International Planetary Data Alliance Meeting (July 14 – July 17, 2010)
Bremen, Germany
Meeting Minutes

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Executive Summary:

The IPDA held a 4-day meeting Bremen, Germany as a precursor to the COSPAR 2010 assembly. The first two days covered technical and archive standards splinters. The third and fourth day covered the Steering Committee. The technical splinter covered topics that included system architecture, registries, PDAP standards, and various implementation projects. The technical efforts within IPDA are firming up and it is now important to generate some process standards for acceptance of documents and general operations of the technical activities. There was significant discussion around both registries and PDAP. Under registries, there was a proposal to work more closely with the IVOA that was sent to the Steering Committee portion of the meeting. Regarding PDAP, there was a critical discussion that occurred around the prioritization of PDAP and preparation to create a v1.0 standard. The archive splinter focused on topics related to discussing standards identification and management within IPDA, documentation, interoperability assessments and ancillary data definition. Good progress has been made in establishing a plan for identifying and coordinating standards within IPDA. The project on identifying standards has established a checklist for IPDA compatibility with an eye towards PDS4. The next steps are to work on processes related to standards. In the PDS4 arena, there was discussion on the PDS 2010 project and progress in developing a core PDS4 standard. The project reported on the results of

the assessment as well as concepts around PDS4 and then proposed that IPDA form a prototype team to create example PDS4 products for each agency. There was a report on documentation standards and areas for improvement. The project found that overall, the documentation situation has improved. However, they feel that creation of "cookbooks" and other tutorials are important for creating mechanisms to improve teams on using PDS standards. Rather than begin in PDS3, the project felt it is better to create these tutorials for PDS4. The efforts to test interoperability has gone well and the approach taken by Venus Express between ESA/NASA is now a good example that should be replicated on future projects. The teams found access to be transparent and the level of effort to share data between the agencies was significantly reduced when compared to missions where data is fully ingested into both the PSA and PDS. The discussion on the identification of an ancillary data standard revealed that IPDA should take a different approach. Given the de facto use of SPICE, it was felt that IPDA should be working with the SPICE team to recommend and ultimately adopt SPICE. Finally, the archive splinter discussed future projects.

Days 3 and 4 were focused on the Steering Committee. Each agency/institution (ASI, CNES, DLR, ESA, ISAS/JAXA, NASA, Shandong University/China) reported on progress and efforts related to archiving. Significant collaboration appears to be occurring between groups on international missions. There was general agreement that some archiving challenges transcend each agency: structure and operation of peer reviews, generation of PDS compliant archives, different interpretations of the PDS3 standard, creation and sharing of tools and access/sharing of data. After each agency presented, there was a discussion on project results from the project leaders. Next, the splinter leads presented on results of the technical and archive splinter. Yasumasa Kasaba then led the discussion on new projects for 2010-2011. A few projects were renewed and a few projects were added in the area of standards identification, PDS4 prototyping, registries, PDAP, and coordination of tools. The TEG accepted actions to work on formalizing their structure and there was a strong commitment to formalizing the process to release standards. Several groups indicated interest in prototyping PDS4 during the next year and continued efforts in developing a protocol for sharing data and improving the underlying standards (query language, VOTABLE, etc) was identified as critical. New project leaders wer encouraged to get their project plans submitted to Kasaba. There was then a discussion on action items and next steps. . Many action items from 2009 were closed and some still remain open and are renewed. Kasaba and Crichton accepted an action to better work action items during the year and post them to the IPDA website. Steve Joy accepted the action to put together a 2012 data management session (B09) for COSPAR in partnership with Gopala Krishna. Finally, there was a discussion on the next meeting which is tentatively scheduled for September 15-18, 2011 in Kyoto, Japan.

As a note, the final selected projects for 2010-2011 are as follows:

PDS4 Prototype Project	Steve Hughes
PDAP Extension	Jesus Salgado
PDAP Fly-by Products	Yukio Yamamoto
PDAP Query Language	Steve Hughes
GIS Project	Naru Hirata
Registry Implementation	Dan Crichton
Standards Identification	Gopala Krishna
Tools Identification	Tom Stein
Ancillary Data Standards	Idle State

Day 1: Technical Experts Group Meeting (July 14, 2010)

Dan Crichton opened the meeting by welcoming everyone and thanking our host, Karin Eichentopf. He then asked Yasumasa Kasaba if he wanted to say a few words. Kasaba said that he was honored to be here, but wanted to be an observer during the splinter sessions. Each person was then asked to introduce themselves. After introductions, the meeting was turned over to Pedro Osuna.

Pedro noted that he was hoping for more time for the TEG, but that some talks related to PDS 2010/PDS4 would be postponed until Thursday, June 15 during the archive and data standards splinter.

Pedro discussed the activities of the TEG which is focusing on system architecture, registries, PDAP, PDS 2010, Tools and other efforts.   He mentioned that there tends to be some confusion between what occurs in the formal steering committee and what occurs in the technical meeting. Pedro would like this discussed by the Steering Committee later in the week.   He noted that **there is an on-going discussion about improving sharing of tools and capturing what people are using**.   After this short introduction, Pedro then set up a series of talks.

Dan Crichton presented on the IPDA system architecture. This was largely a review of what had been done in 2009 and what led to projects going forward. It showed mapping of the architecture back the IPDA requirements. It also identified parts of the architecture that need to be formalized as shared standards.

Dan Crichton also presented on the registries project. A significant amount of the material was presented in a TEG telecon earlier in the year.   The registries presentation provided a mapping to the level 1,2 requirements for IPDA and also to the system architecture. It then broke the needed registries into services and information registries. Dan noted that there are differences between this and what PDS is doing in PDS 2010 because much of the focus within IPDA is on sharing services which provide access and computation at a high level across agencies. Within PDS, many of the interfaces and components of registries are used to provide basic data management in PDS 2010. Dan then recommended that IPDA should close the registry definition project and begin a registry implementation project.

Pedro Osuna presented on the IVOA registries activities.   This included some discussion on fine grain vs. course grain registries. Pedro said there were intense discussions and a decision that registries should only be course grain within the IVOA. He recommended that IPDA should ensure it looks at IVOA and learns from its lessons. Much of the focus is on sharing of service registries. Pedro then discussed the IVOA registry specification along with information about harvesting and authorities for publishing. Dan pointed out that most registries activities seem fairly aligned. We just need to go further to be explicit.

Regarding IVOA registries, Pedro pointed out that registered items should be backed using a standard identifier. IVOA is using URIs. Pedro showed an example of the EuroVO Registry. Accessible from
http://registry.euro-vo.org/index.jsp

They use a concept of a registry of registries and allow for remote harvesting. A validator is in place to test services and send test queries. Steve asked about the content model and how services are mapped against it. Pedro stated that at the moment this is pretty simple and would benefit from being expanded within particular disciplines.

