HERSCHEL / PLANCK

HPSDB Data Collection Plan

H-P-1-ASP-PL-0455

Product Code : 460000

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2.1	01/03/2003	Revision: ❑ Add the Description of SQL, and TWTA on the Acronyms list (see Acronyms chapter) ❑ Changed the chapter title "Elements" for "Elements Responsibility" ❑ UML Sequence Diagram - Log / Log Download, correct the request par by "Log file" instead of "Export file" (figure 15-1) ❑ Add the reference of the RD2 (see chapter Reference documents) ❑ Add system database manager mirror site rights (see chapter User's access rights) ❑ Add ACMS SCOE information to chapter ACMS Subsystem – Responsibility: Dutch Space ❑ Add the email address that all emails related to HPSDB shall be sent (see chapter HPSDB Support) ❑ Web interface connecting add explanation to chapter Input Data)	S. Dos Santos

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2.2	25/02/2005	Instruments Data see chapter 24 - Instruments Data ❑ Loading Instruments data see chapter 24.1 Loading Instruments data ❑ Updating Instruments data see chapter 24.2 Updating Instruments data ❑ Missing Data of instruments see chapter 24.3 Missing Data of instruments ❑ Validation of Instruments data see chapter 24.4 Validation of Instruments data	S Dos Santos

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1. INTRODUCTION

This document defines the procedures for the utilisation of Herschel / Planck System Data Base (HPSDB) .

The procedures have the main objectives to:

- control user's access , each user shall have his own login and password (a login and a password for a group is not allowed),
- maintain data to guarantee the consistency of all the data and to ensure that HPSDB is correctly filled: no data duplication, input of data at correct level (element/subsystem/model, theoretical/real, Generic), limited inputs at mirror site levels…
- define the procedure and associated templates in order that each user can request (report) to other User an action (action result),

The rules specified in this document shall be applied on central site, and can be applied on the mirror sites.

Please note that all the request / report emails specified on this document shall be sent to the HPSDB central site manager (see § 7.HPSDB Support). Some requests (defined in this document) need a template attached to the email, those templates shall be saved in Word 97.

To explain the procedures, this document is structured in two parts:

First a description of the HPSDB procedure, then a Procedure design represented with UML (Unified Modelling Language).

In the cases that the HPSDB procedures are based on an interaction between the different Users, UML sequence diagrams are used (for instance see Figure 8-1~~Figure 8-1~~~~Figure 81~~). For complex cases, UML Activity diagrams are used (for instance see Figure 12-1~~Figure 12-1~~~~Figure 121~~). But if the Procedure is based just on a User action, the Procedure design is represented by UML Use cases (for instance see Figure 17-1~~Figure 17-1~~~~Figure 171~~). The type of UML diagram used is identified in the Procedures and the different identified Users are:

- HPSDB Central site Manager: Central site responsible.
- HPSDB Mirror site Manager: Mirror site responsible.
- HPSDB Interface User: Only user that can issue requests to the HPSDB central site manager. One HPSDB Interface for each company is required.
- Other Users: Users that use the data requested to be change.
- Contractual Hierarchy- The Contractual Company.
- Contractual Hierarchy HPSDB Interface User : Contractual Company HPSDB Interface User.
- Request User - HPSDB User.

The HPSDB concept is outside the scope of this document.

2. HPSDB USER ACCESS CONTROL RULES

1. A User is a person. A group of persons is not allowed as a User.
2. Each User is responsible to enter his own data.
3. A group of Users can share de same data.
4. All the information shall be inserted on the central site, the mirror site shall be use only if there is timing problems.
5. The User shall be connected with HPSDB if and only if , he is using the HPSDB.
6. All the requests/reports shall be made by email to the HPSDB central site manager (email address TBD) with copy to the contractual Hierarchy. Except for creating/deleting an HPSDB Interface User, that shall be made by fax.
7. All the requests shall have a priority level (High Priority, Medium Priority, Low Priority).
8. Even if the procedure is formal, phone calls, teleconferences, or meetings , if needed, are welcome.

3. DOCUMENTS

3.1 Applicable documents

AD1	H-P-1-ASPI-SP-0141	Naming convention

~~1.2~~3.2 Standards

None

~~1.3~~3.3 Reference documents

RD1	H-P-1-ASPI-TN-0231	System Database Guide
RD2	H-P-1-GMV-MA-20487	Software User Manual

~~1.4~~3.4 Acronyms

ACC	Attitude Control Computer
ACMS	Attitude Control and Measurement System
AD	Applicable Document
AIT	Assembly Integration Test
ASCII	American Standard …
ASPI	Alcatel Space
AVM	Avionics Validation Model
CCS	Central Checkout System
CDMS	Command and Data Management System
CDMU	Command and data Management Unit
CQM	Cryogenic Qualification Model
EGSE	Electrical Ground Support Equipment
EQM	Electrical Qualification Model
FDDB	Flight Dynamics Data Base
FM	Flight Model
FUMO	FUnctional Model
GSE	Ground Support Equipment
HPSDB	Herschel/Planck System DataBase
HTTP	HyperText Transfer Protocol

HTTPS	HyperText Transfert Protoco Secure
H/W	HardWare
H-xxx	Herschel-xxx
IE	Internet Explorer
I/O	Input/Output
MCS	Mission Control System
MMI	Man Machine Interface
N/A	Not Applicable
OBCP	On Board Control Procedure
PFM	Proto Flight Model
PLM	PayLoad Module
PTI	Product Tree Identifier
P-xxx	Planck-xxx
RD	Reference Document
SCOE	Specific CheckOut Equipment
SDB	System DataBase
SID	Structure IDentifier
SQL	Structured Query Language
SSL	Secure Socket Layer
SVF	Software Validation Facility
SVM	SerVice Module
S/W	SoftWare
TBC	To Be confirmed
TBD	To Be Defined
TBW	To Be Written
TC	TeleCommand
TM	TeleMetry
TWTA	Travelling Wave Tube Amplifier /Assembly
UML	Unified Modelling Language

4. DEFINITIONS

"Archive area"

An "archive area" is an "area" where are archived the validated items which have been superseded. The items are not unique, they are differentiated by their validation date and per site.

"Area"

An "area" is a logical subset of the database. Three area are defined per site : "working", "reference" and "archive".

"Attributes" (often called "data" in requirements)

"Attributes" are the different characteristics associated to a "granule" (for instance : attributes of a curve granule can be the short description, one point, …)

"Box"

A "box" is one of the following : "theoretical element", "real element", "theoretical subsystem", "real subsystem", "theoretical model" or "real model", “generic”.

"Box object"

A "box object" is one "element" or "subsystem" or "model" of one "box". The “generic” box contains only one “box object”.

"Category"

A category is a flag associated to each granule or element in a list which allows to allocate each granule or element in the list to one or several client (On-board software, AIT, operations). By default granules are allocated to all clients.

"Central site"

A "central site" is a unique site which is the one to be delivered to the customer for spacecraft's operation and which is used to load, via the "export / import" activity, the different mirror sites during spacecraft's development and tests.

"Element"

An "element" is the smallest equipment which can be integrated on a spacecraft model, it can be a spacecraft box , a thermistance, a software, … (For instance : TWTA, CDMU software), and it can be "theoretical" or "real".

"Element definition"

An "element definition" is the activity consisting to enter data at “theoretical element” level or, in case of “direct definition” at “real element level”.

"Export / Import"

"Export / Import" is the activity to transfer consistent subset of data from "reference area" of the "central site" to "reference area" of a "mirror site".

"Generic items"

"Generic" items are the one which are not attached to an element, subsystem or model but which can be referenced by an element, subsystem or model. Those items are not instantiated, they are defined in the generic box.

"Granule"

A “granule” is the smallest set of data manipulated (to be seen as a table record) internally by HPSDB. A granule can contain one or several attributes and is a subset of a user view. As soon as one attribute of a “granule” is created / modified / deleted / instantiated all its attributes are created / modified (considered as) / deleted / instantiated. For instance if a granule of a real element refer to a granule of the corresponding theoretical element and if an attribute of this granule is modified at real element level, then the full granule is considered to have been modified (a copy will be done at real element).

"Identifier"

Each item, theoretical or real, has an unique "identifier". The “theoretical element” identifiers are input by the user. Except for curves identifiers, the “real element” identifiers are the same as the “theoretical element” identifiers. The “theoretical subsystem” identifiers are instantiated from the “theoretical element” identifiers with the subsystem identifier and the element position within the subsystem. Except for curves identifiers, the “real subsystem” identifier are the same as the “theoretical subsystem” identifiers. The “theoretical model” identifiers are the same as the “theoretical subsystem” identifiers. Except for curves identifiers, the “real model” identifiers are the same as the “theoretical model” identifiers. For curve identifiers, the “real” (element or subsystem or model) identifiers are the same than the parameters they refer to associated with a condition number. . refer to AD9 where are defined the rules to be applied to build those identifiers, HPSDB will have to check that those rules are applied (level 1 check)

"Instantiation"

"Physical instantiation" (refer to "physical data") : when an item (element or model) is instantiated from a theoretical item to a real item then :

By default, the attributes of the real item are the same as the ones of the theoretical item,

Some attributes of the real item can be generated by concatenation of the ones of the theoretical item with a dedicated real item attribute (for instance : item identifier, …). The real item dedicated attribute used to perform the concatenation is the item number (real element number or real subsystem number or real model number).

Some attributes of the real item can supersede the corresponding attributes of the theoretical item (Curves identifier, curves contents, …).

"Logical instantiation" (refer to "logical data") when an element (theoretical or real) is allocated to a subsystem (theoretical or real) or when a subsystem (theoretical or real) is allocated to a model (theoretical or real) then :

By default, the attributes of the element / subsystem inside the subsystem /model are the same as the ones of the source element / subsystem (example : mass, …),

Some attributes of the element / subsystem inside the subsystem / model can be generated by concatenation of the ones of the source element / subsystem with a dedicated attribute associated to the subsystem / model (for instance : parameter identifier, short description, …). The dedicated attribute associated to the subsystem / model used to performed the concatenation is composed of the subsystem type to which is allocated the element and the element "position" inside the model / is composed of "null".

Some attributes of the element inside the subsystem / model can supersede the attributes of the source element / subsystem (limits, …).

"Item"

An "item" is a set of granules and all their associated attributes (for ORACLE expert it can be seen as a view record) (for instance : parameter, TM packet, …). They are also called "user views".

"Log / Log download"

"Log / Log download" is the activity to send back to the "working area" of the "central site" items which have been validated at any "mirror site" level.

"Mirror site"

A "mirror site" is a "site" dedicated to a specific user, it is loaded from the "reference area" of the "central site", the "user" is free to performed modification on its "mirror site" but each validation is automatically reported to the "working area" of the "central site" via the "log / log download" activity.

"Model"

A "model" is a spacecraft model. It can be Herschel PFM, Planck SVM PFM, AVM, … . It can be "theoretical" or "real". It is built from a collection of elements and dedicated items.

"Model definition"

A "model definition" is the activity consisting to enter data at “theoretical model” level or, in case of “direct definition”, at “real model” level. Those model data are not associated to subsystem data, this concern the items which cannot be associated to a subsystem, for instance derived parameter calculated from parameters issued from different subsystems.

“Owner”

An “owner” of an element /subsystem / model is the user or user group who has created the element / subsystem / model and who is allowed to modify / delete it.

"Real"

The word "real" is used to represent an instantiation of corresponding theoretical element or model. Before Issue 2.2, the word “real” was also used for attributes of "theoretical model" (Parameter, message 1553, …) or "real element" (curves, …) which have been "instantiated". (opposite is "theoretical").

"Real element"

A "real element" is a “physical instantiation” of a "theoretical element" (for instance : TWTA with serial number = 1234, CDMU software with version 2.0). By default it inherits of all items, granules and attributes of the theoretical element. However it can contain some granules ("real") which can supersede corresponding granules of the corresponding "theoretical element" (for instance : calibration curve). In addition it can also contain items without any correspondence at theoretical element level ("direct definition").

"Real model"

A "real model" is a “physical instantiation” of a "theoretical model" by associating part or all of the "theoretical subsystem" included in the corresponding (corresponding to "real model") "theoretical model" with one of the "real subsystem" (of same type of course) (for instance : Herschel PFM is built from ACMS with number 123 and with CDMS with number 124. By default it inherits of all items, granules and attributes of the theoretical model. However it can contain some granules ("real") which can supersede corresponding granules of the corresponding "theoretical model" (for instance : calibration curve). In addition it can also contain items without any correspondence at theoretical model level ("direct definition").

"Real subsystem"

A "real subsystem" is a “physical instantiation” of a "theoretical subsystem" by associating part or all of the "theoretical element" included in the corresponding (corresponding to "real subsystem") subsystem of the "theoretical subsystem" with one of the "real element" (of same type of course) (for instance : Herschel PFM is built from TWTA with serial number 1234 and with CDU software version 2.0). By default it inherits of all items, granules and attributes of the theoretical subsystem. However it can contain some granules ("real") which can supersede corresponding granules of the corresponding "theoretical subsystem" (for instance : calibration curve). In addition it can also contain items without any correspondence at theoretical subsystem level ("direct definition").

"Reference area"

A "reference area" is an "area" which contains the current valid data. Each item inside the reference area is unique.

