HERSCHEL **SPIRE**	Ref: **SPIRE-RAL-DOC-001630** Author: **S. D. Sidher & M. Requena-Torres** Updated by **: Asier Abreu**	Page: **1** Issue: **2.2** Date: **23-Feb-2007**

SPIRE EGSE-ILT Startup Procedures

Prepared by: **S. D. Sidher & M. Requena-Torres (RAL)** Date

Date

Checked by: Asier Abreu

Approval:

Date

Distribution

RAL	Sunil D. Sidher
	Asier A. Aramburu
	Tim J. Grundy
	Allan Dowell
	Tanya Lim
	Steve Guest
	Eduard Polehamton
Cardiff	Tim Waskett
Imperial College	Davide Rizzo
	George Bendo

Host system	Windows 2000 SP2
Word Processor	Microsoft Word 2000 SR1
File	

Document Change Record

Date	Index	Affected Pages	Changes
24-June-2003	Issue 0.7		First version
02-March-2006	Issue 1.0		Update for PFM3 configuration
08-Sep-2006	Issue 2.0		Update for PFM4 configuration
15-Dec-06	Issue 2.1		Updated to contain PRIME/REDUNDANT references
23-Feb-2007	Issue 2.2		Corrected outdated references to old EGSE setups

Contents

1 Scope of Document

This document describes the procedures for the safe startup of the SPIRE EGSE and the DPU.

2 Applicable Documents

	Title	Author	Reference	Date
AD 1	SPIRE On-Board Software User Manual	Sergio Molinari	SPIRE-IFS-PRJ-001391, Issue 2.1	16/12/2005
AD2	CDMS Simulator User Manual	Andy Matheson & D.J. Parker	SPIRE-RAL-PRJ-00807, Issue 2.2	12/03/2003
AD3	DRCU Simulator User Manual	H-G Florén & GÖran Olofsson	Issue 1.0 Draft 1.5 (?)	26/11/2003

3 Constraints

3.1 Safety Issues

There are no intrinsic risks of personal injury involved in running this procedure. Nevertheless it is advised to follow the general safety recommendations if any of the equipment described bellow is located within space equipment clean areas.

3.2 ESD Issues

Some of components of the equipment required for the start up of the EGSE (The SPIRE DPU in particular) are highly ESD sensitive and therefore ALL ESD precautions should be taken before touching this components. If in doubt of the precautions required to manage electronic equipment DO NOT execute section 4.5 of this procedure.

4 EGSE-ILT Startup Procedures

General Note 1:

For security reasons the passwords for the different accounts used to start the different EGSE applications are NOT provided in this document. These can be found on envelopes (labelled with the different workstation names and user accounts) on top level cabinet of the drawer located on the SPIRE Control Room. Alternatively you can contact Sunil D. Sidher for this information.

General Note2:

It is assumed that the symbolic links that are used for the different PRIME or REDUNDANT EGSE configuration are all set up.

4.1 Starting the EGSE Router and Gateway

Objective:	To startup the EGSE router , gateway and packet display
Initial Conditions:	EGSE router and gateway not running, packet display not started
Final Conditions:	EGSE router and gateway running, packet display started
Constraints:	HCSS needs to be installed on the workstation were these applications are going to be run.
Total Duration:	2 minutes

Step.	Action

	Start the EGSE router and gateway: • Login as user ***sg55*** on Lichfield. • First start the router: o Open a konsole by hitting the console icon o Select "Rename session" option from the "Session" tab and rename the session to be "EGSE Router" o Start the router from this konsole by typing router R • Now start the EGSE gateway o Open another konsole by hitting the console icon o Select "Rename session" option from the "Session" tab and rename the session to be "EGSE Gateway" o Start the EGSE gateway from this konsole by typing router S --scosapids 1280-1283,2036-2038 (**Note**: -- is minus,minus) • Now start the PacketDisplay o On a terminal type *PacketDisplay*

4.2 Starting SCOS 2000

Objective:	To startup SCOS 2000
Initial Conditions:	EGSE router and gateway running
Final Conditions:	EGSE router, gateway and SCOS 2000 running
Constraints:	EGSE router and gateway must be running
Total Duration:	2 minutes