After reviewing the background on IVOA registries, Pedro proposed a two phased/parallel approach in working with IVOA and then working IPDA specific registry development. Crichton recommended a phase zero in defining what planetary services exist which we would want to share in IPDA so we can scope the need both within IPDA for sharing services and services which would be shared with other disciplines such as Astronomy.

Jesus Salgado next discussed the background of PDAP and its purpose. He discussed the interoperability use case where data from ESA and NASA was used to be able to share data between two systems. He also discussed the VEX interoperability project definition which was a collaboration between ESA and the PDS Atmospheres node.

Some problems found during the PDS project included
- New data types to be analyzed
- No standard way to publish propriety data
- Etc

He also expressed interest in having the IVOA be able to access planetary science data and extensions to support it.

After the overview, Jesus then discussed change in version 1.0 and some limitations including:
- the concept of a PQL-type query for planetary data.
- the need for version handling. A PDAP compliant output SHOULD contain the supported version.
- the need for pagination. He stated IVOA and OpenGIS is not handing this.

Jesus then discussed the support for determining Fly-by products. This was the extension to PDAP to support other product types as a collaboration with JAXA.

Jesus then made a series of recommendations for upgrading PDAP including:

Recommendation 1: Define a query language for planetary data
Recommendation 2: Fly-by and single file access definitions
Recommendation 3: Register services within IPDA

Recommendation 4: How to handle proprietary data

He also discussed the map-projected services and the use of KML services for API and a proposed new project to return type of KML services. Crichton and Stein mentioned that the Geosciences node is statically creating KML files on PDS products at the moment. This might be a good connection.

Finally, Jesus suggested a series of actions as follows:

Action 1: TEG to decide if version 1.0 should contain pagination of tags
Action 2: TEG to decide tags and PDAP authors to update document accordingly
Action 3: Describe in PDAP how to create new resource classes
Action 4: SC to decide if IPDA services should be registered in external registries

Yukio Yamamoto showed a demonstration of querying for Clementine data between a set of selected points. Yukio talked about the protocol but mentioned that consideration for the data model is important as well. Yukio felt that extensions for domain specific format is important to consider as PDAP evolves.

Yukio talked about PDAP inputs which include basic, map_projected_products and flyby_product extensions. Yukio designed a PDAP implementation for JAXA which included URL Parameters->PDAP Engine_>VOTABLE OUTPUT

Yukio brought up an issue of compatibility with PDAP relative to the hierarchical structure of the VOTABLE.   Right now the VOTABLE structure is flat.   Pedro feels that we should adopt the good things done in IVOA but reject other items. This leads to the question of a VOTABLE different specification that is different between planetary and astrophysics, but has implications as well. This is something that will need to be seriously considered within the IPDA, TEG and PDAP as the next series of projects are underway.

Baptiste Cecconi presented on CNES efforts to support the IDIS/CDPP implementation.   They developed a project to extend PDAP for doing a search for the IDIS system for the plasma node of IDIS. It will be proposed for EuroPlanet. One of the efforts that has been conducted is to identify what was needed to search plasma data.   As part of this, they identified some extensions, etc needed for PDAP. Yasumasa recommended that they should discuss some of their findings and recommendations with UCLA/PPI.

One of the needs that Baptiste stressed was the need for an authoritative registry of mission and instrument names.   One of their key concerns is that may models and standards are focused principally on spaceborne missions. They've been doing a prototype using terrestrial data.

Baptiste noted that their portal is available at the following address:
        http://voparis-srv.obspm.fr/portal/

He also felt there is a need for harvesting of metadata between registry (aka OAI-PMH) and that such a service would be useful in IPDA. He also recommended standardization of the access mode (e.g., REST style). Pedro Osuna mentioned that this is well in alignment with what IPDA has been discussing.

Baptiste summarized with the following recommendations for consideration:

- Create a cookbook on how to use IPDA services
- Create service registry
- Need for a PDAP service validator
- Need a list of authoritative list for certain resource types; who proposes and who decides
- Need for an object name resolver

Next. Christophe Arviset introduced the mission of the IVOA. It is focused on astronomy and can be considered a sister organization of IPDA. It involves an international organization with different levels of involvement. The governance structure involved a executive committee, various committees that work on standards, and a technical coordination commitment.

Each group holds various meetings. The executive committee holds a telecon every 3 months. The technical coordination group holds a telecon every six months and the IVOA interoperability meeting is held twice a year.

Christophe presented the IVOA architecture Level 0 and then introduced more granular levels. Steve Hughes mentioned that the architecture looked pretty standards, n-tier style, etc. Dan Crichton asked about format standards. Christophe mentioned that the IVOA doesn't dictate format of data, but use of FITS is universal.

Christophe then mentioned some opportunities potential synergy including:
- Organize common IVOA/IPDA technical session
- Maria Teresa gave a talk in May 2008
- Create an IVOA Liaison committee
- Share standards

Christophe mentioned that the next IVOA meeting will be held in Japan in December and that IPDA could attend. He requested that the topic of interfacing with the IVOA be discussed as part of the Steering Committee.

Day 2: Archive and Data Standards Splinter (July 15, 2010)

Maria Teresa Capria opened the session by discussing the agenda and the topics. The first topic to be discussed was the IPDA Standards Identification project. Gopala discussed the objectives of the project which had two key purposes:

1. Capture existing standards and post on the web
2. Define an outline for an IPDA Standards Reference

Gopala also discussed the mapping to the level 2 requirements for IPDA to identified standards categories. In addition to this mapping, Gopala discussed the need to establish a process for maintaining standards. The identified standards area include:

- Submission and monitoring of projects
- Registries
- Ancillary
- Certification Process
- PDS data standards

Maria Teresa mentioned that the project goals of the IPDA Archive Guide is a structure for documents. Gopala mentioned that project and this one should be brought together. There was general agreement that this would make sense during the next year.

Regarding standards for IPDA Data Access and Sharing, Gopala mentioned that this would be done in due course following the PDAP and interoperability standards.

For IPDA Project Submission and Monitoring Standards, he felt that projects should use the template as identified for project submission and that they should report periodically as per the identified template. He also encouraged discussion through telecon meetings and TEG meetings. In addition, results should be posted on the IPDA website including final reports.

Next, Gopala discussed the IPDA Registry definition project and the mapping to standards as well as the ancillary data standards project. Regarding the ancillary data standards project, he mentioned that there was some confusion on this project. Dan Crichton mentioned that he would report for Chuck Acton later. Gopala reported that the certification process is something that needs to be established. This links back to the discussions in the technical splinter about approval of technical standards. A clear process is needed in IPDA.

Gopala discussed the Standards Policy developed at posted to the website which included a check list of compliance to the PDS3 standard. Maria Teresa asked about point "E" for hosting data online. The resolution was to further specify what data means. Dave Heather mentioned that the policy is challenging because of the ambiguity in PDS3. Dan requested that IPDA members help focus on getting to a baseline document.

