

**Herschel Legacy Product task force meeting #6**  
**14/12/2016 – 10:00 am CET – Room A024**

**Minutes of Meeting.**

**Present:** KE, EPU, LC, PGL, EV, JCS (part time), IV, MR (webex), RH (webex), DT

1. Review of action items

No action from the previous meeting.

2. Status of HSA 8.x and schedule for HPDP and ADP interface (EV)

Eva gives a demo of the functionalities implemented in the beta 4 version of HSA 8.0 (<http://archives.esac.esa.int/hsaint/whsa/index.html>). This version is not yet the one that will be released as a beta 5 will be needed. Release is not expected before beginning of next year.

The HPDP interface does not exist yet, although a (yet) inactive selection button is already displayed in the “Herschel Data Collection” area. HPDP will inherit from the UPDP functionalities so what’s presently implemented there is a good example of what to expect. As such several of the requirements identified in the dedicated document are already serviced (e.g. full or category retrieval possible prior to any query).

Target of next beta including HPDP interface is around March next year.

There was a question reg. what’s the background used in the footprint window. It corresponds to PACS 70 microns. This was not considered adequate and, after the meeting, actions were taken to move to optical images (will come in beta 5).

It was also acknowledged that there will be resources available within the HSC to generate postcards in case they are missing in the applicable product deliveries.

3. Current status of HPDP objectives per instrument and their schedule

**a. Existing or on-going deliveries for HPDPs and ADPs/review of priorities**

The following tables summarises the status, timeline and priority of currently contemplated HPDPs (**the point source catalogues are not listed here as they are handled by a different working group**).

HPDP name	Status	Expected delivery	Priority/custodian
<b>HIFI</b>			
Flux Uncertainty error budget tables	Delivered	N/A	2 / DT
OFF spectra data products	Delivered	N/A	2 / DT,MR
Expert-reduced Spectral Maps	Delivered	N/A	1 / PM, SB
Expert-reduced Spectral SScans	On-going	03/2017	1 / DT

Spectral line catalogue	On-going	12/2016	3 / IRAP
Non-averaged level 2 (UPDP)	Delivered	N/A	2 / DT
Fix of anomalous observations	TBD	01/2017	3 / DT
<b>PACS</b>			
PACS-S red leak range	On-going	01/2017	1+ / EP
PACS -S blue range	TBD	02/2017	2 / EP
PACS-S unchopped baseline correction	TBD	01-04/2017	2 / KE
PACS-S POC	TBD	03/2017	2 / EP
PACS-S non-standard AOT	TBD	04/2017	3 / EP
PACS-S fix of anomalous observations	TBD	01-03/2017	3 / KE
PACS-S OFF spectra ( <b>NEW</b> )	TBD	01/2017	2 / KE
PACS-S extremely bright sources	TBD	??	3 / UPDP
PACS-P JScanam HPDP	Delivered	RN 01/2017	3 / JGC
PACS-P Unimap HPDP	On-going	01/2017	1 / LC
PACS-P Mini-Scan level 2.5	TBD	02/2017	3 / LC
<b>SPIRE</b>			
SPIRE-S background correction	Delivered	N/A	1 / IV
SPIRE-S SECT and POCT calib. spectra	Delivered	12/2016	1 / RH
SPIRE-S high absResolution spectra	Delivered	12/2016	2 / RH
SPIRE-S fix of anomalous observations	TBD	01/2017	3 / RH
SPIRE-S feature finder catalogue	V1 delivered	V2 02/2017	1 / RH
SPIRE-P level3 maps of Gal plane	TBD	??	3 / ICC
SPIRE-S non-averaged spectra	Delivered	N/A	2 / RH, IV
SPIRE-P HiRes products ( <b>NEW</b> )	TBD	01/2017	2 / IV
SPIRE-P destriped maps (tentative)	TBD	??	3 / IV

Some detailed inputs on isolated HPDPs:

- PACS-P Unimap: all fields processed, except LMC. LC needs access to a 256 Gb machine – he will try to launch process while at ESAC this week
- PACS-S red leak: 842 obsids treated, another 544 still to be done. Resume processing this week.
- PACS-S blue range: 350+ obsids concerned.
- POC: Consists in running useful script. Obviously the product is only useful for point sources, however work to identify which obsids are and which are not is probably out of the scope here. We agreed that we will run it blindly on all observations, at least for the first delivery, and explain the RN the scope of application.
- Non-standard AOTs: remark was made that many of those obsids probably have a counter-part obsid done with a standard AOT, i.e. being processed standardly in the HSA. We should avoid cover those. **AI on KE/EP to figure out which obsids are concerned.**
- PACS-P GOODS fields: if we take this one as an HPDP (vs UPDP) we should have an small internal review on the delivered products. BA has put in a request to ESAC faculty to fund the visit of Koryo to finish this study.