Step.	Action

Start SCOS 2000

- Login as user ***sops23e*** in Lincoln.
- Open a terminal window by clicking on the screen icon of the desktop environment
- Start SCOS 2000 typing *s2.start* from the command line. The SCOS 2000 MAIN Task Launcher GUI should appear. See Figure 1 on the next page.
- From the SCOS 2000 task launcher click on the **EGSEsrv** button. The mandatory EGSE server processes will become highlighted.
- Start the highlighted processes by clicking on the **Start** button at the bottom left corner of the SCOS 2000 task launcher. Confirmation will be requested. The processes will take about a minute to start. When a horizontal task bar (See Figure 2) appears at the top of the screen several alarms will begin to sound – this is perfectly normal and not a cause for concern.
- Click on the **Alarm Tone Enabled** button on the horizontal task bar that appears at the top of the screen (See arrow on figure 2). Select the option to disable the alarm but only do this if you are confident that you do not want to monitor the alarms – the alarms will sound when housekeeping parameters go in and out of limits.
- Click on the **Users** button in the horizontal task bar and on the pop up window login as:

  User name: Matt **Password**: Matt

  Select the **SOFT_001** role from the **Role** drop down menu.
- Wait until the highlighted processes on the SCOS 2000 task launcher have green borders, indicating that SCOS 2000 server processes have started up correctly.

*A scrolling Regis window appears at the bottom of the screen and displays various messages: **red ones are alarms**, **yellow ones are warnings** and **green ones are for normal messages**. All red alarms regarding the NCTRS connections can be ignored.*

- To monitor telemetry select the **MON2** process from the SCOS 2000 MAIN Task Launcher and click on the **Start** button. A Telemetry Desktop display appears on the second SCOS screen (See Figure 3).
- From the Telemetry Desktop display click on the **AND…** button and select the Alphanumeric Display of interest (e.g. **DPU AND OBS PARAMETERS**)
- To send manual commands, start the Manual Stack process by selecting the **MSTK1** button from the SCOS 2000 task launcher and click on the **Start** button. A Manual Stack display appears on the first SCOS screen (See Figure 4) .

SCOS is now ready to receive OBS TM packets and to display the DPU/OBS parameter values.

4.3 Starting the DRCU Simulator

Objective:	To startup the DRCU Simulator
Initial Conditions:	DRCU Simulator not running
Final Conditions:	DRCU Simulator application running
Constraints:	DRCU Simulator PC must be on
Total Duration:	1 minute

Step.	Action
	• The PC marked **DRCU Simulator** • Login in as user Administrator (See envelope marked “DRCU Simulator” in the top drawer) *Occasionally a failure message appear on the screen for process R2Drv – it can be ignored for now.* • Start the DRCU simulator by double clicking on the **transmit5.5** shortcut on the desktop.

4.4 Starting the CDMS Simulator

Objective:	To startup the CDMS Simulator
Initial Conditions:	EGSE router and gateway running
Final Conditions:	EGSE router, gateway and CDMS Simulator running
Constraints:	
Total Duration:	2 minutes

Step.	Action

The CDMS simulator is installed on Gordon (Screen 3 on the Belkin Switch Box) but can also be run from Tintin (screen 4). The monitor for these PCs is labelled “CDMS & RT display monitor”

- Login in as user cdms (See envelope marked “CDMS-Sim machine” in the top drawer)
- Double click on the shortcut **CDMS_SIM**

  The CDMS simulator front panel appears.
- Check that the ‘**Source TC**’ button is selected for **Router**.

  *TCs from SCOS 2000 will only be accepted and dispatched to the DPU if the **Router** option is selected.*
- Click on the **Launch Router Command Interface** button

  A window appears asking for the IP address of the machine where the router is running. Enter the IP address for Lichfield: 130.246.33.7 (on Spire Control Room setup)

  Enter the IP address for Chichester: 130.246.35.175 (on AVM setup
- Enter 9877 for the Router Port Number and then click on **Connect.**

  This opens TCP/IP connection to the router and also brings up the **Router Command Interface** window**.**
- Enter Client Name as CDMS_SIM and click **Send Command.**

  At this point you can check that the connection with the EGSE router is established by looking in the EGSE router window – CDMS_SIM, the name of the CDMS Simulator Client, should appear.
- From **Select command**, select ADD_CLIENT and enter the hexadecimal APID of SPIRE command packets – the APID is 0x500 but you do not need to enter the “0x”. Then click on **Send command.**
- Repeat the previous step for the APID of the CDMS simulator, viz. 7F6.

  This step should therefore be repeated for all systems to be commanded via the CDMS simulator.
- Click **Close Window** on the **Command Interface** window.

  The Client name should appear in the **Client name** text box on the CDMS Simulator front panel and the **router connection alive** indicator button should flicker yellow/green.

  You should now see the packet dumps of CDMS HK telemetry appearing on the EGSE router window on Truro.
- Click on the **Select BusList** button and select the bus list :
  - SPIRE_Nominal.txt for PRIME instrument
  - SPIRE_Redundant.txt for REDUNDANT instrument
- Click on the **Start/Stop BC** button to start the Bus Controller.

