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 FSC, MOC and other ICCs.

1.2   Definitions of Terms and Acronyms

CVS   Concurrent Versions System
FCSS   FIRST 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   FINDAS URD   FIRST/FSC/DOC/????
RD-3   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 FIRST Common Science System (FCSS) provides the software infrastructure common to the FSC and ICCs. This includes facilities such as the Common Uplink System, Proposal Handling, Version Control, Document Management and the FINDAS database. It also provides an environment for interfacing ICC-specific software (for example the local node of the FINDAS database).

The FCSS forms a large part of the design for the software infrastructure of the ICC as a whole. At the time of writing the FCSS is already at the stage of having detailed use-cases and an under-development UML design. Members of the SPIRE IDT (Trevor Dimbylow, Sunil Sidher & Neal Todd) are involved in this work (along with the FSC, PACS and HIFI members). Documents relating to the design of the FCSS and its fulfillment of the needs of the ICC will be produced by that group. This document does not describe URs that have already been covered in by the work of that group.

Requirements on the FINDAS database for the ICC as a whole (at a fairly low level) are contained within a specific URD; RD-2. Some high level URs relating to FINDAS are given in this document.

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.

3.1   SPIRE Software

3.1.1
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

3.1.2

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

Source	Here
Importance	Essential
Frequency	Weekly
Phase	ILT

3.1.3

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

Source	Here
Importance	Essential
Frequency	Weekly
Phase	ILT

3.1.4

Software for the development release of the FCSS is checked into the CVS of FINDAS. 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 FINDAS and CVS (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

3.1.5

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

3.2   Documentation

3.2.1

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 FIRST format), and PDF for non-editable documents. Since Java is the implementation language of the FCSS, JavaDoc will be used for source code documentation.

Source	Here
	SPIRE IDT
Importance	Essential
Frequency	Monthly
Phase	ILT

3.2.2

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

3.3   FINDAS and local computing system

3.3.1

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

Since only RAL will host the SPIRE FINDAS 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

3.3.2

Each site will have local support for maintaining their FINDAS node.

Source	Here
Importance	Essential
Frequency	Weekly
Phase	ILT

3.3.3

Local accounts created for ICC Actors will be set up with the common environment of 3.1.5 (optionally also 3.1.1), CVS and registered as a FINDAS user.

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

3.3.4

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 FIRST sites or from anywhere.

Source	Here
Importance	Essential
Frequency	Daily
Phase	ILT

3.3.5

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

3.4   Communication

3.4.1

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 FSC, 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 FINDAS accounts. Peoples' details are subject to the Data Protection Act.

Source	Here
Importance	Essential
Frequency	Daily
Phase	ILT

3.4.2

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 FSC 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 inot 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

3.4.3

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 IA analysis).

Source	Here
Importance	Desirable

Frequency	Weekly
Phase	Operations

3.4.4

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

The intension 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