Technical Note

DPU/ICU Onboard
Software Loading

Reference: PICC-ME-TN-009

Version: 1.2

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Installation

The ObswLoader is distributed as a JAVA jar file named "all.jar". This jar file can be placed in any directory. For the IFSI installation it is placed in the ~/local-bin directory of the SCOS 2000 operator account.

To use the ObswLoader the version 1.4 of JAVA is needed. The directory where the all.jar file is placed must be included in the JAVA classpath. To ensure that following shell script file named ObswLoader is used at IFSI (again to be found in the ~/local-bin directory).

```
#! /usr/bin/csh -f

setenv PATH /export/home1/local/j2sdk1.4.1_05/bin:${PATH}

if (${?CLASSPATH}) then
            setenv CLASSPATH ${HOME}/local-bin/all.jar:${CLASSPATH}
else
            setenv CLASSPATH ${HOME}/local-bin/all.jar
endif

java herschel.pacs.egse.obswLoading.ObswLoader $*
```

A second shell script file named PacsDpuObswLoader is used to ease the use of this utility for PACS DPU memory loading. Similar files can be create for the other instruments.

```
#! /usr/bin/csh -f

setenv PATH /export/home1/local/j2sdk1.4.1_05/bin:${PATH}

if (${?CLASSPATH}) then
            setenv CLASSPATH ${HOME}/local-bin/all.jar:${CLASSPATH}
else
            setenv CLASSPATH ${HOME}/local-bin/all.jar
endif

java herschel.pacs.egse.obswLoading.ObswLoader -apid 1152 -dpu $*
```

Memory Files

Currently there are two kind of memory definition files. One is generated by the "Gavazzi" software, the other by Stefano's PACS OBCP files. Both kind of files contain a single telecommands of either PUS type 6, subtype 2 ("Gavazzi") or PUS type 18, subtype 1 (PACS OBCP load). Those telecommands are read from the files, patched according the command options and then send to the router to be uplinked.

Both PACS DPU and SPU subunit are using the "Gavazzi" software format.

Usage

Shell command line syntax:

ObswLoader -apid n {-dpu | -spu | -dmc | -obcp} [other_options] memory_files

Required Arguments:

-apid *number*: the APID (entered in decimal notation) of the unit to receive the telecommands

One of the format specifiers:

-dpu to load DPU memory (memory files are assumed to be in the "Gavazzi" format)

-obcp to load DPU OBCP (memory files are assumed to be in the "Stefano" format)

-spu to load DPU memory, not yet implemented

-dmc to load DEC/MEC memory, not yet implemented

A list of file names pointing to files containing the onboard software memory in a "Telecommand (6,2)" format.

Options:

-interval ms specifies the minimum time (in milliseconds) between two telecommands, defaults to 500 milliseconds

-host *name* the host name of the router, defaults to "localhost"

-port *number* the port number of the router, defaults to "9877"

-client *name* the client name used for the router connection, defaults to "ObswLoader"

-verbose produces more verbose console output

-quiet produces no console output (except errors)

-test inhibits actual uplink of resulting telecommands

The PACS specific "PacsDpuObswLoader" has already predefined settings of the options -apid (1152) and -dpu, so only the memory files have to be specified.

The PACS specific "PacsObcpLoader" has already predefined settings of the options -apid (1152) and -obcp, so only the memory files have to be specified.

If the number of memory files is exceeding the shell command line limit the "xargs" utility can be used. See the examples section.

Examples:

```
PacsDpuObswLoader -test -verbose /home/hpops/TCgavazzi/DmPageTc0*.dm
```

This command processes all files "/home/hpops/TCgavazzi/DmPageTc0*.dm", generates the corresponding telecommands but will not uplink them. It can be used to check the file format and the router connection.

```
PacsDpuObswLoader  /home/hpops/TCgavazzi/DmPageTc0*.dm
```

This command will uplink all memory load telecommands defined by the files "/home/hpops/TCgavazzi/DmPageTc0*.dm" for the PACS DPU unit.

```
ObswLoader -apid 1152 -dpu /home/hpops/TCgavazzi/DmPageTc0*.dm
```

The same as the command above.

```
ls  home/hpops/TCgavazzi/DmPageTc0*.dm | xargs ObswLoader -apid 1152 -dpu
```

The same as the command above. But it can be used also if the number of memory files exceeds the shell command line size.