"Role"

Depending of its HPSDB login, a "role" will be allocated to each user, this "role" defines the rights access of the user to a one or several "box object" defined in a "group".

"Subsystem"

A "subsystem" is a part of theoretical model in charge of a function (AOCMS, CDMS, Power distribution, one experiment, …). It is composed of a list, possibly dependant of the theoretical model it belongs to (for instance : AOCMS), of "theoretical elements" and associated real physical attributes (X, Y, Z, …) and logical attributes (bus addresses, …) allowing to instantiate some attributes of "theoretical element" (parameter identifier, command identifier, …). EGSE is considered as a subsystem.

"Subsystem definition"

A "subsystem definition" is the activity consisting to enter data at “theoretical subsystem” level or, in case of “direct definition”, at “real subsystem” level. Those subsystem data are not associated to element data, this concerns the items which cannot be associated to an element, for instance derived parameter calculated from parameters issued from different elements.

"Theoretical"

The word "theoretical" is used for items (Parameter, message 1553, curves, …) of “theoretical element” or “theoretical model” which have not been instantiated via “physical instantiation” (opposite is "real").

"Theoretical element" (From issue 01/01 up to issue 02/00 was called "Type of system element")

A "theoretical element" is a generic definition (list of generic or default attributes) of an element (for instance : TWTA, CDMU software).

"Theoretical model" (From issue 01/01 up to issue 02/00 was called system element model")

A "theoretical model" is a generic definition of a spacecraft model (for instance : Herschel PFM, AVM). A "theoretical model" contains a list of subsystems.

"Theoretical subsystem"

A "theoretical subsystem" is a generic definition of a spacecraft subsystem (for instance : Herschel ACMS, AVM PCS) in charge of a function. A "theoretical subsystem" contains a list of theoretical elements.

"Working area"

A "working area" is an "area" where the user enters all its items, in this area the user items are not traced except for downloaded items, the items are unique.

"Validation date"

Date and time at which the data base manager has validated an item from the archive area to the reference area.

"Working area"

A "working area" is an "area" where the user enters all its items, in this area the user items are not traced except for downloaded items, the items are unique.

5. USER'S ACCESS RIGHTS

The User's access rights are such that a user entering data at any level (element/ subsystem/model and theoretical /real) shall not know or make assumption on the usage of it. For instance a User entering data about a Startracker will have access only to the Startracker and will not know in witch subsystem or model will be integrated.

The HPSDB User access as the following classification:

Access privileges are :

- SDB administrator : A user for each site, shall have all the privileges described above and is allow to perform specific maintenance operations on RSDB site (backup, restore, disk space allocation, creation / modification / deletion of managers, create / modify / delete of environments, allocation of one manager per environment, new version installation…) .
- SDB manager (central site): shall have all the privileges described below and is allow to perform validation of data, export, log check, log download, SQL access on data, access to all data with read and write access, normal user create / modify / delete. The SDB manager is the only User with write access to generic data.
- SDB manager (mirror site): shall have all the privileges described below and is allow to perform validation of data, import check, import, SQL access on data, access to real data with read and write access, normal user create / modify / delete.
- Element engineer : A user classified as an Element engineer, has write access to the theoretical elements that he created (ie he is the owner), and he has read access to the real elements instantiated from the theoretical elements that he is the owner . He is authorised to force a real element granule to become the new theoretical element granule.He has read access to generic data.
- Element fabrication : A user classified as an element fabrication, has write access to the real elements that he instantiated (ie he is the owner), and he has read access to the theoretical elements associated with the real elements that he is the owner. He is authorised to overwrite the real element granule with the associated theoretical element granule.. He has read access to generic data.
- Element consultation: A user classified as an element consultation has read access to a set of theoretical and associated real elements. He has read access to generic data.
- Subsystem engineer : A user classified as a subsystem engineer, has write access to the theoretical subsystems that he created (ie he is the owner), and he has read access to all the theoretical/real elements and to the real subsystems instantiated from the theoretical subsystems that he is the owner . He is authorised to force a real subsystem granule to become the new theoretical subsystem granule. This user doesn't have write access to the elements associated with the subsystems that he is the owner. He has read access to generic data.
- Subsystem fabrication engineer : A user classified as a subsystem fabrication, has write access to the real subsystems that he instantiated (ie he is the owner), and he has read access to all theoretical/real elements and to the theoretical subsystems associated with the real subsystems that he is the owner .He is authorised to overwrite the real subsystem granule with the associated theoretical subsystem granule. This user type doesn't have write access to the elements associated with the subsystems that he is the owner. He has read access to generic data.
- Subsystem consultation: A user classified as a subsystem consultation has read access to all theoretical/real elements, and to a set of theoretical and associated subsystems. He has read access to generic data.
- Model engineer : A user classified as a model engineer, has write access to the theoretical models that he created (ie he is the owner), and he has read access to all theoretical/real elements, and to all theoretical/real subsystems, and to the real models instantiated from the theoretical models that he is the owner . He is authorised to force a real model granule to become the new theoretical module

granule. This user type doesn't have write access to the elements/subsystems associated with the models that he is the owner. He has read access to generic data.

– Model fabrication (AIT) : A user classified as a model fabrication, has write access to the real models that he instantiated (ie he is the owner), and he has read access to all theoretical/real elements and to all the theoretical/real subsystems and to the theoretical models associated with the real models that he is the owner. He is authorised to overwrite the real model granule with the associated theoretical model granule. This user type doesn't have write access to the elements/subsystems associated with the subsystems that he is the owner. He has read access to generic data.

– Model consultation: A user classified as a Model consultation has read access to all theoretical/real elements/subsystems and a set of theoretical and associated models. He has read access to generic data.

Data owner : the different owners are on-board software ACMS, on-board software CDMS, operations, AIT, instruments (TBC the list exhaustively). The aim is to authorise the owners to give them visibility only to their data. By default the data are shared by all owners.

Each user shall have an access privilege concerning his tasks and shall belong to a group to specify the owner.

Central site														
Levels	Elements				Subsystems				Models				Generic Data	
	Theoretical		Real		Theoretical		Real		Theoretical		Real			
Role	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read
Manager	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Element engineer	x	x		x										x
Element fabrication engineer		x	x	x										x
Element consultation		x		x										x
Subsystem engineer		x		x	x	x		x						x
Subsystem fabrication engineer		x		x		x	x	x						x
Subsystem consultation		x		x		x		x						x
Model engineer		x		x		x		x	x	x		x		x
Model fabrication engineer		x		x		x		x		x	x	x		x
Model consultation		x		x		x		x		x		x		x

Table 5-1 Data access rights lied to HPSDB architecture –Central site

Mirror site														
Levels	Elements				Subsystems				Models				Generic Data	
	Theoretical		Real		Theoretical		Real		Theoretical		Real			
Role	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read	Write	Read
Manager		x	x	x		x	x	x		x	x	x		x
Element engineer		x		x										x
Element fabrication engineer		x	x	x										x
Element consultation		x		x										x
Subsystem engineer		x		x		x		x						x
Subsystem fabrication engineer		x		x		x	x	x						x
Subsystem consultation		x		x		x		x						x
Model engineer		x		x		x		x		x		x		x
Model fabrication engineer		x		x		x		x		x	x	x		x
Model consultation		x		x		x		x		x		x		x

Table 5-2 Data access rights lied to HPSDB architecture –Mirror site

At mirror site will only be allowed to modify the real element/ subsystem/model. After download those modifications to the central site level, the prime (database manager of the central site) will decide if the modification done at mirror site level, shall be or not imported at theoretical level,(via a dedicated function reset) in order that this modification can be shared by all the different instances of the modified box object (if the link is not cut).

6. DATA COLLECTION

The hereafter companies are in charge to enter the data according to the element /subsystem or model that they are responsible. In case they not have access to the HPSDB, they shall provide the data to their contractual company hierarchy in order that they can enter that data.

The delivery of each element /subsystem or model shall include the delivery of the corresponding data inside HPSDB (Theoretical and real ones).

Alcatel Space will be in charge to provide an HPSDB status report (with percentage of filling, consistency errors …).

To access to central site via internet the different companies shall provide as a minimum (TBC)

- The internet address of their front end
- …

~~1.1~~6.1 User's Inputs

6.1.1 Elements- Responsability

Element	Company	Subsystem type	Element Identifier	Comments
Structure SVM	EADS CASA			
CDMU and ACC	SAAB Ericsson	A / B / D / E		
CDMU and ACC I/O Boards	AAE	A / D		Under SAAB Ericsson / CDMU and ACC
PCDU	Alcatel ETCA	W		
TWTA	Alcatel ETCA	R		
TWT	Thales	R		Under Alcatel ETCA / TWTA
Xband transponder	Alcatel Espacio	R		
Solar Array	Dutch Space	W		
Solar network	Galileo avionica	W		Under Dutch space / Solar array
Harness	NEXANS			
LGA	RYMSA	R		
MGA	RYMSA	R		
RFDN	Alcatel Espacio	R		
Battery	AEA Technology	W		
CDMU & ACC BSW	SAAB	B/E		
CDMU ASW	SSF	E		

Element	Company	Subsystem type	Element Identifier	Comments
CCS	TERMA	Y		
PLM EGSE	SSBV	Y		
COTE & Power SCOE	SIEMENS	Y		
CDMU SCOE & TM/TC FEE	SSBV	Y		
TT&C SCOE	SIEMENS	Y		
SVF	TBD			

Table 6-1 User's Inputs- Elements

1.1.26.1.2 TCS subsystem - Responsibility : Alenia Spazio

Element	Company	Subsystem type	Element Identifier	Comments
MLI	AAE	T		
Heat pipes	EHP	T		

Table 6-2 TCS subsystem Inputs

1.1.36.1.3 RCS subsystem - Responsibility : Astrium GmbH

Element	Company	Subsystem type	Element Identifier	Comments
1N thrusters	Astrium	C		
20N thrusters	Astrium	C		
Tank	MSP	C		Under ASTRIUM
Pressure tranducer	Astrium	C		
Latch valve	Astrium	C		

Table 6-3 RCS subsystem Inputs

1.1.46.1.4 ACMS subsystem - Responsibility : Dutch Space

Element	Company	Subsystem type	Element Identifier	Comments

Element	Company	Subsystem type	Element Identifier	Comments
ACMS subsystem	DS			
Planck ACMS	SENER	A		Under Dutch Space
Star tracker	TBD	A		Under DS
Reaction wheels	TELDIX	A		Under DS
IMU	TBD	A		Under DS
AAD	TNO-TPD	A		Under SENER
CRS	TBD	A		Under SENER
ACMS ASW	TBD	B		Under DS
SAS	TNO-TPD	A		Under SENER
ACMS SCOE	DS	Y		Under Dutch Space

Table 6-4 ACMS subsystem Inputs

1.1.56.1.5 Model : Herschel - Responsibility : Astrium-ED

1.1.1.16.1.5.1 Elements

Element	Company	Subsystem type	Element Identifier	Comments
Liquid Helium valve	Astrium	K		
Cryo components part 1	Linde	K		
Cryo components part 2	Astrium	K		
HOT & HTT	Air Liquide	K		
CVV	APCO	K		
Herschel cold unit MTD	TBD			
TSS	Eurocopter			
Optical bench assembly	SENER			
Helium system tubing	Air Liquide			
SFW	HTS			
Sunshield / sunshade	Dutch Space			
Solar network	Galileo avionica	W		Under Dutch space / Solar array
CCU	Patria	K		

CRYO cover	AAE	K		
EHPLM harness	EADS CASA			
External MLI	AAE			
SVM thermal shield	EADS CASA			
H support structures S/S	EADS CASA			
Thermal shield	TBD			
Internal MLI	AAE			
CRYO SCOE	Alcatel space bell	Y		
Herschel CeteF	TBD			

Table 6-5 Model Hershel Inputs

~~1.1.6~~6.1.6 Model : Planck - Responsibility : Alcatel

~~1.1.1.1~~6.1.6.1 Elements

Element	Company	Subsystem type	Element Identifier	Comments
Telescope & cryo structure	Contraves			

Table 6-6 Model Plank Produts

~~1.1.7~~6.1.7 Model : Project product - Responsibility : Alcatel

6.1.7.1 Elements

Element	Company	Subsystem type	Element Identifier	Comments
ISVV	TBD			
Visual monitoring camera	TBD	V		
SREM	ESA (CFE)	M		
FOG	ESA (CFE)	K		

Table 6-7 Model Project Product Inputs

~~1.1.8~~6.1.8 *Subsystem : Instruments - Responsibility : Alcatel*

The instruments shall provide the SCOS MIB ICD files which have been used at subsystem level tests and which will be automatically loaded inside HPSDB, the other data shall be entered via Internet by instrument responsible. Warning : the automatic loading of a subsystem from SCOS MIB ICD files will delete all HPSDB data relevant for the subsystem (including the one not part of SCOS MIB ICD). Those files shall be compliant with AD1 (including specific instrument requirement : annex 1)

1. Subsystem : HIFI - Responsibility : SRON – Utrecht (Space Research Organisation Netherland - Utrecht) Subsystem type : H

2. Subsystem : PACS – Responsibility: MPE (Max Planck Institute für extraterrestrische Physik-Germany) - Subsystem : P

3. Subsystem : SPIRE – Responsibility : RAL (Rutherford Appleton Laboratory- United Kingdom)-Subsystem : S

4. Subsystem : HFI - Responsibility : IAS (Institut d'Astrophysique Spatiale, Université de Paris- France) - Subsystem : H

5. Subsystem : LFI - Responsibility : IASF - Subsystem : L

~~1.2~~6.2 HPSDB Architecture

HPSDB is composed by:

One central site, located on Alcatel Space. and several mirror sites. One per CCS as minimum.

