SARG: Quick user guide

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1 INTRODUCTION

1.1 SCOPE

This is a very short introduction to the SARG instrument control system. Here the user will find a brief summary of the operations needed to start up the instrument control system as well as the main features of the interface and others. The document is intended as a guide for the general observer.

1.2 REFERENCE DOCUMENTS

▪ [RD1]:

1.3 ACRONYMS

• CCD – Charge Coupled Device

• GUI – Graphical User Interface

• SARG – Spettrografo ad Alta Risoluzione Galileo

• TBC – To Be Confirmed

• TBD – To Be Done

• TBW – To Be Written

• TNG – Telescopio Nazionale Galileo

• TCS - Telescope Control Panel

2 How to start up the system

The SARG instrument is essentially composed of a CCD camera and motors to put optical elements (Filters, Slits and grisms) into the optical beam. The user will interact with the whole system by the Graphical User Interface choosing an instrument configuration and an exposure time. The user will interact with the motors control and with the CCD controller only at the system start up (shut down) or if a new system initialization is needed. In this section I'll describe how to start up and shut down the system. If possible ask the support astronomer to do it for you.

2.1 1.1 CCD controller

The software to operate the CCD controller runs on a Windows PC. This computer is located in the control room and share the monitor with another PC. On the table, there are 2 PC. One operates the SARG CCD controller while the second operates the DOLORES one. On the desktop of the SARG PC the huge "CCD SARG" is visible. A panel named CCD (see Figure 1) should be visible on the desktop and the "led" at the right of the "Connect" label on it should be in red (not connected). If this window isn't visible it means that the program to operate the CCD controller is not running. Start it up with a double click on the icon "Shortcut to CCD". (See Figure 2).
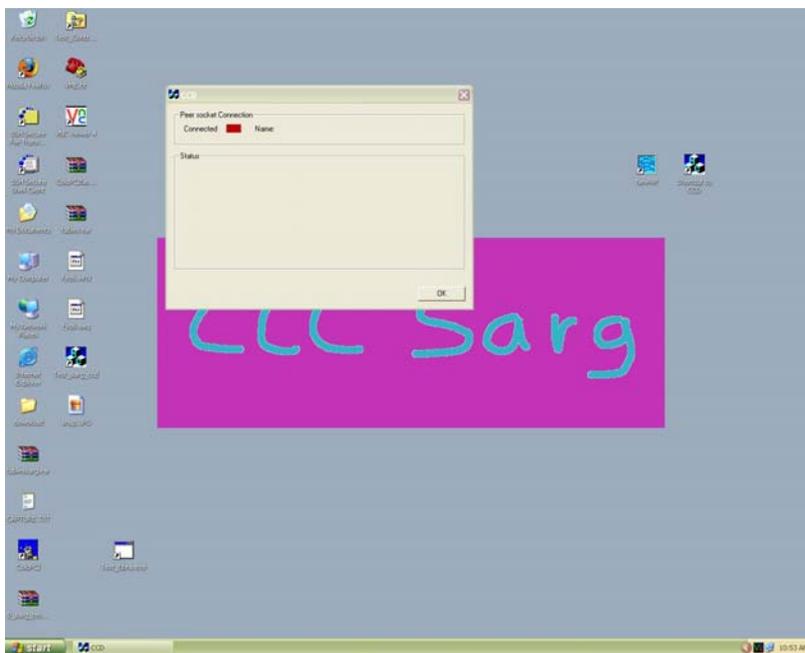
Figure 1 - CCD program control Window.

Figure 2 - Icon to start up the CCD program control.

