From: Felix.Chatte@space.alcatel.fr
Sent: 12 April 2002 17:53
To: ohb@mpe.mpg.de; pacs@mpe.mpg.de; k.j.king@rl.ac.uk; j.a.long@rl.ac.uk; c.k.wafelbaker@sron.nl; hifi-prof@sron.nl; charra@ias.u-psud.fr; valerie.demuy@ias.u-psud.fr; butler@tesre.bo.cnr.it; taddei@tesre.bo.cnr.it
Cc: Bernard.Collaudin@space.alcatel.fr; gerald.crone@esa.int; serge.valera@esa.int; Patrice.Couzin@space.alcatel.fr; Corinne.Torregrossa@support-externe.space.alcatel.fr
Subject: Answer to intruments comments about Naming convention


Mac Word 3.0


Mac Word 3.0


Mac Word 3.0


Mac Word 3.0

Hello every body,

Please find enclosed the ASPI comments to the examples you have provided for the application of the "naming convention" to your experiment.

These new ASPI comments are in line with the new issue of the "naming convention" (H-P-1-ASPI-SP-141 issue 01/01 dated 31/03/02).

I recommend you to have a look over all these four answers some explanation / clarification being not repeated.

(See attached file: ph-naming-convention-d1r0.doc)(See attached file: NOT001155 SPIRE MIB Naming Convention.doc)(See attached file: PACS_Naming_Convention.doc) (See attached file: hifi_naming_ conventions.doc)

In case of any question do not hesitate to contact me, extension 6737.

Best regards.
Félix Chatte.

ALCATEL SPACE INDUSTRIES

By : Luc Dubbeldam
Date : 13 February 2002

Re : Naming conventions

This is a summary of the Naming conventions specification. (H-P-1-ASPI-SP-0141)

The database that we have to generate contains: Monitor and Command packets, Monitor and Command parameters plus the corresponding calibrations.

To indicate that an item belongs to HIFI its name starts with H.

The following names can be used:

Item	**scos-name**	**Name**	**Convention**	**ASPI comments**
Command parameter	cpc_pname	HPnnnppp	5130	OK
Monitor parameter	pcf_name	HMnnnppp	5130	OK
Command packet	ccf_cname	HCnnnppp	4580	OK
Monitor packet	pid_spid	08nnnnppp~~t ttnnnnppp~~	4380	(1)
Command num calibration	cca_numbr	~~tttnnnppp~~	~~5370~~	(2)
Command txt calibration	paf_numbr	~~tttnnnppp~~	~~5370~~	(2)
Monitor num calibration	caf_numbr	~~tttnnnppp~~	~~5370~~	(2)
Monitor txt calibration	txf_numbr	~~tttnnnppp~~	~~5370~~	(2)
Polynomial calibration	mcf_ident~~numbr~~	~~tttnnnppp~~	~~5370~~	(2)
Numerical display	and	HAnnnppp	6150~~6100~~	OK
Graphical display	grd	HGnnnppp	6150~~6110~~	OK
Scrolling display	srd	HLnnnppp	6150~~6130~~	OK

(1) Due to an error in previous issue and due to PACS needs, has been changed

(2) If you are using a SCOS-2000 version supporting only calibration identifier coded as Number(4), please code any curve reference under Number(3) format unique for all your curves (maximum number of curves is 1000) - If you are using a SCOS-2000 version supporting calibration identifier coded over as Char(10) please code the common curves (shared by several parameters) according to 5370 ("289 nnn") and the specific curve (associated to one and only one parameter) according to 5375 ("HP xxx ppp cc" for command parameter or "HM xxx ppp cc" for monitoring parameter)

~~?~~ ttt is a number in the range [190-237] U [238]~~239~~

- nnn is a running number 000-999 OK (For some identifiers could be also ASCII characters)
- nnnn is a running number 0000-9999
- ppp is a number in the range [190-237] U [238]~~239~~

The naming convention distinguishes between theoretical and real identifiers. For example: a parameter has a theoretical calibration curve. As soon as a calibration curve corresponds to a physical model it get a position assigned and it becomes a real calibration curve.

