
Minutes : Meeting to clarify SCOS-2000 Delta URD

Present : Luc Dubbeldam (HIFI)
Claudio Meregalli (LFI)
Sunil Sidher (SPIRE)
Claudio Vuerli (LFI)
Erich Wiezorrek PACS)

Date And in the afternoon-session: Mauro Pecchioli (ESOC)
May 23, 2000

Note

MMI= Man-machine interface

OOL= Out of limit

The documents to be discussed are:

- EGSE URD by Ken King, FIRST-SPI-DOC102 draft 1, dated May 19,2000
- RTA Delta URD by Luc Dubbeldam, dated Jan 27, 2000
- additional requirements to the RTA delta URD by Erich Wiezorrek, emailed on April 3, 2000
- reference is made to the minutes of the RTA CWG, dated Nov 5, 1999

Clarifications of the EGSE URD:

Refer to IFU-FR-03 in section 4.1.1

Question:

How is the interface defined between the SCOS-2000 output (command packets/frames) and the interface unit?

Answer from Mauro:

There are several command sources (e.g. the Auto-stack, Manual stack). These are polled by a Multiplexer which passes commands to the Releaser. This is the "output to the outside world". The releaser can generate packets of CLTUs (Command Link Transmission Units) which are basically encoded frames. With minor modifications it could also generate frames, if required

The standard Releaser supports the NCTRS interface which is described in the ICD NCTRS, but is only available in draft.

Two options exist:

- The interface unit supports the NCTRS interface.
- We replace the Releaser by our own home-made process.

Refer to IFU-FR-8 in section 4.1.1

Question:

How is the interface defined between interface unit and the SCOS-2000 input (TM packets/frames)?

Answer form Mauro:

A Packetizer is needed for this purpose. This is a module outside SCOS-2000 which should be made by the instruments, and can be copied from other projects (i.e. the one from MSG, a table driven one). The functions of the packetizer are:

- accept frames from TM-source
- reconstruct the packets from the frames
- Find SPID and TPSD that belong to the APID, type, subtype combination
- perform checksum control
- perform counter checks
- produce SCOS-2000 packets
- send this packet to Packet Distribution Unit

The interface between SCOS-2000 and the packetizer is not described yet.

Note from Claudio Meregalli:

I have only one warning for what concerns the packetizer if one of us will decide to develop by himself: this S/W should be tightly coupled with the MIB: if the decoding tables used by packetizer will be independent from those contained in the MIB, one could have an inconsistent decoding of packets because the packet structure does not match.

Refer to IFU-FR-13 in section 4.1.1

Question:

What TC uplink speed can be obtained.

Answer from Mauro:

The TC-rate depends on several factors:

- Verification of the commands (a lot of messages are exchanged)
- MMI, i.e. the update of the graphic displays that show the stack being emptied.
- The input-performance of the instrument itself

First impression is:

- 20 TC per second not feasible
- 10 TC per second, possible, if SCOS-2000 is configured as server-client configuration. On one workstation this is not feasible.

The design goal for SCOS-2000 was 10 TC packets/second and/or 4 kbits/second.

Refer to TC-CMD-01, section 4.2.4.1

Question:

Is it possible with the MIB editor which was demonstrated in the SCOS-2000 meeting April 19, 2000, to import/merge an already existing MIB in the SCOS-2000. ASCII file format.

Answer from Mauro:

Yes by ingesting the tables with a bulk load. The format of the MS-access tables is the same as with the ASCII files. Anyway, MS-access expertise is necessary to do more "expert" work with the MS-access based MIB editor.

Refer to TC-CMD-04, section 4.2.4.1

Question:

How to import TC or TC sequences from "test control" to SCOS-2000.

Answer from Mauro:

There are three possibilities:

- a) save stack files (fixed sequences, no parameters to be filled by the commanding operator)
- b) command sequences (nesting allowed, commanding operators can specify parameters)
- c) external command source handler: pseudo command source implemented with a CORBA interface

For a) and b) still the commanding operator is needed to start the save stack or the command sequence. The external command source handler allows to send a command completely controlled by an external process: import and send it, get a message back if the pre-transmission check failed.

Refer to TC-CMD 12 and 13, section 4.1.4.1

Question:

How are the absolute times filled in at the moment of execution of a command-sequence.

Answer can be found in the database import ICD S2K-MCS-ICD-1-TOS-GCI

An element of a command sequence has a command release time tag and a command execution time tag. The release time tag is always with respect to the release of the previous command. The execution time tag is either with respect to the start of the sequence or with respect to the previous time tagged command in the sequence.

Remark by Erich: I find in my notes that Mauro mentioned that this is configurable. Absolute times can be used as well. Mauro: Absolute times cannot be specified in a sequence. However, they can be specified in a saved stack file (typically generated by a mission planning system).

Refer to TC-CMD-18, section 4.2.4.1

Question: OBS maintenance

Answer from Mauro:

OBS images are transferred to SCOS-2000 in a special format. SCOS-2000 compares these images with ones previously loaded and finally generates a save stack file which must be sent by the commanding operator. A lot of project specific things have to be implemented but if the PUS is being followed examples from other missions exists.