The software installed on the different sites, is the same but exits options that are inhibited on the mirror sites , as result:

- No internet access is allowed at mirror site level (only local access)
- No theoretical information can be created/ updated/deleted on the mirror site.
- ON/OFF counting status can not be inserted on the mirror site.
- TM parameter TC packet verification can not be inserted on the mirror site.
- The facility Merging data is not available on the mirror site

Please note that if a company has no access to the HPSDB Data Base the contractual company is responsible to enter the data on HPSDB.

The data input shall be done at “central site” level. Those data , or part of them (for instance a model or a subsystem) can be “exported” to “mirror sites” where can be used (to generate S/W, to perform tests…)

In case an urgent modification is required on “mirror site” it can be performed at “mirror site” level, but note that only at real level.

Then the modifications shall be reported to the central site (see § Log/ Log download)

7. HPSDB SUPPORT

All formal emails shall be sent to the following email address:

Cannes.HPSDB@space.alcatel.fr

The HPSDB central site manager is available to clarify any doubts on the procedures or using the HPSDB software.

The contacts are :

Sonia.Dos-Santos@support-externe.space.alcatel.fr

Extension 3154 – Alcatel Space

In case of urgent doubts ,if not possible to contact the HPSDB central site manager please contact:

Felix.Chatte@space.alcatel.fr

Extension 6737 – Alcatel Space

or

Corrine.Lecrivain@space.alcatel.fr

Extension 7851 – Alcatel Space

8. USER'S MANAGEMENT

A User is a person. A group of persons is not considered as a User.

To start using HPSDB, the User should be aware of the HPSDB concept, functionality's, rules and objectives. (Refer to RD1 and RD2)

~~1.1~~8.1 Create the HPSDB Interface User

To identify the HPSDB Interface User ,

- a request **fax** signed by the company project manager shall be send to the HPSDB central site manager with the User information (with a copy to the Contractual Hierarchy).
- A report email shall be sent by the HPSDB central site manager to the request manager, with a copy to the contractual hierarchy. If the request is denied the report email shall have a justification.

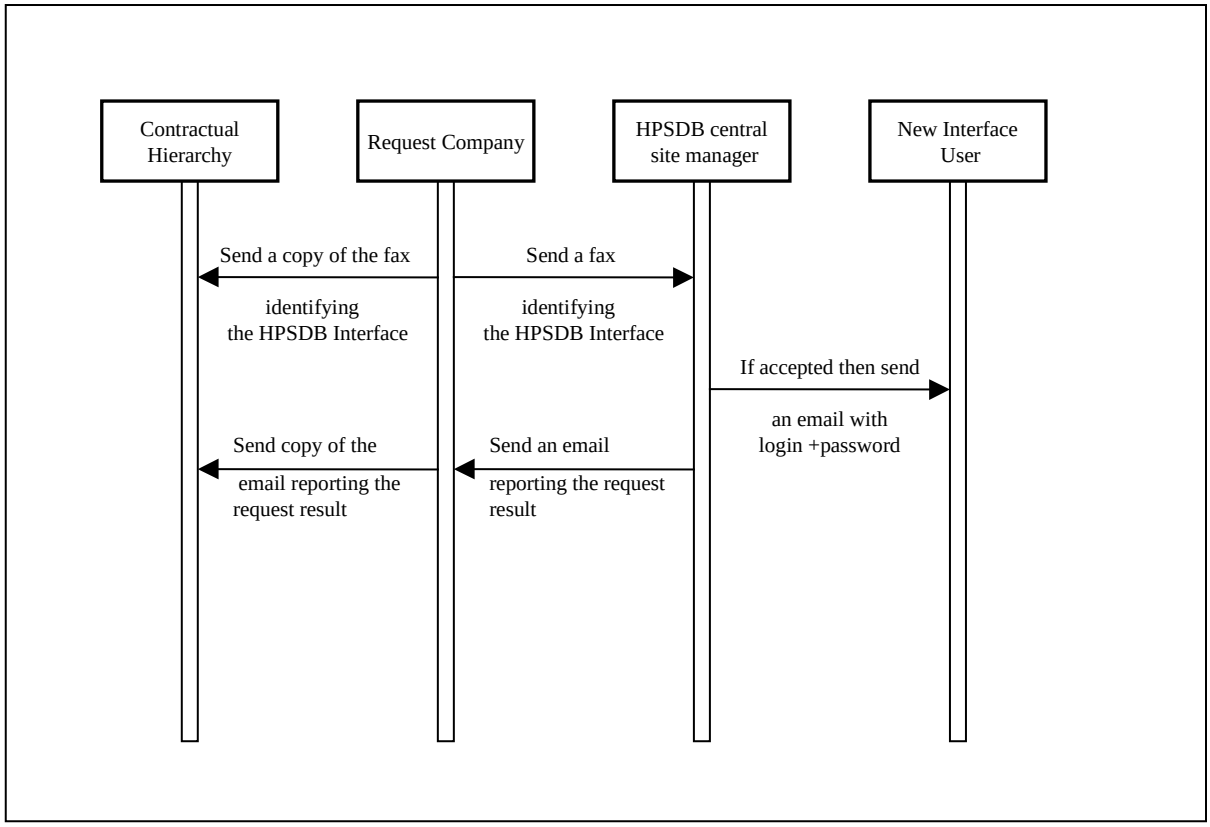


Figure 8-1~~8 1~~ UML Sequence Diagram – Create HPSDB Interface User

~~1.2~~8.2 Modify the HPSDB Interface User

To modify the HPSDB Interface User information:

– The procedure 8.5 Modify/Delete Users shall be done.

~~1.3~~8.3 Delete the HPSDB Interface User

To delete the HPSDB Interface User:

– A request **fax** signed by the company project manager shall be send to the HPSDB central site manager.

– A copy shall be sent to the contractual hierarchy.

– The HPSDB central site manager shall send a report email. If the request is denied the report email has a justification.

Please note that One HPSDB Interface User for each company is required.

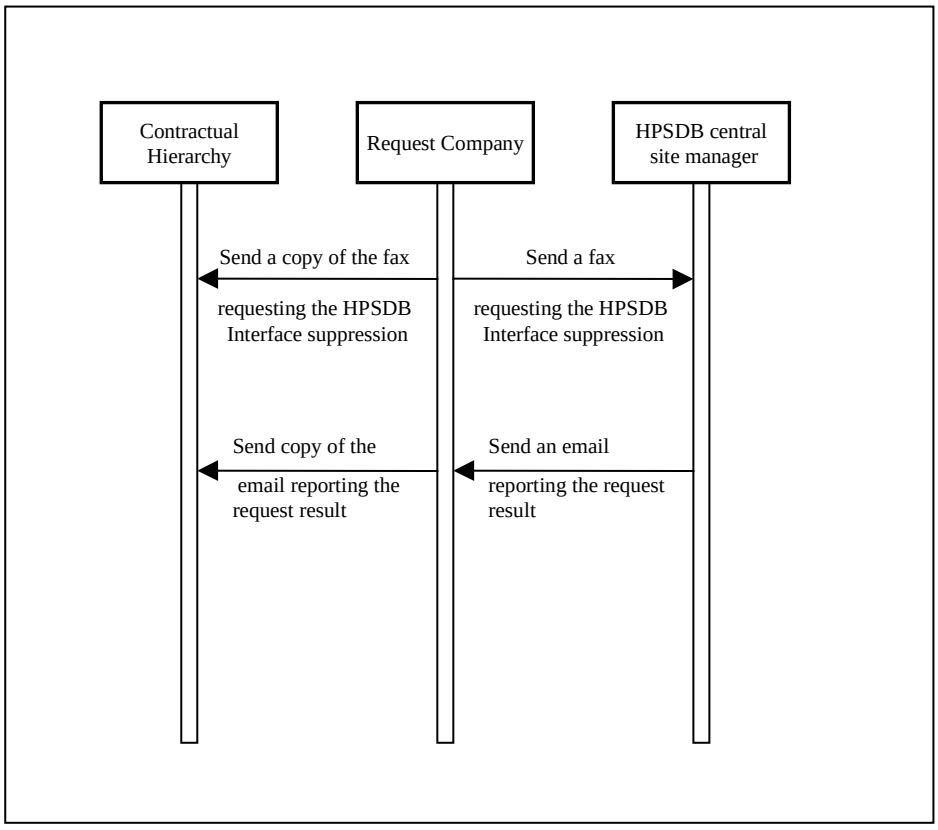


Figure 8-3~~8-2~~ UML Sequence Diagram - Delete HPSDB Interface User

~~1.4~~8.4 Create Users

The company HPSDB Interface User :

- shall send by email the template (defined on § (Annex 1) Create User Template) to the HPSDB central site manager with the new User information (and a copy to the Contractual Hierarchy). Please note that one template shall be sent per new User.
- report email shall be sent to the HPSDB Interface User by the HPSDB central site manager (copy to the Contractual Hierarchy) with the result of the request (approved or denied).
- If the request is denied the report email has a justification.
- if the request was approved an email shall be sent to the New User with the login and the password.

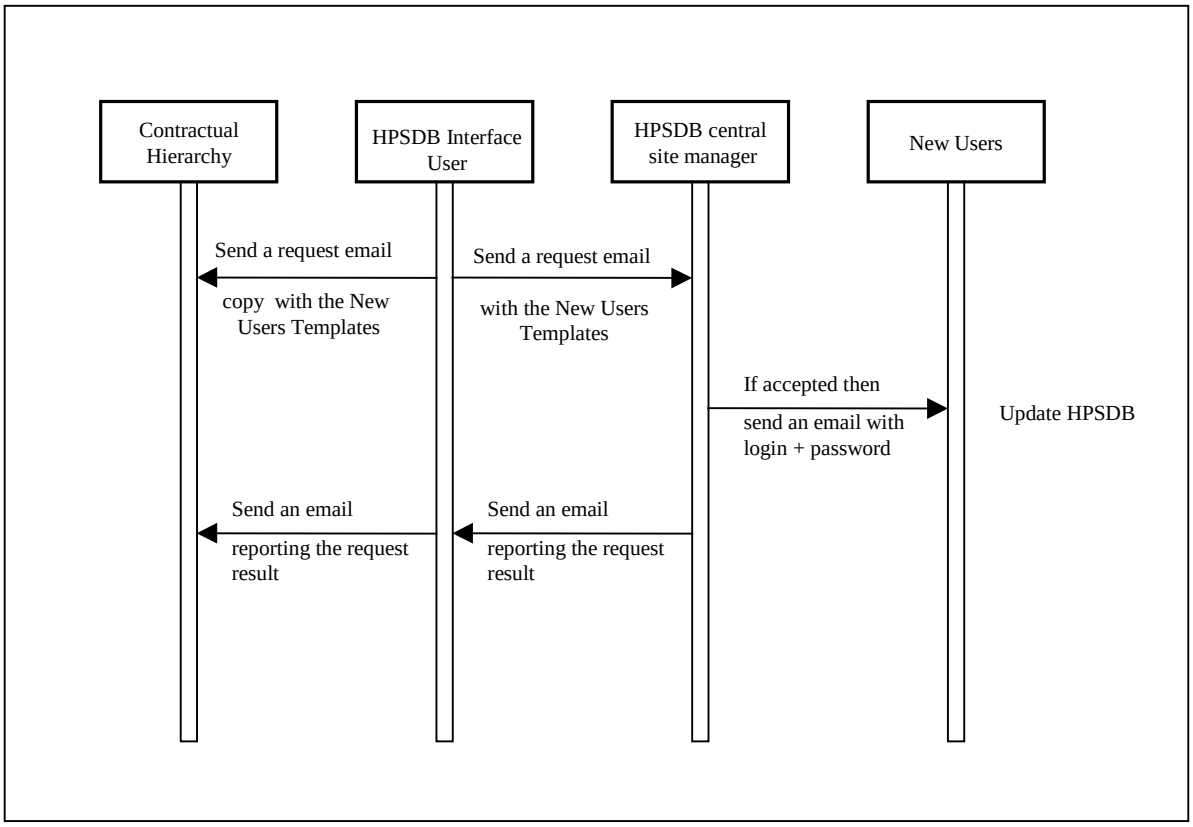


Figure 8-5~~8-3~~ UML Sequence Diagram - Create Users

~~1.5~~8.5 Modify/Delete Users

Each company can modify or delete a User, for that :

- shall be send by email, a template (defined on § (Annex 1) Modify User Template and § (Annex 1) Delete User Template) identifying the user information to delete/modify,
- a copy of the email shall be send to the Contractual Hierarchy,
- the HPSDB central site manager shall send an email to the HPSDB Interface User reporting, the request result (approved or denied), with a copy to the Contractual Hierarchy. If the request is denied the report email has a justification.