Not exactly (but there are still "abusive" utilisations of the word "real" in what concern identifiers at theoretical model level in the documentation) :
HPSDB supports two levels of definition :
. "element" level (box, software, …)
. "model" level (Herschel PFM, Planck PFM, AVM, …)
Note : there is no subsystem level (it is embedded inside the model level)
In addition for each level there are :
. "Theoretical" definition,
. "Real" definition.
Except curves identifiers, all the other identifiers defined at element level are instanciated (with subsystem identifier and position) as soon as they belong to an instance of the element which is allocated to a subsystem and a position inside a model.

As far as some items (packets, parameters (typically derived parameters), …) cannot be defined at element level, they will be enter at model level. If those items can be attached to a subsystem the identifier will be such that it will refer to the subsystem and the position will be a "pseudo position" allocated to the subsystem. If those items cannot be attached to a subsystem then the identifier will be such that it will refer to a "pseudo subsystem" and a "pseudo system position".

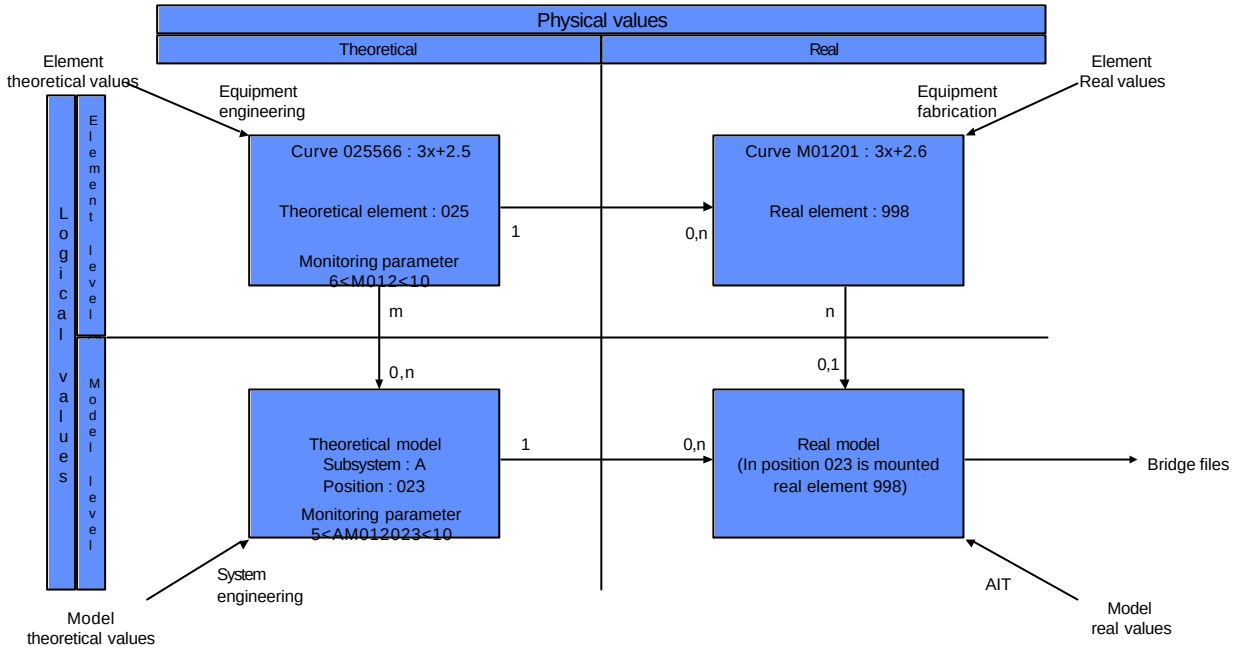
In order to support some "deltas" between "theoretical" definition and "real" definition, it is possible to enter data (associated to the deltas) directly at "real" level. This facility is known as "direct definition" and shall be used with moderation.

