MEETING

Meeting Date	2-3 July 2013	**Ref**	PSA-UG-MN-001
Meeting Place	ESAC, Madrid	**Chairman**	D. Heather / A. P. Rossi
Minute's Date	2013-07-08	**Participants**	A. P. Rossi, B. Cecconi, A. Hagermann, P. Rosenblatt, T. Widemann, H. Svedhem, P. Osuna, D. Heather *Absent: M. Fraenz*
Subject	Planetary Science Archive User Group Meeting #1	**Copy**	D. Lennon, L. Colangeli, C. Arviset

The first meeting of the PSA User Group (henceforth PSA-UG) took place at ESAC, Madrid from 2-3 July 2013. The meeting was primarily focussed on introducing the User Group to the current status of the Planetary Science Archive, the services provided to the end-users of the data, and to setting up a communications base for the User Group to establish themselves within the community.

These minutes will summarise the key points from each of the presentations, and the additional discussions that took place during the meeting. Actions are copied at the end of the minutes for information, but will be tracked in a separate file on Livelink.

Tuesday 2nd July
The Chairmanship for the first day, to introduce the User Group and provide an overview of the current PSA status, was D. Heather. Handover to the PSA-UG Chair was made after these introductory presentations.

Presentation *01_PSA_UG_Welcome_Logistics.pptx*:
Brief overview of the meeting agenda, local logistics and welcome.

Presentation *02_PSA_UG_Membership.pptx*:
Outline of the PSA-UG membership and member introductions, including a summary of current level of experience with PSA and its data content.

The PSA-UG has been split by discipline, according to the broad science disciplines covered by the PSA data holdings. Each PSA-UG member, appointed for a period of up to 3 years, has been selected as an expert in his representative discipline. The Chair was invited by the ESA Division Heads for SRE-OO and SRE-SM and agreed prior to the meeting. During the meeting it was announced that **Angelo Pio Rossi** has agreed to take up this duty. The PSA-UG membership is as follows:

Name	*Discipline / Role*	*Institute*	*e-mail*
Thomas Widemann	Remote Sensing: Atmospheres	Observatoire de Paris	thomas.widemann@obspm.fr
Angelo Pio Rossi	Remote Sensing: Solid Surface **CHAIR**	Jacobs University Bremen	an.rossi@jacobs-university.de
Pascal Rosenblatt	Radio Science	Royal Observatory of Belgium	rosenb@oma.be

Baptiste Cecconi	Magnetospheres	Observatoire de Paris	Baptiste.cecconi@obspm.fr
Markus Fraenz	Plasmas	MPI fuer Sonnensystemforschung	fraenz@mps.mpg.de
Axel Hagermann	Auxilliary data	Open University	axel.hagermann@open.ac.uk
Hakan Svedhem	Project Scientist Representative **Observer**	ESTEC	hakan.svedhem@esa.int
David Heather	Secretary **Observer**	ESAC	dheather@rssd.esa.int

A mailing list e-mail has been set up containing all discipline members: psa-ug@sciops.esa.int.

AI: M1-2013-07-03#08: DJH requested to set up a group webpage and a Livelink area (closed to psa-ug members).

The web-page address shall be: http://archives.esac.esa.int/PSA/psa-ug
This will provide background to the PSA-UG, objectives and contact details for each member.

It was clear from member introductions that the PSA-UG members currently have limited experience of using the PSA. An action was raised to address this

AI: M1-2013-07-03#16: ALL members to investigate current PSA and highlight weak points.

A note was made that 'Magnetospheres' and 'Plasmas' may not be the best terms for their disciplines and that it may be better to change this to 'Particles' and 'Fields'. The representative for 'Plasmas' was not able to attend the meeting, so this shall be discussed further within the PSA-UG before a final decision is made.

Presentation *03_04_PSA_UG_ToR_Procedures.pptx*:
Presentation of the Terms of Reference of the PSA-UG, the tasks, objectives and procedures to be followed now the group has been established.

Key tasks for which the PSA-UG is responsible:
- *Advise ESA on the future development of the PSA content, interfaces, documentation, compatibility with other planetary science archives and tools.*
- *Act as a focus for the interests of the scientific community in the PSA and as an advocate for the PSA within that community.*
- *Monitor the PSA activities to ensure they best meet the needs of the user community within the resources available.*
- *Participate in any reviews of the PSA activities.*

Additional programmatic details:
- The PSA-UG shall meet in person once or twice per year, as a baseline, in ESAC, Madrid. It was decided to aim for a second meeting before the end of 2013.
- The group shall make written recommendations to the PSA Coordinator for assessment and possible implementation.
- Minutes shall be public via the User Group webpage on the PSA website.
- An annual report shall be made to the SSEWG. The next SSEWG will be Oct/Nov 2013 (exact dates TBC). The PSA-UG Chair shall decide the corresponding schedule for delivery of the written report.

