

Herschel Data Processing/HIPE

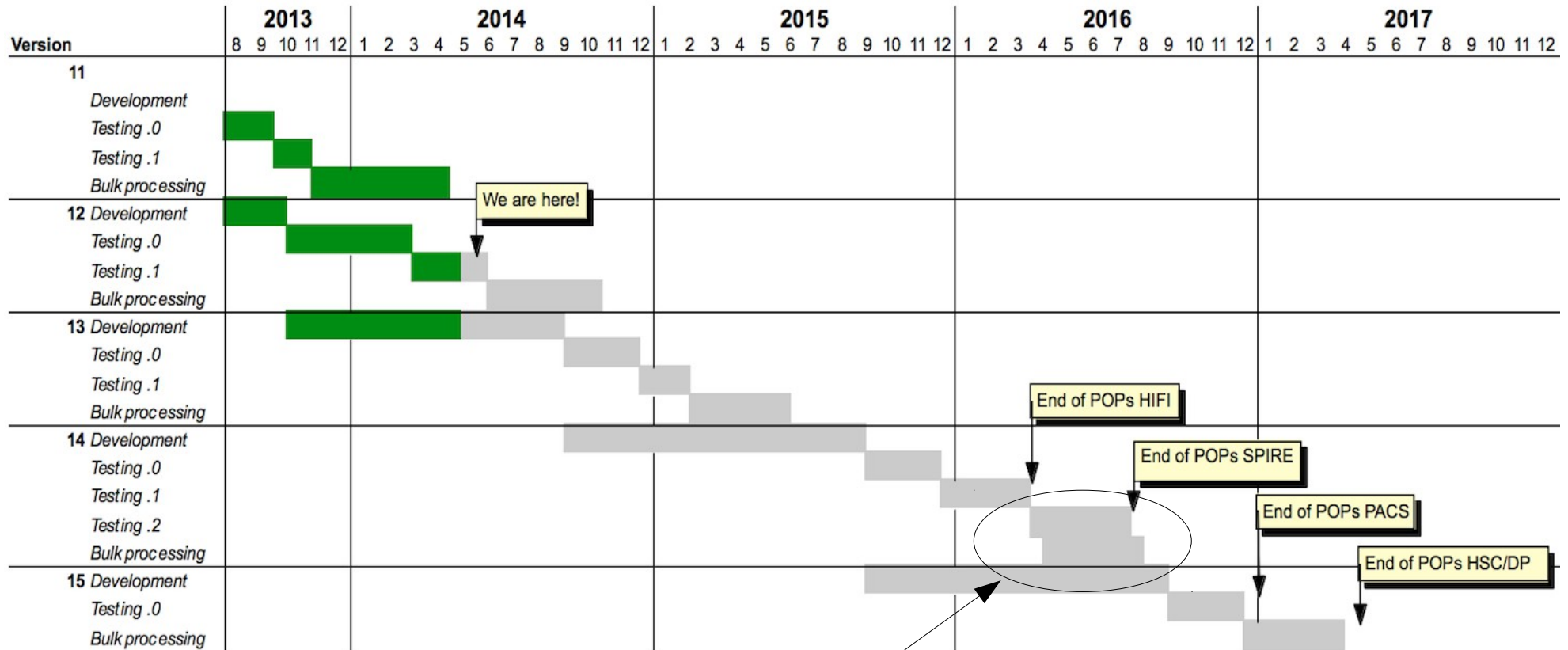
Status and plans

Jorgo Bakker
Herschel DP Manager
22-23 May 2014 | ESAC | Madrid

with contributions of Bruno Merin,
Beatriz Gonzalez, Daniela Coia,
Jaime Saiz, Javier Diaz

- Schedule
- Highlights and plans
- Bulk processing challenges
- HIPE beyond Herschel

DP/HIPE Release schedule



Need to re-assess bulk processing schedule



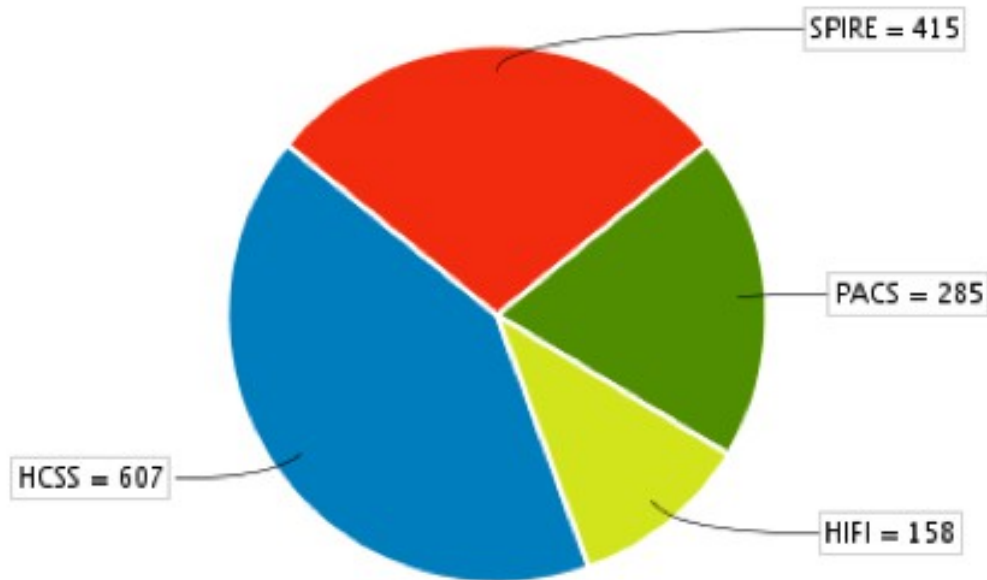
- People leaving, sometimes faster than expected
- Managing expertise that is disappearing
- Changes in schedule

