ALCATEL ALENIA SPACE
An Alcatel/Finmeccanica company

HERSCHEL / PLANCK

MIB files processing by HPSDB

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ISSUE	DATE	§: DESCRIPTION DES EVOLUTIONS §: CHANGE RECORD	REDACTEUR AUTHOR
1D1	02/02/2006	Warning an incomplete draft (without any reference) was attached to MOM: H-P-ASP-MN-6913 (Herschel Instruments – data base meeting on 29 and 30/09/05 in ASED Munchen) as annex 5 This version (Draft 1 of issue 1) is dispatched to ESA to close AI#69-13-04 (“AAS-F to finalize the draft (“MIB files processing by HPSDB” – refer to annex) for ESA review, This draft is also distributed to instruments for information. It will be dispatched officially (issue 1) as soon as ESA agreed.	F. Chatte

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1. SCOPE

This document is aimed to document the way HPSDB:

- Ingests the S2K (i.e. Instrument EGSE using MIB ICD 5.1, delivered by ESTEC) or CCS MIB files
- Generates the S2K or CCS MIB files

From those processing, the constraints, to apply to S2K or CCS input bridge files in order to get from HPSDB the same output S2K or CCS bridge files, are listed.

However according to the user needs, the 100% compatibility cannot always be reached due to specific HPSDB, S2K MIB ICD, CCS MIB ICD constraints that may differ. For instance HPSDB allows an N to 1 relation between TM packets and SPID, the MIB ICD authorise a N to N relation, claiming that at any time, only one relation is valid !.

The constraints expressed in bold are those constraints which cannot be filtered by HPDSB and as such under the user responsibility to set correctly. The other constraints (i.e. not bold) are controlled by HPSDB at bridge file loading time.

Constraints identified within this document do not guarantee that both the Instrument EGSE and the CCS will have the same behaviour when using data generated by HPSDB or used at instrument level (i.e. compliant with MIB ICD 5.1). The reasons being for example that specific functions have been developed for CCS, functions that do not have correspondence in S2K (e.g. selection of calibration by condition, event limit, critical TC), or that SCOS configuration files (e.g. MISCconfig) are differently configured between instruments or between S2K and CCS.

2. DOCUMENTS

2.1 Applicable documents

ADX	Title	Reference
AD1	AD1Naming convention	H-P-1-ASP-SP-0141
AD2	SCOS-2000 Data base import ICD	S2K-MCS-ICD-0001-TOS-GCI, issue 5.1
AD3	CCS External Interface Control Document	H-P-4-TE-ID-8020

Note: AD3 only applicable for CCS

2.2 Reference documents

RDX	Title	Reference
RD1	Packet Structure Interface Control Document (PSICD)	SCI-PT-ICD-07527

3. ACRONYMS

CCS	Central Checkout System
HPSDB	Herschel / Planck System data base
MIB	Mission Information Base
NMCVT	Naming Convention
S2K	Instrument EGSE version 2.3eP5 based on SCOS 2000 2.3e
SCOS	Spacecraft Control and Operation System

4. GENERALITIES

4.1 G1 – Object data model

HPSDB allows extracting S2K and CCS bridge files from any object. When a bridge files generation of an object is required, HPSDB generates the bridge files using all the items referenced inside the object and all the items (even if not referenced) of the generic object. As a consequence each couple (object, generic object) shall be consistent.

To build the "object data model" from the flat MIB files, HPSDB requires the creation of an object which encapsulates data contained within the MIB files. Each object are uniquely identified by an identifier and its position within a subsystem or a model. Loading MIB files implies that the object related configuration files are specified prior to ingestion within HPSDB.

Constraints:

- Inside an object (identified by its position) consistencies shall be ensured (except in case of reference to generic items)
- Provide the list of "object identifiers" and associated "positions" (according to AD1)

4.2 G2 – Naming convention

HPSDB manages identifiers of:

- Objects (for instance PACS, Herschel PLM, DPU_PACS, EGSE, …)
- Items:
  - Managed by SCOS/CCS (curves, parameter, SCOS packet identifier, …)
  - Not managed by SCOS/CCS (constants, Files, …)

Here are addressed only the identifiers of items which are managed by SCOS and/or CCS (note: CCS manage also some object identifiers for TM /TC packet distribution with SCOE's) .

For all the identifiers the HPSDB naming convention follows the following rules:

- At element identifier:
  - In case of CHAR field (except for curves and groups – groups are only used by CCS)
    - § the first letter refers to the items type (derived parameter, command parameter, …)
    - § the other characters are free (except if specific rules expressed in AD1)
  - In case of NUMBER field (except for curves and groups – groups are only used by CCS)
    - § Free (except if specific rules expressed in AD1)
  - For curve
    - § Number(6) (3 digits for theoretical element number and three digits free)
    - § Unique independently of curve type
  - For packet Groups (Only supported by CCS)
    - § Char(11) (3 digits for theoretical element number, "TMGR", four free digits)
  - For parameter Groups (Only supported by CCS)
    - § Char(11) (3 digits for theoretical element number, "PAGR", four free digits)
- At subsystem and model level, the identifier is instantiated as follows:
  - In case of CHAR field (except for groups)
    - § Subsystem letter added in front of element identifier ("Z" in case of pseudo subsystem),

§ Position (number(3)) added appended at the end (Subsystem pseudo position as defined in AD1, System pseudo position = “999”)

- In case of NUMBER field (except for groups)
  - § Subsystem number (A=00, …, Y=25) in front of element identifier (“26” in case of pseudo subsystem),
  - § Position (number(3)) added appended at the end (Subsystem pseudo position as defined in AD1, System pseudo position = “999”)
- In case of packet or parameter groups (only supported by CCS)
  - § Position (number(3)) added appended at the end (Subsystem pseudo position as defined in AD1, System pseudo position = “999”)

- The Generic items follows the same rules but with the following constraints:
  - Only subsystem / model identifiers (no element identifiers – no instantiations)
  - Subsystem letter is “G”
  - Subsystem number is “07”
  - Position is “000”
  - Element number is “000”

The same naming convention applies for S2K and CCS MIB files except for S2K curves, S2K command verification stage and S2K parameter range sets due to the fact that those identifiers are too short in S2K MIB ICD to support instantiation at HPSDB level.

When loading bridge files HPSDB ignores the generic items. When generating bridge files all the generic items are generated (even if not used)

Constraints:

- All generic items are always extracted from HPSDB when producing MIB files., as consequence should be present in input files.
- S2K: to apply naming convention (except for curves, command verification stages and parameter range sets refer to following chapters)
- CCS: to apply naming convention
- CCS: specific curve identifier to be unique independently of type

4.2.1 G3 – Naming convention for S2K curves

In case a S2K curve refers to a specific (i.e. not generic as possible using HPSDB) curve then the curve shall be coded as number(3) which will match with the 3 free digits of the element curve identifier of HPSDB.

In case S2K curve refers to a generic curve then the curve shall be coded as number(4) according to the following format: “1xxx” such that “xxx” will refer to generic curve “G000xxx000”.