Please note that is not possible to modify the User login, and the User Role.

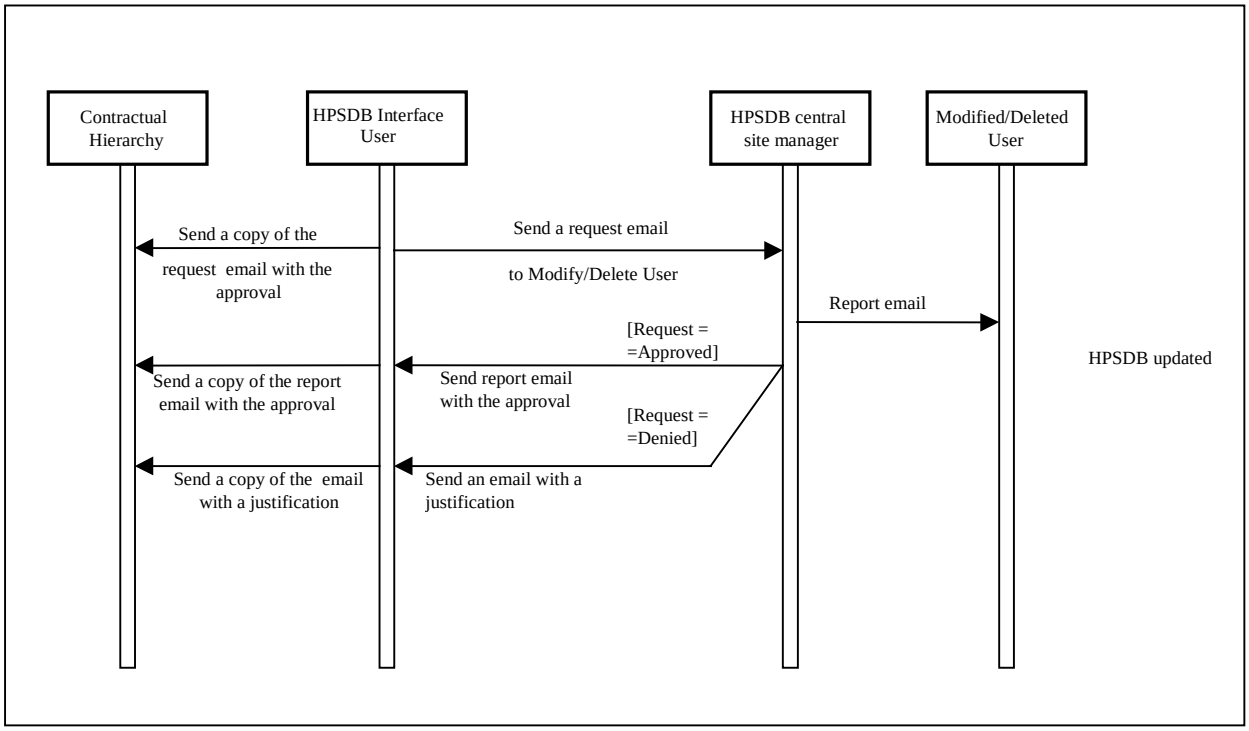


Figure 8-7~~8-4~~ UML Sequence Diagram - Modify/Delete User

9. INPUT DATA

To input data on HPSDB, the following facilities are provided:

– WEB interface to create /delete / modify any HPSDB object. [Refer RD2].

– And a facility to input files in to HPSDB only for creation of HPSDB objects (procedure described below).

9.1 Web connection procedure

There is no dedicated template procedure for the internet access.

The company that need that access shall send an email with the IP address (as seen for the ASP side connection) to the HPSDB email address (see chapter HPSDB Support).

~~1.2~~9.2 Input Data Files

HPSDB provides the facility to input files with data to HPSDB (format ASCII TBD), but this facility is not available by Internet (this is an offline facility). So for the HPSDB Interface User input a file with data on HPSDB, the following procedures shall be done:

1) The HPSDB Interface User shall send an email asking to input data file to HPSDB central site manager (with a copy to the Contractual Hierarchy)
2) File transfer TBD.
3) The HPSDB central site manager shall input the file in HPSDB.
4) If same items are rejected , nothing of the file is injected on the database.. The HPSDB central site manager shall send an email to the HPSDB Interface User with the reason of rejection (copy to the Contractual hierarchy). The HPSDB Interface User shall correct the file, and the step 1) shall be done.
5) If the file is correctly ingested the HPSDB central site manager shall send a report email to HPSDB Interface User (with a copy to the Contractual Hierarchy) .

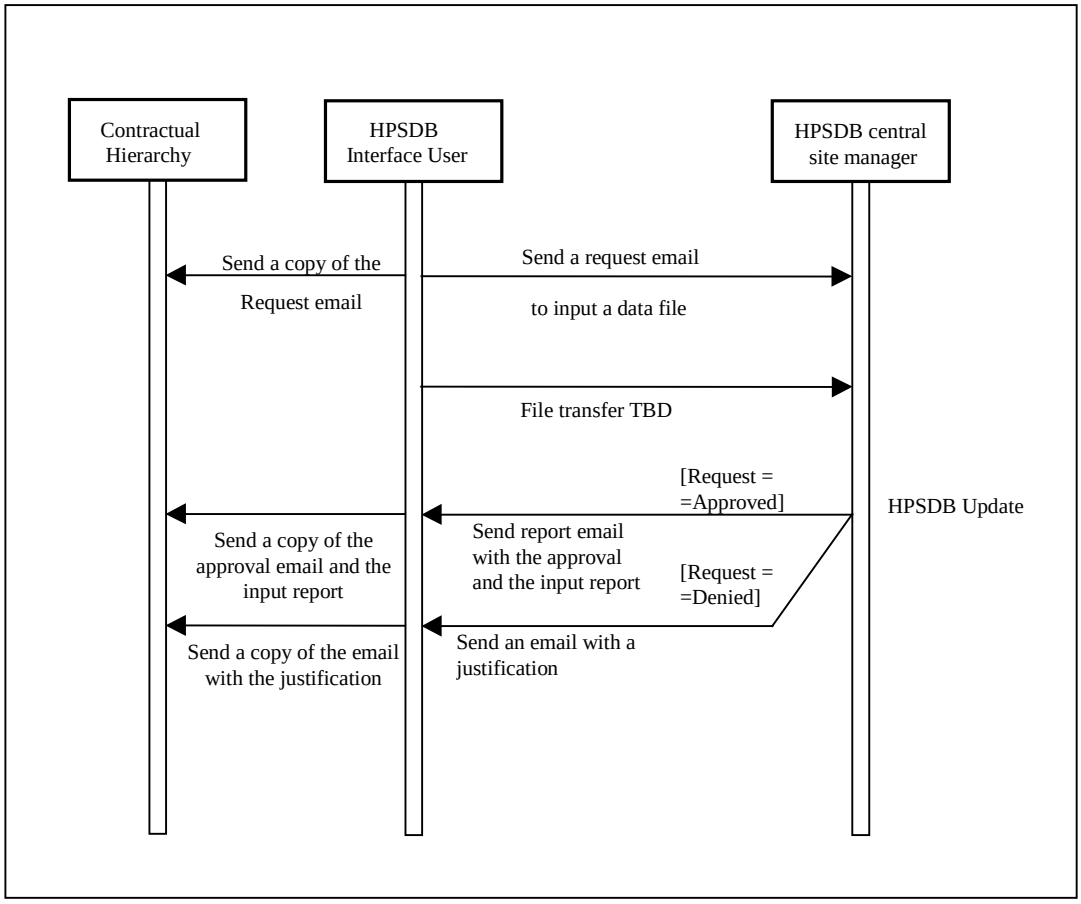


Figure 9-1~~0 1~~ UML Sequence Diagrams – Input Data File

10. GENERIC DATA MANAGEMENT

Because data from an element is independent of the data of any other element (items can not be shared), the same applies to the subsystem and to the model level, HPSDB offers the facility to define generic items which can be referenced at any level and is accessible to all HPSDB Users, but the HPSBD central site manager is the only one that can enter , remove or modify Generic Data.

Before HPSDB be available for the users, the Generic Data shall be inserted by the HPSDB central site manager.

HPSDB supports generic definitions off all type of defined items (curves, constants, parameters…..)

~~1.1~~10.1 Create Generic Data

If a User needs to create some Generic Data :

- The HPSDB Interface User shall send a request template (defined on § (Annex 1) Generic Data change request Template) by email to the HPSDB central site manager. A copy of the email shall be sent to the Contractual Hierarchy,
- the HPSDB central site manager shall analyse, and report to the HPSDB Interface User if the request was accepted or refused,
- if the Request was approved the HPSDB manager shall send an email to the Other Users informing that new Generic data is available.
- If the request was denied the report email has a justification.

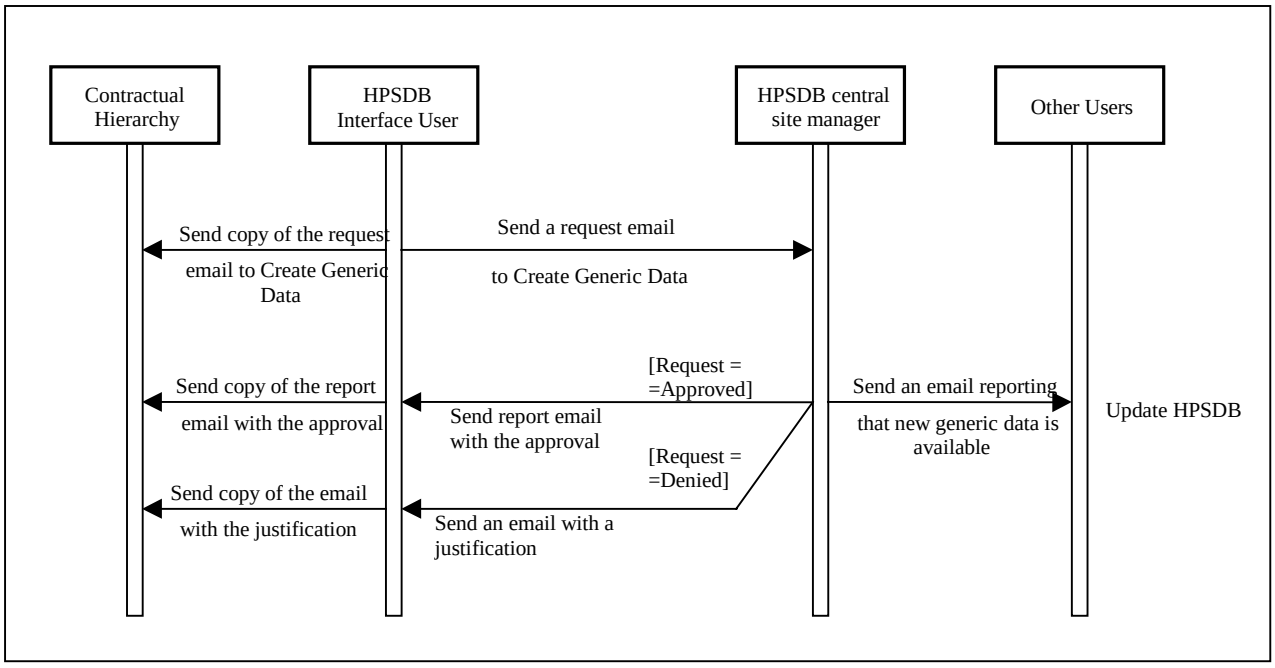


Figure 10-1~~10-1~~ UML Sequence Diagram - Create Generic Data

~~1.2~~10.2 Modify / Delete Generic Data

If a User needs to modify/delete some Generic Data ,

- The HPSDB Interface User shall send a request template (defined on § (Annex 1) Generic Data change request Template) by email to the HPSDB central site manager ,
- a copy of the request email shall be sent to the Contractual Hierarchy,
- the HPSDB central site manager shall send an email to the Other Users, to check the impacts on their side,
- the Other Users shall send an email reporting their agreement or not to the HPSDB central site manager, Please note that in case that the Other Users didn't send an answer email, The HPSDB central site manager shall contact them by telephone. If not possible the HPSDB central site manager will consider that the request doesn't create impacts on their side.
- the HPSDB central site manager shall decide if the change is approved,
- if the request was approved, the HPSDB central site manager shall send an email to the HPSDB Interface User reporting the approval, with a copy to the Contractual Company. An email shall be sent informing the Users that Generic Data has been modified / deleted,
- if the request was denied the HPSDB central site manager shall send an report email to the HPSDB Interface User with a justification, (copy to the Contractual Company).

Please note that because Generic Data can be used by all the Users, modify/delete Generic Data information can generate a lot of impacts.