The curve identifier does not follow the above rules.

At theoretical level (element or model) curves are defined such that they can be addressed by several parameters.

At real level (element or model), the curve identifier is instanciated according to the following rule (understood that a real curve can be attached to one and only one parameter) : the curve identifier is equal to the parameter identifier addressing this curve (and due to conditional calibration with a condition number : AIT need currently not supported by SCOS-2000).

In addition "generic" curves have been specified (and are system responsibility) in order to make homogeneous some classical conversions ("ON"/"OFF", "OPEN"/"CLOSE", 5V conversion, …)



We have to assign a position identifier to each subsystem. For example:

Subsystem		**AVM**	**QM**	**FM**
Unknown or still theoretical	190.			
OBS		191.	192.	193.
ICU main		194.	195.	196.
ICU redundant		197.	198.	199.
FCU main			200.	201.
FCU redundant			202.	203.
HRS FM			204.	205.
WBS FM			206.	207.

In order to get the same test sequences, displays, … (the logical identifiers will be the same) for the different models we recommand you to apply the following implementation:

Subsystem		**AVM**	**QM**	**FM**
Unknown or still theoretical	190			
OBS		191	191	191
ICU main		192	192	192
ICU redundant		193	193	193
FCU main			194	194
FCU redundant			195	195
HRS FM			196	196
WBS FM			197	197

1. INTRODUCTION

This note takes the Naming Convention Specification (H-P-1-ASPI-SP-0141) for the Herschel/Planck satellites' database and applies it to the SPIRE instrument to provide a recommended naming convention for the SPIRE Mission Implementation Base (MIB).

The SPIRE MIB contains Monitor and Command packets, Monitor and Command parameters plus the corresponding calibration curves and displays.

The following naming convention shall be used:

Item	**scos-name**	Name	Convention	ASPI comments
Command parameter	cpc_pname	**SP**innppp	5130	OK
Monitor parameter	pcf_name	**SM**innppp	5130	OK
Command packet	ccf_cname	**SC**innppp	4580	OK
Monitor packet	pid_spid	19nnnnppp~~tt tnnnnppp~~	4380	(1)
Command num calibration	cca_numbr	~~tttnnnrrr~~	~~5370~~	(2)
Command txt calibration	paf_numbr	~~tttnnnrrr~~	~~5370~~	(2)
Monitor num calibration	caf_numbr	~~tttnnnrrr~~	~~5370~~	(2)
Monitor txt calibration	txf_numbr	~~tttnnnrrr~~	~~5370~~	(2)
Polynomial calibration	mcf_ident~~numbr~~	~~tttnnnrrr~~	~~5370~~	(2)
Numerical display	and	**SA**innppp	6150~~6100~~	OK
Graphical display	grd	**SG**innppp	6150~~6110~~	OK
Scrolling display	srd	**SL**innppp	6150~~6130~~	OK

(*) ASPI SCOS mnemo are issued from issue 5.0 of SCOS-2000 database import ICD.

(1) Due to an error in previous issue and due to PACS needs, has been changed

(2) If you are using a SCOS-2000 version supporting only calibration identifier coded as Number(4), please code any curve reference under Number(3) format unique for all your curves (maximum number of curves is 1000) - If you are using a SCOS-2000 version supporting calibration identifier coded over as Char(10) please code the common curves (shared by several parameters) according to 5370 ("289 nnn") and the specific curve (associated to one and only one parameter) according to 5375 ("HP xxx ppp cc" for command parameter or "HM xxx ppp cc" for monitoring parameter)

Where:

- i is the System Element ID (see section 2.1)
- nn, nnn and nnnn are running numbers starting at zero and incrementing (warning : this limits the number of command parameter, monitor parameter and command packet to 99 per system element ID. The naming convention allows for some identifiers "nn" to be 2 alphanumerics)
- ttt is the System Element number (see section 2.1)
- rrr is the Real Element number (see section 2.3)
- ppp is the Position Identifier (see section 2.2)

2. IDENTIFIERS

Identifiers are defined in the Naming Convention Specification with SPIRE allocated particular numbers and characters for the various fields. This section defines how these are used in the SPIRE naming convention.