Constraints:

- S2K:
  - specific curve to be coded as NUMBER(3)
  - Specific curve identifier to be unique independently of type
  - generic curve
    - § to be coded as NUMBER(4) and as “1xxx”
    - § ensure exactly the same definition with HPSDB “G000xxx000” generic curve

4.2.2 G4 – Naming convention for S2K command verification stages

In case a S2K command verification stage refers to a specific command verification stage then the command verification stage shall be coded as number(4) which will match with the 4 free digits of the element command verification stage identifier of HPSDB.

In case S2K command verification stage refers to a generic command verification stage then the command verification stage shall be coded as number(5) according to the following format: “1xxxx” such that “xxxx” will refer to generic command verification stage “07xxxx000”.

Constraints:

- S2K:
  - specific command verification stage to be coded as NUMBER(4)
  - generic command verification stage
    - to be coded as NUMBER(5) and as “1xxxx”
    - ensure exactly the same definition with HPSDB “07xxxx000” generic command verification stage

4.2.3 G5– Naming convention for S2K parameter range set

In case a S2K parameter range set refers to a specific parameter range set then the parameter range set shall be coded as NUMBER(3) – This will match with the 3 free digits of the element parameter range set identifier of HPSDB.

In case S2K parameter range set refers to a generic parameter range set then the parameter range set shall be coded as number(4) according to the following format: “1xxx” such that “xxx” will refer to generic parameter range set “GRxxx000”.

Constraints:

- S2K:
  - specific parameter range set to be coded as NUMBER(3)
  - generic parameter range set
    - to be coded as NUMBER(4) and as “1xxx”
    - ensure exactly the same definition with HPSDB “GRxxx000” generic parameter range set

4.3 G6- Enumerated fields

HPSDB controls that fields, which values is one of an enumeration set, have a value is inside this set. This set can be the one defined inside MIB ICD documentation or it can be reduced due to PSICD (example allowed couple of (type, subtype)) or to HPSDB (Octal radix not allowed).

Constraints:

- Enumerated fields shall be in line with the HPSDB ones (refer to naming convention)

4.4 G7- Commutation

The way HPSDB implements the commutations of packets is completely different of the way SCOS does.

For all the commutation (fixed or variable, TM or TC packets) the way to implement is always in HPSDB, the following:

- A packet or structure is a list of
  - 0 or n parameters / structures / fixed areas (TC only) with the following attributes
    - § For TM packet
      - Offset byte,
      - Start bit,
      - Time offset,
      - For Structure
        - Number of times the structure is repeated (0 for variable)
        - Monitoring parameter as counter or dummy counter
      - For parameter
        - Number of occurrences (super commutation – default 1)
        - Number of bit between two occurrences (super commutation)
        - Time delay between two occurrences (super-commutation)
    - § For TC packet
      - Offset byte,
      - Start bit,
      - For structure
        - Flag to indicate if counter is editable or not
        - Number of times the structure is repeated (0 for variable)
        - Command parameter as counter or dummy counter
      - For (command) parameter
        - Number of occurrences (super commutation – default 1)
        - Number of bit between two occurrences (super commutation),
        - Editable flag,
        - Value,
        - Monitoring parameter identifier (echo)
      - For fixed areas:
        - Field length,
        - Description,
        - Value

A TM structure can be referenced by several TM packets or TM structures.

A TC structure can be referenced by several TC packets or TC structures.

For variable packet, HPSDB manages a dedicated display definition (to allow reconstruction of full VPD table merging de-commutation and display data).

For TM packet HPSDB manages a flag just to identify if a packet shall be interpreted as:

- A fixed packet only (only PLF table will be generated as output)
- A variable packet (only VPD table will be generated),
- Both variable and fixed packet (both PLF and VPD table are generated).

In case in the MIB input files a packet is interpreted as fixed (PLF) and variable (VPD) then HPSDB will first loaded HPSDB as a fixed packet then it will set the flag to both (fixed and variable) and build the associated variable display (TBC. Some limitations exist, contact Alcatel if a given packet uses both a fixed area defined using PLF and a variable area using VPD).

Constraints:

- The link between SPID and variable packets is a one to one correspondence
- The description of fixed and variable packet associated to the same SPID shall map exactly (warning on HIFI ….)

4.5 G8– default value

In case a field value is declared not mandatory but a default value is associated in the MIB ICD, the default value is forced by HPSDB even when this default value is irrelevant

However for some default values, HPSDB does not use the default given in the MIB ICD but another "HPSDB default value", the justification being that, the MIB ICD default value is not adequate for HP:
Ifor instance PID_CHECK, or due to the commonality CAF_RADIX and CCA_RADIX

Constraints:

- Set all the default value according to HPSDB including if the field is irrelevant

4.6 G9– Commonality

HPSDB has been specified to adapt commonality as far as possible.

For instance refer to the "commutation" chapter.

In addition inside HPSDB, curves (discrete and status) can be shared by TM and TC. This has for consequence that the field shall have the same format (same description, same default value, ….).

When loading MIB files the process will detect a duplicated curve id when the same identifier is used on TM and TC side and will only load one of them.

Constraints:

- Do not use the same identifier for TM and TC curves.

Note: this means that bridge files generated by HPSDB that use an HPSDB curve defined for both TM and TC cannot be reloaded (TBC).

4.7 G10 Category flag

HPSDB supports data for different type of users: AIT, Operation, software, Flight Dynamics data.

Each item is associated with a 8 bits category flag, each bit represents a given type of user.

This allows making each item visible to only a subset of users.

In addition the same principle applies also for some item attributes like limits, packet contents…

When loading the MIB files the category flag is always set to "all except FDD" (reason being that this category flags are not part of MIB ICD.

When MIB files are generated, the items are filtered according to the type of user interested by the data,i.e. AIT, operations, software, FDD.

Constraints:

- None

4.8 G11– HPSDB common fields

HPSDB is such that for each item the following fields are defined:

- Identifier according to AD1 (refer to G2)
- Mnemonic over 64 characters (required by software users) – Not supported by S2K and CCS
- Short description: by default 32 characters else in accordance with corresponding S2K / CCS MIB file field
- Long description over 256 characters – Not supported by S2K and CCS
- Set of configuration data (not supported by S2K and CCS):
  - Type of last action (creation, modification or suppression),
  - User
  - Date and hour
  - Reason of change
  - Area (working, reference, archive)
  - Source,
  - Site,
  - Validation date on central
  - Validation date on source,
  - Archive date

When loading bridge files those fields are automatically filled.

Constraints: None

4.9 G12– TC packet header

The different types of TC packet header are defined at generic level inside HPSDB. The MIB files from S2K or CCS are required to make reference to one of those generic TC packet headers (refer to CCF_PKTID). When loading S2K or CCS bridge files the tables TCP , PCPC and PCDF are ignored.

Constraints:
Define PCP, PCPC and PCDF tables according to the generic TC packet referenced in CCF and defined inside HPSDB

Remark: NCR open on HPSDB. Only one generic packet can be referenced.

4.10 G13– Reserved characters

Due to XML, the following characters (interpreted by XML), shall never been used: “>”, “<”, “’” (quote), “”” (double quote) and “&” (commercial and).