Once you are sure that the CCD software is running, switch 'ON' SARG from the Telescope Control Panel (TCP) interface in the WLBUILD computer inside the control room. To do that, click 'ON' : "CCD", "Motors", "Lamps", "Slit Viewer" buttons. The leds at the right of the buttons will change its color from gray to green. (See Figure 3). This operation will switch on the SARG devices but will not initialize the instrument. The 'Telemetry' and 'LRS Lakeshore' buttons **must be always 'ON'** (are password protected).
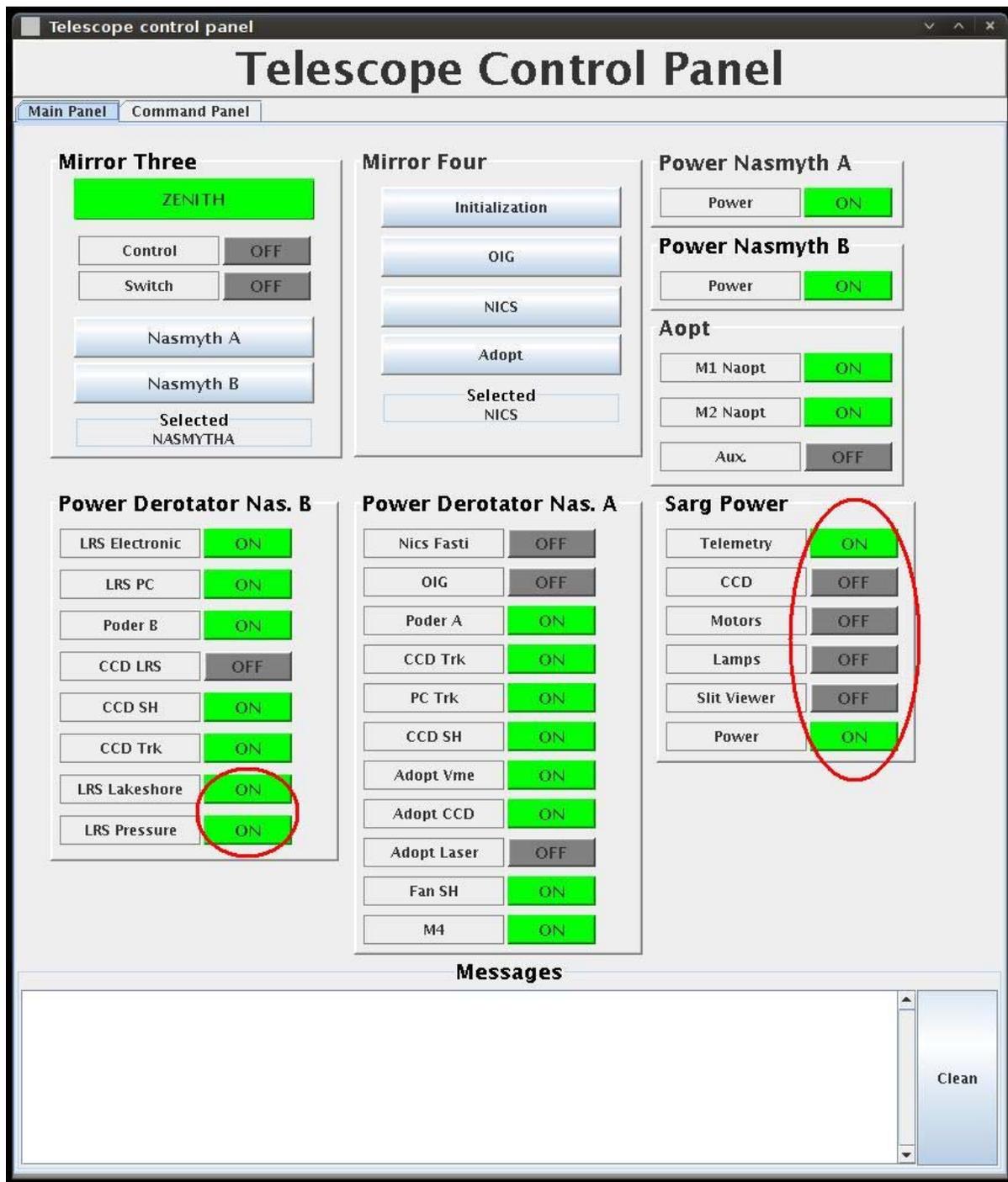
Figure 3 - Click on the red circled button to switch 'ON' all the sections of SARG. The Telescope Control Panel interface program runs on the WLBUILD computer.

2.2 1.2 How to start up the motors and CCD servers

Once having initialized the program to operate the CCD controller and having switched 'ON' the controller, you will have to run the 'SARG Motor Startup".

Sarg Motors StartUp

Figure 4 - Icon to start up the motors

1.2.1 Start up the motors

On the LRSPC desktop you will find an icon named "SARG Motors StartUp". A double click on it, will pop up the panel shown in Figure 6. On his panel, activate the Start Up button on the right of the SARG Motors server label. It will activate the motor server program and it will change the color of the "led" on the right from gray to green. The label on it will also change from "OFF" to "ON". During the initialization a log window show the initialization processes.

2.2.1 Start up the CCD server

Again on the panel described in Figure 6, press the CCD Server "Start Up" button. Again the "led" will change from gray to green and the label from OFF to ON.

2.3 Temperature server

The temperature server is strictly connected with the telemetry and must be always powered 'ON'. The user can shut down this server only if requested by the responsible of the instrument.

