



**Technical Note**

SPIRE ICC Manning Plan

**Ref:** SPIRE-RAL-DOC-003138

**Issue:** Issue 1.0

**Date:** 7th August 2008

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**SUBJECT:** SPIRE ICC Manning Plan

**PREPARED BY:** K.J. King

**DOCUMENT No:** SPIRE-RAL-DOC-003138

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**APPROVED BY:**

**Date:**



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## Distribution

ICCMT members



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## Change Record

ISSUE	DATE	Changes
1.0	8 <sup>th</sup> August 2008	First Issue



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## 1. INTRODUCTION

### 1.1 Scope

This document defines the required staffing levels of the SPIRE Instrument Control Centre (ICC) for all of the post launch operational phases of the mission (i.e. Commissioning Phase to the end of the Routine Operations Phase).

### 1.2 Structure of Document

Section 2 gives a summary of the required staffing levels in terms of different expertise based on the analysis contained in Appendix A.

Section 3 identifies the SPIRE ICC members available and their expertise

### 1.3 Documents

#### 1.3.1 Applicable Documents

#### 1.3.2 Reference Documents

RD01 SPIRE Operations Description (SPIRE-RAL-DOC-002888), Issue 1.1



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**2. STAFFING LEVELS**

**2.1 Commissioning Phase**

Commissioning Phase	OPS1	OPS2	OPS3	OPS 4	CAL1	CAL2	CAL3	CAL4	SW1	SW2	OBS1	OBS2	MAN1	MAN2
ICC@MOC	60	60												
Instrument Health Monitoring			15	15										
Observation Planning			15		45	15	15	15						
Calibration Analysis			15		15	65	15	15						
Trend Analysis			30	30										
PA/QA	10		10		10				10		10		10	
Pipeline														
Computing Support									25	25				
Test Facilities (AVM/FS)														
Management (50%)													30	30
Consortium Support (10%)														
Meetings/Overheads (10%)														
Problem handling (30%)														
<b>Total</b>	70	60	85	45	70	80	30	30	35	25	10		40	30



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**2.2 PV Phase**

PV Phase	OPS1	OPS2	OPS3	CAL1	CAL2	CAL3	CAL4	SW1	SW2	OBS1	OBS2	MAN1	MAN2
<b>Instrument Health Monitoring</b>	15	15	15										
<b>Observation Planning</b>	26	26	26		22	22	22						
<b>Calibration Analysis</b>				45	45	40	40						
<b>Trend Analysis</b>		13	13										
<b>PA/QA</b>	30			30				30		30		30	
<b>Pipeline</b>	15				10	10	10	15		50	50		
<b>Computing Support</b>								25	75				
<b>Test Facilities (AVM/FS)</b>		10	10										
<b>Management (50%)</b>												30	30
<b>Consortium Support (10%)</b>													
<b>Meetings/Overheads (10%)</b>													
<b>Problem handling (30%)</b>													
<b>Total</b>	86	64	64	75	77	72	72	70	75	80	50	60	30





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**2.3 Science Demonstration and Routine Operations Phases**

Routine Operations	OPS1	OPS2	OPS3	CAL1	CAL2	CAL3	CAL4	SW1	SW2	OBS1	OBS2	MAN1	MAN2
Instrument Health Monitoring	15	15	15										
Observation Planning	12	12			10	10							
Calibration Analysis				30	25	15							
Trend Analysis		13	13	6	6								
PA/QA	20			20				20		20		20	
Pipeline								15		30			
Computing Support								25	50				
Test Facilities (AVM/FS)	10	18	18	10	15	15		15	15				
Management (50%)												30	30
Consortium Support (10%)													
Meetings/Overheads (10%)													
Science/Problem handling (30%)													
<b>Total</b>	<b>57</b>	<b>58</b>	<b>46</b>	<b>66</b>	<b>56</b>	<b>40</b>	<b>0</b>	<b>75</b>	<b>65</b>	<b>50</b>	<b>0</b>	<b>50</b>	<b>30</b>





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### **3. SPIRE STAFF AVAILABILITY**

The following table identifies the ICC staff available for the different roles defined in section 2. Some people are able to work in more than one team

#### **3.1 Operations Team**

- **Sunil Sidher (RAL) - Leader**
- Markos Trichas (IC)
- Ken King (RAL)
- Michael Pohlen (Cardiff)

#### **3.2 Calibrations Scientists**

- **Sarah Leeks (RAL) – Leader**
- Ed Polehampton (Canada)
- Chris Pearson (Canada) (50%)
- Michael Pohlen (Cardiff)

#### **3.3 Software Engineers**

- **Steve Guest (RAL) – Leader**
- Huw Morris (RAL)

#### **3.4 Observation Specialists**

- **Leader -TBD**
- Chris Pearson (50%)
- George Bendo (50%)

#### **3.5 Management**

- Tanya Lim
- Bruce Swinyard



**APPENDIX A ICC OPERATIONAL TASKS**

These tables describe the activities to be performed by the ICC They appear under the headings identified in RD01.