The description (short description inside HPSDB) shall be expressed using a character subset:

Constraints:

- The following characters shall never been used: “>”, “<”, “’” (Quote), “”” (double quote) and “&”

- Short Description shall use the following character subset
  - Upper case [A .. Z]
  - Lower case [a .. z]
  - Decimal digit [0 .. 9]
  - Special characters: " " (blank), "+" (plus), "-" (minus), and "_" (underscore)

4.11 G14– Radix

In case of unsigned integer value the radix cannot be "O" (for Octal) only "D" (for decimal) and "H" (for Hexadecimal) are allowed.

Constraint:

- Do not use octal radix

4.12 G15– Range allocation

Due to SCOS limitation, mainly its non adaptation to support easily "smooth transition", for some attributes, some value allocation have been made and are listed in AD1. For instance: PID number, UDC packet location, ….

Constraint:

- Respect the range allocation as defined inside AD1

4.13 G16– Automatic instantiation (TBC)

Some items attributes are automatically instantiated when an element is allocated inside a subsystem. This automatic instantiation concern the following attributes:

- Short description: the last character (attribute of the position of the element inside the subsystem) will be automatically appended at the end of the inherited short description.
- APID: will be automatically generated by adding the offset (APID defined at element level) and the base (associated to the position of the element inside the subsystem)
- PID: will be automatically generated by adding to the PID defined at element level a delta associated with the position of the element inside the subsystem. For CCS at bridge file generation the value inside HPSDB will be overwritten by curve Z999999999.
- UDC parameter position (inside the unique UDC packet) will be automatically calculated by adding the position defined at element level and a delta position associated with the position of the element inside the subsystem
- MISC parameter position (inside the unique MISC packet) will be automatically calculated by adding the position defined at element level and a delta position associated with the position of the element inside the subsystem

Constraints:

- Take care about last position of short description (recommendation use one character less than allowed) Note: There is no check at input time, the HPSDB will overwrite the last character.
- Take care about APID allocation
- Take care about PID allocation

- Take care about UDC parameter position
- Take care about MISC parameter position

4.14 G17– short description

While in AD2 and AD3 all descriptions (xxx_DESCR) are optonal, inside HPSDB they are mandatory fields. In case this field is empty, the HPSDB loading process will not stop but it will set it with the identifier of the item.

Constraint:

- Fill the DESC field for all items.

4.15 G18– Orphan items

The orphan items are not loaded by HPSDB.

Constraint:

- No orphan items shall exist in the input MIB files.

4.16 G19– MIB file sorting

The HPSDB output files are sorted according to the MIB ICD primary key (note : for some files this is not natural, for instance PID, …)

Constraint:

- S2K MIB input files to be sorted according to AD2.
- CCS MIB input files to be sorted according to AD2 and AD3.

4.17 G20– Derived parameter

The derived parameter expression files shall be delivered together with the MIB input files.

Constraint:

- None

5. FIELD BY FIELD PRESENTATION

In the following tables the meaning of each field is the following:

- "FIELD"
  SCOS / CCS MIB ICD identifier (without the file identifier)
- "Input processing"
  Summary of how the input "field" is processed in order to be loaded inside HPSDB. In some cases the process is different or specific between S2K (instruments) and CCS, in this case the S2K processing is described under the bullet "S2K" and the CCS processing is described under the bullet "CCS". For some field there is no processing associated ("Ignored") because they are redundant data (example OCF_CODIN)
- "HPSDB"
  Provides the HPSDB corresponding field(s) if any, it is also identified ("instantiation") (this can add specific constraints: for instance on short description) or if those fields are driven by the naming convention (all identifiers).
- "Output processing"
  Summary of how the output "field" is generated from HPSDB. In some cases the process is different or specific between S2K (instruments) and CCS, in this case the S2K processing is described under the bullet "S2K" and the CCS processing is described under the bullet "CCS"
- "Constraints"
  List the constraints to apply in order to get "output" = "input" for the concerned field. Those constraints very often refer to some general constraints expressed in the previous chapter (Gx) or list a specific constraints. If the constraint is in bold, that mean there is no way to detected the inconsistency and it is the user responsibility to set correctly the input field, if the constraint is not expressed in bold that means that HPSDB will prevent this inconsistency (error report, ….). Those constraints are only additional constraints to the constraints already expressed in AD2 and AD3
- "R"
  Allows to route to some additional comments added after the table.

5.1 General

5.1.1 Data base version: VDF

According to MOM H-P-ASP-MN-7063 (“Herschel / Planck – PM#32 – HPSDB splinter” dated 30/11/05 and 01/12/05) it has been agreed (refer to annex 3 - chapter “from maintenance point of view” item “Full compliance with instrument MIB ICD”) that:

- The loading within HPSDB of this file is not required
- The generation of this file will follow the same rules as the one required for CCS

Field	Input processing	HPSDB	Output processing	Constraints	R.
NAME	Ignored	None	Automatic	Impossible	(1)
COMMENT	Ignored	None	Automatic	Impossible	(2)

(1) this field is calculated by HPSDB according to the selected date (by default last HPSDB validation date). Several records are created.
(2) For each record a format is defined inside HPSDB specification

5.2 Monitoring data

5.2.1 Monitoring parameters characteristics: PCF

HPSDB define all parameters: TC, TC software, TC header, TM, TM software, dynamic UDC, static UDC, saved synthetic, Misc, system (CCS only) in the same table, the attributes and controls are specific to each type of parameters.

Field	Input processing	HPSDB	Output processing	Constraints	R.
NAME	Copy	Param id NMCVT	Copy	G2	
DESCR	Copy	Short desc Instantiation	Copy	G13 & G16 & G17	
PID	Copy	PCF_PID NMCVT instantiation	• S2K: Copy • CCS: Calibrated using Z999999999	• S2K: G16 • CCS: Compliance with Z999999999 curve	(7)

Field	Input processing	HPSDB	Output processing	Constraints	R.
				• G8 (Default value = null)	
UNIT	Copy	Units	Copy	G6 (refer AD1)	
PTC	Copy	PTC	Copy	G6 (refer RD1)	(8)
PFC	Copy	PFC	Copy	G6 (refer RD1)	(8)
WIDTH	Ignored		Forced to Null	Set it to "Null"	(1)
VALID	Copy	PCF_VALID NMCVT	Copy	G2	
RELATED	• Saved synthetic parameter: copied as attribute of saved synthetic parameter • Deduced parameter: saved as attribute of deduced parameters	PCF_RELATED NMCVT PCF_RELATED NMCVT	• Copy • Copy	• G2 • G2	
CATEG	• If "T" • If "S" • If "N" and PTC=7, 8 or 9 • If "N" and PTC#7, 8 and 9	Cal category "N" "T" "N" "C"	• If PTC=8 then "T" • "S" • "N" • "N"	• For all parameter with PTC=8 PCF_CATEG shall be "T" • None • None • None	(2) (6)
NATUR	• PAR_TYPE Set according to naming convention (function parameter code – NMCVT-0110) • For derived parameter only: Copy	PAR_TYPE PCF_NATUR	• If PAR_TYPE = "D" and PCF_NATUR = "D" then PCF_NATUR = "D" • If PAR_TYPE = "D" and PCF_NATUR = "H" then PCF_NATUR = "H" • If PAR_TYPE = "D" and PCF_NATUR = "S" then PCF_NATUR = "S"	G2 & G20 Set it correctly	

