SUBJECT: ICC Software Project Management Plan

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1. INTRODUCTION

This document presents an overview of the plan for the development of software for the SPIRE Instrument Control Centre (ICC). The ICC is a key part of the ground segment of the Herschel Space Observatory mission. The ground segment is a collaborative development between ESA and the scientific instruments on Herschel[1].

The SPIRE ICC itself is comprised of:

- The ICC Operations Centre at RAL.
- Three "Data processing And Science Analysis Software" centres at:
  - Imperial College, London
  - Saclay, France
  - University of Lethbridge, Canada
- Contributions from other institutes, including:
  - University of Cardiff
  - University of Sussex
  - IPAC, USA
  - NAOC, China
  - Padova, Italy
  - LAM, France
  - IA, Tenerife

The institutes listed above contribute to SPIRE software and form part of the development team.

1.1 Scope

The elements that comprise this development are:

- Herschel Common Science System (HCSS).
- SPIRE data processing software. This includes pipeline processing, interactive analysis and data visualisation tools.
- Calibration and Trend Analysis software.
- Quick Look Analysis software.
- Miscellaneous tools.

The HCSS is a shared development with the other contributors to the ground segment, under coordinating ESA management, see **[AD4]**. It includes common data processing software. The ICC contributes to this development. Whilst the other elements fall under the management of the SPIRE ICC, their development shares the same general organisation, responsibilities, methodologies, tools, and key milestones of the Herschel ground segment in general. The SPMP for the HCSS **[AD4]** therefore remains applicable to the developments also led by the SPIRE ICC. An additional SPMP describes tasks identified for "extended" Herschel data processing tasks, see **[AD5]**.

[1] NASA are now also offering some contribution to the development.

1.2 Documents

1.2.1 Applicable Documents

AD1	SPIRE ICC Work Packages	SPIRE-RAL-DOC-001198	1.2	28th October 2002
AD2	ICC Software Configuration Management Plan	SPIRE-RAL-PRJ-001106	1.1	1st February 2002
AD3	Pipeline Development Schedule	SPIRE-ICS-NOT-002786	1.2	18th December 2006
AD4	HCSS Software Project Management Plan	FIRST/FSC/DOC/0116	7	1st June 2006
AD5	Extended Herschel Interactive Analysis and Data Processing Software Project Management Plan	Herschel/HSC/DOC/0555	1.0	23rd May 2005

1.2.2 Reference Documents

RD1	SPIRE Product Assurance Plan	SPIRE-RAL-PRJ-000017	1.3	4th January 2007
RD2	SPIRE Configuration Management Plan	SPIRE-RAL-PRJ-000626	1.3	28th January 2002
RD3	SPIRE Science Implementation Plan	SPIRE-RAL-PRJ-000018	1.2.1	19th December 2006
RD4	SPIRE ICC Scenarios	SPIRE-RAL-DOC-001195	1.0	3rd May 2002

2. ICC SOFTWARE DEVELOPMENT

The following topics are addressed by the HCSS Software Project Management Plan **[AD4]**, and are applicable to all software development in the SPIRE ICC:

- Project phase breakdown.
- Project reviews.
- Managerial responsibilities.
- Project organisation.
- Tools, techniques and methodologies.
- Risk management plan.
- Initial schedule and milestones.

Further background is described in **[RD3]** and **[RD4]**. Configuration control procedures within the ICC are specifically described in the ICC Software Configuration Management Plan **[AD2]**.

2.1 HCSS Development

The SPIRE ICC will contribute to this development as described in **[AD4]**. Work packages are specified in an appendix to **[AD4]**.

2.2 SPIRE Data Processing Software

The work packages for this development are specified in **[AD1]**, except for work funded by ESA as part of "extended" data processing, which is specified in **[AD5]**. The SPIRE-specific part of the schedule for the pipeline part of this work is described in **[AD3]**.

2.3 Calibration and Trend Analysis

The work packages for this development are specified in **[AD1]**.

2.4 Quick Look Analysis

The work packages for this development are specified in **[AD1]**.

2.5 Miscellaneous Tools

This represents the development of tools that could not be foreseen at the beginning of the project. Placeholders for this exist in **[AD1]**. When a need is identified for such a tool, this will be signalled by the raising of an SCR (Software Change Request), using the ESA-provided system at http://www.rssd.esa.int/herschel_webapps/servletsuite/ProblemReportServlet?area=spire. The requirements for the tool will be specified in the SCR. The SCR system will also be used to track the development of the tool.