2.1 System Elements

Each distinct type of subsystem in the instrument (called a System Element Type) is assigned a unique id and number:

System Element Type	ID	ASPI comments	Number
OBS	B	OK	480
DPU	P	OK	490
DCU	D	OK	500
MCU	M	OK	510
SCU	S	OK	520

2.2 Position Identifiers

Each model of the instrument (including a 'theoretical' model) is composed of a set of System Elements. This may include more than one System Element of any given type. Each distinct System Element for each instrument model is assigned a unique number. This unique number is also used as the Position Identifier.

	Model				
System Element	Theoretical	AVM	QM	FM	FS
OBS	480	481	483	485	487
DPU	490	491[1] 492[2]	493[1] 494[2]	495[1] 496[2]	497[1] 498[2]
DCU	500	501	503	505	507
MCU	510	511	513	515	517
SCU	520	521	523	525	527

ASPI suggest the following implementation (refer to answer to ASPI comments to HIFI summary) :

	Model				
System Element	Theoretical	AVM	QM	FM	FS
OBS	480	480	480	480	480
DPU	490	490[1] 491[2]	490[1] 491[2]	490[1] 491[2]	490[1] 491[2]
DCU	500	500	500	500	500
MCU	510	510	510	510	510
SCU	520	520	520	520	520

The "theoretical" position identifier is not needed.

1. Valid for prime element
2. Valid for redundant element

2.3 Real Element Numbers

These numbers identify individual configurations of each System Element (there may be more than one configuration if, for example, electronic boards have to be exchanged during testing). The table below gives the Real Element Number for the first configuration of the System Element. They should be incremented by 1 for each new configuration.

	Model			
System Element	AVM	QM	FM	FS
OBS	100	300	500	700
DPU	100[1] 200[2]	300[1] 400[2]	500[1] 600[2]	700[1] 800[2]
DCU	100	300	500	700
MCU	100	300	500	700
SCU	100	300	500	700

1. Valid for prime element
2. Valid for redundant element

OK

1 Introduction

This note takes the Naming Convention Specification (H-P-1-ASPI-SP-0141) for the Herschel/Planck satellites' database and applies it to the PACS instrument to provide a recommended naming convention for the PACS Mission Implementation Base (MIB).

The PACS MIB contains Monitor and Command packets, Monitor and Command parameters plus the corresponding calibration curves and displays.

The following naming convention shall be used:

Item	**scos-name**	Name	Convention	ASPI comments
Command parameter	cpc_pname	**PP**nnnppp	5130	OK
Monitor parameter	pcf_name	**PM**nnnppp	5130	OK
Command packet	ccf_cname	**PC**nnnppp	4580	OK
Monitor packet	pid_spid	~~tt~~16nnnnpp	4380	(1)
Command num calibration	cca_numbr	~~tttnnnrrr~~	~~5370~~	(2)
Command txt calibration	paf_numbr	~~tttnnnrrr~~	~~5370~~	(2)
Monitor num calibration	caf_numbr	~~tttnnnrrr~~	~~5370~~	(2)
Monitor txt calibration	txf_numbr	~~tttnnnrrr~~	~~5370~~	(2)
Polynomial calibration	mcf_ident	~~tttnnnrrr~~	~~5370~~	(2)
Numerical display	dpf_numbe	**PA**nnnppp	~~6100~~6150	OK
Graphical display	gpf_numbe	**PG**nnnppp	~~6110~~6150	OK
Scrolling display	spf_numbe	**PL**nnnppp	~~6130~~6150	OK