Field	Input processing	HPSDB	Output processing	Constraints	R.
			• If PAR_TYPE = "M" => "R" • If PAR_TYPE = "N" => "R" • If PAR_TYPE = "U" => "C" • If PAR_TYPE = "Z" => "R"		
CURTX	• S2K G2&G3 • CCS G2	Def curve NMCVT	• S2K G2&G3 • CCS G2	• G2&G3 • G2	
INTER	• S2K: Copied as attribute of discrete curve referenced in CURTX. In case several parameter address the same discrete curve last one will overwrite the previous ones. • CCS: None	PCF_INTER (at discrete curve level)	• S2K: copied from discrete curve referenced y the parameter (all parameters addressing the same curve will have a common INTER) • CCS: None	• S2K: parameters addressing the same discrete curve shall have the same INTER • S2K: shall be "null" for all type of curves not discrete (polynomial, logarithmic, textual) • S2K: G8 (default value = "F") • CCS: None	(5)
USCON	Ignored		Forced to "Y" if a minimum of one limit is "C" for this parameter else, forced to "N".	Set it to "Y" if consistency check exists, else set it to "N".	(3)
DECIM	Copy	PCF_DECIM	Copy	None	
PARVAL	Copy	PCF_PARVAL	Copy	None	
SUBSYS	Ignored (TBC)		with February 2006 HPSDB version 3.2, the field is automatically set to the subsystem number.	Set it to the subsystem number associated with the instrument.	(4)
VALPAR	Copy	Param value	Copy	G8 (Default value = "1")	

Field	Input processing	HPSDB	Output processing	Constraints	R.
STYPE	Ignored		Fixed to "Null"	Forced to "Null"	

(1) PCF_WIDTH is not used only VPD_OFFSET is used.
(2) This is due to commonality between TM and calibration curves.
(3) What's happen if there is a condition (in the worse case always false) associated to the limit ?
(4) Will be used in future HPSDB version (By default forced according to subsystem A=1 .. Z=26)
(5) NCR (evolution) to be written against HPSDB to set this field to Null in case of non discrete curve
(6) ESA to clarify what is the impact of PCF_CATEG = "T" on real time SCOS execution.
(7) Currently (V3.1.7) the PCF_PID is ignored, in version 3.1.9 it will be processed as presented
(8) Some additional couple (PTC, PFC) can have been allowed for failure test cases and for SCOE

5.2.2 Numerical calibration curves: CAF

Due to commonality with CCA (numerical de-calibration for TC parameters) some constraints on field has been "aligned" on the most restrictive one (short description, ….)

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBR	• S2K G2&G3 • CCS G2	Curve id NMCVT	• S2K G2&G3 • CCS G2	• G2&G3 • G2	
DESCR	Copy	Short desc Instantiation	Copy	24 characters & G13 & G16 & G17	
ENGFMT	Copy	Eng format	Copy	None	
RAWFMT	Copy	Raw format NMCVT	Copy	None	
RADIX	Copy	Raw radix	Copy	G8 (Default value "D" - as specified in cca.dat) & G6 & G14	
UNIT	Copy	Unit	Copy	G6 (AD1)	
NCURVE	Ignored		Calculated	Set it correctly	
INTER	• S2K: this field does not exist in MIB ICD 5.1 • CCS: Copy	PCF_INTER	• S2K: none • CCS: Copy	• S2K: None • CCS: G8 (default value = "F")	

5.2.3 Numerical calibration definition: CAP

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBR	• S2K G2&G3 • CCS G2	Curve id NMCVT	• S2K G2&G3 • CCS G2	• G2 and G3 • G2	
XVALS	Copy	Raw value	Copy	None	
YVALS	Copy	Eng value	Copy	None	

5.2.4 Textual calibration curves: TXF

Due to commonality with PAF (textual de-calibration for TC parameters) some constraints on field has been “aligned” on the most restrictive one.

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBR	• S2K G2&G3 • CCS G2	Curve id NMCVT	• S2K G2&G3 • CCS G2	• G2&G3 • G2	
DESCR	Copy	Short desc Instantiation	Copy	24 characters & G13 & G16 & G17	
RAWFMT	Copy	Raw format	Copy	None	
NALIAS	Ignored		Calculated	Set it correctly	

5.2.5 Textual calibration definition: TXP

When a textual curve can be addressed also by a TC parameter inside HPSDB “Low value” = “High value” and unique status.

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBR	• S2K G2&G3 • CCS G2	Curve id NMCVT	• S2K G2&G3 • CCS G2	• G2 and G3 • G2	
FROM	Copy	Low value	Copy	None	
TO	Copy	High value	Copy	None	
ALTXT	Copy	Status	Copy	G13	

5.2.6 Polynomial calibration curves: MCF

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBR	• S2K G2&G3 • CCS G2	Curve id NMCVT	• S2K G2&G3 • CCS G2	• G2&G3 • G2	
DESCR	Copy	Short desc Instantiation	Copy	24 characters & G13 & G16 & G17	
POL1	Copy	MCF_POL1	Copy	G8 (default value = “0”)	
POL2	Copy	MCF_POL2	Copy	G8 (default value = “0”)	
POL3	Copy	MCF_POL3	Copy	G8 (default value = “0”)	
POL3	Copy	MCF_POL4	Copy	G8 (default value = “0”)	
POL5	Copy	MCF_POL5	Copy	G8 (default value = “0”)	

5.2.7 Monitoring checks: OCF

As far as this table establish a 0,1 to one correspondence, inside HPSDB the above attributes are optional attributes of monitoring parameter.

Field	Input processing	HPSDB	Output processing	Constraints	R.
NAME	Copy	Param id NMCVT	Copy	G2	
NBCHECK	Copy	OCF_NBCHECK	Copy	None	
NBOOL	Ignored		Calculated	Set it correctly	
INTER	Copy	OCF_INTER	Copy	None	
CODIN	Ignored		Calculated	Set it correctly	(1)

(1) warning in case of polynomial or logarithmic (CCS only) calibration shall be set to “R”

5.2.8 Monitoring checks definition: OCP

As far as this table establishes a 0,1 to one correspondence, inside HPSDB the above attributes are optional attributes of monitoring parameter.

Field	Input processing	HPSDB	Output processing	Constraints	R.
NAME	Copy	Param id	Copy	G2	

Field	Input processing	HPSDB	Output processing	Constraints	R.
		NMCVT			
POS	Copy	OCP_POS	Copy	No gap allowed and starting from 1 for a parameter (TBC).	
TYPE	Copy	OCP_TYPE	Copy	S2K: Warning in case "E" (refer to (1))	
LVALU	Copy	OCP_LVALU	Copy	None	
HVALU	Copy	OCP_HVALU	Copy	None	
RLCHK	Copy	Param id NMCVT	Copy	G2	
VALPAR	Copy	OCP_VALPAR	Copy	G8 (default value = "1")	

(1) CCS: "E" (event) will generate automatic execution of a "danger test sequence".

