DOCUMENT:

INS Common Software Specification
VLT-SPE-ESO-17240-0385, issue 2.1, 15/07/96

+ User Manuals for all modules belonging to INS common software (distributed with the VLT Common SW)

MODULES:

- pco: protocol converter
- oslx: handling of dictionaries, setup files, FITS headers
- dxf: bulk data transfer (from detectors)
- ist: disk space monitor, MIDAS table conversion, widgets for ICS panels
- mobs -> bob
- ...

OSS:

- originally: to build/edit set-up files
- support for P2PP (exposure time calculator, possibly verification of template and its parameters)

DICTIONARIES:

- keywords in hierarchical format: CAT SUBS1 SUBS2 PAR e.g. INS LAMPi TYPE
- contains all parameters needed for a sub-system (incl. formatting info, description, ...)
- the most fundamental interface between the Data-Flow world and the VLT Control Software
- needs to be submitted for approval to DICB (see also Data Interface Control Document - GEN-SPE-ESO-19400-0794, issue 1.1)
- dealt with by the oslx libraries.

```
#
#---------------------------------------------------------------------------
Dictionary Name:   ESO-VLT-DIC.UVES_ICS
Scope:             INSTRUMENT
Source:            ESO VLT
Revision:          $Revision: 1.39 $
Date:              $Date: 1998/09/11 12:05:07 $
Status:            draft
Description:       Based on GEN-SPE-ESO-19400-794, 1.0/8

Parameter Name:    INS ID
Class:             header|conf-log
Context:           Instrument
Type:              string
Value Format:      %30s
Unit:
Comment Field:     Instrument ID
Description:       Combines the ESO identification of the instrument
                   and the software version of the control software.
                   Format: NAME/HW-REV/SW-VERSION
```

```
...

Parameter Name:    INS ADCS SWSIM
Class:             header|ops-log
Context:           Instrument
Type:              logical
Value Format:      T
Unit:
Comment Field:     If T, function is software simulated
Description:       Function software simulation.

Parameter Name:    INS ADCS LIMIT
Class:             private|setup
Context:           Instrument
Type:              string
Value Format:      %10s
Unit:
Comment Field:     Move to the limit.
Description:       Move to the lower or upper limit.

Parameter Name:    INS ADCS SPEED
Class:             private|setup
Context:           Instrument
Type:              double
Value Format:      %.1f
Unit:
Comment Field:     Moving speed.
Description:       Speed (default units) the motor is moved (see LIMIT).

Parameter Name:    INS ADCS TYPE
Class:             conf-log
Context:           Instrument
Type:              string
Value Format:      %10s
Unit:
Comment Field:     Type of component
Description:

...
```

SETUP FILES:

- *Reference* setup file:
  - contains all parameters which may be undefined or have improper values after start-tup or initialization, for all equipments involved
  - to give reasonable defaults for standard modes
  - provided by instrument designers / ESO
- *Partial* setup file:
  - any subset of a reference setup file
  - examples: instrument, detector, target setup files
  - is what the observer is exposed to
- *SETUP* command: only sets/moves functions for parameters given as arguments, rest remain untouched

```
PAF.HDR.START;                          # Marks start of header
PAF.TYPE       "Instrument Setup";      # Type of parameter file
PAF.ID         "EMMI/TIMF32";           # Parameter file ID
PAF.NAME "WF Imaging";                  # Parameter file NAME
PAF.DESC "Reference setup file for EMMI imaging";
PAF.CRTE.NAME "EMMI-OSS";               # Application creating parfile
PAF.CRTE.DAYTIM   "1996-10-14T09:10";   # Date and time of creation
PAF.LCHG.NAME     "A. Wolf";            # Appl/person that did last change
PAF.LCHG.DAYTIM   "1996-10-15T16:21";   # Date and time of last change
PAF.CHCK.NAME     "VLT-OSS/1.4";        # Version of appl checking parfile
PAF.CHCK.DAYTIM   "1996-10-15T18:12";   # Date and time of parameter check
PAF.CHCK.CHCKSUM "670415008";           # Status of parameter file check
PAF.COMMENT Wide field imaging with EMMI RILD
PAF.COMMENT Filters include V, B, R and I
PAF.HDR.END
#======================================================================
```

```
# There should be no comment lines before this one. Above this line
# is a compulsary header containing information about the setup file
# itself.  The block of comments coming after this header and before any
# other keyword or a blank lime is considered the description of the setup
# file.
#=================================================================

#*****************************************************************
# The above blank line terminated the description part.
# The next section contains the "protected functions", i.e. the settings
# which cannot be overridden by merging a partial setup file with this
# reference setup file
#*****************************************************************
PAF.PROT.START
INS.ID       "EMMI"
INS.MODE     "SPECTROSCOPY";  # instrument mode
INS.FOCU.MODE"auto";          # instrument focus in automatic mode
PAF.PROT.END

#*****************************************************************
# The instrument part is next.
# For optical elements we can either give the ESO-unique ID or the NAME
# (supposing this name is unique withing the instruments configuration).
# Here both are given, which is, as said redundant.

# Many subsystem keywords may be accompanied by an index (i), to
# differentiate between functions of identical/similar type.  For a real
# setup file this index has to be replaced by an integer value, and
# several subsystems, each with a different index, may appear in this
# file.
#*****************************************************************
INS.FOCU.ENC "12345";         # Instrument focus encoder position

INS.GRATi.ID      "ESO #6789"; # Grating-i unique ID
INS.GRATi.NAME    "MyGrating"; # Grating-i common name

INS.GRISi.ID      "ESO #123";  # Grism-i unique ID
INS.GRISi.NAME    "MyGrism";   # Grism-i common name
.......
#*****************************************************************
# Now comes the detector part
```

```
#*********************************************************************
DET.FRAM.CDELT1  2;           # Binning factor in X
DET.FRAM.CDELT2  1;           # Binning factor in Y
DET.FRAM.CRPIX1  1;           # X coordinate of reference pixel
DET.FRAM.CRPIX2  1;           # Y coordinate of reference pixel
DET.FRAM.CRVAL1  99;          # X coordinate of lower left pixel
DET.FRAM.CRVAL2  215;         # Y coordinate of lower left pixel
DET.FRAM.NAXIS1  715;         # Number of pixels along X
DET.FRAM.NAXIS2  836;         # Number of pixels along Y

DET.MODE         "FAST";      # Readout-mode
DET.OUTi.ADU     9.455;       # Electrons per AD unit for output i
DET.OUT1.GAIN    4;           # Gain for output i

#*********************************************************************
# Telescope
#
#*********************************************************************

......
```

PARANAL LANs:

- currently using standard Ethernet and ATM (155 Mbps), all based on multi-mode fibre
- one subnet per subsystem (i.e. 1 per instrument)
- instrument subnets do not extend to the user room!! => instruments must be able to operate from a User WS and/or X-terminal on a different subnet
- host-naming, host-ip-number rules/conventions to be respected!
- details in Final Lay-out of VLT Control LANs (VLT-SPE-ESO-17120-1355, issue 1.2)