2.3.1 What to check?

At this point you are ready to move the SARG motors and to operate the CCD from the LRS linux PC. Before starting the observation, the astronomer has to verify if the position of the LRS folding mirror is in SARG position. To operate with the folding mirror, the DOLORES motor service must be 'ON'.

To start it up, double click an icon named "*Dolores Motors StartUp*". on the LRS linux PC desktop. The LRS GUI interface will pop up (See Figure 5). To move the folding mirror in the SARG position press the 'Sarg' button in the 'select instrument' section .
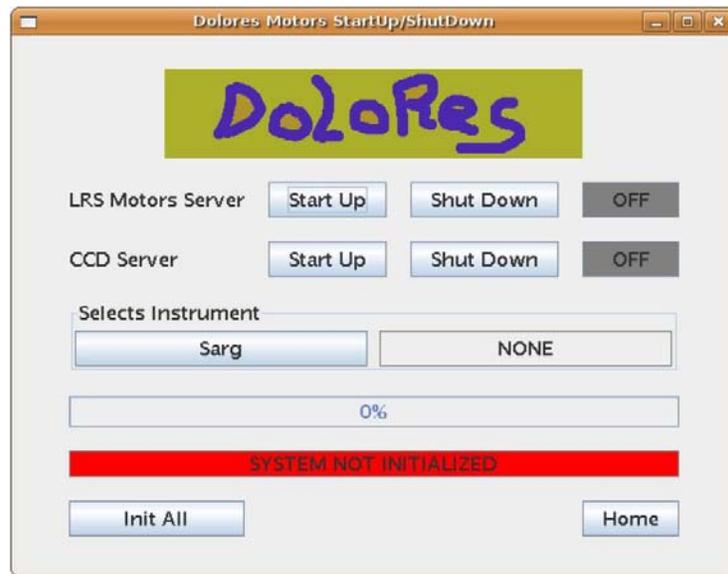
Figure 5 - A double click on the "Dolores Motors Start Up" icon on the LRS linux PC desktop will open this panel.

Figure 6 - A double click on the "Sarg Motors Start Up" icon on the LRS linux PC desktop will open this panel. Actions to be done here are described in the text.

2.4 Open the SARG GUI

The astronomer will send commands to SARG by means of the Graphical User Interface program (GUI). To start it up, double click on the "SARG GUI" icon (see Figure 7) on the LRS linux PC desktop. The SARG GUI interface will pop up. (See Figure 8) . To be able to start your first image, you still have to open the socket, open the the WSS bridge and boot the CCD controller. To start this three operations select the option "SYSTEM STARTUP" under the "SARG MANAGER" menu. Once the boot ends send a dummy bias before to start the calibrations or observations.

SARG GUI

Figure 7 - A double click on the "SARG GUI" icon on the LRS linux PC will open the SARG GUI.

Figure 8 - The SARG GUI.

2.4.1 Start Up check list

1. Verify the status of the 'CCD' software in the "Windows XP PC" (Figure 1)
   a. If is not in execution, execute it ("shortcut to CCD" icon)
   b. If is 'ON' go to point 2
2. Power 'ON' all the SARG sections in the "Telescope Control Panel"
   a. CCD
   b. Motors
   c. Lamps
   d. Slit viewer
3. Start the 'SARG motors startup" (Figure 4) panel and:
   a. Start up: SARG motors server
   b. Start up: CCD server
4. Start the SARG user interface (Figure 7)
5. Start the 'system startup' in the 'SARG manager' menu (more details in "SARG: The graphical user interface manual")
6. When the boot ends stake one bias image to check that everything is working properly

3 How to shut properly down the system

Once you have finished working with SARG, please shut down the system as follows:
Close the GUI, click on the Sun image marked with the label "Arrivederci" at the GUI bottom and
the GUI program will end.

3.1 Stop the servers

Once having closed the GUI came back to the "Dolores Motors StartUp/ShutDown" panel.
Press the Motors Shut Down button and the CCD Server Shut Down button. The "leds" associated to these
buttons will switch from "ON" to "OFF" while changing theirs color from green to gray. Now close the panel
itself. Click on the cross at the top right of the panel. Now you can go to the WLBUILD computer and switch
all the SARG sections off from the **TCP** (CCD, motors, lamps and slit viewer)

3.2 Shut down check list

1. Close the GUI
2. shut down the 'CCD server' in the 'SARG motors panel'
3. shut down the 'SARG motors server' in the 'SARG motors panel'
4. Close the 'SARG motors panel'
5. Switch off the 'CCD', 'Motors', 'Lamps' and 'Slit viewer' buttons in the "Telescope Control Panel"