It was stressed that the User Group should **not** be running a data review of the current archive content, but should focus on the services, tools and supporting information provided to end-users of the data.

Presentations *05A_PSA_UG_PSA_Intro.pptx* and *05B_PSA_UG_PSA_Actors.pptx*:
Introduction to the PSA and an overview of the internal groups working on the PSA and their roles within the archiving process.

PSA was established and first became available online in 2003. Since then, it has grown to include all science data from ESA's planetary missions. The current PSA has consistent usage, but an overwhelming majority (>85%) of users retrieve data directly through the ftp 'Dataset Browser'.

Within ESAC, the responsibilities for the PSA are split between two groups:
- PSA Data Handling Team (PSA-DH):
    - Data Handling Archive Scientists (~one per mission)
    - 2 S/W engineers for supporting tool development
    - Coordinated by the PSA Coordinator

The PSA-DH team are responsible for all instrument team communications, validation and handling of all data received from the PI Teams prior to ingestion, management of all independent data reviews, specification of requirements for PSA, end-user support (helpdesk etc.).

- Science Archives Team (SAT) in the PSA context:
    - One person specifically dedicated to PSA
    - Core team providing more horizontal support and expertise across all ESAC archives.
    - Coordinated by SAT Leader

The SAT is responsible for developing, deploying, operating and maintaining all PSA access subsystems in accordance to user requirements agreed with the PSA-DH. They are also responsible for the final ingestion of data into the PSA and for its long-term preservation.

A question was raised about how to handle changes for post-operational missions.
Currently, the SAT, supported by Departmental funds, have a commitment to maintain archives beyond the end of mission lifetime. This covers updates to technologies allowing for data access, but will not include any updates that may be needed on the data themselves. There is no formal or standard means by which such updates are made, and it is done on a best effort and case-by-case basis.
To alleviate possible issues that may arise from this, **the following recommendations were made**, many of which are covered by the PDS Standards and the procedures followed during peer review:
- *Ensure completeness of S/W, tools and documentation for all data. [Covered by Standards and Review]*
- *Ensure all links to current and relevant tools for data usage are present*
- *Provide and maintain direct links in the PSA to key files listing known issues, such as ERRATA.TXT files. These files should be updated whenever issues are found, especially in cases where funds and/or expertise are not available to make the required fixes to the data sets themselves.*
- *Look into how Knowledge Management can be linked to the archives for preservation of key technical knowledge that will help with data usage.*

These will all be looked into and discussed further within the PSA-UG to extract clear actions where needed.

Presentation *06_PSA_UG_Archive_Process.pptx*:
Summary of the PDS Standards usage in the PSA context. An overview of the full Archive Lifecycle was also presented.

All PSA data comply with the PDS Standards (currently PDS3). This is a major step in terms of making the data as widely usable as possible, as the PDS is a recognised standard within the community. The standards include rules for definition of metadata and data set structure, and requirements for supporting tools and documentation. Tools exist for the basic reading and, to a point, manipulation of PDS data.

Resources are available online to thoroughly describe the PDS Standards and the supporting tools:
http://pds.jpl.nasa.gov/pds

The Archiving Process followed by PSA was briefly outlined. The various interfaces and points of interaction were presented and the basic data set lifecycle summarized. Details are available in the presentation.
The turnaround time for release of a data set after delivery to PSA is between a day and a few weeks. There is currently no backlog of data pending ingestion, so all data from teams is available or in the pipeline for release.

Presentation *07_PSA_UG_Archive_Content.pptx*:
Review of the current data content in the PSA and their rough split into the various disciplines supported by the PSA-UG members. It is clear that many instruments cross several disciplines. It was stressed that it is not intended that any member 'takes the lead' on any given instruments. All PSA-UG members should feel free to comment on any issue they may find related to any instrument's data, even if its focus is outside of their discipline.

In addition to the existing PSA data content, there is an intention to include data from the Ulysses Jupiter flyby. There is high level Ulysses data at CDPP that is also available through the VO. PSA may consider providing access to this as well.

Key issues raised during the presentation of the archive content are listed below.