Gopala discussed next steps. This includes capturing the list of standards that are in used by various organizations development of a certification process, and development of detailed documentation and report generation.

Maria Teresa discussed progress on the IPDA archiving guide project. The project accomplished the first part of the project including review existing documentation. It was felt it would be better to wait for PDS4 before writing a new cook-book guide. The group also felt that the documentation has improved quite a bit.

Maria Teresa emphasized that the APG from PDS is a good document, but could be improved. She felt that it should be stressed how important it is to prepare timely and in advance an adequate software pipeline, for the calibration and analysis of the data, taking into account PDS-compliant formats since the beginning. She also felt that the document should include the necessary resources, especially in terms of FTE. Maria Teresa felt the examples could be improved.

Regarding the APG, Maria Teresa emphasized the following:
- 2.1: An increasingly important element of a good archive is information explains the why of a mission
- 4.3: One of the best things about PDS data sets is that they have been through the peer review process. More emphasis is needed to make clear that this is a ** peer ** review.
- Appendix D: Some of the hyperlinks are incomplete, mission or incorrect.

Maria Teresa then discussed the Standards Reference Document. She felt that a general introduction should be included. In fact, she found that people might have to go back and forth between the Standards Reference and the APG. She also felt some updated should be made with more recent examples. Also, CD/DVD should not be referenced. Maria Teresa then discussed the Cost Analysis Tool. This should become a key document. It should go directly in the hands of the PI and space agency.

Regarding the Data Dictionary document, the project team felt that it was good and useful technical documentation. Maria Teresa felt that information about keywords could be improved so non-experts can better understand how to use it. She felt that examples should be included in descriptions.

Finally, Maria Teresa provided a set of "Personal Opinion" comments on how to evolve archiving documents internationally. These include:
- Cost of the whole process is underestimated
- Careful assistance when designing the data sets would avoid a lot of problems further on
- The added value of the peer review should be stressed out
- Maybe the power of the (peer) reviewers should be limited in some way (this is very personal opinion of M.T. Capria)

Steve Joy agreed with the comments of Maria Teresa, particularly the peer review process. Steve felt that PDS4 will help with a few simple formats. If something is bucketed within a PDS4 data format, then that should improve efficiency and usability end-to-end.

Steve Joy also felt that IPDA should take a view on PDS3 that provides for narrowing the adoption so that simple data formats, for example, are employed now rather than waiting for PDS4 to try and make that philosophical change.

Dan Crichton provided an overview of the PDS 2010 project. The project was reported out last year, but significant progress is being made. The team is working towards a build 1 for October 2010 which will contain a beta PDS4 standard and an initial set of PDS 2010 software components that can work with the standard for building a PDS4 product registry. The intent is not to go live in October 2010, but rather to generate a standard which the community can start planning against. Dan also explained the goals of PDS 2010 which include increasing efficiency between the missions and PDS, increasing the stability of the archiving, and adding more value added services on the back end. Dan introduced the architecture and described both the data standards effort and the technical development which is a distributed, service-oriented architecture style. One of the key technical decisions that has been made has been the adoption of XML for capturing the metadata for PDS4 products. This will help to minimize tool development in the future. Pedro Osuna and Dave Heather agreed. Dave mentioned that he is looking forward to PDS4 and appreciated participating in the PDS 2010 system review in Washington DC in March 2010.

Regarding the transformation of archive data to user formats, Maria Teresa mentioned that this could be a big effort. At the same time, this could be very useful for the community. She felt that the community might be willing to help share and develop the transformation so it doesn't sit on one team.

Steve Hughes presented an overview of PDS4. This included discussion of the architecture. He also discussed the IPDA projects and their relationship including
- Assessment projects (2006)
- Data dictionary project (2007)
- Information model project (2008)

The PDS4 is striving to overhaul the entire set of standards to adopt a new grammar, define data products, define formats, restructure the data dictionary and formalize the model of the data architecture.

Regarding Data Dictionaries, Maria Teresa mentioned that this effort should include existing PDS3 keywords because it would be confusing.

Maria Teresa brought up the question of standard language. IPDA has not chosen a language. We need to bring this up as a policy question. In addition, units of measure (e.g., SI units) needs to be agreed on.

Questions arose about when missions can start with PDS4. The time was clarified that the October 2010 release is intended to be a beta release for missions to plan against. It is also a perfect time for IPDA to prototype and provide comments back to the PDS.

Finally, regarding PDS4 development, Pedro requested that information be sent to the IPDA mailing list for PDS4.

Next, Dave Heather discussed the VEX interoperability project and the assessment. In 2009, the VEX interoperability project occurred. In 2010, there was an assessment. The focus was for accessing the Venus Express data as a model for future interoperability projects. ESA, JAXA and NASA were involved. The purpose was to assess the portal for VEX and evaluate the interoperability model. IPDA Team members along with external assessors were used.

Dave reported that the project was successful in many ways. For example, it has similar response times from both PSA and PDS and users, for example, found the access transparent.

Dave then gave a set of recommendations as follows:
- Overall positive experience
- Project can be closed and no follow on needed

Dave also identified some non-IPDA issues which need to be addressed including:
- Transferring larger data sets
- Visibility of proprietary data

Dan recommended the VEX Interoperability write a paper or something on the experience and the result.

Dan Crichton then presented the Ancilliary Data Project from Chuck Acton. This was a project started in 2009 to identify requirements and needs for an ancillary standard. Dan reported that the project ran into some bumps along the way given that SPICE already exists which seems to have put members in an awkward position. The IPDA members generally agreed that approaching from a SPICE agnostic point of view probably didn't make sense in hindsight. Going forward, it was recommended that IPDA consider endorsing the use of SPICE and then look for ways to adopt it. There was some concerns raised over the NASA specific support and dependency. All recognized that the SPICE team is doing a good job and that the IPDA role should be to help look for ways to internationalize it. It was recommended that Dan talk to Chuck and get his input and that the project be put

into an idle state for a year at which time the question of how to internationalize SPICE should be addressed.

Maria Teresa then held a wrap up session. The session covered the following topics:

- General recommendations and requirements on documentation
- International cooperation
- How to communicate with the user community
- How to go on: new projects

Maria Teresa talked about the importance of raising the reputation of archiving. One way to do this is to require users to cite PDS or PSA, for example. PDS has tried this, but there is no way to force users to do this.

Maria Teresa felt that there should be courses, similar to SPICE, for PDS4, for data producers. Tom Stein mentioned a LPSC workshop that was used on how to use the data.

It was discussed that tutorials are needed and IPDA could participate in this. This could be tied into the project on assessment.

Finally, the splinter discussed new projects that could be proposed to the Steering Committee including:

1. IPDA Prototyping using PDS4 – this would be prototyping and including

2. Standards Identification – this would include definition of standard processes

3. PDAP – next set of extensions

4. COSPAR 2012– Need different conveners; French and India will.

5. IPDA Infusion – Tom Stein proposed getting standards and tools involved earlier in missions through a project

Day 3: IPDA Steering Committee Meeting (July 16, 2010)

Yasumasa Kasaba, the chair of the IPDA, opened the event. He thanked everyone for coming and he thanked our hosts, Karin Eichentopf and Thomas Roatsch for their help in hosting the meeting.