(1) Due to an error in previous issue and due to PACS needs, has been changed

(2) If you are using a SCOS-2000 version supporting only calibration identifier coded as Number(4), please code any curve reference under Number(3) format unique for all your curves (maximum number of curves is 1000) - If you are using a SCOS-2000 version supporting calibration identifier coded over as Char(10) please code the common curves (shared by several parameters) according to 5370 ("289 nnn") and the specific curve (associated to one and only one parameter) according to 5375 ("HP xxx ppp cc" for command parameter or "HM xxx ppp cc" for monitoring parameter)

Where:

- nnn and nnnn are running numbers starting at zero and incrementing
- ttt is the System Element number, for PACS it is a number in the range 380-429 (see section 2.1)
- ppp is the Position Identifier number, for PACS is a number in the range [380-427] U [428] ~~429~~ (see section 0)
- rrr is the Real Element number (see section 2.3)

2 Identifiers

Identifiers are defined in the Naming Convention Specification with PACS allocated particular numbers and characters for the various fields. This section defines how these are used in the PACS naming convention.

2.1 System Elements

Each distinct type of subsystem in the instrument (called a System Element Type) is assigned a unique number:

System Element Type	Number	ASPI comments
DPU	380	OK
SPUL	390	OK
SPUS	400	OK
BOL	410	OK
DMC	420	OK

2.2 Position Identifiers

Each model of the instrument (including a 'theoretical' model) is composed of a set of System Elements. This may include more than one System Element of any given type. Each distinct System Element for each instrument model is assigned a unique number. This unique number is also used as the Position Identifier.

	Model				
System Element	Theoretical	AVM	QM	FM	FS
DPU nominal	380	380	380	380	380
DPU redundant			381	381	381
SPUL nominal	390	390	390	390	390
SPUL redundant			391	391	391
SPUS nominal	400	400	400	400	400
SPUS redundant		401	401	401	401
BOL	410	410	410	410	410
DMC	420	420	420	420	420

ASPI comments : OK

2.3 Real Element Numbers

This numbers identify the real ~~System~~ Element.

	Model			
System Element	AV M	QM	FM	FS
DPU	380	380	380	380
SPUL	390	390	390	390
SPUS	400	400	400	400
BOL	410	410	410	410
DMC	420	420	420	420

ASPI comments :
No - There is not any constraints on the real element number (except its limitation over 3 numerical digits [000-999]) but for a same "subsystem" for you ("real element" for ASPI the number shall be differents (one to one correspondance with serial number). The ASPI proposal is :

	Model			
System Element	AV M	QM	FM	FS
DPU	380	381	382	383
SPUL	380	381	382	383
SPUS	380	381	382	383
BOL	380	381	382	383
DMC	380	381	382	383

the following implementation is also valid :

	Model			
System Element	AV M	QM	FM	FS
DPU	0	1	2	3
SPUL	4	5	6	7
SPUS	8	9	10	11
BOL	12	13	14	15
DMC	16	17	18	19

the following implementation is also valid :

	Model			
System Element	AV M	QM	FM	FS
DPU	0	1	2	3
SPUL	0	1	2	3
SPUS	0	1	2	3
BOL	0	1	2	3

DMC	0	1	2	3

1. INTRODUCTION

This document show how the naming conventions (H-P-1-ASPI-SP-0141) specified by ASPI can be applied to the Planck/HFI for a subset of items.
The following table indicates how to format the SCOS name.