Refer to TC-CMD-22, section 4.2.4.1

Question:

How does SCOS-2000 signal pre-transmission validation command errors to an external process?

Answer from Mauro:

If the "external command source handler" is used to send commands this interface will also return pre-transmission validation errors.

Refer to TC-AUT-05, section 4.2.4.2

Question:

How to read TM parameters from SCOS-2000?

Answer from Mauro:

General answer: There are six new interface (CORBA based) which will be implemented in future version of SCOS-2000:

a) three "providing" services (already available or spring 2001):

- to read TM parameters
- to read event packets
- to read TC history (transmission, validation)

b) three "ingesting" services (available spring 2001):

- to ingest parameters
- to ingest event packets
- to ingest commands (external command source handler)

TM packets may be delivered via a TCPIP interface.

Refer to TC-AUT-10, section 4.2.4.2

Question:

Is it possible to stop a command sequence/stack by an external process?

Answer from Mauro:

No, but using the external command source handler the control over commanding is completely by the external process. There is no need anymore to pass a save stack file or command sequence.

Refer to TC-AUT-10, section 4.2.4.2

Question:

Within the MMI of SCOS-2000 is it possible to bypass an active command stack with an immediate command?

Answer from Mauro:

No, but the stack can be stopped, the immediate commanded can be sent and the stack can be restarted. The stack can be edited but only after it has been stopped.

With respect to the Delta URD

Refer to RTA 4.1.1.-{5,6,7,8}

We foresee that operators would like to have more display capabilities for the house-keeping than can be provided by SCOS-2000 as it is now. There are a few ways to go:

- Work around with mimic displays
- Send House-keeping data to an application outside SCOS-2000.
- Ask ESOC to modify SCOS-2000

We decided to lower the priority of RTA 4.1.1.-{5,6,7,8} to "desirable"

Refer to RTA 4.1.1.-11

Question:

Can we open two Monitor units, one for real time one for playback.

Answer from Mauro:

This depends on the hardware configuration. Two TM monitor desktops will not fit on one screen, hence more screens are needed. There are several options: connect two or three screens to one machine, a server-client configuration. A remote login to the client shall be possible as well to use the X11 windows system. But this option is not tested.

The hardware configuration only has an impact on the 'physical' capability to view several displays at the same time. It is in any case possible to open several TM Desktop applications and select live or retrieval mode independently on each of them.

Mauro suggests to use WEB-RM (web remote monitoring) an option to monitor SCOS-2000 over the WWW. This becomes available end of this year.

Refer to RTA 4.1.3.-4

We decided to drop this requirement.

Refer to RTA 4.2.0.5

TBD could be set to 10 minutes.

Rumors say that the start-up time is better than 5 minutes so this delta-requirement is fulfilled.

Refer to RTA 4.4.0.2

The text: All operator input shall be logged changes to: Operator input shall be logged (e.g. command input, on-line changes of MIB-data)

Refer to RTA 4.4.0-{17,19}

In the current version the possibilities to edit the MIB-data on-line are very limited (conversion data, limit range values and synthetic parameter definition) There is no feedback-possibility of the changes into the MIB-files. The way to go is to use a printout of the logged operator input to edit the original MIB-files.

We decided to lower the priority of RTA 4.4.0-{17,19} to "desirable". Who want to have differences, who is willing to pay and who can make a proposal in line with a sound configuration-control philosophy?

According to Mauro this kind of requirement is not considered yet for future requirements of SCOS-2000.

MISCELLANEOUS

Behavior checker:

We discussed the behavior-checker. If a parameter goes OOL the behavior checker shows this parameter together with the value it had at the moment of the event report. This value is shown in the column "VALUE". So if the value goes out of limit at 30 and keeps growing to 100, the behavior checker keeps showing 30, which is misleading. We prefer to monitor the actual value. Mauro explains that the behavior checker can be configured to keep track of the actual value. This option is normally off, as a large number of OOL-parameters may tax the CPU too much.

SCOS-2000 mailing list

A mailing list has been established to improve the communication among the members of the SCOS-2000 user group.

Address: scos2000@sron.nl

Subscribe by sending the message

subscribe scos2000 [address]

to majordomo@sron.nl

MIB editor:

The MIB editor that would come with SCOS-2000 does not have all functionality that we want to have. In the HIFI-project another MS-Access based MIB-editor is available. This editor answers the MIB-editor requirements-specification document and is described in the MIB-editor design document. These documents will be input for the 4th FIRST common EGSE meeting, (June 15 ESTEC) and will be distributed to the SCOS-2000 mailing list. The Access file will be mailed on request. (Request to L.Dubbeldam@sron.nl)

Listing display play back:

The problems we found with the listing display as specified in the additional requirements:

- The SCOS 2000 listing display shall work in replay mode as in real-time mode.
- The SCOS 2000 listing display shall provide a scrolling window.
- The number of lines saved in the scrolling window shall be configurable are not seen yet by the SCOS-2000 team.

However a TM-data retrieval service which produces parameter value overviews into ASCII files will become available in the September version.

Startup of SCOS-2000 via a script:

This has to be implemented by the ICCes. They can take the scripts used by the SCOS-2000 task launcher as examples.