Kasaba then discussed the two day agenda for the Steering Committee. The focus is on agency and project reports, new project proposals, and actions to be considered

by the Steering Committee.   The first day will focus on reports and the second day on actions.

IPDA Overview

Yasumasa Kasaba provided an overview of IPDA this past year. He identified ew members wich include Christophe Arviset (ESA), Mickael Fermain (CSA), and China (Li Chunlai, Chia Wang) with Ling Zongcheng (Shandong Univ). He thanks Tom Stein and Jim Green (from NASA Headquarters) for their help in identifying some Chinese representatives to the IPDA. He also recognized Lewis (Ling Zongcheng) from Sandong University for coming.   He ask Christope Arviset to say a few words who expressed his interest in being part of the IPDA Steering Committee.

Kasaba then discussed the structure of the IPDA including the Technical Experts Group (TEG) and the projects. He emphasized the IPDA is working well. He also pointed out that the website at http://planetarydata.org has worked well this past year, however, he felt it isn't used as much for management of projects and this could be improved. **Using the website to capture actions and track projects is an action that will be proposed during the 2ⁿᵈ day of the Steering Committee.**

Kasaba discussed the B09 COSPAR session on data management including the talks and posters. All the posters are from non-IPDA members which everyone viewed as a positive way to improve collaboration on data management topics in planetary science. He noted that COSPAR will be help next in 2012 in India and we should continue to push for this session. In adition, Tom Stein mentioned that the B01 session will be on Tuesday and has a heavy agenda focused on planetary mission results. He noted that Reta Beebe has pointed this out.

Kasaba also discussed the IVOA Meeting that will be in Dec 7-11 and whether there are further actions by IPDA. IPDA was invited by Christophe Arviset to attend. While not mandatory, this would be a possible venue to explore a collaborative relationship between IVOA and IPDA.   The IPDA will wait for futher information from Kasaba and Arviset.

In addition to IVOA, Maria Teresa mentioned background on EuroPlanet and its founding and operations. This included the relationship between EuroPlanet and the IPDA. The EuroPlanet has adopted PDS and IPDA requirements and is planning to be IPDA compliant.

Finally, Yasumasa emphasized the key points of this meeting which include:
- Summarizing projects from the 2009-2010 period
- Setting up projects for 2010-2011
- Encouraging IPDA publications to Journals
- Improving
    - The communication to the user communities
    - The I/Fs to other disciplines (solar, astronomy)

Overview of Agency Efforts in Planetary Science Archiving

Maria Teresa Capria discussed the state of archiving at ASI. Ultimately, all data is sent to the PDS or PSA for planetary missions that require archiving.   ASI cooperates with several agencies and several missions. It established the ASI Science Data Center in Nov 2000. The principal task is to support the management of long-term preservation of scientific data.

Key data center features include:
• Use of international standards (including PDS, FITS, NASA-OGIP, etc) for all archives
• Hosted by ESA-ESRIN
• ASI provide science support

ASDC hosts data from VIMS (Cassini), VIRTIS (Rosetta) and VIRTIS (Venus Express). Currently, the ASDC is looking to appoint an expert in planetary science. They are also looking to integrate with the IVOA and EuroPlanet.

Alain Sarkisian discussed archiving activities at CNES. There is some reorganization in CNES and this has had some impact on IPDA and the representation. Nothing is completely firmed up at the moment.   Work is performed at several laboratories involved in data archiving and data systems development. CDPP is a principal site for this activity. The are involved in Europlanet activities and each year they are organizing a meeting on archiving/data management where IPDA is invited.

Regarding new missions, PICARD (launched last month) is a solar experiment. There is currently no (clear) plans for archiving PICARD in France.

Ling Zongcheng (Lewis) from Shandong University provided an overview of activities he China, particularly the PDS Laboratory at the university in Weihai. He clarified that he is at an education institution and not CNSA and provided a background on PDS and their application to their node. China started its deep space exploration with launch of Chang'E-1. Tinghuo-1 will use the PDS standard to do archiving/distribution.

In 2006, a cooperation was signed between SDUWH and WSU (Ray Arvidson). This has led to many meetings between the universities and Lewis has spent time at Washington University. In July 2009, the 1st Yinghou-1 PDS workshop was held in SDU. There is a strong commitment to PDS standards and to follow PDS practices.

China is looking to have a series of missions (Chang'E-1, Chang'E-2, Yinghou-1, Chang'E-3) through 2013. They believe exchange of data between Chinese and international planetary science community is critical to improve mission efficiency, data archiving and use.

Lewis showed information about the center including pictures of several of the meetings and identified the primary website at http://pds.wh.sdu.edu.cn . Data from Clementine and Lunar Prospector missions are online there.

The lab at SDUWH has also been involved in data processing and product preparation for missions including Chang'E-1 and is preparing for Yinghuo-1.

Finally, he discussed the recent workshop which included discussions between the U.S. and Chinese groups that included PDS representatives from PPI and NAIF.

Crichton asked if the data would be available publically and Lewis confirmed that this is the plan.

Thomas Roatcsh discussed activities at DLR, particularly of the missions in which they are involved. The major archiving activity is Mars Express. This makes up a substantial part of the current PSA. They have delivered to the PSA including radiometrically calibrated data, map projected data, etc from 6 years in orbit. They have also released it to the PDS as well.

Venus Express data has been delivered from 1380 orbits almost 4 years and is available through the PSA and PSA/PDS interoperability activity. Both Venus and Mars Express extended to 2012.

They are also involved in Cassini support including delivery to PDS consisting of global mosaics and cartographic maps of Icy Satellites For Dawn, they are providing support to deliver local and global mosaics, digital terrain models and maps to UCLA. Currently, they are expanding beyond camera data to laser data and supporting this for Bepi Columbo. They will deliver raw, calibrated and higher order data. Finally, Thomas discussed Rosetta data and the preparation for delivery and archiving to the PSA.

Dave Heather presented on ESA archiving activities and the Planetary Science Archive (PSA). He invited Chrostophe Arviset, as the other IPDA Steering Committee member from ESA, to provide any input as well.

The PSA follows a well-defined process of receiving data sets from the PI teams, following peer review, performing internal validation and the ingestion of the data. It is critical that the data is compliant to their tool set otherwise data will not be successfully ingested. They have about 13 TBs of data online in a centralized system. The PSA is organized into two teams which cover Data Handling and Development. They are a pretty small team and are have a large workload.

Dave noted that one of the unusual actions they have is to ingest engineering-related data from an ATV which will have some unusual product type (movies, etc). It is also not science data, but they plan to make the data publically available.