HRSC (Mars Express): There was a plan to deliver derived mosaic data. PSA requested to follow up on this with the PI team to see if this is still a possibility.

Radio Science (all missions): Would be useful to have access to HK attitude information and spacecraft orbit information, currently available only in ESOC files. It is planned that PSA include this sort of information in a specific ESOC Auxilliary data set for each mission. Similarly, the 'Radio Navigation' data is currently not accessible through the PSA. It would be useful to find a way to include this and provide a link to it from the Radio Science data sets.

The lack of calibrated radio science data was raised as a key point. PSA were requested to investigate if profiles could be produced, or at least if S/W allowing for their production could be made available. No official action was raised, but this will be tracked through the user group once PSA provide feedback on the possibilities.

SPICE (Huygens and SMART-1): There is no specific SPICE dataset available for Huygens or for SMART-1. For Huygens, there is a specific housekeeping data set and the DTWG data set, which between them contain the relevant information. For SMART-1, not data set has ever been produced. The PSA-UG officially requested that this is produced and included in the PSA.

AI: M1-2013-07-03#19: PSA to produce and ingest a SPICE data set for SMART-1.

Presentation *08_PSA_UG_Access_Services.pptx*:
Details were presented of all current means to access data within the PSA.

There are currently several interfaces through which users can access the data:
-   Advanced Search java interface
-   Mars Map search java interface
-   Machine (scriptable) interface (PAIO)
-   Planetary Data Access Protocol (PDAP)
-   Data set browser (ftp)

The current status of all of these interfaces was shown with examples of searches. It is not clear if all interfaces are needed (>85% of current usage is through the Data set Browser), and one of the key tasks of the PSA-UG should be to help us clarify the needs and desires of the community so that we can focus our efforts on providing query interfaces that are needed and useful.

The PSA currently uses the oldest technologies for its Advanced and Map interfaces. A presentation was also made of possible directions we may head to in future. Two possibilities were presented based on the technologies supported by the SAT:

-   A 'SOHO' style interface (link from http://soho.esac.esa.int/data/archive/index_ssa.html). This is still a 'rich client' and can provide very complex functions, but resolves many of the known issues with the current PSA technologies (java applet, slow searches etc.)
-   A 'Ulysses' style interface (http://ufa.esac.esa.int/ufa/). This is the so-called 'thin-layer' option that appears more as a webpage.

Both of these options resolve issues related to the use of Java applets, and of connectivity through ftp ports that are problematic with the current PSA.

One major discussion point for the future is the Map-base search, as the current projections of maps and footprints is not the most practical. The possibility of map-based searches for other missions / bodies was also discussed. It may be useful for Rosetta scientists once the comet escort phase data are received, but it is not clear how to best manage geometry of such bodies. An action was raised to explore this further.

AI: M1-2013-07-03#03: ALL members to discuss Use Cases for minor bodies + irregular geometries

The PSA-UG members will explore the options for each user interface further and report back on their recommendations in future meetings. As part of this, use cases from each discipline will be produced.

AI: M1-2013-07-03#02: ALL members to define use cases for basic and advanced PSA users.

A discussion followed on ways in which the PSA could be promoted. The following ideas were discussed:
- Use of PSA data enforced through Ph.Ds or post-docs that are co-funded by ESA.
- A presentation was made of the YouTube training videos produced for use of the Ulysses Final Archive. It was recommended that the PSA follow a similar approach in future.
- Continue to host and promote PSA content through data workshops, and ensure high visibility of this through PSA web.
- Repetition of workshops, and use of materials in knowledge management for archive and data usage, including use cases and exemplary science exploitation workflow (e.g. wiki, screencast or the like).

AI: M1-2013-07-03#12: ESA to investigate the possibility to involve YGT, RF, Trainees etc. for PSA-UG institutional activities/duties.

End of Day 1

Wednesday 3rd July
The Chairmanship of the meeting for the second day was officially handed over to the PSA-UG Chair.

Presentation *09_PSA_UG_WWW_Supporting_Tools.pptx*:
Brief overview of the PSA webpage content and tools provided / linked to through the pages.

Objective in the long-term is to provide pages that are specific to instruments and their data usage. Information and recommendations form the PSA-UG will be used to start development of these pages.

Currently, a list of tools is provided split by support of the end-user and the data provider. The PSA-UG were asked to review this list and provide inputs on any missing links.

AI: M1-2013-07-03#04: ALL members to list tools used within their community for science, visualization, promotion etc.