For each phase this section describes each workpackage and the effort level required. This effort is distributed between a set of operational staff, in order to give a rough profile of the individuals needed in the ICC. These consist of (note: not all are required during all phases of the mission):

- 4 Operations Enginners:
  - OPS1
  - OPS2
  - OPS3
  - OPS4
- 4 Calibration Scientists:
  - CAL1
  - CAL2
  - CAL3
  - CAL4
- 2 Software Engineers
  - SW1
  - SW2
- 2 Observation Specialists
  - OBS1
  - OBS2
- 2 Managers
  - MAN1 – Operations Manager
  - MAN2 – Deputy Operations Manager

<b>Instrument Health Monitoring</b>		
<b>Phase</b>	<b>Activities</b>	<b>Resources</b>
Commissioning (L+2w to L+6w)	<ul style="list-style-type: none"> <li>• Check for event packets</li> <li>• (Generate and) Check trend analysis products</li> <li>• Produce Daily Log for ICC</li> <li>• Produce Weekly Reports to HSC</li> </ul>	Carried out by staff at RAL 2 hr daily during phase 3 staff to cover 7 day/wk OPS(3,4) – 15%
PV-Phase	<ul style="list-style-type: none"> <li>• Check for event packets</li> <li>• (Generate and) Check trend analysis products</li> <li>• Produce Daily Log for ICC</li> <li>• Produce Weekly Reports to HSC</li> </ul>	Carried out by staff at RAL 30% fte during phase 3 staff to cover 7 day/wk OPS(1,2,3) – 15%
Science Demonstration	Check for event packets (Generate and) Check trend analysis products Produce Daily Log for ICC Produce Weekly Reports to HSC	Carried out by staff at RAL 30% fte during phase 3 staff to cover 7 day/wk OPS(1,2,3) – 15%
Routine Operations	<ul style="list-style-type: none"> <li>• Check for event packets</li> <li>• (Generate and) Check trend analysis products</li> <li>• Produce Daily Log for ICC</li> <li>• Produce Weekly Reports to HSC</li> </ul>	Carried out by staff at RAL 30% fte during phase 2 staff to cover 7 day/wk OPS(1,2,3) – 15%



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<b>Observation Planning</b>		
<b>Phase</b>	<b>Activities</b>	<b>Resources</b>
Commissioning (L+2w to L+6w)	<ul style="list-style-type: none"> <li>Preparation of performance observations using HSpot</li> <li>Scheduling of observations and delivery</li> <li>Processing data from observations</li> <li>Coordination of consortium support</li> </ul>	<ul style="list-style-type: none"> <li>CAL1 – 15%, CAL2 – 15%</li> <li>OPS3 – 15%</li> <li>CAL3 – 15%, CAL4 – 15%</li> <li>CAL1 - 30%</li> </ul>
PV-Phase 7 days/wk ops	<ul style="list-style-type: none"> <li>Creation/update of observation types (20% fte)</li> <li>Planning performance/calibration observations (20% fte)</li> <li>Preparation of performance/calibration observations using Hspot (30% fte)</li> <li>Scheduling of observations and delivery to HSC (30% fte)</li> </ul>	<ul style="list-style-type: none"> <li>OPS(1,2,3) – 11%,</li> <li>CAL(2,3,4) – 10%</li> <li>CAL(2,3,4) – 12%</li> <li>OPS(1,2,3) – 15%</li> </ul>
Science Demonstration	<ul style="list-style-type: none"> <li>Creation of new observation types (10% fte)</li> <li>Planning and preparation of performance/calibration observations using HSpot (20% fte)</li> <li>Scheduling of observations and delivery to HSC (10% fte)</li> </ul>	<ul style="list-style-type: none"> <li>OPS(1,2) 6%</li> <li>CAL(2,3)-10%</li> <li>OPS(1,2) - 6%</li> </ul>
Routine Operations	<ul style="list-style-type: none"> <li>Creation of new observation types (10% fte)</li> <li>Planning and preparation of performance/calibration observations using HSpot (20% fte)</li> <li>Scheduling of observations and delivery to HSC (10% fte)</li> </ul>	<ul style="list-style-type: none"> <li>OPS(1,2) 6%</li> <li>CAL(2,3)-10%</li> <li>OPS(1,2) - 6%</li> </ul>