4.5 Starting the DPU and the OBS

Objective:	To startup the DPU and run the OBS
Initial Conditions:	EGSE router & gateway, DRCU Simulator, CDMS Simulator and SCOS 2000 all running. DPU off and the OBS not running.
Final Conditions:	EGSE router & gateway, DRCU Simulator, CDMS Simulator and SCOS 2000 all running. DPU on and the OBS running
Constraints:	If the OBS image has to be loaded via the JTAG probe then the startup procedure could take longer
Total Duration:	2 minutes to 5 minutes

Note: The steps below are applicable for both PRIME/REDUNDANT SPIRE DPU.

Step.	Action
1	Power ON DPU: • Switch on DPU master switch on the power supply – the power supply is labelled **SPIRE Power Supply** • Wait for the voltage to stabilise to 28.00V. The current being drawn should be ~2.2A. • Press the **ON/OFF** toggle button on the power supply. The current being drawn should be ~0.42A. • When the DPU is powered ON the Boot Software performs some internal checks and generates and event packet (5,1) in the case of boot software v2.0 (DPU model FM and CFM) or a (5,2) in the case of boot software v1.0 • **Note that at this point it may be necessary to stop and start the Bus Controller from the CDMS Simulator Front Panel to start receiving SPIRE HK TM packets.**

2

- **Case 1: Starting OBS via JTAG probe (this procedure will rarely be needed)**
  - DPU software is installed on isopc1 (Screen 4 on the Belkin Switch Box for the DPU & DRCU display monitor). If a new OBS image has to be loaded via the JTAG probe the following steps have to be executed
    - o Check to see whether Screen 4 is already connected. If it is not then ensure that the isopc1 PC is powered on – isopc1 located on the floor to the left of the DPU & DRCU display monitor
    - o Ensure that the JTAG probe is plugged into the CPU board of the DPU and in the back of the isopc1 PC
    - o Login in with your federal ID on the SSD domain.
    - o Start ADSP-21020 emulator:
      - Double click on the ADSP-21020 Emulator shortcut

      Alternatively select Start/Programs/ADSP-21000 Tools and then select ADSP-21020 Emulator
    - o Load OBS Image
      - Click on file and select **Load file**

      Select folder q:/obs/obs_so~1

      First select spire.ach file

      Click on **<OK>**
      - Click on file and select **Load file**

      Select folder q:/obs/obs_so~1

      Select spire.exe file

      Click on **<OK>**

      In the bottom of the display the message **"Target Loading please wait**" should appear.

    After the OBS has finished loading the message **"Target Halted"** should appear. The OBS loading takes about 10 seconds.
    - o If a new OBS image was loaded in the previous step, then press **F4** on isopc1 keyboard to start OBS. In the bottom of the display the message **"Target Running"** should appear.

    The OBS is now running.
  - Check to see that an event TM packet (5,2) is received on the CDMS Simulator TM Log window.
  - You should now see SPIRE HK TM packets being received on the EGSE gateway display, the CDMS Simulator TM log window and also on the SCOS 2000 display for DPU/OBS Parameters.

3	• **Case 2: EEPROM-resident OBS is being used (most commonly used)** • On SCOS execute DPU_START procedure from Local Test Procedures window in TOPE. This automatic script will prompt the used for which partition to boot (either primary/secondary). Depending on user input either a FORCE_BOOT_PRIMARY or FORCE_BOOT_SECONDARY commands will be issued. • Following the boot commands a series of SET/UPDATED TABLE commands will be sent to the DPU for creating/updating the contents of the various command lists used by the SPIRE DPU. • **ALTERNATIVELY (If DPU_START is not available) manual commanding mamy be required:** o Send the "Force Boot" command from SCOS 2000 using the Manual Stack: o Click on the **Cmd…** button of Manual Stack GUI and select the **FORCE_BOOT_PRIMARY or FORCE_BOOT_SECONDARY** command from the scrolling list of commands. Click on the **OK** button. o A GUI with the command default parameters appears, click on the **OK** button**.** o The command will be loaded on the Manual Stack as entry number 1. o Click on the **Arm** button followed by the **Go** button to execute the command o You should now see SPIRE HK TM packets being received on the EGSE gateway display, the CDMS Simulator TM log window and also on the SCOS 2000 display for DPU/OBS Parameters.