5.2.9 Telemetry packet definition: PID

This table allows a n-n relation between TM packet (identified by: TYPE, STYPE, APID, PI1__VAL and PI2_VAL) and SCOS packet (identified by: SPID), HPSDB allows only a n-1 relation: one TM packet can be referenced in only one SCOS packet and a SCOS packet can be referenced by several TM packets (Note: AIT requires also to change this n-1 link to a 1-1 link an action is currently open on this point)

Consequently HPSDB implements in two separate tables (MMI):

- The TM packet definition (TM packet identifier are generated when loading MIB ICD via configuration files),
- The SCOS packet definition.

In addition the link between this table and the VPD table is a n-1 relation while HPSDB force a 1-1 relation.

Field	Input processing	HPSDB	Output processing	Constraints	R.
TYPE	Copy	PIC_TYPE	Copy	G6 (refer to RD1)	(4)
STYPE	Copy	PIC_STYPE	Copy	G6 (refer to RD1)	(4)
APID	Copy	PID_APID Instantiation	Copy	G6 & G16 (refer to RD1)	
PI1_VAL	Copy	PID_ID1_VAL	Copy	G8 (default value = "0")	
PI2_VAL	Copy	PID_ID2_VAL	Copy	G8 (default value = "0")	

Field	Input processing	HPSDB	Output processing	Constraints	R.
SPID	Copy	PID_SPID NMCVT	Copy	G2	
DESC	Copy	Short desc. Instantiation	Copy	G13 & G16 & G17	
UNIT	Ignored (TBC)		with February 2006 HPSDB version 3.2, the field is automatically set to the subsystem number.	Set it to the subsystem number associated with the instrument. (5)	(1)
TPSD	Ignored		Forced to SPID or –1 according to packet type	Set it to SPID in case of variable packet (refer to VPD table)	
DFHSIZE	Copy	PID_DFHSIZE	Copy	Default value is “16” Shall be the same for all TM source packets addressing the same SPID	
TIME	Ignored		Forced to “Y”	Set it to “Y”	
INTER	If INTER is null then periodic fl set to “N” and PID_INTER to null else copy of INTER in PID_INTER and periodic fl set to “Yes”	PID_INTER Periodic flag	If Periodic flag is null INTER is set to null else INTER is set with PID_INTER	None	
VALID	Ignored		Forced to “Y”	Only deliver valid PID definitions, as such, only “Y” can be used	(2)
CHECK	Copy		Copy	G8 (Default value is “1”)	(3)
EVENT	Copy	PID_EVENT	Copy	G8 (Default value is “N”)	
EVID	Copy	PID_EVID	Copy	None	

(1) will be used in future HPSDB evolution
(2) Ensure that a the TM packet / SCOS packet is a 1-n relation (each TM packet shall reference a unique SCOS packet)
(3) V3.1.9 (current implementation before V3.1.9: PID_CHECK is ignored and forced to « 1 »)
(4) Specific other values can be used for test purpose only (wrong: type, subtype)
(5) Anomaly to be corrected in HPSDB version 3.3.x (shall be a n attribute of TM source packet not of SPID)

5.2.10 Packet identification criteria: PIC

In order to support “smooth transition” this table shall be the same on all the SCOS and CCS system used on HP. As a consequence it has been defined in the generic part of HPSDB and all HP SCOS and CCS users have been required to implement this table inside their own system. This table is not loaded when ingesting SCOS or CCS bridge files. When generating bridge files the PIC table is generated from generic HPSDB data.

Field	Input processing	HPSDB	Output processing	Constraints	R.
TYPE	Ignored		From generic definition	Set according to HPSDB	
STYPE	Ignored		From generic definition	Set according to HPSDB	
PI1_OFF	Ignored		From generic definition	Set according to HPSDB	
PI_WID	Ignored		From generic definition	Set according to HPSDB	
PI2_OFF	Ignored		From generic definition	Set according to HPSDB	
PI2_WID	Ignored		From generic definition	Set according to HPSDB	

5.2.11 Telemetry packets characteristics: TPCF

Field	Input processing	HPSDB	Output processing	Constraints	R.
SPID	Copy	PID_SPID NMCVT	Copy	G2	
NAME	Copy	TPCF_NAME	Copy	Mandatory & G2	
SIZE	Copy	MaxPacketSize	Copy	None	

5.2.12 Parameter location in fixed packets: PLF

Refer to G7

Field	Input processing	HPSDB	Output processing	Constraints	R.
NAME	Copy	Param id NMCVT	Copy	G2	
SPID	Copy	PID_SPID NMCVT	Copy	G2	
OFFBY	Copy	PLF_OFFBY	Copy (1)	None	
OFFBI	Copy	PLF_OFFBI	Copy (1)	G8 (default value = “0”)	

Field	Input processing	HPSDB	Output processing	Constraints	R.
NBOCC	Copy	PLF_NBOCC	Copy (1)	G8 (default value = “1”)	
LGOCC	Copy	PLF_LGOCC	Copy (1)	G8 (default value according to parameter (PTC,PFC))	
TIME	Copy	PLF_TIME	Copy (1)	None	
TDOCC	Copy	PLF_TDOCC	Copy (1)	None	

(1) As there is no structure in input there is no structure in output.

5.2.13 Variable packet definition: VPD

Refer to G7

Field	Input processing	HPSDB	Output processing	Constraints	R.
TPSD	Ignored		Forced to SPID	Set it to SPID in case of variable packet	
POS	Ignored		Calculated	TBD for both fixed and variable packet	
NAME	Copy	Param id NMCVT	Copy	G2	
GRPSIZE	Ignored except the value: • If “Null” then forced to “0” • If > 0 then HPSDB will create a structure (OFFBY and OFFBI which will be set according to begin of structure)	Structure number of elements	Calculated from the number of parameter inside the structure	G7 Do not use Null value	
FIXREP	Copy	Nbr repet	Copy	G7	
CHOICE	Ignored		Forced to “N”	Set it to “N”	
PIDREF	Copy	VPD_PIDREF	Copy	G8 (default value = “N”)	
DISDESC	Copy	VPD_DISDESC	Copy	G13 & G16	
WIDTH	Copy	VPD_WIDTH	Copy	None	
JUSTFY	Copy	VPD_JUDTIFY	Copy	G8 (default value = “L”)	

Field	Input processing	HPSDB	Output processing	Constraints	R.
NEWLINE	Copy	VPD_NEWLINE	Copy	G8 (default value = “N”)	
DCHAR	Copy	VPD_DCHAR	Copy	G8 (default value = “0”)	(2)
FORM	Copy	VPD_FORM	Copy	G8 (default value = “N”)	
OFFSET	Parameter position is converted in absolute position from the previous parameter characteristics (position, PTC, PFC) and VPD_OFFSET	PLF_OFFBY PLF_OFFBI	Calculated from PLF_OFFBY and PLF_OFFBI	G8 (default value = “0”)	