<b>Calibration Analysis</b>		
<b>Phase</b>	<b>Activities</b>	<b>Resources</b>
Commissioning (L+2w to L+6w)	<ul style="list-style-type: none"> <li>Preparation of performance observations using HSpot</li> <li>Scheduling of observations and delivery</li> <li>Processing data from observations</li> <li>Coordination of consortium support</li> </ul>	<ul style="list-style-type: none"> <li>CAL1 – 15%, CAL2 – 15%</li> <li>OPS3 – 15%</li> <li>CAL3 – 15%, CAL4 – 15%</li> <li>CAL2 - 50%</li> </ul>
PV-Phase 7 days/wk ops	<ul style="list-style-type: none"> <li>Processing data from observations (50%fte)</li> <li>Update and Test of new Calibration products(50%)</li> <li>Coordination of consortium support</li> </ul>	<ul style="list-style-type: none"> <li>CAL(2,3,4) – 20%</li> <li>CAL(1,3,4) - 20%</li> <li>CAL(1,2) - 25%</li> </ul>
Science Demonstration	<ul style="list-style-type: none"> <li>Processing data from observations (30%fte)</li> <li>Update and Test of new Calibration products (20%)</li> <li>Coordination of consortium support</li> </ul>	<ul style="list-style-type: none"> <li>CAL2,3 - 15%</li> <li>CAL(1,2) – 10%</li> <li>CAL1 - 20%</li> </ul>
Routine Operations	<ul style="list-style-type: none"> <li>Processing data from observations (30%fte)</li> <li>Update and Test of new Calibration products (20%)</li> <li>Coordination of consortium support</li> </ul>	<ul style="list-style-type: none"> <li>CAL2,3 - 15%</li> <li>CAL(1,2) – 10%</li> <li>CAL1 - 20%</li> </ul>



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<b>Trend Analysis</b>		
<b>Phase</b>	<b>Activities</b>	<b>Resources</b>
Commissioning (L+2w to L+6w)	<ul style="list-style-type: none"> <li>• Generate and check TA products from Housekeeping (15% fte)</li> <li>• Produce TA Report (5% fte)</li> </ul>	<ul style="list-style-type: none"> <li>• OPS3,4 – 15%</li> <li>• OPS3,4 – 15%</li> </ul>
PV-Phase	<ul style="list-style-type: none"> <li>• Generate and check TA products from Housekeeping (15% fte)</li> <li>• Produce TA Report 5% fte)</li> </ul>	<ul style="list-style-type: none"> <li>• OPS(2,3) – 10%</li> <li>• OPS(2,3) – 3%</li> </ul>
Science Demonstration	<ul style="list-style-type: none"> <li>• Generate and check TA products from Housekeeping (15% fte)</li> <li>• Generate and check TA products from Performance Checks (5%)</li> <li>• Generate and check TA products from Calibration updates (%5 fte)</li> <li>• Produce TA Report (5% fte)</li> </ul>	<ul style="list-style-type: none"> <li>• OPS(2,3) – 10%</li> <li>• CAL(1,2) - 3%</li> <li>• CAL(1,2) - 3%</li> <li>• OPS(2,3) – 3%</li> </ul>
Routine Operations	<ul style="list-style-type: none"> <li>• Generate and check TA products from Housekeeping (15% fte)</li> <li>• Generate and check TA products from Performance Checks (5%)</li> <li>• Generate and check TA products from Calibration updates (%5 fte)</li> <li>• Produce TA Report (%5 fte)</li> </ul>	<ul style="list-style-type: none"> <li>• OPS(2,3) – 10%</li> <li>• CAL(1,2) - 3%</li> <li>• CAL(1,2) - 3%</li> <li>• OPS(2,3) – 3%</li> </ul>

<b>PA/QA</b>		
<b>Phase</b>	<b>Activities</b>	<b>Resources</b>
Commissioning (L+2w to L+6w)	<ul style="list-style-type: none"> <li>• Preparation and running CCBs (10%)</li> </ul>	<ul style="list-style-type: none"> <li>• OPS1, CAL1, SW1, OBS1, MAN1 – 10%</li> </ul>
PV-Phase	<ul style="list-style-type: none"> <li>• Preparation and running CCBs (20%)</li> <li>• Delivery Reviews (10%)</li> </ul>	<ul style="list-style-type: none"> <li>• OPS1, CAL1, SW1, OBS1, MAN1 – 20%</li> <li>• OPS1, CAL1, SW1, OBS1, MAN1 – 10%</li> </ul>
Science Demonstration	<ul style="list-style-type: none"> <li>• Preparation and running CCBs (10%)</li> <li>• Delivery Reviews (10%)</li> </ul>	<ul style="list-style-type: none"> <li>• OPS1, CAL1, SW1, OBS1, MAN1 – 10%</li> <li>• OPS1, CAL1, SW1, OBS1, MAN1 – 10%</li> </ul>
Routine Operations	<ul style="list-style-type: none"> <li>• Preparation and running CCBs (10%)</li> <li>• Delivery Reviews (10%)</li> </ul>	<ul style="list-style-type: none"> <li>• OPS1, CAL1, SW1, OBS1, MAN1 – 10%</li> <li>• OPS1, CAL1, SW1, OBS1, MAN1 – 10%</li> </ul>