5 Figures

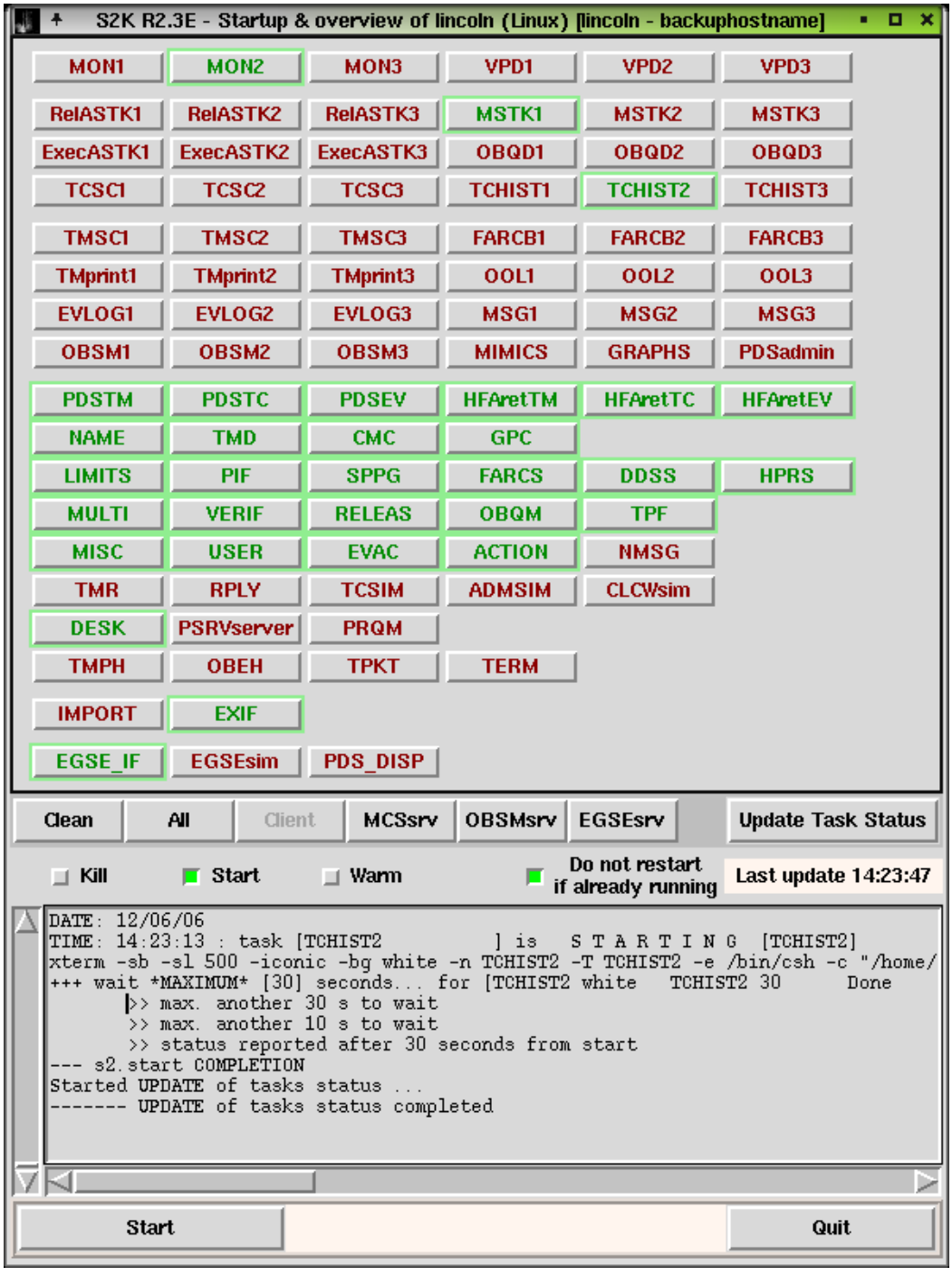

Figure 1. SCOS MAIN Task Launcher

Figure 2. Login Task bar