Presentations *10_PSA_UG_URD_Overview.pptx, 11_PSA_UG_Workshops_Overview.pptx, 12_PSA_UG_User_Support.pptx* and *13_PSA_UG_Interoperability.pptx*:
The presentations above were not given during the meeting, as they were provided only for additional information. It was decided instead to have an open discussion and focus on how the PSA-UG can best address the needs of the community and meet the requirements and tasks outlined in their Terms of reference.

Presentation *14_PSA_UG_Summary.pptx*:
The discussions were guided by the tasks outlined for the PSA-UG, and presented in the summary slides. In order to promote PSA and PSA-UG visibility, the following actions were immediately raised:

AI: M1-2013-07-03#09: ALL members to gather information on mailing lists for dissemination/advocacy/*questionnaire*

AI: M1-2013-07-03#12: ESA to investigate the possibility to involve YGT, RF, Trainees etc. for PSA-UG institutional activities/duties.

AI: M1-2013-07-03#20: CHAIR to prepare template/few slides & basic info / concept / task of PSA-UG for all members to use and present at meetings.

AI: M1-2013-07-03#18: CHAIR to prepare an e-mail announcing the PSA-UG and its scope for dissemination to relevant mailing lists

AI: M1-2013-07-03#15: Use the presentation and e-mail to inform key players of the group's existence (e.g. IPDA mailing list).
N.B. Several members will attend the IPDA meeting in July and make the announcement there as well.

The possibility of starting a forum and/or a wiki was discussed for obtaining user feedback, but a recommendation was put on hold until the PSA-UG is better established. Both cases would require regular curating and promotion (we do not want a forum that nobody is aware of / uses). One possibility would be to use *Kayako*, which is already used within ESAC on some projects for managing user feedback.

Promotion of PSA at conferences / workshops would be achieved through distribution of a flyer. A brochure has already been produced internally by PSA-DH and feedback on this was requested.
The PSA-UG recommends bulk production of the PSA flyer (after feedback) and its distribution at all planetary science conferences and workshops (currently done by PSA-DH 'manually')

AI: M1-2013-07-03#06: ALL members to provide feedback on PSA flyer

Questionnaire:
It was generally agreed that one of the first steps the PSA-UG should take is to approach the community for feedback via a questionnaire. The aim would be to generate this before EPSC (September) where members

attending could promote it. The following actions were raised in relation to the development and distribution of the questionnaire:

AI: M1-2013-07-03#21: ALL members to propose list of 4/5 open questions with short form for the questionnaire

AI: M1-2013-07-03#10: ALL members to draft questionnaire for their discipline

AI: M1-2013-07-03#11: CHAIR to combine/summarize inputs from questionnaire components by UG members.

AI: M1-2013-07-03#13: CHAIR and Secretary to distribute the questionnaire.

AI: M1-2013-07-03#14: CHAIR and Secretary to compile questionnaire results at defined deadline.

The questionnaire would most likely be 'hosted' by the PSA on their webpages, and should remain available for continuous feedback. The possibility to use a 'QR' type barcode to scan and download the questionnaire to a mobile device was recommended. May consider adding this to the flyer.
N.B. These barcodes could be used to promote several other PSA links as well.

A discussion on ideas for the questionnaire content / scope led to the following suggestions:
- Ensure the questionnaire objectives are clear, and focus the questions accordingly.
- Keep the questionnaire length down to a few pages.

Some ideas for objectives included:
- Assess Expectation/need/desire of user from a planetary archive wrt:
  - **Who** archive users are / **what** do they do / **which** archive they use / what do they want
  - How to **find** data → User Interface
  - How do **retrieve**/access data
  - How to **read/load** data → Tools and services
  - How to make optimal **use** of data → Tools and services
  - How to **identify/link** _external_ software/libraries tools for **analysis**
  - How research benefits from **Interoperability**

It was suggested that the questions be split into four categories:
- Archive related
- Science specific
- Tools and software
- Request for continued participation in PSA evolution

A call for ideas on each of these question categories was made (see AI: M1-2013-07-03#21 and AI: M1-2013-07-03#10).

User Requirements
A brief discussion was held on the existing PSA User Requirements Document (URD) and the need for these to be updated as part of the PSA-UG activities. It was clarified that the PSA-UG should provide recommendations / requirements, but they cannot dictate the resulting development timeline, as that would need to be discussed internally between PSA-DH and SAT and PSA-DH, and all implementation is dependent upon agreement from projects funding the PSA. For updating the User Requirements Document, it was recommended to split requirements according to discipline. The document as it is now should be used as an indicator for what has been done previously, but the members should not let it drive their requirements.