Dave indicated that the PSA team is involved in many missions including Huygens, Venus Express, Rosetta, Mars Express, etc. For Rosetta, validation has been a major issue, however, he believes good progress has been made recently. Dave also emphasized how important it is to have workshops to educate data providers.

In the area of tools, the PSA has developed PVV for validation. PVV is required to be run before any data is delivered to the PSA. However, this doesn't guarantee PDS compliance and therefore the PSA also need to run PDS tools. Dave stressed that having tools that yield the same results will be important in PDS4.

Tom Stein asked how ESA evaluates the ROI on the PSA. What metrics are required? Number of data sets downloaded, number of users. Dave indicated that there isn't a real rigorous process for this. One area he noted that want to capture is to identify the popular data sets.

Dave mentioned that VEX has gone very well in terms of the interoperability project. This was also indicated during the archive splinter and is seen as an important way-forward in the future. Dave mentioned that this is opposed to Rosetta which is looking at "full" compliance between both PDS/PSA and that has placed the bar higher on this collaboration.

Dave also discussed the involvement of PSA in IPDA both on data and technical standards development. In addition, he mentioned their involvement in the PDS 2010 system review which he felt was important for alignment between the two groups.

Finally, Dave identified a number of open issues and potential remedies as follows:

Open issues
o Delivery schedules by instrument teams which affect PSA teams
o Incomplete deliveries
o Insufficient resources
o Parallel activities in member states – we try to coordinate and focus resources
o Standard evolution
o Peer review handling and the peer review process (which Maria Teresa also pointed out needs some improvement and understanding by everyone)
o Data set ingestion turnaround

Potential Remedy actions
o Planning and monitoring through data set spreadsheet
o Try automate ingestion process
o Review peer-review concept
o Immediately release the incoming datasets as "provisional"

Gopala Krishna discussed the ISRO activities.

ISRO has many centers that deal with different tasks that are involved in building observational systems for earth and solar system research. Gopala is involved in the Space Application Centere which provides communications, remote sensing, meteorology and satellite navigation research and development. The centre includes a deputy director for signal and image processing area, deputy project director for data processing and a deputy project director Chandrayaan-1 data processing.

ISRO is involved in many missions including:
    Chandrayaan-1 (launch 2008/terminated August 2009)
    Astrosat
    Megha-Tropiques – climate change/earth observation

The Indian Space Science Data Centre (ISDCC) is responsible for the ingest, archive, and dissemination of the payload and related ancillary. Only has planetary science missions are captured there. Earth observation is held with the remote sensing data at a different center. Level 0 data is being stored in a long-term archive.

The centere is developing the following tools:
  • PDS Generator
  • PDS Verifier
  • PDS archival

It is also providing a Web-based Interface
  • Thumbnails and label/metadata
  • Browse-dissemination
  • Not right now NOT publically accessible, but after peer review will be open. This is planned for December 2010.

Gopala also discussed the archive development status including:
  • New keywords for ISRO needs
  • One archive meeting was held with science team
  • Training for all instrument data sets (except NASA)
  • SPICE is updated by mission team
  • Peer review to be initiated (except NASA which is carried out separately)

Finally, Gopala discussed the needs from the IPDA Steering Committee. This included providing sample data sets compliant to IPDA, availability of tools, and general consultancy between members so they can exchange information during the year.

Dan Crichton discussed the status of PDS noting that this was a presentation from all the represented colleagues (Steve Joy, Tom Stein and Steve Hughes). He said that Reta Beebe sends her regrets for not being here. It has been noted several times that Reta is an important part of the IPDA.

Crichton reminded the members about the structure of the PDS and then discussed some of the challenges. He noted that PDS is receiving data from over 110 instruments and has somewhere between 150-200 TBs of data. He also noted that the shift in the whole technology capabilities of the 21st century coupled with new missions being planned through the decadal survey that has been put together by the U.S. National Academy is really a driving force behind the need to update and modernize the PDS standards, tools and system.

He also discussed the international missions and provided charts that identified areas where NASA is involved in planetary science missions under development.

Yukio Yamamoto discussed the status of archiving at the DARTS lab at JAXA. This included challenges for interoperability, status of missions, and collaborative projects that JAXA is involved in. He noted that the Venus Climate Orbiter successfully launched. He also discussed IKAROS, a small solar power sail demonstrator and provided a video showing results from Hyabusa. In discussing the DARTS lab, Yukio mentioned the website is open at http://darts.jaxa.jp and includes planetary and lunar science data.

Yukio then discussed the data archive and use Selene as an example. This archive is available online at https://www.soac.selene.isas.jaxa.jp/archive/index.html.en

It is available in PDS format and is the project archive.

He also discussed the maintenance framework of SPICE kernels in JAXA and expressed some concerns about calculating accuracy and precision since it is stored as ASCII. Steve Joy probed those concerns and mentioned they could talk off-line. Currently SPICE is being used and planed to be used for Antenna, Hayabusa, Kaguya, Planet-C data. JAXA invited the NAIF team to ISAS for the SPICE training of Venus Climate Orbiter, AKATSUKI mission. The ancillary data will be prepared as SPICE kernals for scientific purpose in past and future missions including Hayabusa and SELENE

Project Reports

Kasaba transitioned the meeting from agency reports to project reports with Steve Hughes first discussing the PDS4 assessment.

Steve identified that the data standards efforts in IPDA are directly tied to the IPDA standards architecture. He also noted that the PDS4 standards that was largely influenced by early ground work done by IPDA. Steve reviewed the components of the data architecture and mentioned specifically that efforts within IPDA to review the data dictionary help lead to the adoption of ISO/IEC 11179 in PDS4.

Steve then discussed the purpose and background of the current project. The project was formed in 2009 to assess the PDS4 model and dictionary. It has largely been used to help identify holds and gaps in the requirements.

Overall, the project had the following findings:

- Good work is being done
- More work is required to make the standards more user accessible
- Goal to identify elements to be promoted to the international level because the standards are still under development
- Recommend an IPDA PDS4 prototyping project

General issues

- Definitions through the standards needs to be re-written
- More supporting material is needed (tutorials, specification documents, etc)
- Local data dictionaries need to be designed
- Archive organization need to be specified

Crichton asked for clarification of the relationship between thee IPDA website for PDS4 and PDS. Can we these be linked because we want to minimize redundancy? It was suggested that major documents should be re-posted or linked on the IPDA website which should help navigate documents.

Steve then presented background information on PDS4 including the data formats, data dictionary, data products, and other concepts. Steve then proposed a project for next year which includes agencies prototyping PDS4 data products.

Thomas Roatsch asked about existing PDS3 pipeline support. In response, Dan presented the migration/transition plan for PDS 2010/PDS4. This approach ensures continued support for PDS3 pipelines while allowing new, PDS4 pipelines to be in place. It also doesn't not assume there is one migration or transition, but a transition over time. Christophe Arviset noted that this makes a lot of sense. Pedro Osuna suggested that specific tools PDS is building to support automated migration be made available for international use in IPDA.

