1. INTRODUCTION

This note is written to define the roles of personnel in the SPIRE Operations Team in order for the SPIRE ICC Management Team to identify suitable candidates for thse roles from within the ICC.

An additional purpose is to identify future training requirements for these staff, which will be added to the SPIRE Training Record.

Section 2 defines the tasks of the operational ICC

Section 3 summarises the tasks associated with each role and (will) identify suitable staff for these.

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2. ICC OPERATIONAL TASKS

Instrument Health Monitoring		
Phase	**Activities**	**Resources**
Pre-Launch	• Write scripts and procedure for extracting and listing events • Define Trend Analysis requirements • Write scripts to extract Trend Product data and produce Trend reports • Write procedure to check Trend reports • Define Instrument Health Log and Report format • Participation in SOVT1, SOVT2, PV-Phase Validation, Simulation exercises	OPS – 1w Instr Team OPS – 4w OPS – 2w OPS – 1w OPS – 8w
Commissioning (L+2w to L+6w)	• 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 2 hr daily during phase 3 staff to cover 7 day/wk OPS(1,2,3) – 15%
PV-Phase	• 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%
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	• 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 2 staff to cover 7 day/wk OPS(1,2,3) – 15%

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Observation Planning

Phase	Activities	Resources
Pre-Launch	• Define Performance processing requirements • Write scripts and procedures for generating performance products from observations • Generate initial performance products • Definition of Performance Observations • Implementation of performance observations in CUS/HSpot • Preparation of observations for SOVT1, SOVT2, PV-Phase Validation, Simulation exercises • Scheduling of observations for SOVT1, SOVT2, PV-Phase Validation, Simulation exercise • Processing data from SOVT1, SOVT2, PV-Phase Validation, Simulation exercises	• Cal Scientist - done? • CAL (1 staff to coordinate) – 10w • CAL (1 staff to coordinate) – 3w • CAL (2 staff) - 1w • OPS – 8 w • • CAL (1d per test) – 4d • OPS (1d per test) - 4d • CAL 2w *3 = 6w
Commissioning (L+2w to L+6w)	• Preparation of performance observations using HSpot • Scheduling of observations and delivery • Processing data from observations • Coordination of consortium support	• CAL1 – 15%, CAL2 – 15% • OPS1 – 15% • CAL1 – 15%, CAL2 – 15% • CAL1 - 50%
PV-Phase 7 days/wk ops	• Creation/update of observation types (20% fte) • Planning performance/calibration observations (20%fte) • Preparation of performance/calibration observations using Hspot (30% fte) • Scheduling of observations and delivery to HSC (30% fte)	• OPS(1,2,3) – 11%, • CAL(2,3,4) – 10% • CAL(2,3,4) – 12% • OPS(1,2,3) – 15%
Science Demonstration	• Creation of new observation types (10% fte) • Planning and preparation of performance/calibration observations using HSpot (20% fte) • Scheduling of observations and delivery to HSC (10% fte)	• OPS(1,2) 6% • CAL(2,3)-10% • OPS(1,2) - 6%
Routine Operations	• Creation of new observation types (10% fte) • Planning and preparation of performance/calibration observations using HSpot (20% fte) • Scheduling of observations and delivery to HSC (10% fte)	• OPS(1,2) 6% • CAL(2,3)-10% • OPS(1,2) - 6%