The PSA-UG members will familiarize themselves with the URD, and as a first step toward developing new recommendations and requirement, each member agreed to define some use cases for data access and usage for basic and advanced archive users (see AI: M1-2013-07-03#02).

Additional discussion points
The use of Google Mars style interfaces for visualization was briefly discussed, and a recommendation was

made to continue discussion within the PSA-UG to investigate this further. There may be ways to utilize / provide KML files from the PSA for use within Google Mars applications, and this can be assessed in future discussions.

Promotion of data that has less immediate visible appeal (e.g. radio science) was discussed. One possibility for radio science would be to have a visual display of the track of the spacecraft, showing areas for which tracking data exists. The CDDP uses SPICE along with some plotting and visualization tools to do something similar to this, although it is currently not supported on a Mac. This is available through interoperability.

As a first step in dealing with this, all PSA-UG members were asked to compile a list of tools such as this used for visualization and promotion of data (see AI: M1-2013-07-03#04).

A point was raised regarding the need to consider lander / rover data access / usage when making recommendations for the future of the PSA. Although there are currently no such data sets within the holdings, there will be such data in future, and there is a need to ensure that recommendations for improvements and changes to the PSA will be compatible with these data types in future.

Closing points and logistical issues.
The meeting was extremely valuable, and has allowed us to kick-start many activities that will allow for improved user / community feedback and corresponding updates to services provided by the PSA. The following top-level schedule was proposed for the PSA-UG activities:

- Set up Livelink and Webpage (ASAP)
- Telecons are proposed for every month, kicking off with a short technical telecom Friday 12th July to look at the Livelink / web setup.
- The questionnaire should be ready for distribution September 2013
- Responses from the questionnaire should be consolidated by October 2013
- ***The next face to face meeting will be scheduled October / November 2013***
    o Assessment of the questionnaire output and draft recommendations will be discussed
- Aim to have first recommendations officially documented by mid-November 2013.

Close of meeting, and thanks to all participants for a very productive start.

Actions: The official action item list is to be tracked through the Livelink area. The table below summarises the actions from the meeting for reference only.

Action	What	Who	When
M1-2013-07-03#01	Set doodle for PSA-UG-M2	APR/DJH	2013-07-10
M1-2013-07-03#05	Travel pre-booking possibility inquiry	DJH	2013-07-10
M1-2013-07-03#08	Setting up Group Webpage + Livelink + tools + PSA-UG WEB archives.esac.esa.int/psa/psa-ug/	DJH	2013-07-10
M1-2013-07-03#20	Prepare template/few slides & basic info / concept / task of PSA-UG	APR/ESA/DJH + All	2013-07-12
M1-2013-07-03#18	Compile basic email announcing PSA-UG and scope, etc.	APR	2013-07-17
M1-2013-07-03#21	Propose list of 4/5 open questions with short form for the questionnaire	All	2013-07-29
M1-2013-07-03#10	Draft questionnaire for each member's discipline	All UG	2013-07-31
M1-2013-07-03#11	Combine/summarize inputs from questionnaire components by UG members	APR	2013-08-07
M1-2013-07-03#06	Flyer inputs/comments	All	2013-08-15
M1-2013-07-03#02	Define use cases for basic and advanced PSA uses.	All	2013-08-31
M1-2013-07-03#04	List tools in each community (science tools, visualization, promotion, dissemination)	All	2013-08-31
M1-2013-07-03#07	Flyer design	DJH	2013-08-31
M1-2013-07-03#09	Gather information on mailing lists for dissemination/advocacy/*questionnaire*	All à DJH	2013-08-31
M1-2013-07-03#13	Distribute questionnaire	APR/DJH	2013-09-08
M1-2013-07-03#15	Informing key players of group existence (e.g. IPDA mailing list)	APR + ALL	2013-09-08
M1-2013-07-03#03	Discuss Use Cases for minor bodies + irregular geometries	All	2013-09-15
M1-2013-07-03#14	Compile questionnaire results at defined deadline	Chair/Secretary	2013-10-08
M1-2013-07-03#12	Investigate possibility to involve YGT, RF, Trainees and alike for PSA-UG institutional activities/duties	ESA	2013-10-31
M1-2013-07-03#16	Investigating current PSA and highlight weak points (own judgement + questionnaire)	ALL	2013-11-01
M1-2013-07-03#17	Compile weak points	APR/DJH	2013-11-07
M1-2013-07-03#19	Spice data in SMART-1	DJH	2013-12-31