Next, Maria Teresa Capria discussed the Archive Guide Project. She discussed the importance of creating cookbooks, but felt that it should be done in PDS4 vs PDS3. As mentioned in the splinter, the documentation and web pages have improved greatly in PDS.

Regarding specific suggestions, she noted in the PDS Archive Process Guide (APG) the following:
- Should stress preparation timely and advance an adequate SW pipeline for the calibration and analysis of data taking account PDS complaint formats since the beginning
- Should include resources information in terms of FTE
- Examples should be improved

There was some discussion as to whether they could proceed now, but the principal goal is to provide good examples and this could be tied to the PDS4 prototype activity to create good PDS4 examples.

Gopala Krishna provided an overview of the Standards Definition Project. He showed the work plan which included capturing a list of standards, updating the website, creating a standards reference outline, developing a plan for standards for the IPDA SC, etc. He then discussed progress towards these goals.

He identified standards from the IPDA requirements and what is needed in the area of standards including:
- Documentation Standards
- Reduction algorithms and related standards
- Standard publishing processes
- Grammar
- Protocols
- Data access
- Querying PDS
- Registries
- IPDA project submission/monitoring
- Ancillary data standards

He then discussed the standards policy and recommendation that IPDA adopt PDS 3.8 as its baseline standard with a firm statement that it is working on the next generation standards with PDS for PDS4. Gopala will send the statement for standards identification to all the members. Gopala will also send a template to the members to capture any standards that are in use which should be identified and/or shared by other members of the IPDA.

Gopala then recommended the following:
- Standards website will be used to identify any standards endorsed by IPDA

- IPDA members review the policy statement for PDS3 which gives a checklist. This should involve suggestions on how to improve it.
- Members should provide standards to post
- The project should be renewed for another year.

Finally, Gopala discussed the need for a certification process for documents.

Dan Crichton discussed Chuck Acton's slides regarding the Ancillary Project. Chuck indicated that this project had several goals to review and produce a recommendation on an ancillary standard for the IPDA. However, this was problematic because of the conflict between SPICE, which is almost a de facto standard and then putting together a general investigation that is agnostic to SPICE.

The IPDA members discussed the use of SPICE. It was recognized that IPDA most likely put Chuck into an awkward situation. It was generally felt that IPDA members are all using SPICE and that IPDA should recommended the use of SPICE. It was noted that "recommend" is not as strongly worked as "adopt". In addition, the IPDA recommended the ancillary project be "parked" for a year and then resurrected with the purpose of determining the implications of moving from "recommended" to "adopted". This includes addressing the dependency on the NAIF node and NASA. The IPDA then charged Crichton with contacting Chuck to get his input.

Dan Crichton then discussed the registries project. The project has developed an initial definition of registries that includes distinction between services and information registries. Of particular interest at the moment to IPDA is service registries. Crichton noted the discussion during the splinter session for the TEG in which Pedro and Christope discussed the opportunity to work closely with the IVOA and leverage existing registries. Crichton noted that he would present a project plan to the IPDA that addressed establishing a service registry capability for the IPDA as well as options work working with different scientific disciplines to share planetary science data services.

Jesus Salgado discussed the PDAP project which included an overview of the project along with some areas that need addressing. There has been good progress in using PDAP for the interoperability projects as well as the GIS project. Through its use, there has been some issues and needs identified. Therefore, Jesus made a series of recommendations for upgrading:

Recommendation 1: Define a query language for planetary data
Recommendation 2: Fly-by and single file access definitions
Recommendation 3: Register services within IPDA
Recommendation 4: How to handle proprietary data

He also discussed the map-projected services and the use of KML services for API and proposed the idea of a new project to return a KML formatted data object. Crichton and Stein mentioned that the Geosciences node is statically creating KML files on PDS products at the moment. This might be a good connection.

Finally, Jesus identified the following actions from the PDAP project:

Action 1: TEG to decide if version 1.0 should contain pagination of tags
Action 2: TEG to decide tags and PDAP authors to update document accordingly
Action 3: Describe in PDAP how to create new resource classes
Action 4: SC to decide if IPDA services should be registered in external registries

Finally, regarding approval of documents, Jesus also discussed a potential approval process for documentations as follows:
    4X weeks of comments for TEG
    4X weeks of comments from EXEC group
This can be considered by both the TEG and the standards identification project which will is working on defining processes for the acceptance of standards.

Dave Heather then discussed the Venus Express project. The objective was to assess the approach/concept for Venus Express. The model seems to work well and it is recommended for future projects.

Dave mentioned a few top level needs for the system that were taken as requirements/constraints in evaluating the success of the interoperability effort. These include:
• Being transparent so users are unaware of where the data is coming from
• Sufficient provenance of the data
• Be fast and reliable
• Be intuitive
• Provide adequate mission level information
• Provide browse, on-the-fly, access prior to download

Kasaba asked about continuing this project to improve access to data within jAXA. It was decided that this should be discussed internally in ISAS and then potentially proposed next year.

Naru then discussed the PDAP extension for the GIS. The aim was to extend PDAP and ensure that the IPDA has a solution for using GIS-tools and services with planetary data through a web services-based interface.

Naru discussed the specific web-based standards from the Open Geospatial Consortium (OGC) which include information and background on the Web Mapping

Service (WMS). WMS is a protocol for distributing image data. He discussed related standards from OGC to WMS. He clarified the following standards:
WMS: Web Mapping Service for JPG, PNG, TIFF
WFS: Web Feature Service: Vector data
WCS: Web Coverage Service

He then discussed the planetary coordinate reference systems (CRS) that is included by OGC. Planetary systems have not been included.   He feels that a planetary encoding system should be included. Naru then showed some examples of the planetary GIS using a lunar WMS.

The team has not provided substantial feedback to IPDA/PDAP since most of the focus in this project was on GIS products and standards. Possible future efforts include:
- WMS to be able to make PDAP search queries
- Coordinate system and those in IPDA/PDS
- Constructing a repository of available planetary mapping services

Splinter Reports

Maria Teresa Capria reported on the Archive and Data Standards Splinter meeting. The meeting was well attended and there was substantial discussion. Some of the main points include:

- Recommendations about how to improve documentation to supporting planetary science archiving
- PDS introductory courses, similar to the ones regularly held about using SPICE, are recommended.
- Regarding the local problems and local differences in the adopted standards, it seems that the situation is greatly improved
- Efforts should be made to let the scientific community fully understand and improve the image of data archiving. It is recommended that we continue to pursue a B09 data management track at COSPAR

There was then a discussion on the upcoming COSPAR meeting in 2012. Maria Teresa strongly recommended that we do this again and said it isn't a heavy load. Gopala offered to be a co-convener for the 2012 meeting. Steve Joy offered to be a convener. Maria Teresa offered to help in feeling out the form.

An action was assigned to Steve Joy and Gopala Krishna to work with Maria Teresa to plan the next COSPAR B09 session.