(1) Can ESA clarify VPD_PIDREF and VPD_DCHAR
(2) Can ESA clarify processing of deduced parameters (in fixed and in variable packets)
(3) To be clarified with Order field of variable display

5.2.14 Alphanumeric displays: DPF

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBE	Copy	DPF_NUMBE NMCVT	Copy	G2	
TYPE	Copy	DPF_TYPE	Copy	None	
HEAD	Copy	DPF_HEAD	Copy	G13 & G16 & G17	

5.2.15 Alphanumeric displays definition: DPC

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBE	Copy	DPF_NUMBE NMCVT	Copy	G2	
NAME	Copy	DPC_NAME NMCVT	Copy	G2	
FLDN	Copy	DPC_FLDN	Copy	None	
COMM	Copy	DPC_COM	Copy	G8 (default value = “1”)	
MODE	Copy	DPC_MODE	Copy	G8 (default value = “Y”)	
FORM	Copy	DPC_FORM	Copy	G8 (default value = “N”)	

5.2.16 Graphic displays: GPF

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBE	Copy	GPF_NUMBE NMCVT	Copy	G2	
TYPE	Copy	GPF_TYPE	Copy	None	
HEAD	Copy	DPF_HEAD	Copy	G13 & G16 & G17	
SCROL	Copy	GPF_SCROL	Copy	G8 (default value = “N”)	
HCOPY	Copy	GPF_HCOPY	Copy	G8 (default value = “N”)	
DAYS	Copy	GPF_DAYS	Copy	None	
MINUT	Copy	GPF_MINUT	Copy	Set in the range [00..59] Real value forbidden	
AXCLR	Copy	GPF_AXCLR	Copy	None	
XTICK	Copy	GPF_XTICK	Copy	None	
YTICK	Copy	GPF_YTICK	Copy	None	
XGRID	Copy	GPF_XGRID	Copy	None	
YGRID	Copy	GPF_YGRID	Copy	None	
UPUN	Ignored	GPF_UPUN	Not generated	Set it to “NULL” (1)	

(1) NCR open on HPSDB to allow loading and generation (because it is supported inside the MMI and the data base)

5.2.17 Graphic displays definition: GPC

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBE	Copy	GPF_NUMBE NMCVT	Copy	G2	
POS	Copy	GPC_POS	Copy	[0..7] (1)	
WHERE	Copy	GPC_WHERE	Copy	None	
NAME	Copy	GPC_NAME NMCVT	Copy	G2	
RAW	Copy	GPC_RAW	Copy	G8 (default value = “U”)	
MINIM	Copy	GPC_MINIM	Copy	None	

Field	Input processing	HPSDB	Output processing	Constraints	R.
MAXIM	Copy	GPC_MAXIM	Copy	None	
PRCLR	Copy	GPC_PLCLR	Copy	None	
SYMBO	Copy	GPC_SYMBO	Copy	G8 (default value = “0”)	
LINE	Copy	GPC_LINE	Copy	G8 (default value = “0”)	

(1) NCR on HPSDB to allow range [0..9] – Very strange that a key is not used by SCOS and could be “Null”.

5.2.18 Scrolling displays: SPF

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBE	Copy	SPF_NUMBE NMCVT	Copy	G2	
HEAD	Copy	SPF_HEAD	Copy	G13 & G16	
NPAR	Ignored		Calculated	Set it correctly	
UPUN	Ignored	GPF_UPUN	Not generated	Set it to “NULL” (1)	

(1) NCR 264 open on HPSDB to allow loading and generation (because it is supported inside the MMI and the data base)

5.2.19 Scrolling displays definition: SPC

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBE	Copy	SPF_NUMBE NMCVT	Copy	G2	
POS	Copy	SPC_POS	Copy	None (1)	
NAME	Copy	SPC_NAME NMCVT	Copy	G2	
UPDT	Copy	SPC_UPDT	Copy	G8 (default value = “ ”)	
MODE	Copy	SPC_MODE	Copy	G8 (default value = “ ”)	
FORM	Copy	SPC_FORM	Copy	G8 (default value = “N”)	
BACK	Copy	SPC_BACK	Copy	G8 (default value = “0”)	
FORE	Copy	SPC_FORE	Copy	None	

(1) NCR to written on HPSDB – to control the range [1..9] with 5 records max.

5.2.20 Printout proforma: PPF

This file are not loaded

Constraint: PPF shall not be present.

5.2.21 Printout proforma definition: PPC

This file are not loaded

Constraint: PPC shall not be present.

5.3 Commanding data

5.3.1 Packet header characteristics: TCP

Field	Input processing	HPSDB	Output processing	Constraints	R.
TCP_ID	Ignored		From generic data	G12 - Set according to generic data	
DESC	Ignored		From generic data	G12 - Set according to generic data	

(1) two other TC packet header are defined but normally not used by instruments:
   a. One without data field header (not processed by software)
   b. No header at all (for TC decoder: segment or frame)

5.3.2 Packet header parameter: PCPC

Field	Input processing	HPSDB	Output processing	Constraints	R.
NAME	Ignored		From generic data	G12 - Set according to generic data	

Field	Input processing	HPSDB	Output processing	Constraints	R.
DESC	Ignored		From generic data	G12 - Set according to generic data	
CODE	Ignored		From generic data	G12 - Set according to generic data	

5.3.3 Packet headers definition: PCDF

Field	Input processing	HPSDB	Output processing	Constraints	R.
TCNAME	Ignored		From generic data	G12 - Set to “GX000000“	
DESC	Ignored		From generic data	G12 - Set according to generic data	
TYPE	Ignored		From generic data	G12 - Set according to generic data	
LEN	Ignored		From generic data	G12 - Set according to generic data	
BIT	Ignored		From generic data	G12 - Set according to generic data	
PNAME	Ignored		From generic data	G12 - Set according to generic data	
Value	Ignored		From generic data	G12 - Set according to generic data	
Radix	Ignored		From generic data	G12 - Set according to generic data	

5.3.4 Command characteristics: CCF

Field	Input processing	HPSDB	Output processing	Constraints	R.
CNAME	Copy	TCPK id NMCVT	Copy	G2	
DESCR	Copy	Short desc	Copy	G13 & G16 & G17	