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<b>Pipeline</b>		
<b>Phase</b>	<b>Activities</b>	<b>Resources</b>
Commissioning (L+2w to L+6w)	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
PV-Phase	Pipeline development is an independent activity. This WP deals only with testing and delivery of pipeline(s) <ul style="list-style-type: none"> <li>• Check daily Quality Control output (30%)</li> <li>• Acceptance test of new pipeline versions (30%)</li> <li>• Pipeline Verification (scientific and implementation) (100%)</li> </ul>	<ul style="list-style-type: none"> <li>• OPS1, OBS1– 15%</li> <li>• SW1, OBS1– 15%</li> <li>• OBS1-20, OBS2 – 50%, CAL(2,3,4) – 10%</li> </ul>
Science Demonstration	Pipeline development is an independent activity. This WP deals only with testing and delivery of pipeline(s) <ul style="list-style-type: none"> <li>• Check daily Quality Control output (25%)</li> <li>• Acceptance test of new pipeline versions (25%)</li> </ul>	<ul style="list-style-type: none"> <li>• OPS1, OBS1– 15%</li> <li>• SW1, OBS1– 15%</li> </ul>
Routine Operations	Pipeline development is an independent activity. This WP deals only with testing and delivery of pipeline(s) <ul style="list-style-type: none"> <li>• Check daily Quality Control output (25%)</li> <li>• Acceptance test of new pipeline versions (25%)</li> </ul>	<ul style="list-style-type: none"> <li>• OPS1, OBS1– 15%</li> <li>• SW1, OBS1– 15%</li> </ul>

<b>Computing Support</b>		
H/W Support provided by RAL infrastructure		
<b>Phase</b>	<b>Activities</b>	<b>Resources</b>
Commissioning (L+2w to L+6w)	<ul style="list-style-type: none"> <li>• Maintain Delivered S/W Systems (25%)</li> <li>• DB Maintenance (25%)</li> </ul>	<ul style="list-style-type: none"> <li>• SW(1,2) – 12%</li> <li>• SW(1,2) – 12%</li> </ul>
PV-Phase	<ul style="list-style-type: none"> <li>• Maintain Delivered S/W Systems (25%)</li> <li>• DB Maintenance (25%)</li> <li>• Maintain SPIRE S/W (50%)</li> </ul>	<ul style="list-style-type: none"> <li>• SW(1,2) – 12%</li> <li>• SW(1,2) – 12%</li> <li>• SW2 – 50%</li> </ul>
Science Demonstration	<ul style="list-style-type: none"> <li>• Maintain Delivered S/W Systems (25%)</li> <li>• DB Maintenance (25%)</li> <li>• Maintain SPIRE S/W (25%)</li> </ul>	<ul style="list-style-type: none"> <li>• SW(1,2) – 12%</li> <li>• SW(1,2) – 12%</li> <li>• SW2 – 25%</li> </ul>
Routine Operations	<ul style="list-style-type: none"> <li>• Maintain Delivered S/W Systems (25%)</li> <li>• DB Maintenance (25%)</li> <li>• Maintain SPIRE S/W (25%)</li> </ul>	<ul style="list-style-type: none"> <li>• SW(1,2) – 12%</li> <li>• SW(1,2) – 12%</li> <li>• SW2 – 25%</li> </ul>



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**Test Facilities**

Cold Facility operated by RAL infrastructure

<b>Phase</b>	<b>Activities</b>	<b>Resources</b>
Commissioning (L+2w to L+6w)	<ul style="list-style-type: none"><li>•</li></ul>	<ul style="list-style-type: none"><li>•</li></ul>
PV-Phase	<ul style="list-style-type: none"><li>• Test of command sequences on AVM (15%)</li></ul>	<ul style="list-style-type: none"><li>• OPS(2,3) – 10%</li></ul>
Science Demonstration	<ul style="list-style-type: none"><li>•</li></ul>	<ul style="list-style-type: none"><li>•</li></ul>
Routine Operations	<ul style="list-style-type: none"><li>• Test of command sequences on AVM (5%)</li><li>• Test preparation for FS</li><li>• Test execution on FS (15%)</li></ul>	<ul style="list-style-type: none"><li>• OPS(2,3) – 3%</li><li>• OPS1 – 10%, CAL1 -10%</li><li>• OPS(2,3), CAL(2,3), SW(1,2) – 15%</li></ul>