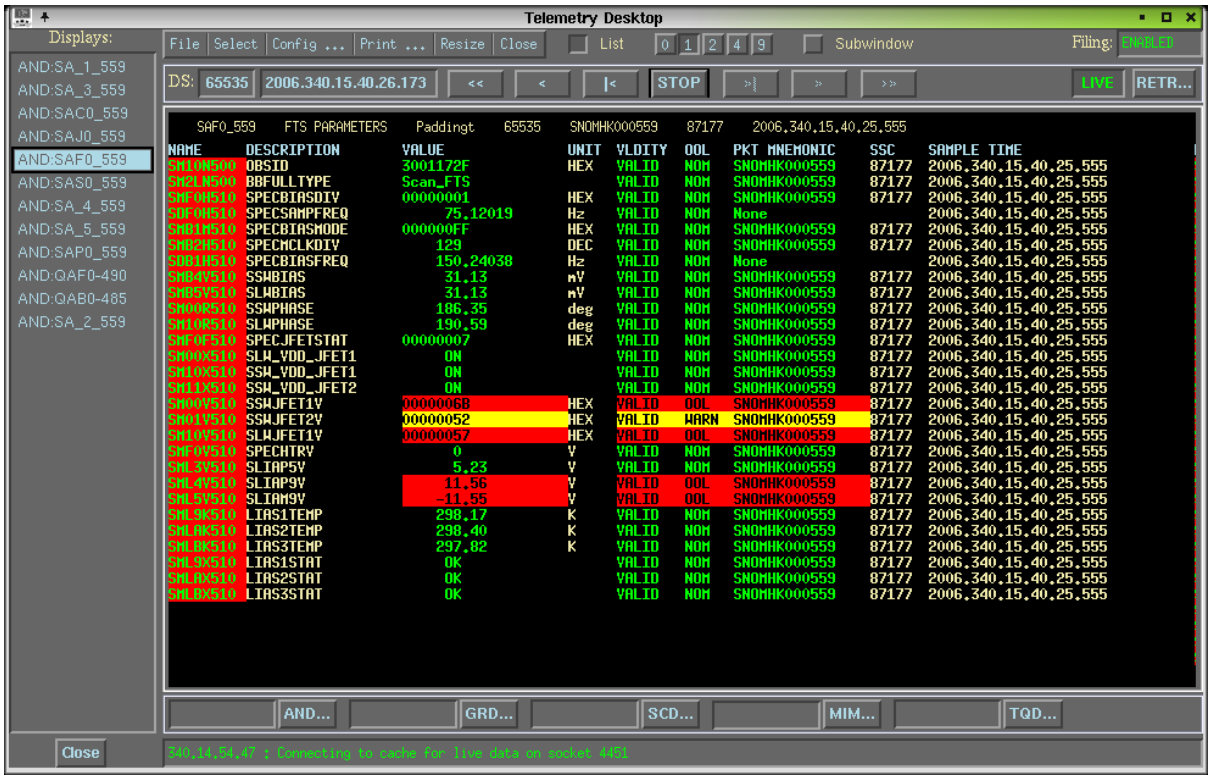

Figure 3. Telemetry Desktop

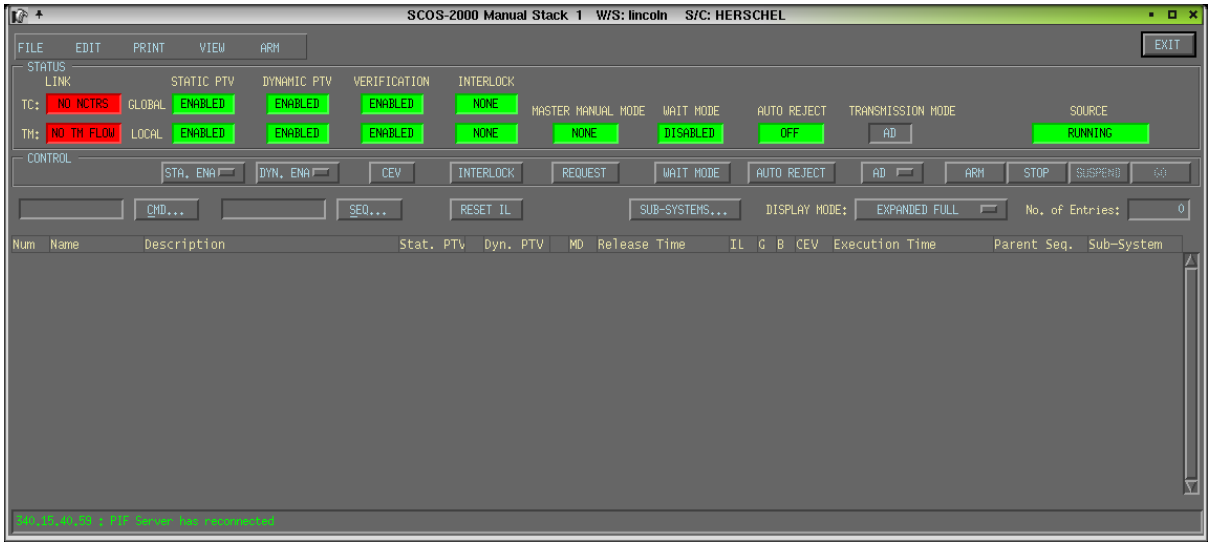

Figure 4. Manual Stack Window