Field	Input processing	HPSDB	Output processing	Constraints	R.
		Instantiated			
DESCR2	Copy	Long desc	Copy	G13	
CTYPE	Copy (if CTYPE is "null" CCF_CTYPE is set to "N")	CCF_CTYPE	Copy (If CCF_TYPE is "N" then CTYPE is set to "null")	None	
CRITICAL	Copy	CCF_CRITICAL	Copy	G8 (default value = "N")	(1)
PKTID	Copy	TCPK header	Copy	Shall refer to a HPSDB generic TC header	
TYPE	Copy	CCF_TYPE	Copy	G6	
STYPE	Copy	CCF_STYPE	Copy	G6	
APID	Copy	CCF_APID	Copy	G6 & G16	
NPARS	Ignored		Automatically calculated	Set it correctly	
PLAN	Copy	CCF_PLAN	Copy	G8 (default value = "N")	
EXEC	Copy	CCF_EXEC	Copy	G8 (default value = "Y")	
ILSCOPE	Copy	CCF_ILSCOPE	Copy	G8 (default value = "N")	
ILSTAGE	Copy	CCF_ILSTAGE	Copy	G8 (default value = "C")	
SUBSYS	Ignored		Forced according to subsystem letter type: "01" for "A" … "26" for "Z"	Set it accordingly	(2)
HIPRI	Ignored		Calculated from • "Y" if CCF_PKTID = "GX002000" • "N" if CCF_PKTID # "GX002000"	Set it accordingly	(3)
MAPID	Copy	CCF_MAPID	Copy	G6	(4) (5)
DEFSET	Copy	CCF_DEFSET NMCVT	Copy	G2	
RAPID	Copy	CCF_RAPID	Copy	G6	
ACK	Split in four fileds	CCF_ACK acep CCF_ACK_strt	Calculated	None	

Field	Input processing	HPSDB	Output processing	Constraints	R.
		CCF_ACK_prog CCF_ACK_comp			

(1) At CCS level that mean the TC shall be first armed before sending it.
(2) Will be modified in future HPSDB evolution
(3) Changes are expected:
    a. ESA to clarify the meaning of this field
    b. The current calculation id no more in line with PSICD 5.0 (some HP command can be issued by S/W)
    c. The current implementation is no more in line with specification
(4) Not used by CCS – How is it used by MCS: ESA to clarify
(5) Can be "0" (High priority), "1" (normal computer", "2" (redundant computer), "5" (reset CROME), "6" (TC only mode) and "32" (TBC)

5.3.5 Command routing: DST

This file is not loaded

Constraint: TBW (open action)

5.3.6 Command parameters: CPC

Field	Input processing	HPSDB	Output processing	Constraints	R.
PNAME	Copy	Param id NMCVT	Copy	G2	
DESCR	Copy	Short desc Instantiated	Copy	G13 & G16 & G17	
PTC	Copy	PTC	Copy	G6 (refer to RD1)	(1)
PFC	Copy	PFC	Copy	G6 (refer to RD1)	(1)
DISFMT	Ignored		Calculated according to MIB ICD description excerpt in case none of the condition are satisfied then	Set it correctly	

Field	Input processing	HPSDB	Output processing	Constraints	R.
			set according to PTC		
RADIX	Copy	CPC_RADIX	Copy	G14	
UNIT	Copy	Units	Copy	G6 (refer to AD1)	
CATEG	Copy	CPC_CATEG	Copy	G8	
PRFREF	• S2K G2&G5 • CCS G2	CPC_PRFREF NMCVT	• S2K G2&G5 • CCS G2	• G2&G5 • G2	
CCAREF	• S2K G2&G3 • CCS G2	Def curve NMCVT	• S2K G2&G3 • CCS G2	• G2&G3 • G2	
PAFREF	• S2K G2&G3 • CCS G2	Def curve NMCVT	• S2K G2&G3 • CCS G2	• G2&G3 • G2	
INTER	Copy	CPC_INTER	Copy	G8	
DEFVAL	Copy	Def value	Copy		

(1) some specific couple (PTC, PFC) could have been added for test purpose (error case, SCOE)

5.3.7 Command definition: CDF

Field	Input processing	HPSDB	Output processing	Constraints	R.
CNAME	Copy	TCPK id NMCVT	Copy	G2	
ELTYPE	Copy	TYPE	Copy	None	(1)
DESC	Copy	Short desc Instantiated	Copy	G13 & G16 From HPSDB version 3.2, the desc for parameter is a copy of CPC parameter desc.	(2)
ELLEN	• Copy for fixed area • Ignore for parameters	CDF_ELLEN	• Copy for fixed area • Calculated for parameter (from CPC_PTC, CPC_PFC)	• None for fixed area • Set it correctly according to CPC related PTC/PFC	
BIT	Converted in OFFBY and OFFBI	Offset byte Offset bit	Converted in CDF_BIT	No gap and no overlapping	(3)
GRPSIZE	Ignored except the value: • If “0” or Null then forced	Structure number of	Calculated from the number of parameter inside the structure	Do not use Null value	

Field	Input processing	HPSDB	Output processing	Constraints	R.
	to "0" • If >0 then HPSDB will create a structure (OFFBY and OFFBI will be then set according to begin of structure)	elements			
PNAME	Copy	PStr/param id NMCVT	Copy	G2	
INTER	Copy	CDF_INTER	Copy	G6 and G8	
VALUE	Copy	CDF_VALUE	Copy	None	
TMID	Copy	CDF_TMID NMCVT	Copy	G2	

(1) Because HPSDB managed: fixed area, parameter and structure only parameter can be editable or not.
(2) In a future version of HPSDB (V3.1.9) the DESC in case of parameter will be filled by a copy of the parameter description as consequence the constraints will be reversed
(3) Control not yet implemented inside HPSDB

5.3.8 Command pre-transmission validation: PTV

Field	Input processing	HPSDB	Output processing	Constraints	R.
CNAME	Copy	TCPK id NMCVT	Copy	G2	
PARNAM	Copy	PTV_PARNAM NMCVT	Copy	G2	
INTER	Copy	PTV_INTER	Copy	G6	
PTV_VAL	Copy	PTV_VAL	Copy	None	

5.3.9 Command sequence characteristics: CSF

Not supported by CCS.

Constraints: do not use

Note: HPSDB will support the loading in order to interface with MOIS for operations

5.3.10 Command sequence definition: CSS

Not supported by CCS.

Constraints: do not use

Note: HPSDB will support the loading in order to interface with MOIS for operations

5.3.11 Command sequence element parameters: SDF

Not supported by CCS.

Constraints: do not use

Note: HPSDB will support the loading in order to interface with MOIS for operations

5.3.12 Command sequence formal parameters: CSP

To be written

Note: HPSDB will support the loading in order to interface with MOIS for operations

5.3.13 Verification stage file: CVS

Field	Input processing	HPSDB	Output processing	Constraints	R.

Field	Input processing	HPSDB	Output processing	Constraints	R.
ID	• S2K: G2 & G4 • CCS: G2	CVS_ID NMCVT	• S2K: G2 & G4 • CCS: G2	• G2 & G4 • G2	
TYPE	Copy	CVS_TYPE	Copy	None	
SOURCE	Copy	CVS_SOURCE	Copy	None	
START	Copy	CVS_START	Copy	None	
INTERVAL	Copy	CVS_INTERVAL	Copy	None	
SPID	Ignored		Forced to “Null”	Forced to “Null”	

5.3.14 Verification expressions: CVE

Field	Input processing	HPSDB	Output processing	Constraints	R.
CVSID	• S2K: G2 & G4 • CCS: G2	CVS_ID NMCVT	• S2K: G2 & G4 • CCS: G2	• G2 & G4 • G2	
PARNAM	Copy	CVE_PARNAM	Copy	G2	
INTER	Copy	CVE_INTER	Copy	G16	
VAL	• Value • Command parameter id	• Value • Cmd param	• Value • Value	None	
TOL	Copy	CVE_TOL	Copy	None	
CHECK	Copy	CVE_CHECK	Copy	G16 & G8	

5.3.15 Verification profiles: CVP

Field	Input processing	HPSDB	Output processing	Constraints	R.
TASK	Association with TC	List of command verification associated to a TC	Generated from referenced TC	G2	
TYPE	Ignored		Forced to “C”	Set it to “C”	

Field	Input processing	HPSDB	Output processing	Constraints	R.
CVSID	Ignored	List of command verification associated to a TC	Generated from Command verification stage identified in the list	G2	

5.3.16 Parameter sets: PST

Not supported by CCS.