- We introduce a new PACS-S HPDP: the OFF-position spectra. This work replaces the WP aiming at providing a QC on whether obsids are affected by OFF position contamination. It will be easier and faster to provide the products (readily processable within HIPE) than figuring out the contamination ourselves.
- PGL asks whether we could create a matching matrix between PACS-P HPDPs and the SPIRE level3 SPG maps.
- PGL is worried that the SPIRE HiRes are hidden inside the observation contexts. He proposes that we make it an HPDP to show them more prominently (note: this is already what HIFI is doing e.g. with their OFF position spectra, or uncertainty budget tables). **AI on DT and IV to discuss the timeline for this WP.**

The following tables summarises the status, timeline and priority of currently contemplated ADPs

ADP name	Status	Expected delivery	Priority/ Custodian
<b>HIFI</b>			
HIFI Trend Analysis Data Products	Delivered	N/A	3 / DT
HIFI Tsys Data Products	Delivered	N/A	3 / DT
HIFI Beam Data Products	Delivered	N/A	1 / DT
HIFI OBSW images	On-going	12/2016	3 / DT
HIFI LCUSW and Safety tables	On-going	12/2016	3 / DT
ILT diplexer data products	TBD	01/2017	3 / DT
ILT gascell data products	On-going	01/2017	3 / DT
SEU monitoring data products	On-going	01/2017	3 / DT
<b>SPIRE</b>			
SPIRE-S and SPIRE-P Beams	Delivered	N/A	1 / IV
SPIRE-P filter transmission curve	Delivered	N/A	1 / IV
SPIRE-S diffraction losses	Delivered	N/A	1 / IV
SPIRE OBSW images	Delivered	N/A	3 / RH
Trend monitoring data products	Delivered	N/A	3 / IV
CDMS simulator ( <b>NEW</b> )	TBD	Best effort basis	3 / RH
<b>PACS</b>			
PACS-P and PACS-S Beams	On-going	01/2017	1 / LC, EP
PACS-P filter transmission curve	On-going	01/2017	1 / LC
PACS OBSW (CDU and SPU)	TBD	12/2016	3 / ICC
Trend monitoring data products	TBD	12/2016	3 / ICC
SEU monitoring/log	TBD	12/2016	3 / ICC

We briefly discussed what to do with the CDMS simulator. We agreed that this should not be considered a product as such. Instead we propose to store it in the software area of the long-term repository (<http://archives.esac.esa.int/hsa/legacy/software/>). The same is true for the OBSW e.g., although we actually have already identified a separate area for all uplink-related material, which is presently curated by Jon Brumfit, see:

<http://archives.esac.esa.int/hsa/legacy/other/operations/moc/>.

## **b. Public opening of cosmos pages for HPDPs and ADPs**

The following pages

[www.cosmos.esa.int/web/herschel/highly-processed-data-products](http://www.cosmos.esa.int/web/herschel/highly-processed-data-products)

[www.cosmos.esa.int/web/herschel/ancillary-data-products](http://www.cosmos.esa.int/web/herschel/ancillary-data-products)

are no longer orphans and can be linked from the Product tabs of the Cosmos Herschel portal. The HPDP link was advertised in the Dec. 13<sup>th</sup> eNews. The ADP link is not yet officially advertised, but since users can find it, we need to make sure the accessible content there is tidied up.

## **c. Product generation: on the use of HIPE 15 for restructured headers**

With the HIPE 15.0 release, the upgrade of the FitsArchive task has been completed, and allows to optimally re-structure the FITS headers of our products. The idea is that we apply this header refurbishment as much as possible in our HPDPs. Re-writing FITS from an older file version is very easy and doable in essentially a two-line code in HIPE. **AI on DT to distribute a code snippet illustrating how to do this.**

LC asks whether he can apply the task on headers where ad hoc keywords have been added, as is the case in his Unimap HPDP. The answer is that only keywords present in the dictionaries of HIPE 15.0 will be re-organised in the applicable categories. Keywords absent from the dictionaries will end up in the *Miscellaneous* section (at the end of the header).

PGL also raises the idea to create dedicated flyers for each released HPDP. The idea is to showcase the added value of the products. First reaction is that there is no resources to do this on the mid-term. Pili might help.

### 4. Discussion: Legacy Data Products

The main idea behind this concept would be to be able to identify for each obsid what are the best products to serve to the community. For some sub-instruments /sub-modes, it can however be problematic to identify a “best product”, as there will most likely be several possible best products, and decision on which one to prefer will be science-driven – the goal is that documents such as handbooks or product explained should provide some sort of decision tree on the matter.

The other point is that HPDPs are not always the best products for a given obsid. So, Irrespective of how such products would be served/singled-out in the HSA interface, we agreed that typically two categories of HPDP do exist:

- HPDPs that supersede their SPG counterpart, as they are of superior science-readiness level. Within those, HPDPs can be unique (one single product), or multiple (several variation of products within one obsid).
- HPDPs that are complementary to their SPG (or other HPDP) counterpart.

Because we are planning to add QSummary to obsids that will benefit from HPDPs, we agreed that we should standardize the messages to add, and that the message should illustrate the above 3 possible categories: “superseding HPDPs: single”, “superseding HPDPs: multiple”, “complementing HPDPs”. **AI on the ICS to figure out which of their respective HPDPs falls into each of those categories.**

I add here a remark that was made by G. Helou during the HST#59: “are we using “Legacy” too widely? Is this concept using the right wording for ex.? We mean “best product”, is legacy accurate?”. I think it is worth thinking about his comment and see how this affects the concept discussed here.

5. AOBs/next meeting

We will have our next meeting in March next year. This will be a good opportunity to check the status of the HPDP interface in the next version of the HSA.

6. New action items:

AI	Description	Actionee	Due date
HPDP6-AI1	Distribute code snippet to apply the FITS header category	DT	16/12/2016
HPDP6-AI2	All to assign categories to the HPDP under their custody (see discussion in agenda item 4 for details)	ICS	20/03/2017
HPDP6-AI3	DT to copy the JScanam HPDP files delivered by JGC on VOspace into the updp area, prior to official delivery on repository area	DT	15/01/2017
HPDP6-AI4	Figure out which obsids from the non-standard AOT list have a counterpart done with a standard AOT	KE, EP	20/03/2017
HPDP6-AI5	Discuss timeline for provision of new SPIRE-P HiRes HPDP	DT, IV	15/01/2017