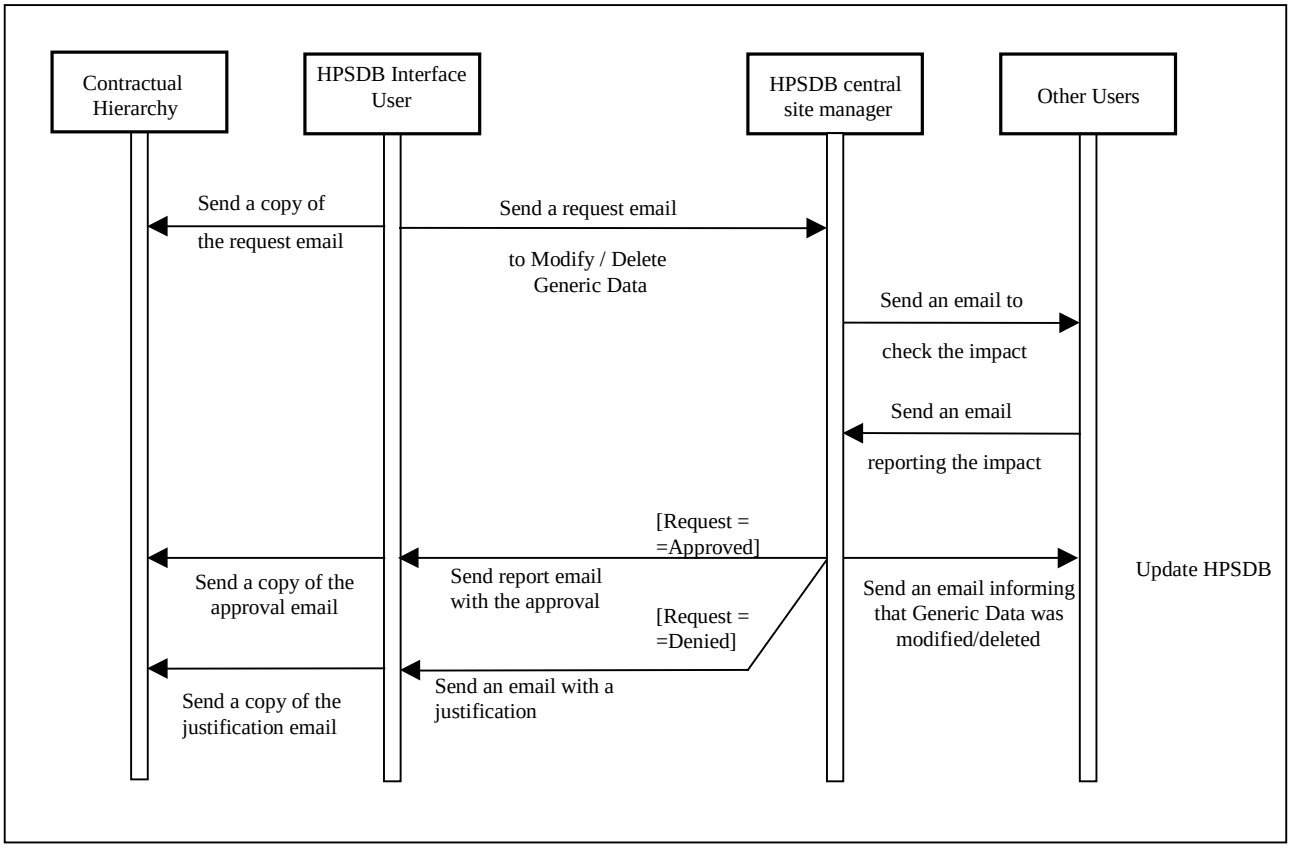


Figure 10-3~~10-2~~ UML Sequence Diagram - Modify / Delete Generic Data

11. PARAMETERISATION DATA

The HPSDB manager is the only User with write access to this type of data.

~~1.1~~11.1 Create/ Delete Parameterisation Data

If the User needs to create/ modify Parameterisation Data :

- The HPSDB Interface User shall send a template (defined on § (Annex 1) Parameterisation Data change request Template) by email to the HPSDB central site manager, with a copy to the Contractual Hierarchy.
- HPSDB central site manager shall send an email to the Other Users, to check the impact on their side.Please note that in case that the Other Users didn't send an answer email, The HPSDB central site manager shall contact them by telephone. If not possible the HPSDB central site manager will consider that the request doesn't create impacts on their side
- The Other Users shall send a report email to the HPSDB central site manager.
- The HPSDB central site manager shall decide if the change is approved.
- If the change was approved, the HPSDB central site manager shall send an email to the HPSDB Interface User, reporting that the data has changed, with a copy to the Contractual hierarchy. The HPSDB manager shall send an email to the Other Users reporting that new Parameterisation Data is defined.
- If the change was denied the HPSDB central site manager shall send an email to the HPSDB Interface User justifying why the change was denied, with a copy to the Contractual hierarchy.

Please note that, when Parameterisation Data is created/modified, can exists values already defined in HPSDB, that can be inconsistent with the new Parameterisation Data.

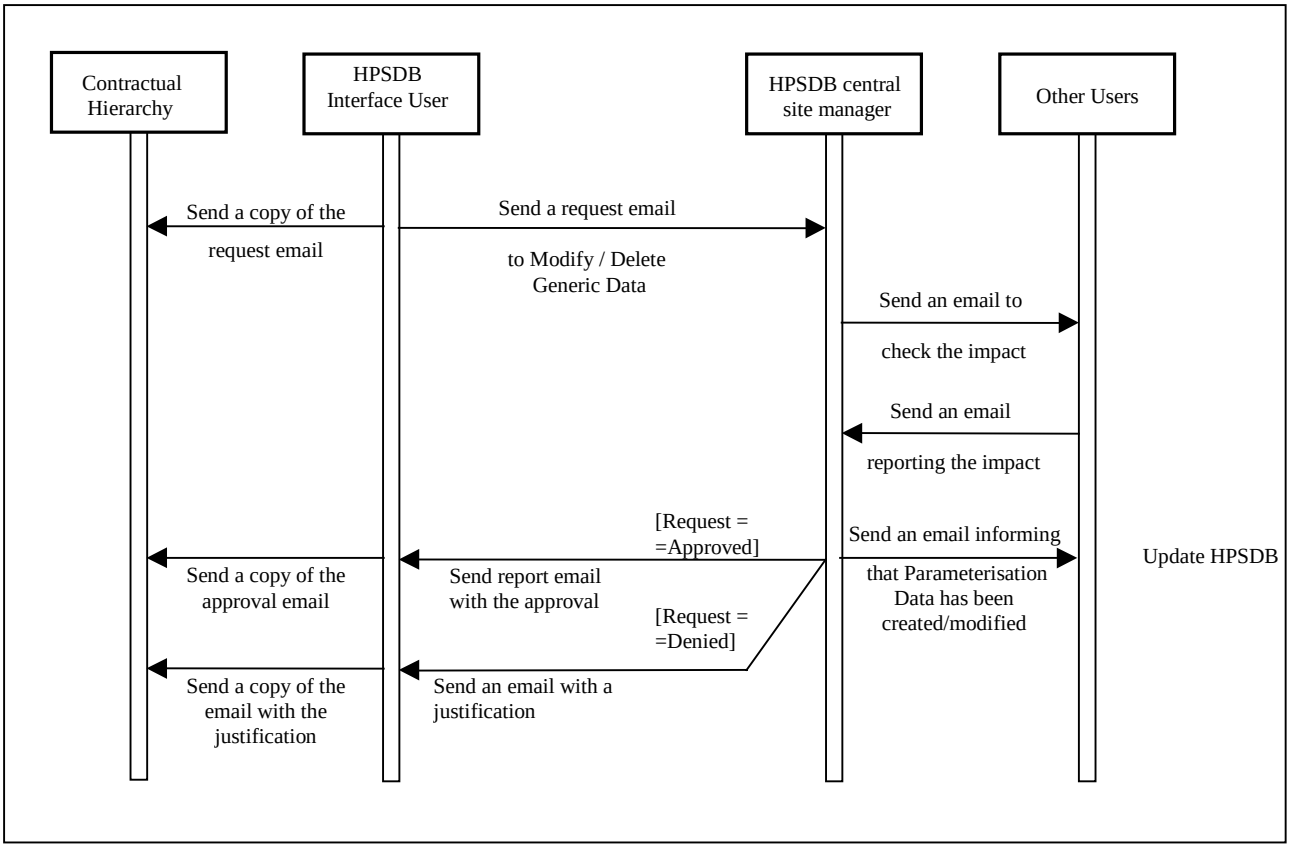


Figure 11-1~~11-1~~ UML Sequence Diagram - Create / Modify Parameterisation Data

~~1.2~~11.2 Delete Parameterisation Data

If a User needs to delete some Parameterisation Data :

- the HPSDB Interface User shall send a request template (defined on § (Annex 1) Parameterisation Data change request Template) by email to the central site HPSDB manager, with a copy to the Contractual Hierarchy.
- The HPSDB central site manager shall analyse the request, and shall send a report email to the HPSDB Interface User, (with a copy to the contractual hierarchy. If the request was denied the report email shall have a justification.
- The HPSDB central site manager shall send an email informing the Other Users that Parameterisation data has been deleted.

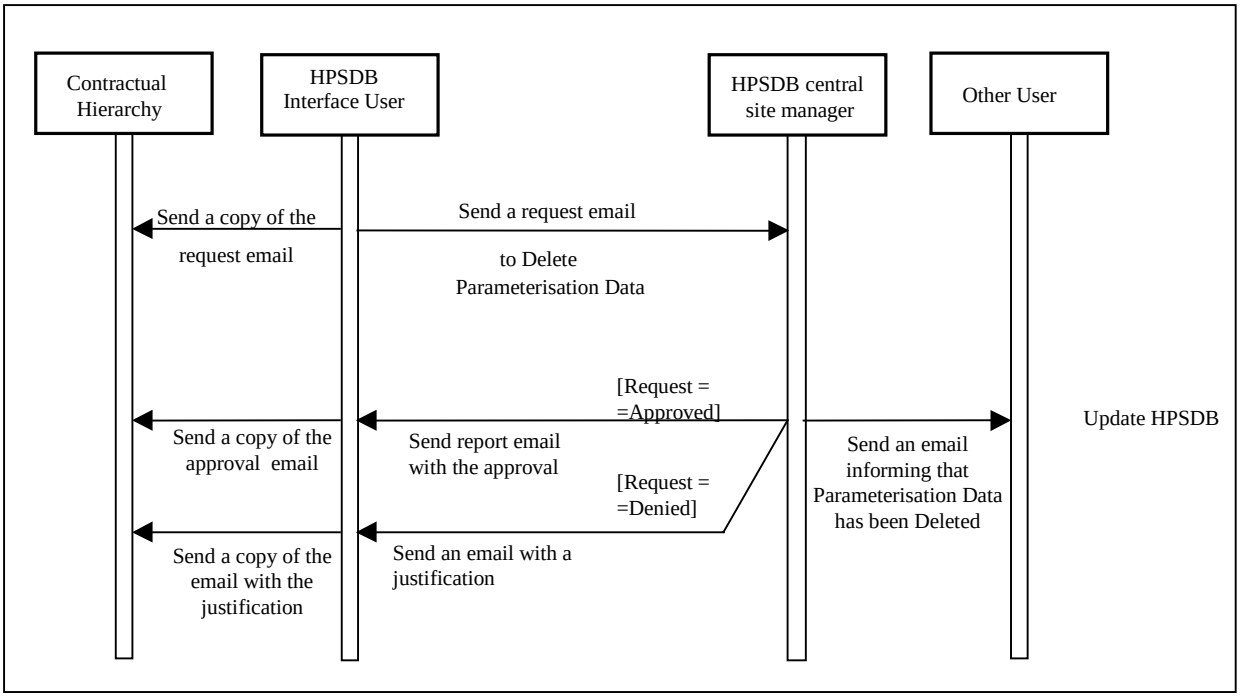


Figure 11-3~~11-2~~ UML Sequence Diagram - Delete Parameterisation Data

12. DATA VALIDATION

To validate data:

1. The HPSDB Interface User shall send a request email (with the template defined on § (Annex 1) Data Validation Template) to the Contractual Hierarchy HPSDB Interface User .
2. If the HPSDB Interface User accept the validation, shall report the acceptance on the template that the HPSDB Interface User send to him, and send the template to the HPSDB Interface User of his Contractual Hierarchy company.
3. The procedure 2) shall happen until reach the prime contractor company .
4. The HPSDB central site manager shall send a email (reporting if the request was accept or denied), to the direct HPSDB Interface User , and the reverse of procedure 2) shall be made until reach the HPSDB Interface User.
5. If the validation is not accept for an HPSDB Interface User that belongs to the hierarchy, a report email (with a justification) shall be sent to the reverse way, until reaches the HPSDB Interface User (reverse of procedure 2). Please note that the validation process stops when a Contractual Hierarchy doesn't agree with the validation. And the Contractual Hierarchy of the company that didn't agree with the validation, is not informed that a validation has been asked by a HPSDB Interface User.