Constraints: do not use

Note: HPSDB supports the loading

5.3.17 Parameter value sets: PSV

Not supported by CCS.

Constraints: do not use

Note: HPSDB supports the loading

5.3.18 Parameter sets definition: CPS

Not supported by CCS.

Constraints: do not use

Note: HPSDB supports the loading

5.3.19 Parameter value sets definition: PVS

Not supported by CCS.

Constraints: do not use

Note: HPSDB supports the loading

5.3.20 Parameter sets: PSM

Not supported by CCS.

Constraints: do not use

Note: HPSDB supports the loading

5.3.21 Numerical (de-)calibration curves: CCA

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBR	• S2K: G2 & G3 • CCS: G2	Curve id NMCVT	• S2K: G2 & G3 • CCS: G2	• G2 & G3 • G2	
DESCR	Copy	Short desc Instantiation	Copy	G13 & G16 & G17	
ENGFMT	Copy	Eng format	Copy	G6	
RAWFMT	Copy	Raw format	Copy	G6	
RADIX	Copy	Raw radix	Copy	G6 & G14	
UNIT	Copy	Unit	Copy	G6	
NCURVE	Ignored		Calculated	Set it correctly	

5.3.22 Numerical (de-)calibration curves definition: CCS

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBR	• S2K: G2 & G3 • CCS: G2	Curve id NMCVT	• S2K: G2 & G3 • CCS: G2	• G2 & G3 • G2	
XVALS	Copy	Eng value	Copy	Char(14)	
YVALS	Copy	Raw value	Copy	Char(14)	

5.3.23 Textual (de-)calibration: PAF

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBR	• S2K: G2 & G3 • CCS: G2	Curve id NMCVT	• S2K: G2 & G3 • CCS: G2	• G2 & G3 • G2	
DESCR	Copy	Short desc Instantiation	Copy	G13 & G16 & G17	
RAWFMT	Copy	Raw format	Copy	G6	
NALIAS	Ignored		Calculated	Set it correctly	

5.3.24 textual (de-)calibration definition: PAS

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBR	• S2K: G2 & G3 • CCS: G2	Curve id NMCVT	• S2K: G2 & G3 • CCS: G2	• G2 & G3 • G2	
ALTXT	Copy	Status	Copy	Char(14)	
ALVAL	Copy	Raw value	Copy	Char(14)	

5.3.25 Parameter range sets: PRF

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBR	• S2K: G2 & G5	PRF_NUMBR	• S2K: G2 & G5	• G2 & G5	

Field	Input processing	HPSDB	Output processing	Constraints	R.
	• CCS: G2	NMCVT	• CCS: G2	• G2	
DESCR	Copy	Short desc Instantiation	Copy	Mandatory & G13 & G16 & G17	
INTER	Copy	PRF_INTER	Copy	G6	
DSPFMT	Copy	PRF_DSPFMT	Copy	G6	
RADIX	Copy	PRF_RADIX	Copy	G6 & G14	
NRANGE	Ignored		Calculated	Set it correctly	
UNIT	Copy	PRF_UNIT	Copy	G6	

5.3.26 Parameter range values: PRV

Field	Input processing	HPSDB	Output processing	Constraints	R.
NUMBR	• S2K: G2 & G5 • CCS: G2	PRF_NUMBR NMCVT	• S2K: G2 & G5 • CCS: G2	• G2 & G5 • G2	
MINVAL	Copy	PRV_MINVAL	Copy	None	
MAXVAL	Copy	PRV_MAXVAL	Copy	None	

5.4 Specific CCS data

5.4.1 Conditional calibration curve: CUR

Field	Input processing	HPSDB	Output processing	Constraints	R.
NAME		List of curves associated to a parameter		G2	
POS	Copy	CUR_POS	Copy	None	
RLCHK	Copy	CUR_RLCHK	Copy	G2	

Field	Input processing	HPSDB	Output processing	Constraints	R.
VALPAR	Copy	CUR_VALPAR	Copy	None	
SELECT	Copy	CUR_SELECT	Copy	G2	

5.4.2 Group: GRP

Field	Input processing	HPSDB	Output processing	Constraints	R.
NAME	Copy in different tables according to GTYPE	TMGR id PAGR id	According to tables	G2	
DESCR	Copy in different tables according to GTYPE	GRP_DESC	According to tables	G13 & G16	
GTYPE	Use to route above attributes to the correct tables		According to tables		

5.4.3 Parameter Group: GRPA

Field	Input processing	HPSDB	Output processing	Constraints	R.
GNAME	Copy	PAGR id	Copy	G2	
PANAME	Copy	Param/PAGR Id	Copy	G2 & All parameters shall be of the same type	

5.4.4 SCOS packet Group: GRPK

Field	Input processing	HPSDB	Output processing	Constraints	R.
GNAME	Copy	TMGR id	Copy	G2	
PANAME	Copy	SPID/TMGR Id	Copy	G2	

5.4.5 SCOE definition: SCO

Field	Input processing	HPSDB	Output processing	Constraints	R.
NAME	Copy	Real element identifier	Copy	G2	
HOST	Copy	SCO_HOST	Copy	None	
Port	Copy	SCO_PORT	Copy	Copy	

5.4.6 TC distribution: TCD

Field	Input processing	HPSDB	Output processing	Constraints	R.
APID	Ignored	Parametrisation table	Generated from Parametrisation table	G6	
DNAME	Ignored	Poarametrisation table	Generated from Parametrisation table	G2 (real element)	

5.4.7 TM distribution: TMD

Field	Input processing	HPSDB	Output processing	Constraints	R.
SPID	Ignored	Parametrisation table	Generated from Parametrisation table	G2	
DNAME	Ignored	Parametrisation table	Generated from Parametrisation table	G2 (real element)	

5.4.8 Logarithmic curve: LGF

Field	Input processing	HPSDB	Output processing	Constraints	R.
IDENT	Copy	Curve id NMCVT	Copy	G2	
DESCR	Copy	Short desc	Copy	Char(24) & G13 & G16 & G17	

Field	Input processing	HPSDB	Output processing	Constraints	R.
		Instantiation			
POL1	Copy	LGF_POL1	Copy	None	
POL2	Copy	LGF_POL2	Copy	None	
POL3	Copy	LGF_POL3	Copy	None	
POL4	Copy	LGF_POL4	Copy	None	
POL5	Copy	LGF_POL5	Copy	None	

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