SPIRE ICC

ICC as a whole
User Requirements Document

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1 Introduction

1.1 Purpose & Scope

Requirements on the infrastructure needs of the ICC to allow it to function day-to-day, during the different phases of the mission. This includes procedural functions and high level requirements common to the other URD scopes (RD-1), for example the provision of a suitable database; communication channels within SPIRE and with the HSC, MOC and other ICCs.

1.2 Definitions of Terms and Acronyms

CVS	Concurrent Versions System
HCSS	Herschel Common Science System
UML	Unified Modelling Language

Two web pages are available describing terms applicable to SPIRE
http://www.ssd.rl.ac.uk/spire/consortium/information/FIRSTacronyms.shtm
http://www.ssd.rl.ac.uk/spire/consortium/information/FIRSTdefinitions.asp

1.3 Related Documents

1.3.1 Applicable Documents

AD-1	FIRST Ground Segment Design Description	FIRST/FSC/DOC/0146
AD-2	FSC Actor Definitions	FIRST/FSC/DOC/0157

1.3.2 Reference Documents

RD-1	SPIRE ICC URD Scope Document	SPIRE-ICS-DOC-000484
RD-2	FSC System URD	FIRST/FSC/DOC/0115

1.4 Overview

The ICC is split geographically into three parts, the control centre itself at RAL and two DAPSASs at IC and Saclay.

The Herschel Common Science System (HCSS) provides the software infrastructure common to the HSC and ICCs. This includes facilities such as the Common Uplink System, Proposal Handling, Version Control, Document Management and the (Versant) database. It also provides an environment for interfacing ICC-specific software (for example the local node of the database).

The HCSS forms a large part of the design for the software infrastructure of the ICC as a whole. This document does not in general describe URs that have already been covered by the HCSS, however it does specify particular requirements that the ICC places on the HCSS.

2 User Characteristics

The descriptions of the users can be found in AD-2.

2.1 ICC Actors

Calibration Scientist
ICC Manager
Instrument Engineer
Instrument Tester
Scientific Software Developer
Scientific Product Analyst
Software Tester
Software Maintenance Team

3 Requirements

This section describes the actual requirements. Note that the Phase flag indicated the *earliest* phase the requirement is made at. It is assumed, unless explicitly stated that the requirement holds for all subsequent phases.

UR-ICC-100 SPIRE Software

UR-ICC-110 Common environment

There will be a common development environment for software developers, including for example the software tools, tool versions, standard locations for spire-developed libraries, standard build scripts, etc.

Source	Here
Importance	Essential
Frequency	Weekly
Phase	ILT

UR-ICC-120 CVS

There will be a configuration control system in which all SPIRE software and related files that have reached a `version 1' of maturity are stored.

Source	SIRD-ICCF-185
Importance	Essential
Frequency	Weekly
Phase	ILT

UR-ICC-130 Sandbox environment

A sandbox environment will be available for testing software on stored without affecting the `live' software release(s), nor changing the data itself. This sandbox may or may not exist within the HCSS.

Source	Here
Importance	Essential
Frequency	Weekly
Phase	ILT

UR-ICC-140 Information local to ICC

Software for the development release of the HCSS is checked into the central repository. This logs what component of software it is, its version, the date, etc. However, it may be desirable to have a more readily readable source of information on the status of software that is local to the ICC and does not require a lot of interaction with the HCSS (especially for non-developers)

E.g. a forms based set of local web pages that developers can update with textural information of the status of a component of softwaree; who it working on it, what's being done to it, last version submitted to CVS, what changes were made, estimated time of next version, etc.

Source	Here
Importance	Desirable
Frequency	Weekly
Phase	ILT

UR-ICC-150 Common system environment

There will be a common system environement set up for ICC Actors such that routine processing, analysis and calibration can be performed without requiring the user to set up their environment ad hoc.

Source	Here
Importance	Desirable
Frequency	Weekly

Phase	ILT

UR-ICC-200 Documentation

UR-ICC-210 Document format

A common document format will be used, which may be different for editable and non-editable documents (source code documentation may have its own format).

The current choice of document formats is Framemaker and Word for editable documents (Word exclusively for externally viewed documents since that is the standard Herschel format), and PDF for non-editable documents. Since Java is the implementation language of the HCSS, JavaDoc will be used for source code documentation.

Source	Here SPIRE IDT
Importance	Essential
Frequency	Monthly
Phase	ILT

UR-ICC-220 Document templates

Templates will be produced, for supported document formats, for standard types of document routinely produced by the ICC.