Maria Teresa then included the following other points:

- The peer review process is being seen as a nightmare from everybody involved in it. Peer review is a necessary step. The process should be reviewed.
- A lot of discussion about PDS4 transition. An important point that has emerged is the attempt to produce SW able to transform PDS format into everyday life formats. This is seen as extremely positive.
- Some concerns over multilingual/language, however, it is a necessary step. This needs to continue to be understood and we need to mindful of this as we plan IPDA and PDS4.
- The IPDA should recommend the usage of SPICE (which was already covered in the project report)

Day 4: IPDA Steering Committee Meeting (July 17, 2010)

Yasumasa Kasaba, the chair of the IPDA, opened the 2nd day of the Steering Committee. He reference the agenda and ask Pedro Osuna to report out on the TEG splinter.

Splinter Reports Continued...

Pedro discussed the presentations that occurred in the area of system architectures, registries, PDAP and the data architecture.

A major point that Pedro identified for the TEG is to adopt a process for the approval of standards. He also referenced Yasumasa's proposal that the plan for approval be included in the next newsletter. Pedro recommended that the W3C process be leveraged, if possible.

Pedro accepted the action within the TEG to draft an approval process for documents and hold a telecon.

Pedro then discussed the registries need within IPDA. He emphasized the need for registries and the plan presented by Crichton. In addition, he identified needs for registry users in the astronomy community.   Crichton recommended that we be agnostic in terms of discipline and be open to sharing our planetary services.

It was agreed that the IPDA should be open to registering its services in other discipline registries.

Pedro then discussed the need for a standard for PDAP. If PDAP is to be related, two things need to be agreed to:
- What to strip-out to release it ASAP
- How to insert "extensions"

Pedro discussed that it would be desirable to have a core for PDAP available soon. Pedro also discussed critical needs for PDAP including

- o A directory reference to be able to download directories
- o A way to introduce hierarchical data in PDAP
- o Need for pagination within responses
- o Need for a new extension RESOURCE_CLASS=TIMELINE
- o Need of a query language for PDAP complex queries->JS proposes new project

He discussed Baptiste's presentation which included:

- o What to do if I need certain PDS functions not available
- o Requirement to have a stable PDAP official release
- o Problem in implementing PDAP for experiments that are not PDS compatible
- o Be able to register PDAP services
- o Implement extensions to PDAP

Crichton mentioned that the PDAP data object extensions should be aligned with the PDS4 class types. Steve Joy mentioned, for example, time series is really a table which led to some discussions that ultimately need further discussion and collaboration between PDAP and the data model projects.

Under Tools, Pedro noted that Dan had proposed tools be captured on the IPDA website. This is still an open question. He also asked whether NASAView can be extended to support SAMP protocol.

It is recommended that the Steering Committee consider creation of a project to capture the tools in used by agencies that can be shared.

Crichton pointed out that we need to formalize the structure of the TEG and define its operations relative to the Steering Committee.

Kasaba felt that there isn't a clear breakdown structure and management scheme between the Steering Committee and work break down structure. Two points related to the Steering Committee role:

- o SC should cover the former part (agency and project reports)
- o Need to setup standing action items list and maintain

It is recommended that the Steering Committee consider formalizing the TEG and improving the clarity between the splinters and the Steering Committee meeting.

It recommended that the action item list be captured, circulated and resolved during the year.

IPDA Management

Kasaba introduced the structure of the IPDA for review. This includes the function at the next meeting for current chair & deputy-chair will be replaced. He also reconfirmed the Steering Committee members. Finally, he showed and discussed the mailing lists for IPDA members. These should and are open. For the TEG, he indicated that we should keep the current scheme, but we need to update the member list.

An action was identified to send the current member list of the TEG to the IPDA Steering Committee.

Kasaba also emphasized the structure for proposing projects. He requested that projects should strive to:

- Improve communication internally
- Improve communication with user communities
- Interface to neighborhood fields
- Interface to other specific projects (flight, for example)

Maria Teresa asked how we achieve the last point, interfacing to specific projects. She felt it was a good idea, but is challenging for IPDA.

IPDA Internal: 2010-2011. Kasaba felt the newsletter was not very useful. He asked for members to consider ways to improve it and the communication.

Pedro pointed out that the mailing lists are available at:
http://lists.planetarydata.org/lists/listino

This is the place folks should go to subscribe to the mailing lists.

He mentioned to belong to the TEG list, there needs to be a request sent to the IPDA chair.

Kasaba mentioned that the website seems okay, but we can improve the documentation.

Kasaba and Crichton will agree on a plan to improve the IPDA website documentation and organization

Kasaba hopes to improve the reporting including
- What has been done?
- What were proposed?
- With good figures & web index

Current project managers need to send their reports to Kasaba and Crichton by end of July, if possible.

Newsletters will be published in September, January and May. Pedro stated that the standards process will not be available until January.

New project managers need to submit their project plans to Kasaba and Crichton by end of July.

Kasaba then discussed interactions with external groups. This includes the European Planetary Sciences Congress in Rome, Italy (Sep 19-25) and the IVOA meeting in Nara, Japan (Dec 7-11). Maria Teresa mentioned that the PV2011 will be important to attend at CNES.

Kasaba proposed the next meeting be held in Japan in either Kyoto or Tokyo. Kasaba mentioned a proposal for 12-15 September for the meeting.

Kasaba asked that people check their schedules for a meeting 12-15 September in Japan for the next IPDA Steering Committee.

New IPDA Projects

Kasaba led the Steering Committee in discussing the IPDA projects.

Steve Hughes indicated that the PDS4 Assessment project be closed. He then proposed a new project on PDS4 Prototyping. This project includes a series of milestones for identifying products and validating them using the PDS4 standard. Gopala requested tools for going from PDS3 to PDS4 and PDS4 to PDS3 and other tools for validation.

The Steering Committee approved the formation of the IPDA PDS4 prototype project

Proposed project members include: Yukio, Gopala, Maria Teresa, Thomas, and David all agreed to join.

Maria Teresa proposed that the Archive Guide project be closed. This project maybe reinvigorated after PDS4 standards is released.

Gopala requested that the Standards Identification be extended into the new year. Additional deliverables and actions have been asked.

Crichton reported back to the IPDA on an email exchange with Chuck Acton. Chuck agreed that the Ancillary Data Standards will be put into an idle state as well as to the IPDA plan to "recommend" SPICE. The IPDA then adopted the following:

"The IPDA recommends the use of SPICE for capturing ancillary data and improving interoperability among planetary science archives"

The Registry Definition project is closed. Crichton requested a new project on Registry Implementation.

The Steering Committee approved the formation of the IPDA Registry Implementation project

Alain, Pedro, Hughes and Crichton are initial members.

In Jesus absence, Kasaba requested that the PDAP specification be kept on the books for clarification. The concern is approval of the specification. After discussion it was decided to close the project since there is a TEG action to clarify the approval process and bring the PDAP forward as a standard.