Item	scos-name	Name	Convention	ASPI
Command parameter name	CPC_PNAME	HP xxx ppp	5130	OK
Monitor parameter name	PCF_NAME	HM xxx ppp	5130	OK
TC packet identifier	CCF_CNAME	HC xxx ppp	4580	OK
TM packet number	PID_SPID	ttt08 nnnn ppp	4380	(1)
Command num calibration	CCA_NUMBR	ttt nnn rrr	5370	(2)
Command txt calibration	PAF_NUMBR	ttt nnn rrr	5370	(2)
Monitor num calibration	CAF_NUMBR	ttt nnn rrr	5370	(2)
Monitor txt calibration	TXF_NUMBR	ttt nnn rrr	5370	(2)
Polynomial calibration	MCF_IDENTNUMBR	ttt nnn rrr	5370	(2)
Numerical display	DPF_NUMBE	HA nnn ppp	6100	OK
Graphical display	GPF_NUMBE	HG nnn ppp	6110	OK
Scrolling display	SCF_NUMBE	HL nnn ppp	6130	OK
TM Parameter Identifier	PCF_PID	0 - 65535	7800??	OK
Monitoring text curve id	TXF_NUMBR	ttt nnn nnn	5370	(2)
Monitor packet identifier variable length	PID_TPSD	ttt08 nnnn ppp	4380	(1)
TC packet header	TCP_ID	HXTCPS aa bb	4505	OK (3)
TC packet header parameter	PCPC_PNAME	HY xxx ppp	5130	OK (3)
Command Sequence	CSF_NAME	HS xxx ppp	4660	OK
Command sequence formal parameter	CSP_FNAME	HF xxx ppp...	4074	
Verification stage identifier	CVS_ID	00001 – 02999		OK
Command parameter set	PST_NAME	HT xxx ppp...	5215	
Command parameter set value	PSV_PVSID	HVxxx ppp...	5225	
Command textual curve	PAF_NUMBR	ttt nnn nnn	5370	(2)

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ttt is a number in the range [240-287] U [289]~~289~~ type of system element for HFI
aa service type of the TC
bb service sub-type of the TC
nnn is a running number 000-999
nnnn is a running number 0000-9999
rrr real element
ppp is a number in the range [240-287] U [289] position allocation for HFI
xxx is in the range (0-9) and (A-Z but not O,Q,I)
cc is the condition number (for conditioned calibration curve) - If not supported by your SCOS-2000 version to be forced to "00".

1.1 System Element (ttt)

Subsystem	Number	ASPI
OBSW	240	OK
DPU	250	OK
4KDCE	260	OK
DCE	270	OK
REU	280	OK

1.2 Position Identifier (ppp)

Subsystem	Theoretical	CQM	PFM	FS	ASPI
OBSW	240				OK
DPU prime	250	250	250	250	OK
DPU redundant			251		OK
4KDCE	260	260	260	260	OK
DCE	270	270	270	270	OK
REU prime	280	280	280	280	OK
REU redundant			281		OK

1.3 Real Element number (rrr)

Subsystem	CQM	PFM	FS	ASPI
OBSW	100	300	500	OK
DPU prime	100	300	500	OK
DPU redundant		200		OK
4KDCE	100	300	500	OK
DCE	100	300	500	OK
REU prime	100	300	500	OK

REU redundant		200		OK

2. PCF_NAME VERSUS PCF_PID

In order to associate easily the PCF_NAME (Monitoring parameter identifier) and the PCF_PID (OBSW parameter identifier used in PSICD service 3), the same numerical value on 3 digits (000 to 999) is taken in association with the sub-system Position Identifier (only the 2 high order digit for the PCF_PID - ASPI comments : "well done" for nominal / redundant).