Source	Here
Importance	Desirable
Frequency	Monthly
Phase	ILT

UR-ICC-230 Document Standards

Provide to the HCSS, to the agreed standards all relevant ICC related documentation. This includes:

- The ground segment related ICC Operational Procedures (nominal and contingency)
- The ICC Operations Plan
- Monthly ICC reports

Source	SIRD-ICCF-115 SIRD-ICCF-190 SIRD-ICCO-085
Importance	Essential
Frequency	Monthly
Phase	ILT

UR-ICC-300 HCSS database and local computing system

The database part of the HCSS was formerly known as FINDAS.

UR-ICC-310 Local FINDAS nodes

Each of the three geographically separated sites of the ICC shall have their own local HCSS node.

Since only RAL will host the SPIRE node itself, what the two DAPSASs actually have at their sites needs to be investigated. E.g. it could be a permenant, reliable and fast network connection, or a local read-only copy. The chosen implementation will impose additional requirements on the ICC.

Source	Here
Importance	Desirable

Frequency	Once
Phase	ILT

UR-ICC-320 Local FINDAS support

Each site will have local support for development and maintenance of their HCSS node.

Source	SIRD-ICCF-176
Importance	Essential
Frequency	Weekly
Phase	ILT

UR-ICC-330 Local accounts

Local accounts created for ICC Actors will be set up with a common environment and registered as a database user. They shall also have access (read or write depending on role) to the configuration control system.

Source	Here UR-3[FSC-UR-3.2-1230/1240]
Importance	Essential
Frequency	Monthly/Yearly
Phase	ILT

UR-ICC-340 Remote connection for ICC actors

The ICC computing system will allow full access for ICC Actors with accounts who connect remotely whilst working at other sites (e.g. MOC).

TBD: whether this means Herschel sites or from anywhere.

Source	Here
Importance	Essential
Frequency	Daily
Phase	ILT

UR-ICC-350 Security

The ICC computing system will be maintained regarding security issues, e.g. security patches, firewall configuration, password checking, etc. This requirement has precedence over requirement 3.3.4 (i.e. if the only way to allow an ICC Actor remote access is to reduce the level of security then that access will not be allowed).

Source	Here
Importance	Essential
Frequency	Weekly/Monthly
Phase	ILT

UR-ICC-400 Communication

UR-ICC-410 Contact info for SPIRE members

There will be an up-to-date restricted-access web page listing all the SPIRE members, including details of name, position, address, telephone, email, etc. An up-to-date as possible list of the relevant personnel at the HSC, MOC, PACS & HIFI will be similarly available.

For SPIRE members at least, this web page might be kept dynamically up-to-date by using the user details of HCSS accounts. Peoples' details are subject to the Data Protection Act.

Source	Here
Importance	Essential
Frequency	Daily
Phase	ILT

UR-ICC-420 Staff on call

During the early stages of PV it may be necessary to have members of the ICC on 24 hour call to react to any unexpected behaviour in the spacecraft or the instrument. It may be the HSC or other ICC members who make such a call. Staff on call will have a means of quick communication (phone/pager) and be able to respond suitably (e.g. connect remotely to the ICC, travel into work, have access to documentation, etc).

This is essential if there will be any situations that have to be dealt with outside of normal office hours.

Source	Here
Importance	Essential
Frequency	Daily
Phase	PV

UR-ICC-430 Video link and common desktop

To allow efficient communication between the three sites of the ICC users will be able to have a video link with other users from their computers and be able to use a common desktop (i.e. one in which the users can see and interact with same desktop on their computer displays to discuss, for example, code or the results of interactive analysis).

Source	Here
Importance	Desirable
Frequency	Weekly
Phase	Operations

UR-ICC-440 Staff availability schedule

A restricted-access dynamic web page or some such equivalent that informs HSC, MOC and ICCs members as to which members of the ICC are available on a given day and how they can be contacted.

The intention here is for some system that allows rapid communication rather than, for example, someone sending an email requesting information on a short time scale, or having important information about the health of the instrument but not knowing if the person is in to read it, or if not when they will be.

Source	Here
Importance	Desirable
Frequency	Daily
Phase	ILT

UR-ICC-500 Management

UR-ICC-510 Management

The ICC Manager shall:

1. Establish jointly with ESA the detailed list of ICC tasks and deliveries.
2. Generate the ICC SIP.
3. Establish and maintain the ICC schedule.
4. Manage the ICC interfaces with the ESA Project Team, the other ICCs, the HSC and the MOC.

5. Support the ground segment reviews.
6. Attend the meetings of the F-GSAG.
7. Establish jointly with SCI-SA the set of documents to be produced by the ICC.
8. Provide the infrastructure and facilities to support the work of the ICC.

Source	SIRD-ICCF-005 to SIRD-ICCF-045 SIRD-ICCO-080 SIRD-ICCA-050
Importance	Essential
Frequency	Daily
Phase	Definition