



SUBJECT: ICC Software Configuration Management Plan

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Project Document

**ICC Software Configuration
Management Plan**

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Change Record

ISSUE	DATE	Changes
1.0	29 th January 2002	First issue
2.0	19 th February 2007	Second Issue with reference included (Section 1.6) to applicable document for CUS/CCS configuration control
2.1	22 nd September 2008	Updated SPIRE CCB operation



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1. INTRODUCTION

1.1 Applicable Documents

AD1	Herschel Science Centre Software Configuration Control Procedures	HSC/DOC/0212	1.3	20 th May 2007
AD2	SPIRE Configuration Management Plan	SPIRE-RAL-PRJ-000626	1.3	28 th January 2002
AD3	SPIRE Database Management and CUS Configuration Control	SPIRE-RAL-NOT-002829	0.1	18 th December 2006
AD4	SPIRE ICC Software Project Management Plan	SPIRE-RAL-PRJ-002790	1.2	22 nd September 2008

1.2 Reference Documents

RD1	SPIRE ICC CCB Terms of Reference		1.1	31 st July 2008
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1.3 List of Acronyms

CVS	Concurrent Versions System
ESA	European Space Agency
HIFI	Heterodyne Instrument for FIRST
ICC	Instrument Control Centre
PACS	Photoconductor Array Camera and Spectrometer
SPIRE	Spectral and Photometric Imaging Receiver

1.4 Overview

The three Herschel ICCs (SPIRE, PACS, HIFI), together with the European Space Agency, share a common configuration management system. This enables resources (staff, hardware, software) to be shared, resulting in reduced costs for all the participating institutes.

2. CONFIGURATION MANAGEMENT

2.1 Configuration Control System

The repository for configurable items will reside at an ESA site, previously ESTEC, currently ESAC. ESA is responsible for all system management tasks, including backups.

CVS (Concurrent Versions System) will be used as the configuration control system. This is an open standard (see <http://www.cvshome.org/> for details). Clients at the ICCs will access a central CVS server located at the ESA site.

Software Configuration Status Lists (CSLs), showing the traceability of released versions of the built system, will be generated automatically from CVS.

Reference documents will be stored in Livelink rather than CVS. This system will also be operated centrally by ESA. Software produced for delivery to ESA and software produced for internal use by the SPIRE ICC are treated identically, with the caveat that the composition of the CCB will be different.



2.2 Responsibility

It is the responsibility of the manager of a software subsystem to ensure that configuration and version control are applied.

2.3 Configuration Identification

Note that there are no “deliverable” items in the conventional sense. Releases are identified by the attachment of CVS “tags” to a group of files. Any release can then be rebuilt using the tag to extract the files. These tags should not be confused with CVS version numbers:

- A tag is attached to a subsystem by the subsystem manager and is chosen manually.
- A CVS version number is generated automatically and only applies to individual source files.

Specifically, this means that:

- Individual source files are identified by the CVS version number. This is generated automatically by CVS. This version number must also be included in the source files and added automatically by CVS.
- When a subsystem is identified as reaching version 1.0, all of its constituent files will be tagged with this version. Following a tag version of 1.0, and optionally before, source files shall contain a change log in the header, specifying what changes have been made and at what date.
- Text-based documentation that is considered part of a subsystem’s source code, including HTML will also have CVS version numbers. It is optional whether the version number is included in the files themselves. This includes documentation intended for developers. For example, a Java package must contain a package.html file describing the purpose of the package.
- Subsystem releases are identified by CVS tags. See [AD1] for details. Text-based documentation describing the subsystem must receive the same tag.
- Following a tag version of 1.0, and optionally before, subsystems shall contain a CHANGELOG file, in which changes to the subsystem are documented together with the date of the change and the applicable (tag) version. This file records all of the changes made to the subsystem’s components.
- Source documentation (e.g. Word files) may also be kept in CVS. For certain documents this is likely to be enforced by ESA. Identification of SPIRE documents must meet the requirements outlined in [AD2].
- Executable files may be stored in CVS, though where possible this should be avoided and the entire source to create the executable stored instead. In the case of an executable being stored, the file is still tracked by a CVS version number, but the number is not contained in the file itself. Versions should be compared with byte-to-byte comparisons. Storing a checksum is not necessary.

2.4 Change Control

For change control of reference documents, see [AD2]. This section describes change control of software.

For change control of the software used for instrument testing purposes, see [AD3]



The way in which changes are carried out is specified in [AD1]. All changes will be tracked using a single problem reporting system under the responsibility of ESA. The same system shall be used for tracking:

- Software Problem Reports (SPRs)
- Software Change Requests (SCRs)
- Documentation change requests, also by SCR.
- Other “system” problems or changes i.e. the “S” may stand for “System” as well as “Software”.

New or changed requirements shall be handled by submission of an SCR.

A software subsystem will come under change control when it is identified as being Version 1.0 or greater.

The SPIRE ICC shall operate a Configuration Control Board (CCB). This CCB shall be a “feeder” CCB to the Herschel operational CCB, in that items identified as having an impact beyond SPIRE should be referred to it. The composition of the CCB shall include:

- Representatives of each core team of the ICC (software, operations, calibration, observations).
- Representatives of each major centre of the ICC (RAL, Imperial College, Saclay, Lethbridge).
- A representative of the Herschel Operational CCB.
- A representative of the Herschel Operations team.
- A QA representative.

It is the responsibility of this CCB to monitor the SxR system (where “x” refers to both “P” and “C”). All changes shall be requested through this system as noted above.