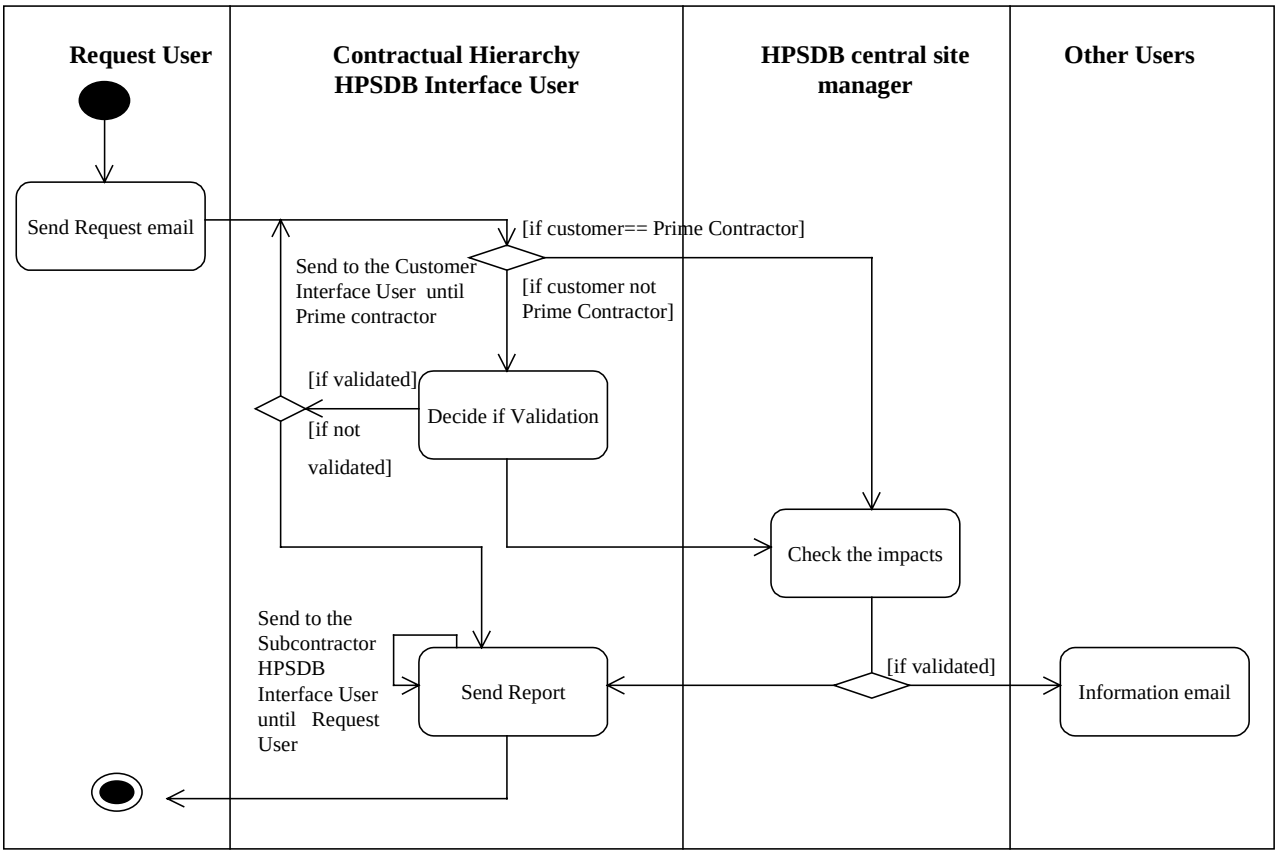


Figure 12-1~~12-1~~ UML Activity Diagram - Validate Data

13. SITE COMPARISON

The site comparison is a facility provided by HPSDB that allows to compare the Central site reference area with the reference area of any mirror site.

To avoid big discrepancies between central site and mirror sites , once a week the central site is compared to each mirror site.

- The HPSDB central site manager shall generate an export file (with selection at subsystem or model level, to be compliant with the mirror site) and the HPSDH mirror site shall generate also an export file.

The site comparison facility is also available by request:

Then two scenarios can happen:

1st scenario Central site request:

The request can be done by the HPSDB central site manager, so the HPSDB central site manager :

- shall send an email with template (defined § (Annex1) Site comparison) the request to HPSDB mirror site manager,.
- The mirror site manager shall send an email to the HPSDB central site manager reporting that the Export File is available.
- The central site manager shall compare the sites (with an HPSDB tool).
- The central site manager shall send an email with the site comparison report, to the mirror site manager.

2nd scenario Mirror site request:

The request can be done by the HPSDB mirror site manager, so the HPSDB mirror site manager :

- shall send an email with template (defined § (Annex1) Site comparison)the request to HPSDB central site manager.
- The central site manager shall send an email to the HPSDB mirror site manager reporting that the Export File is available.
- The mirror site manager shall compare the sites (with an HPSDB tool).
- The mirror site manager shall send an email with the site comparison report, to the central site manager.

Please note that to maintain coherency, major differences between sites shall be avoid. The mirror site managers shall maintain their sites as equal as possible to the central site.

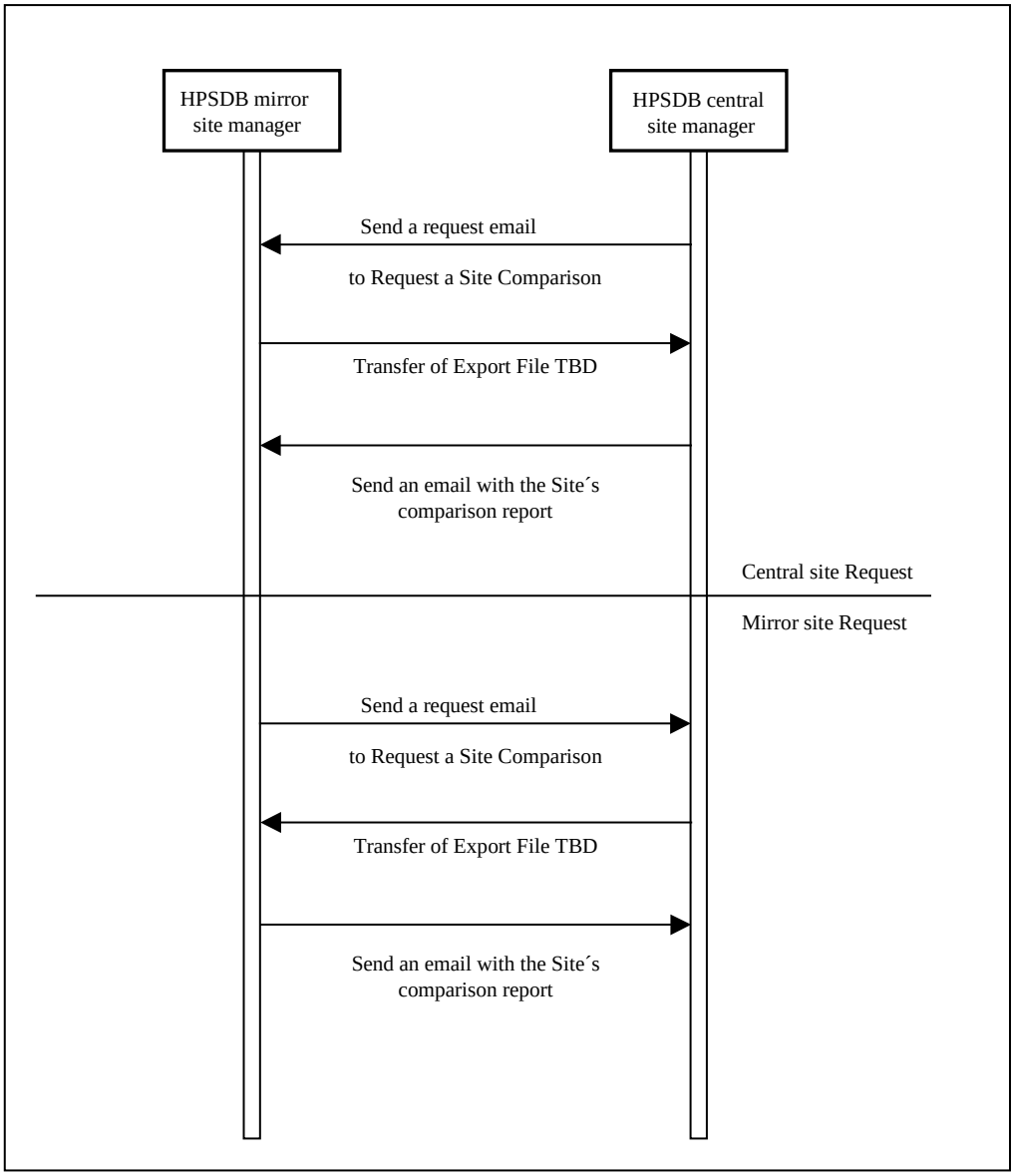


Figure 13-1~~13-1~~ UML Sequence diagram - Site Comparison by Request

14. IMPORT/EXPORT

The Export facility provided by HPSDB allows to generate a file that contains the data of the central site reference area. The Import facility provided by HPSDB allows that the mirror site reference area ingests the file created by the Export operation.

For generating an Import/Export file two scenarios can happen:

1st scenario Central site request:

- The HPSDB central site manager sends an email with the template (defined see § Import / Export) to the HPSDB mirror site manager asking for an import of the central site data to the mirror site.
- The central site Export file transfer shall be done (transfer TBD).
- The HPSDB mirror site manager shall Import the file to HPSDB mirror site.
- If for technical, timing… problems is not possible to import the file, the HPSDB central site manager shall send an email to the HPSDB central site manager, with a justification.
-

2nd scenario Mirror site Request:

- The HPSDB mirror site manager sends an email with the template (defined on § (Annex 1) Import/Export) to the HPSDB central site manager requesting a generation of an export file, to be imported on the mirror site.
- The HPSDB manager shall generate an export file and send an email to HPSDB mirror site manager, reporting that the Export File is available.
- The file transfer shall be done (transfer TBD).
- The HPSDB mirror site manager shall Import the file to HPSDB mirror site.

If for some reason (technical, timing…) is not possible to generate the export file the HPSDB central site manager shall send a report email to the HPSDB mirror site manager with the justification.

Please note that when an Import is made the working area and the archiving area of the mirror site are erased.

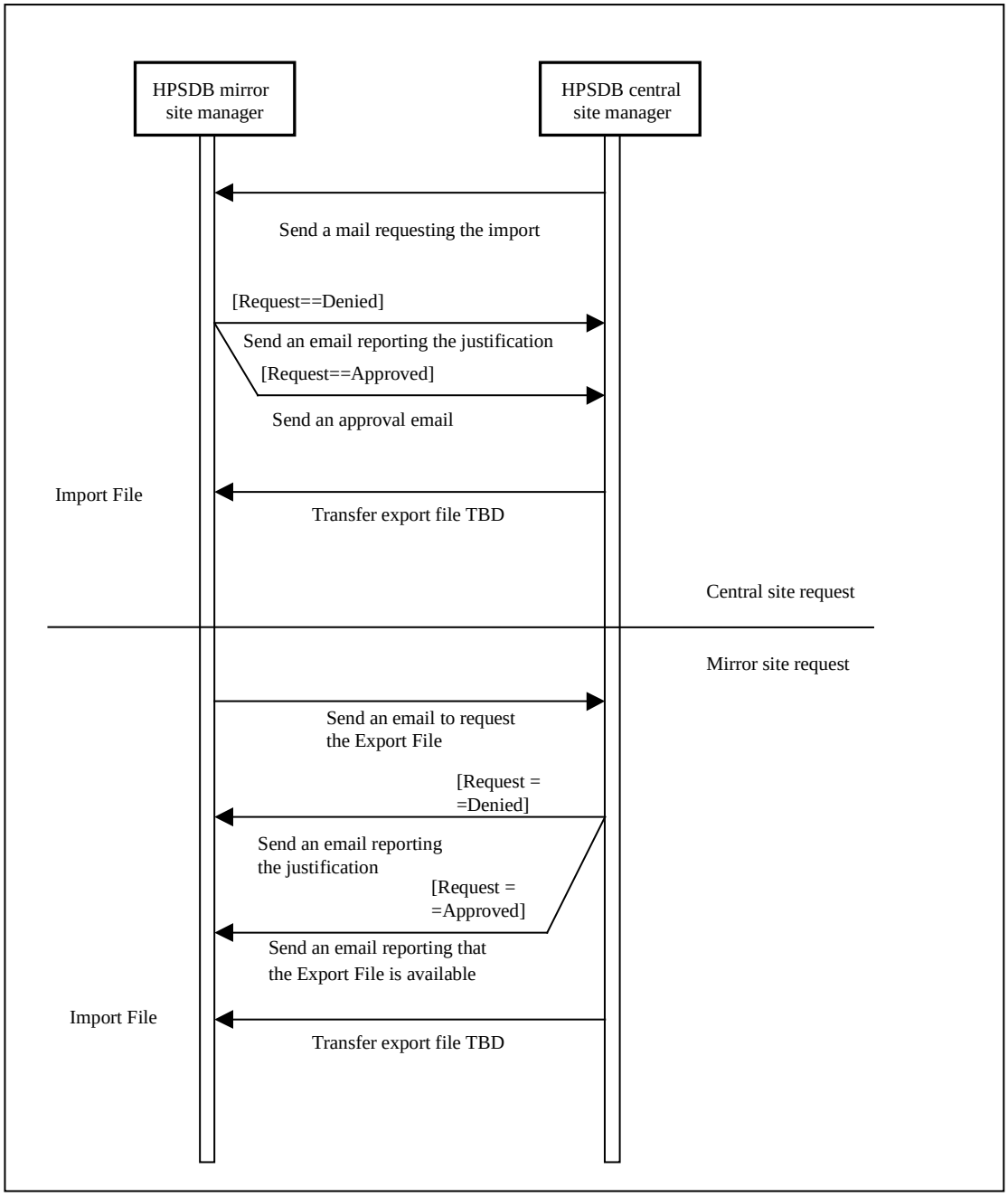


Figure 14-1~~14 1~~ UML Sequence Diagram – Import/Export

15. LOG/ LOG DOWNLOAD

The Log facility provided by HPSDB allows that all the validations done on the mirror site be registered on a Log file. The Log Download facility provided by HPSDB allows that the central site working area ingests the file created by the Log operation.