Subsystem	PCF_NAME			PCF_PID	ASPI
	HM	xxx	ppp	xxxxx	OK
OBSW	HM	0 – 999	240	24000 – 24999	OK
DPU prime	HM	0 – 999	250	25000 – 25999	OK
DPU redundant	HM	0 – 999	251	25000 – 25999	OK
4KDCE	HM	0 – 999	260	26000 – 26000	OK
DCE	HM	0 – 999	270	27000 – 27999	OK
REU prime	HM	0 – 999	280	28000 – 28999	OK
REU redundant	HM	0 – 999	281	28000 – 28999	OK

Note : this allocation applies for HFI software, different allocation will be provided automatically by HPSDB for CDMS software (for HFI parameters processed by CDMS : FDIR, …)

3. PCF_NAME VERSUS CALIBRATION NAMES

The nnn digit of the CCA_NUMBR, PAF_NUMBR, CAF_NUMBR, TXF_NUMBR and MCF_NUMBR shall be the same as the PCF_NAME and PCF_PID. Therefore the range of the calibration numbers for a given sub-system stays the same.

Example:

Parameter Description	PCF_NAME	PCF_PID	CAF_NUMBR	ASPI
REU Prime cryogenic temperature #0	HM 515 280	28515	280 515 rrr	(2)

First instanciation for the first calibration of CQM REU cryogenic temperature #0:

Parameter Description	PCF_NAME	PCF_PID	CAF_NUMBR	ASPI
REU Prime cryogenic temperature #0	HM 515 280	28515	280 515 100	(2)

4. RANGE OF VALUE FOR TC PACKET IDENTIFIER (CCF_CNAME)

A first repartition of the xxx numerical value is given below in function of the sub-system and the Planck PS.ICD service type:

Subsystem	PS.ICD service type	HC	xxx	ppp	ASPI
OBSW (On-board management)	8 (unified)	HC	000 – 149	240	OK
OBSW (Science management)	8 (unified)	HC	150 – 299	240	OK

OBSW (General services)	3, 9, 14, 17	HC	300 – 399	240	OK
DPU prime	6 & 8 (private)	HC	300 – 399	250	OK
DPU redundant	6 & 8 (private)	HC	400 – 499	251	OK
4KDCE	6 & 8 (private)	HC	500 – 599	260	OK
DCE	6 & 8 (private)	HC	600 – 699	270	OK
REU prime	6 & 8 (private)	HC	600 – 699	280	OK
REU redundant	6 & 8 (private)	HC	700 – 799	281	OK

Let us note that the general TC are always sent to OBSW (ppp = 240). ASPI comment : right.

5. TELEMETRY PACKET NUMBER PID_SPID

ASPI comment : Refer to (1)

The PID_SPID is a number N10 with ttt nnnn ppp.
The PID_SPID shall be formatted as 240nnnn240 (possible update to 08nnnn240 - ASPI comment : confirmed refer to (1)). The numerical value nnnn is separated in 2 field:

- 2 high order digit gives the Planck PS.ICD service type
- 2 low order digit gives the packet numbering range for a Planck PS.ICD service sub-type.

Planck PS.ICD service type and subtype	Nnnn	ASPI
HSK packet TM(3,25)	0300 – 0319	OK
Diagnostic packet TM(3,36)	0320 – 0339	OK
Event Report TM(5,1)	0500 – 0519	OK
Exception Report TM(5,2)	0520 – 0539	OK
Alarm Report TM(5,4)	0540 – 0559	OK
Nominal Science	2100	OK
Science Type B1	2101	OK
Science Type B2	2102	OK
Diagnostic Science	2103	OK
Auxiliary Science	2104	OK
TC Acceptance Report TM(1,1)	0100	OK
TC Acceptance Report TM(1,2)	0101	OK
TC Acceptance Report TM(1,7)	0102	OK
TC Acceptance Report TM(1,8)	0103	OK
HSK Parameter Report TM (3,10)	0340-0359	OK
Diagnostic Parameter Report TM (3,12)	0360-0379	OK
Memory dump TM(6,6)	0600-0619	OK
Memory Check TM(6,10)	0620-0639	OK
Function Status Report TM(8,6)	0800 – 0819	OK
Time Verification Report TM(9,9)	0900	OK
Enabled Telemetry Packet Report TM(14,4)	1400	OK

Some range is open to sub-division. Others can be set to a unique value.