Dave Heather proposed the Venus Express Interoperability be closed.

Naru Hirata proposed that the PDAP GIS project be extended. Kasaba requested a project plan and solicited additional members.

Christophe requested new projects as follows:
- PDAP extension for Individual files with Jesus as the project leader
- PDAP extension for fly-by products with the project leader as Yukio
- PDAP query language with the project leader as Steve Hughes

After discussion, the final selected projects by the IPDA Steering Committee are as follows:

PDS4 Prototype Project – S. Hughes
PDAP Extension – J. Salgado
PDAP Fly-by products – Y. Yamamoto
PDAP Query Language – S. Hughes
GIS project – N. Hirata
Registry Implementation – D. Crichton
Standards Identification – G. Krishna
Tools Identification – T. Stein
Ancillary Data Standards (idle state)

After discussing the project, Kasaba then discussed some management items within IPDA. **Kasaba recommended that some action items be sent to the projects for resolution.** Other related projects include Web Site improvement and standardization scheme will be done by Kasaba and Crichton, as mentioned previously. There was a discussion regarding other action items and projects. Again, it was decided that the actions would be sent back to the existing projects. Examples include the ability to support return types of KML from PDAP, query models and the relationship between PDS4 and PDAP, etc.

Kasaba and Crichton agreed to create a list of action items that will be tracked separately from the meeting minutes.

Review of the action items

The IPDA members reviewed action items from the previous meeting as follows: Kasaba asked Crichton to review the action from the July 2009 Steering Committee.

The review with the Steering Committee produced the following result:

1. (All, ASAP): Beebe asked each agency to write a paragraph on how to make optimize archiving processes within the agencies.

   Follow-up: Crichton mentioned that what we are really looking for are bottlenecks and problems where we need to improve within the IPDA. He suggested IPDA members to still send Reta notes about problems.

2. (Project Leaders, September 2009): Send project reports to chair

   Closed.

3. (Osuna, Ongoing): Coordinate with Crichton on registry plan for PDAP

   Closed.

4. (Crichton, ASAP): Setup a section of the IPDA website to capture actions from the meeting

   Follow-up: This action is open and will be worked by Kasaba and Crichton in 2010.

5. (IPDA Assessment Team, ASAP): Develop a presentation that explains PDS4 to agency leadership

   Closed. Sent to the PDS4 Assessment Project members.

6. (TEG, March 2010): Provide a list of tools that should be linked to on the IPDA webpage.

   Follow-up: It was proposed that this be turned into a project with Tom Stein appointed as project manager.

7. (Hughes, ASAP): Send PDS4 Image Descriptions and Model to Roatsch for input and comments

   Closed.

8. (JAXA, October 2009): Provide comments on PDAP and its application to supporting SELENE and Hyabusa

   Closed.

9. (Beebe/Crichton, September 2009): Provide a spreadsheet for assessments as part of a "how to"

   Closed. Done for Venus Express Interoperability.

10. (TEG, February 2010): Develop a few planetary use cases that can validate both PDAP and PDS4 queries (e.g., the structure of a query in PDAP and the semantics in the PDS4 model)

    Open.

11. (Stein, Arvidson, ASAP): Work with IPDA to distribute a presentation to the Chinese and to request a Steering Committee member

    Closed.

12. (Krishna, Rye, July 2010): Define end-to-end process flow for standards approval and change as part of the standards identification process

    Open.

13. (TEG, December 2009): Develop assessment matrix for PDAP

    Follow-up: will be folded into the approval process.

14. (Roatsch, Ongoing): Help secure a facility for the 2010 IPDA Meeting

    Closed.

15. (Crichton, December 2009): Work with Sean Kelly on content management updates to website

     Closed.

16. (Crichton, December 2009): Setup mailing lists for projects

     Closed.

17. (Crichton, ASAP): Distribute a sample agency description that can be used as a template for Beebe

     Closed.

18. (Crichton, ASAP): Meet with Acton to discuss ancillary data project

     Closed.

19. (All, Allan, July 2010): Send inputs to Allan for a Wikipedia description of IPDA; Allan to develop a write up

     Closed.
     Follow-up: An initial Wikipedia page has been set up.   A new action is assigned to IPDA memebers to review an update.

20. (Kasaba, September 2009): Create a report for the COSPAR newsletter with support from other IPDA members

     Closed.

21. (Kasaba, ASAP): Find/update the members from China, Russia, Canada

     Closed.

     Follow-up: Members from China and Canada identified. Follow-up is underway with Russia.

22. (Beebe, September 2009): Establish the strategy towards the next COSPAR

     Closed.

Kasaba proposed an IPDA meeting in Japan September 12-15, 2011. The Steering Committee will be 14/15.

Actions: IPDA should confirm dates for the next meeting by end of July

It was decided that the meeting will be in Kyoto.

The meeting was closed at 12 PM.

2010 IPDA Steering Committee Action Items (Assigned, Due, SC Meeting Date)

1. (All, ASAP 2010): Agencies should report issues around archiving efficiency to Reta Beebe as a part of a 2009 action.

2. (Crichton/Kasaba, ASAP, 2009): Setup a section of the IPDA website to capture actions from the meeting and circulate to the IPDA.

3. (Stein, ASAP, 2010): Establish a new project to capture tools used by IPDA member agencies for sharing.

4. (TEG, ASAP, 2009): Develop a few planetary use cases that can validate both PDAP and PDS4 queries (e.g., the structure of a query in PDAP and the semantics in the PDS4 model)

5. (Krishna, Rye, ASAP, 2009): Define end-to-end process flow for standards approval and change as part of the standards identification process

6. (All, ,July 2011, 2010): Review and update the IPDA Wikipedia entry. Where possible, provide a link to the IPDA entry from other Wikipedia pages.

7. (Kasaba, ASAP, 2010): Find/update the members from Russia.

8. (Osuna, October 2010, 2010): Draft approval process for documents and hold a telecon; send results to Kasaba

9. (Osuna, ASAP, 2010): Send TEG members list to the IPDA Steering Committee to ensure the TEG has the proper representation.

10. (Kasaba/Crichton, ASAP, 2010): Agree on plan to improve the website in terms of project documentation and access.

11. (Osuna/Crichton, October 2010, 2010): Draft a charter and operating procedures for the TEG.

12. (All 2009 Project Managers, August 2010, 2010): Send final reports to Kasaba and Crichton.

13. (All 2010 Project Managers, August 2010, 2010): Send project plans to Kasaba and Crichton.

14. (All, ASAP, 2010): Send conflicts to Kasaba if Sep 12-15, 2011 will not work in Japan for the next Steering Committee.

15. (Steve Joy, October 2010, 2010): Work with Maria Teresa to submit forms to COSPAR for a B09 Data Management session at the 2012 COSPAR meeting.

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(IPDA Members present Saturday, July 17……Photo: Courtesy of Tom Stein)