- **HIFI** electric standing wave correction in HIPE
- **PACS-P** first time JScanam maps;
improved MadMap pipeline (better drift correction and performance)
- **SPIRE-P** super-resolution pipeline in HIPE
- **ALL** improved FITS keywords in products
- ... and much more:
<http://herschel.esac.esa.int/twiki/bin/view/Public/HipeWhatsNew12x>

➤ Tickets integrated: 1465

, of which:

- 494 change requests
- 971 bug fixes

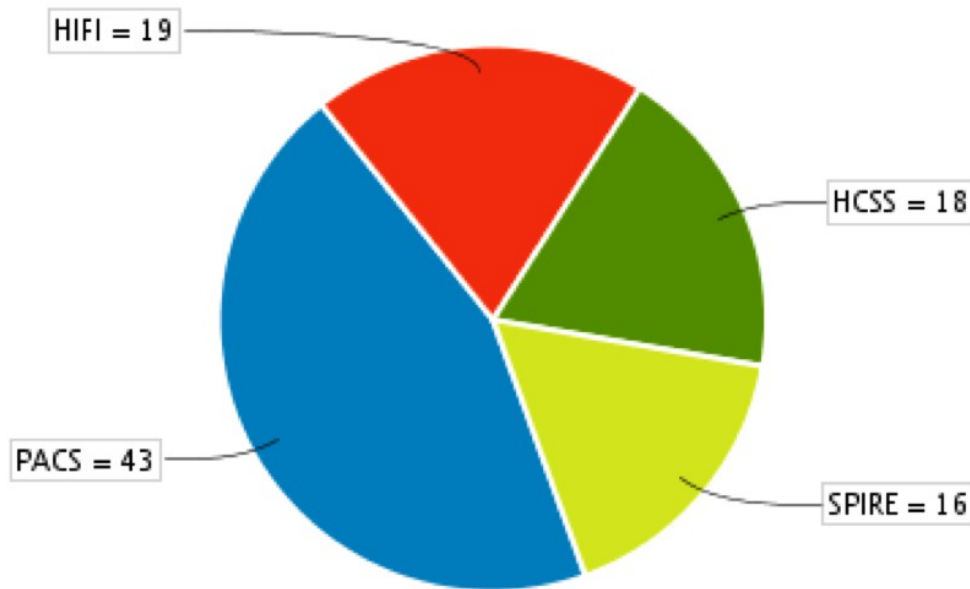


➤ Additional tickets: 96

, of which:

- 85 closed or under test
- 19 awaiting integration

planned to start bulk:
2nd part of June



Data produced with 12.1 will support advanced panels HSA



- Last version possible for major functionality additions
- Current top level priorities:
 - Archive products
 - Pipelines
 - Documentation
 - HIPE visualization/analysis tools (e.g. spectral, cube)
- Based on 12.1 experience and resulting products:
 - PACS will choose what mapper to use in version 13

ICCs: committed for testing and bug-fix this release!

- **HIFI** Bands 6&7 corrected for electric standing waves;
Level 2.5 for point spectra WBS subbands and convert to simple spectrum (the polarisations will still not be averaged);
HIFI beams
- **PACS-P** Maps valid for point source and extended emission analysis (JScanam, UniMap)
- **PACS-S** Cubes with evenly sampled spectral info
- **SPIRE-P** Better deglitched maps (multi-pass pipeline)
- **SPIRE-S** Full wavelength spectra and feature lists

- Last pipeline and calibration updates
 - 14.0: Last version for HIFI ICC
 - 14.2: Last version for SPIRE ICC
 - 15.0: Last version for PACS ICC
- Work on DP Legacy ... improvements in:
 - Archive Products,
 - Documentation, and thus
 - Software
- Software library upgrades (Java8, removal Versant)
 - to ensure HIPE continues to be available on user computer

ICCs: commitment for testing and bug-fix limited to above!

- HIPE will be maintained until end of 2017
- Beyond, still be available for download ... as is
 - But will break one day, as no maintenance
- To prolong life of HIPE, intent to use virtual machines:
 - ESA contracted company to virtualize legacy scientific software
 - Virtual machines for Herschel, XMM-Newton, ISO & EXOSAT
 - HIPE 11.1 successfully in VM, running main user pipelines of all instruments!
- Goal is to have last version in a virtual machine

End



➤ Thank you:

- On behalf of whole Data Processing team

➤ Questions?



➤ **Rosetta**

- Validating MAPPS software and complementing its functionality
- Generates interest for other planetary missions as well

➤ **JWST/MIRI**

- KU Leuven uses it for QLA

➤ **Solar Orbiter**

- Using EGSE router, QLA and TM ingestion

➤ **BepiColombo**

- Investigating for 'QLA'

➤ **Gaia**

- Developing HIPE plugin for reading binary data

➤ **SVOM**

- Prototype uses full system
 - Started writing from scratch, but HIPE reuse proved better
- Changed TM ingest part
- Not pure Java (have to accept other tools as well)
- Inline scripting environment of HIPE very powerful

➤ **EcHO**

- Not selected but consortium still active
- First intentions to use parts of HIPE/HCSS