For generating Log Files two scenarios can happen:

1st scenario Central site Request:

- The HPSDB central site manager sends an email with the template (defined on § Log/ Log download) to the HPSDB mirror site manager requesting a generation of an Log file.
- The HPSDB mirror site manager shall generate the Log file.
- The file transfer shall be made (transfer TBD).
- Log download shall be done.

2nd scenario Mirror site Request:

- The HPSDB mirror site manager sends an email with the template (defined on § (Annex 1 Log / Log Download) to the HPSDB central site manager reporting that a Log file is available and requesting for a Log Download.
- If the HPSDB manager accepts the Log file transfer , the file transfer shall be made (transfer TBD).
- Log download shall be done.
- If the HPSDB manager for some reasons (technical, timing, …) denies the Log download, the HPSDB central site manager shall send a report email with a justification.

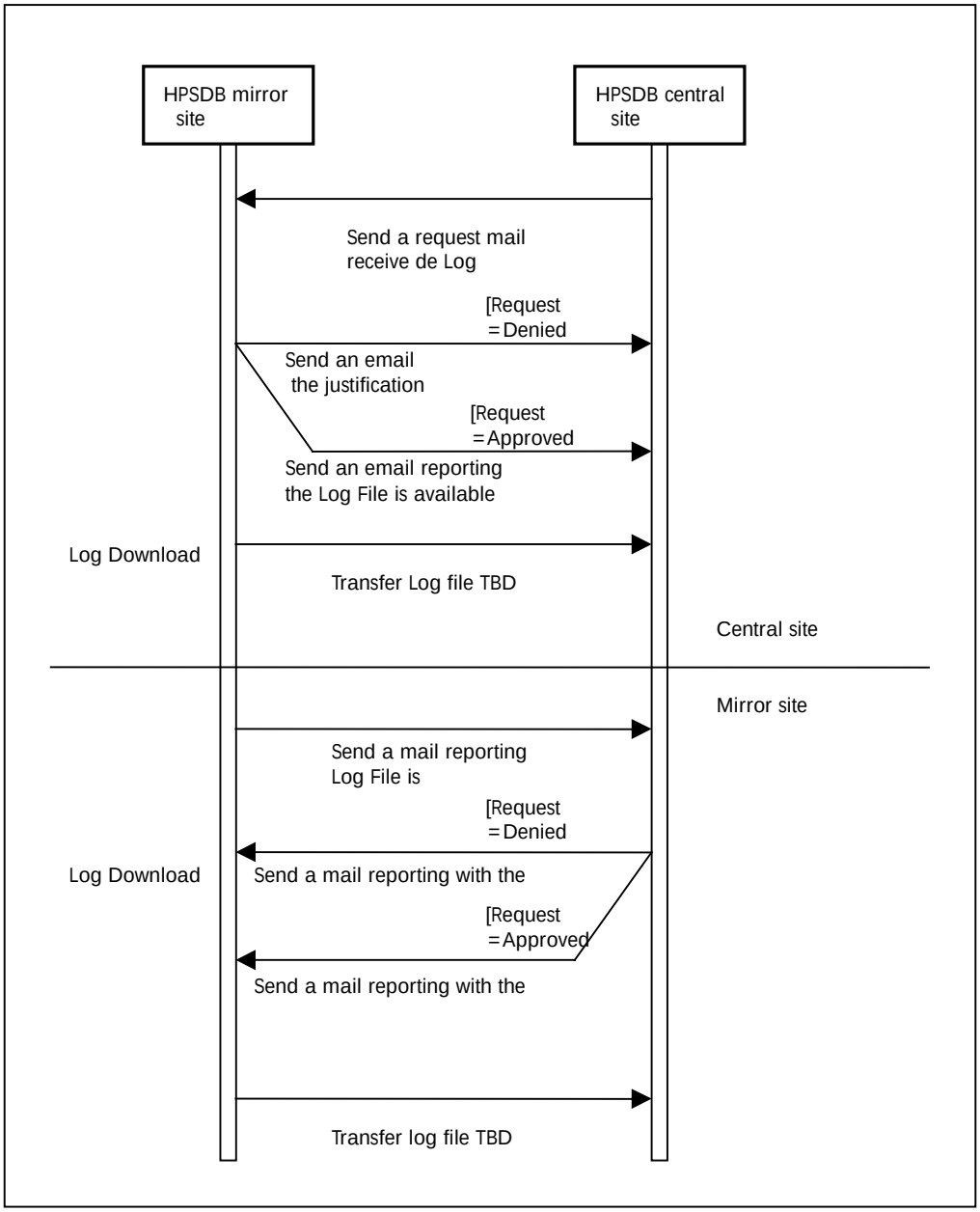


Figure 15-1~~15-1~~ UML Sequence Diagram - Log / Log Download

16. GENERATE BRIDGE FILES

HPSDB includes the necessary tools to perform extraction of data from any site to formatted files (bridges) which are used by the end user (CCS, MCS, …). The extraction is done by default from the reference area. In order to regenerate previous environment, it can be possible to generate those files from reference area for still valid items and from archive area for no longer valid items. In order to validate some modifications or to perform investigations it can be possible to generate those files from working area for not yet validated items and from the reference area for the other ones. The bridge files can be generated from a element, a subsystem or model, theoretical or real.

~~1.1~~16.1 Reference Area

Generate the bridge files (from the reference area) is an HPSDB facility available for all the HPSDB Users (with read access to the data).

There is no need to made a request to the HPSDB manager.

The Bridge File transfer TBD.

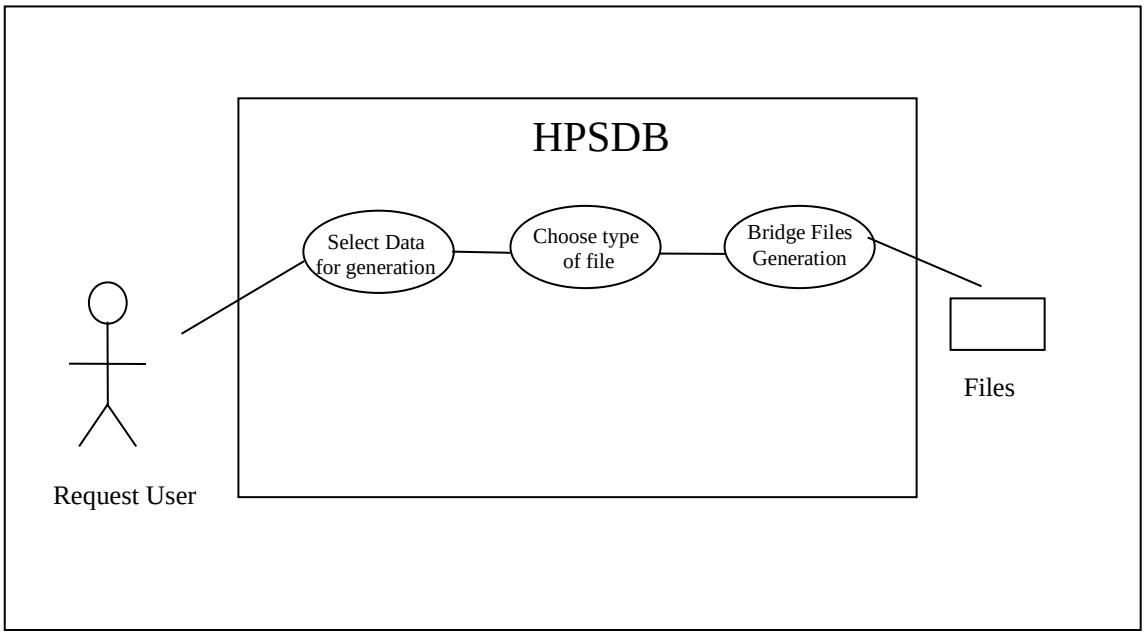


Figure 16-1~~16-1~~ UML Use Case Diagram - Generate Bridge Files from Reference Area

~~1.2~~16.2 Working Area

Generating Bridge files from the Working area is possible, but only by request to the HPSDB central site manager.

For that request the HPSDB Interface User :

– shall send a request email (defined § (Annex 1)Working Area Bridge Files Generation) to the HPSDB central site manager, with a copy to the Contractual Hierarchy

- The central site manager shall generate the Bridge Files, and send a report email to the HPSDB Interface User, with a copy to the contractual hierarchy.
- The Bridge File transfer TBD.
- If the request was denied a report email shall be sent with a justification.

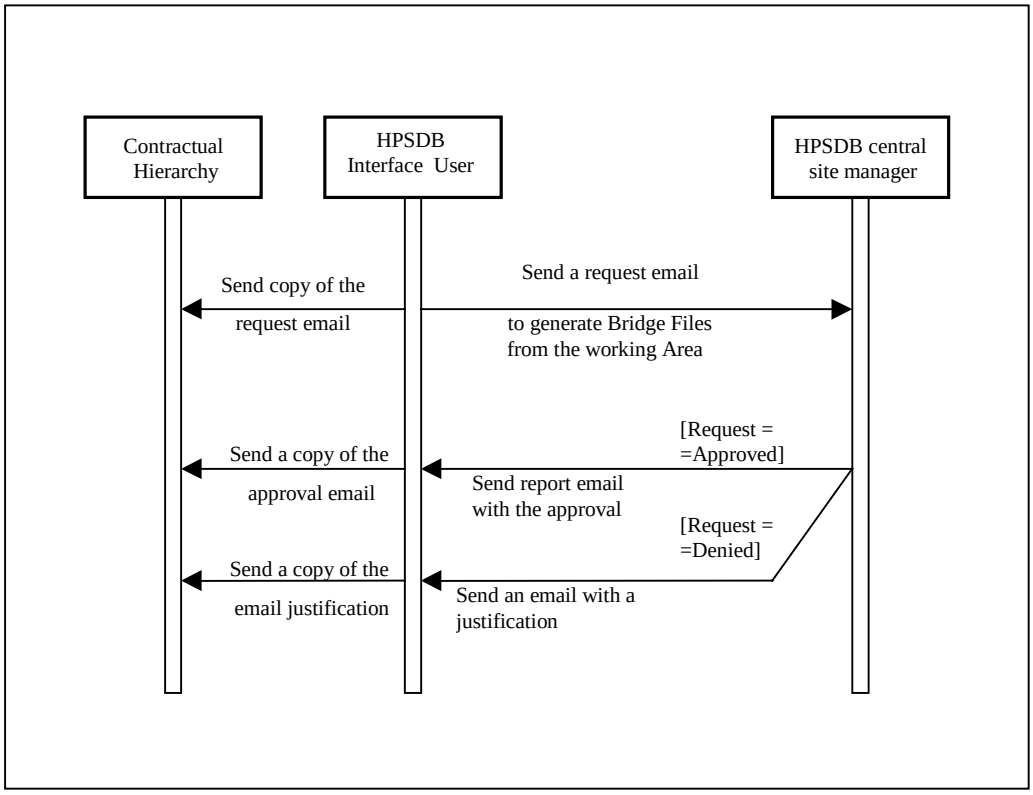


Figure 16-3~~16-2~~ UML Sequence Diagram - Generate Bridge Files from Working Area

~~1.3~~16.3 Archiving Area

If new data is validated, the old validated data is transfer from the Reference Area to the Archiving Area, but is still possible to Generate Bridge files with the old data. For that the HPSDB Interface User:

- shall send a request email (defined § (Annex 1) Archiving Area Bridge Files Generation) to the HPSDB central site manager, with a copy to the Contractual Hierarchy.
- The central site manager shall generate the Bridge Files, and send a report email to the HPSDB Interface User, with a copy to the Contractual Hierarchy
- The Bridge File transfer TBD.
- If the request was denied a report email shall be sent with a justification.