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Calibration Analysis		
Phase	**Activities**	**Resources**
Pre-Launch	• Define Performance processing requirements • Write scripts and procedures for generating performance products from observations • Generate initial performance products • Definition of Performance Observations • Implementation of performance observations in CUS/HSpot • Preparation of observations for SOVT1, SOVT2, PV-Phase Validation, Simulation exercises • Scheduling of observations for SOVT1, SOVT2, PV-Phase Validation, Simulation exercise • Processing data from SOVT1, SOVT2, PV-Phase Validation, Simulation exercises	• Cal Scientist - done? • CAL (1 staff to coordinate) – 10w • CAL (1 staff to coordinate) – 3w • CAL (2 staff) - 1w • OPS – 8 w • • CAL (1d per test) – 4d • OPS (1d per test) - 4d • CAL 2w *3 = 6w
Commissioning (L+2w to L+6w)	• Preparation of performance observations using HSpot • Scheduling of observations and delivery • Processing data from observations • Coordination of consortium support	• CAL1 – 15%, CAL2 – 15% • OPS1 – 15% • CAL1 – 15%, CAL2 – 15% • CAL1 - 50%
PV-Phase 7 days/wk ops	• Processing data from observations (50%fte) • Update and Test of new Calibration products(50%) • Coordination of consortium support	• CAL(2,3,4) – 20% • CAL(1,3,4) - 20% • CAL(1,2) - 25%
Science Demonstration	• Processing data from observations (30%fte) • Update and Test of new Calibration products (20%) • Coordination of consortium support	• CAL2,3 - 15% • CAL(1,2) – 10% • CAL1 - 20%
Routine Operations	• Processing data from observations (30%fte) • Update and Test of new Calibration products (20%) • Coordination of consortium support	• CAL2,3 - 15% • CAL(1,2) – 10% • CAL1 - 20%

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Trend Analysis		
Phase	**Activities**	**Resources**
Pre-Launch	• Define Performance processing requirements • Write scripts and procedures for generating performance products from observations • Generate initial performance products • Definition of Performance Observations • Implementation of performance observations in CUS/HSpot • Preparation of observations for SOVT1, SOVT2, PV-Phase Validation, Simulation exercises • Scheduling of observations for SOVT1, SOVT2, PV-Phase Validation, Simulation exercise • Processing data from SOVT1, SOVT2, PV-Phase Validation, Simulation exercises	• Cal Scientist - done? • CAL (1 staff to coordinate) – 10w • CAL (1 staff to coordinate) – 3w • CAL (2 staff) - 1w • OPS – 1 w • • CAL (1d per test) – 4d • OPS (1d per test) - 4d • CAL 2w *3 = 6w
Commissioning (L+2w to L+6w)	• Generate and check TA products from Housekeeping • Generate and check TA products from Housekeeping • Generate and check TA products from Housekeeping •	• CAL – 15%, OPS – 15% • OPS – 8% • CAL 3 staff to coordinate 60%
PV-Phase	• Generate and check TA products from Housekeeping (15% fte) • Produce TA Report (%5 fte)	• OPS(2,3) – 10% • OPS(2,3) – 3%
Science Demonstration	• Generate and check TA products from Housekeeping (15% fte) • Generate and check TA products from Performance Checks (5%) • Generate and check TA products from Calibration updates (%5 fte) • Produce TA Report (%5 fte	• OPS(2,3) – 10% • CAL(1,2) - 3% • CAL(1,2) - 3% • OPS(2,3) – 3%
Routine Operations	• Generate and check TA products from Housekeeping (15% fte) • Generate and check TA products from Performance Checks (5%) • Generate and check TA products from Calibration updates (%5 fte) • Produce TA Report (%5 fte)	• OPS(2,3) – 10% • CAL(1,2) - 3% • CAL(1,2) - 3% • OPS(2,3) – 3%

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PA/QA		
Phase	**Activities**	**Resources**
Pre-Launch	•	•
Commissioning (L+2w to L+6w)	•	•
PV-Phase	• Preparation and running CCBs (20%) • Delivery Reviews (10%)	• OPS1, CAL1, SW1, OBS1, MAN1 – 20% • OPS1, CAL1, SW1, OBS1, MAN1 – 10%
Science Demonstration	• Preparation and running CCBs (10%) • Delivery Reviews (10%)	• OPS1, CAL1, SW1, OBS1, MAN1 – 10% • OPS1, CAL1, SW1, OBS1, MAN1 – 10%
Routine Operations	• Preparation and running CCBs (10%) • Delivery Reviews (10%)	• OPS1, CAL1, SW1, OBS1, MAN1 – 10% • OPS1, CAL1, SW1, OBS1, MAN1 – 10%

