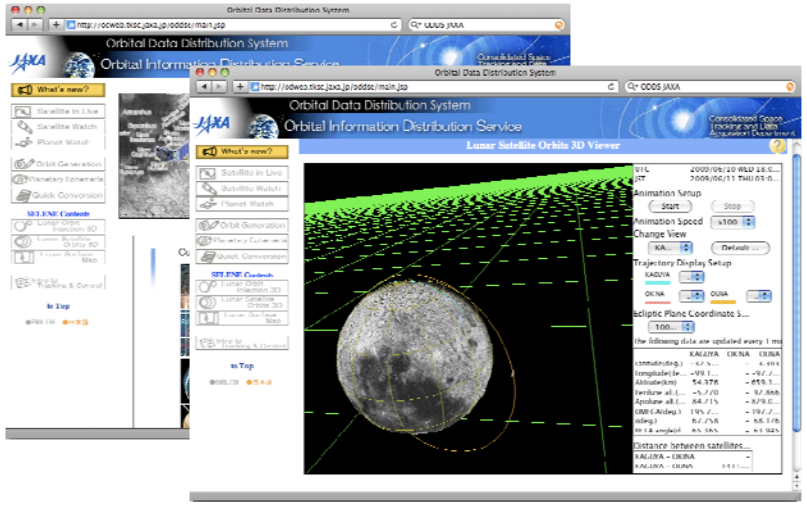
- WMS server for SELENE (Kaguya)
  - Web Map Server for SELENE data is now available.
- Satellite Operation and Data Archives
  - Orbital Data of JAXA satellites can be obtained by Orbital Data Distribution System (ODDS). Both of predicted orbit and analyzed orbit can be acquired from the ODDS.
  - PDAP for Ancillary Data, if we define, may be an alternative technique to construct an ODDS-like system.
- Press Release and Data Archives
  - YouTube JAXA Channel started from the Kaguya operation. The movie is data converted from real data taken by HDTV and Terrain Camera (TC).

SELENE Web Map Server(WMS)



Orbital Data Distribution System (ODDS)

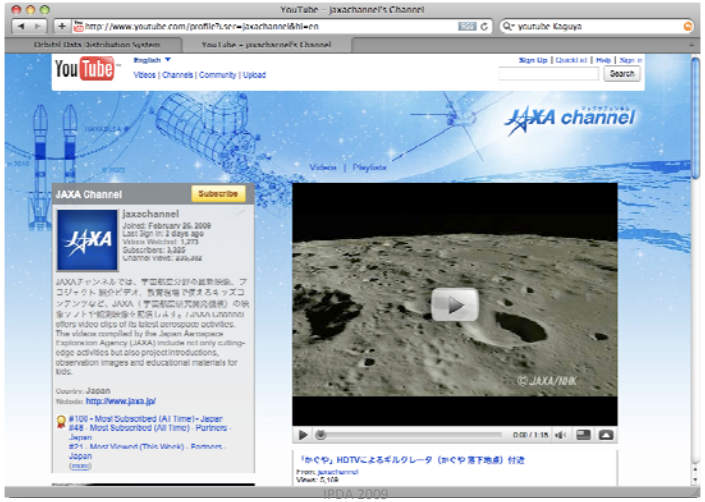
http://odweb.tksc.jaxa.jp/oddse/main.jsp



YouTube JAXA channel

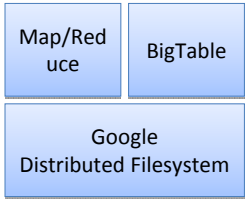
http://www.youtube.com/profile?user=jaxachannel&hl=en

HDTV &TC movies

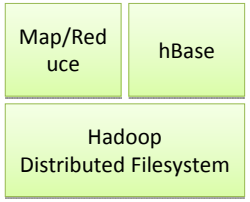


Capability of Column Based Database

- Some services of Google, Amazon, and Yahoo etc. use Column-Based Database that is not a Relational Database. Considering redundancy and scalability, we do not ignore for the future capability.



Proprietary



Open Source

Summary

- JAXA is trying to make consolidated framework that strongly supports project, scientist and third partners.
- Lots of PDAP applications will improve PDAP specification. JAXA is going to develop required applications for scientists.
- Capability to adopt new technologies used in cloud computing is considered to reach High Availability (HA) and keep system with low cost.

Grazie !