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Pipeline		
Phase	**Activities**	**Resources**
Pre-Launch	•	•
Commissioning (L+2w to L+6w)	•	•
PV-Phase	Pipeline development is an independent activity. This WP deals only with testing and delivery of pipeline(s) • Check daily Quality Control output (30%) • Acceptance test of new pipeline versions (30%) • Pipeline Verification (scientific and implementation) (100%)	• OPS1, OBS1– 15% • SW1, OBS1– 15% • OBS1-20, OBS2 – 50%, CAL(2,3,4) – 10%
Science Demonstration	Pipeline development is an independent activity. This WP deals only with testing and delivery of pipeline(s) • Check daily Quality Control output (25%) • Acceptance test of new pipeline versions (25%)	• OPS1, OBS1– 15% • SW1, OBS1– 15%
Routine Operations	Pipeline development is an independent activity. This WP deals only with testing and delivery of pipeline(s) • Check daily Quality Control output (25%) • Acceptance test of new pipeline versions (25%)	• OPS1, OBS1– 15% • SW1, OBS1– 15%

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Computing Support
H/W Support provided by RAL infrastructure

Phase	Activities	Resources
Pre-Launch	•	•
Commissioning (L+2w to L+6w)	•	•
PV-Phase	• Maintain Delivered S/W Systems (25%) • DB Maintenance (25%) • Maintain SPIRE S/W (50%)	• SW(1,2) – 12% • SW(1,2) – 12% • SW2 – 50%
Science Demonstration	• Maintain Delivered S/W Systems (25%) • DB Maintenance (25%) • Maintain SPIRE S/W (25%)	• SW(1,2) – 12% • SW(1,2) – 12% • SW2 – 25%
Routine Operations	• Maintain Delivered S/W Systems (25%) • DB Maintenance (25%) • Maintain SPIRE S/W (25%)	• SW(1,2) – 12% • SW(1,2) – 12% • SW2 – 25%

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Test Facilities
Cold Facility operated by RAL infrastructure

Phase	Activities	Resources
Pre-Launch	•	•
Commissioning (L+2w to L+6w)	•	•
PV-Phase	• Test of command sequences on AVM (15%)	• OPS(2,3) – 10%
Science Demonstration	•	•
Routine Operations	• Test of command sequences on AVM (5%) • Test preparation for FS • Test execution on FS (15%)	• OPS(2,3) – 3% • OPS1 – 10%, CAL1 -10% • OPS(2,3), CAL(2,3), SW(1,2) – 15%

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3. SUMMARY OF ICC ROLES

PV Phase Operations	OPS1	OPS2	OPS3	CAL 1	CAL 2	CAL 3	CAL 4	SW1	SW2	OBS 1	OBS 2	MAN 1	MAN 2
Instrument Health Monitoring	15	15	15										
Observation Planning	26	26	26		22	22	22						
Calibration Analysis				45	45	40	40						
Trend Analysis		13	13										
PA/QA	30			30				30		30		30	
Pipeline	15				10	10	10	15		50	50		
Computing Support								25	75				
Test Facilities (AVM/FS)		10	10										
Management (50%)												30	30
Consortium Support (10%)													
Meetings/Overheads (10%)													
Problem handling (30%)													
Total	86	64	64	75	77	72	72	70	75	80	50	60	30

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Routine Operations	OPS1	OPS2	OPS3	CAL 1	CAL 2	CAL 3	CAL 4	SW1	SW2	OBS 1	OBS 2	MAN 1	MAN 2
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%)													
Total	57	58	46	66	56	40	0	75	65	50	0	50	30