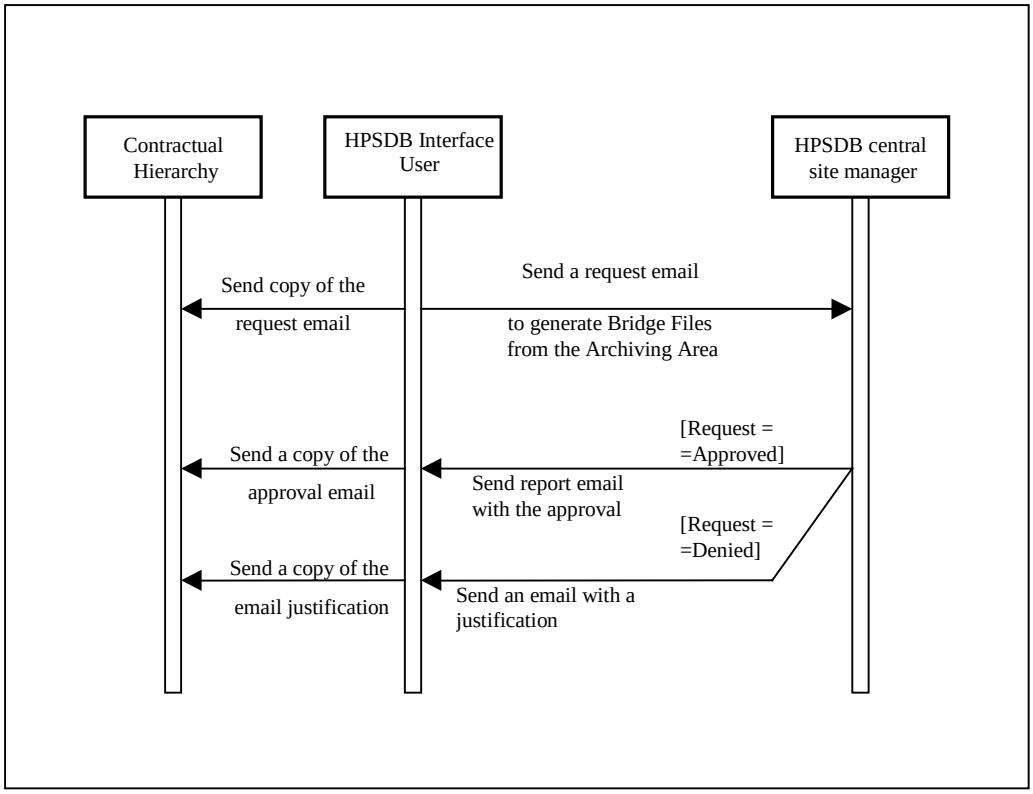


Figure 16-5~~16-3~~ UML Sequence Diagram - Generate Bridge Files from Archiving Area

17. PRINT/DISPLAY

Print / Display data is a HPSDB facility available to all HPSDB Users.

There isn't necessary to make a request to the HPSDB manager, but each User can only Print /Display data that he has read access .

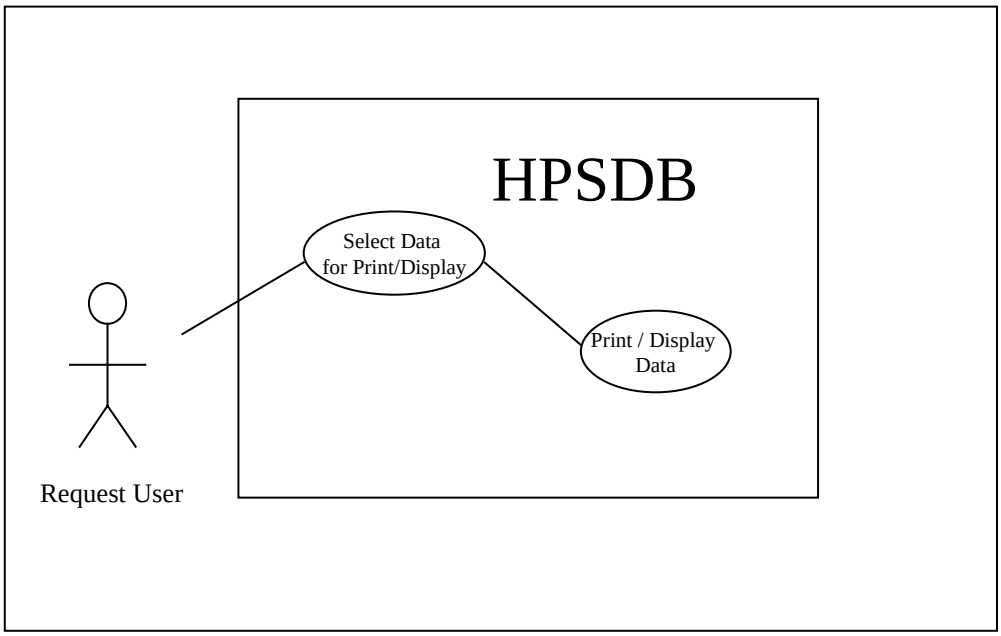


Figure 17-1~~17 1~~ UML Use Case - Print / Display

18. CONSISTENCY CHECKS

HPSDB supports a set of tools which allow to ensure the consistency and integrity of the data. Those tools can act at different levels : system, data, consistency between data; on an area or several area; on a part or the full content of the HPSDB.

~~1.1~~18.1 Apply consistency checks

The consistency checks are made periodically (once a week), but it can be made also by request. By default the consistency checks are done in the reference area, but is also available to perform consistency checks to the archiving area and to the working area (where missing items are taken from reference area).

For the User apply consistency checks (in the Reference Area):

- Shall select the data..
- Shall choose the option to apply consistency checks available on HPSDB.

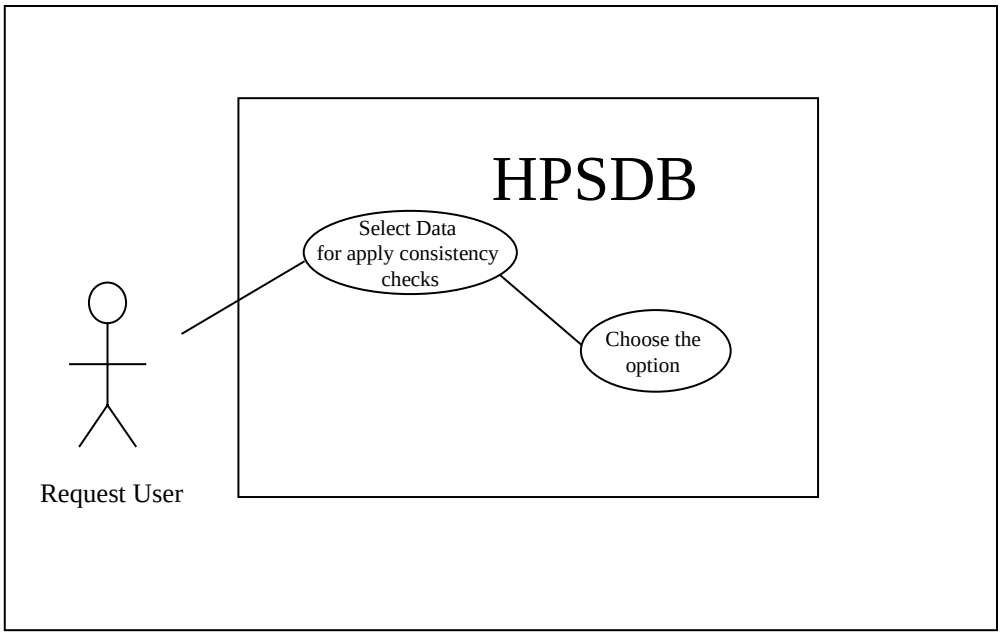


Figure 18-1~~18-1~~ UML Use Cases - Reference Area Consistency Checks

19. MERGING DATA

The Merging data facility allows to generate an element/subsystem/model by the result of merging others elements/subsystems/models, but no logical/ physical instantiation is allowed with this new element /subsystem/ model.

Is available to the User at central site without being necessary a request to the HPSDB central site manager.

The Merging Data facility is available only at central site.

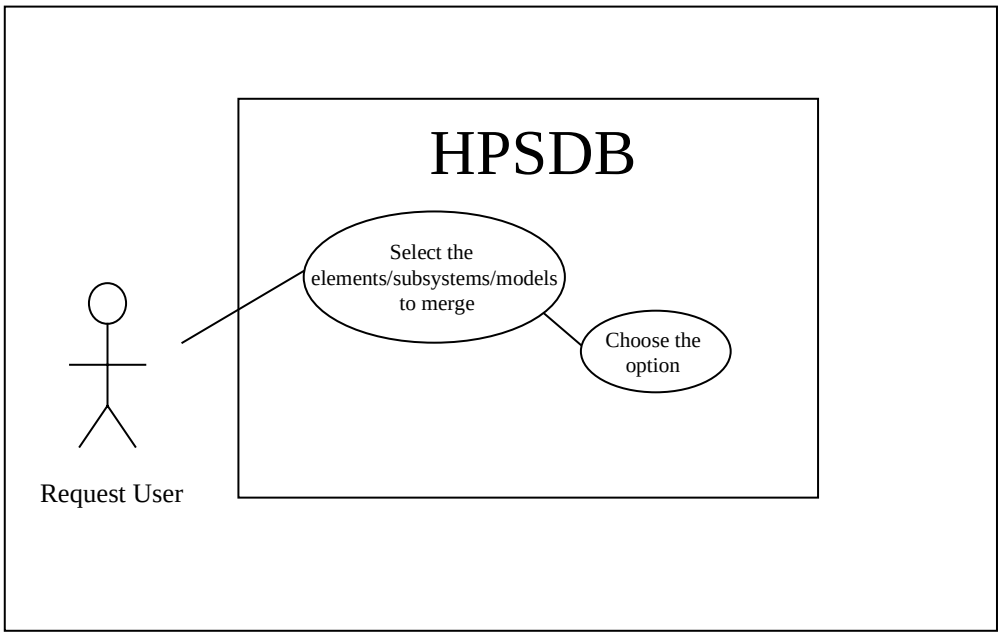


Figure 19-1~~9 1~~ UML Use Case Diagram - Merging Data

20. BOX OBJECT

A Box Object is one "element" or "subsystem" or "model" of one "box" .To create a Box Object first, Box Object Type (Box Object Theoretical name) shall be defined on the database (procedure described below).

~~1.1~~20.1 Create Box Object

If a User wants to create a Box Object:

- The HPSDB Interface User shall send an email to the HPSDB central site manager (and a copy to the Contractual Hierarchy) with the new Box Object level (element /subsystem /model ie Box), and the Box Object Type. (It can only exist one Box Object of each type)
- the HPSDB central site manager shall insert on HPSDB the new Box Object Type information and give the permission to the HPSDB Interface User create the Box.
- the HPSDB central site manager shall send and email to the HPSDB Interface User reporting that the Box Object Type has been created , so HPSDB facility to create a Box Object is activated, a copy of the email shall be sent to the Contractual Hierarchy.
- the User shall use the facility provided by HPSDB to create the Box Object.
- If the request was denied the report email shall have a justification.

Please note that several Users can have write access to the same Box for that, after creating a Box Object (see procedure above), the HPSDB Interface User shall send and email to the HPSDB manager with the User's information that shall have the write access to the Box Object.

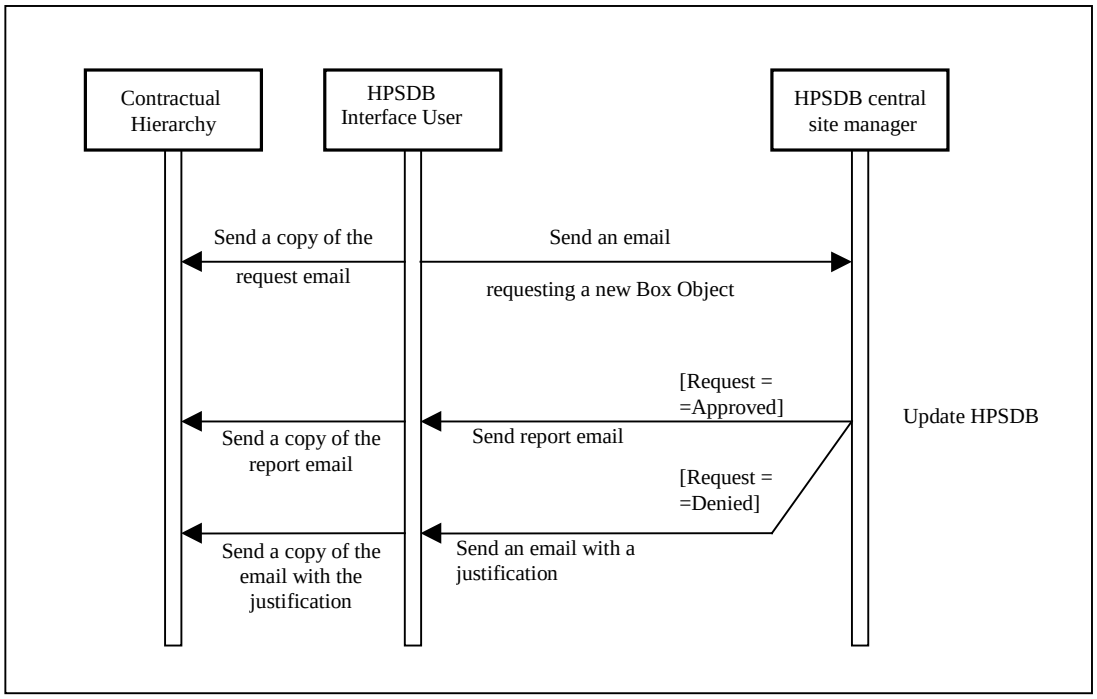


Figure 20-1~~20-1~~ UML Sequence Diagram - Create a new Box Object

~~1.2~~20.2 Delete a Box Object

HPSDB provides a facility to delete a Box Object, for that the Request User:

- shall select the Box Object
- and shall choose the option to delete Box Object, (available on HPSDB).
- the HPSDB Interface User shall send an email to the HPSDB central site manager reporting that the Box Object was deleted, with a copy to the Contractual Hierarchy,
- the HPSDB central site manager shall delete the Box Object Type from HPSDB.

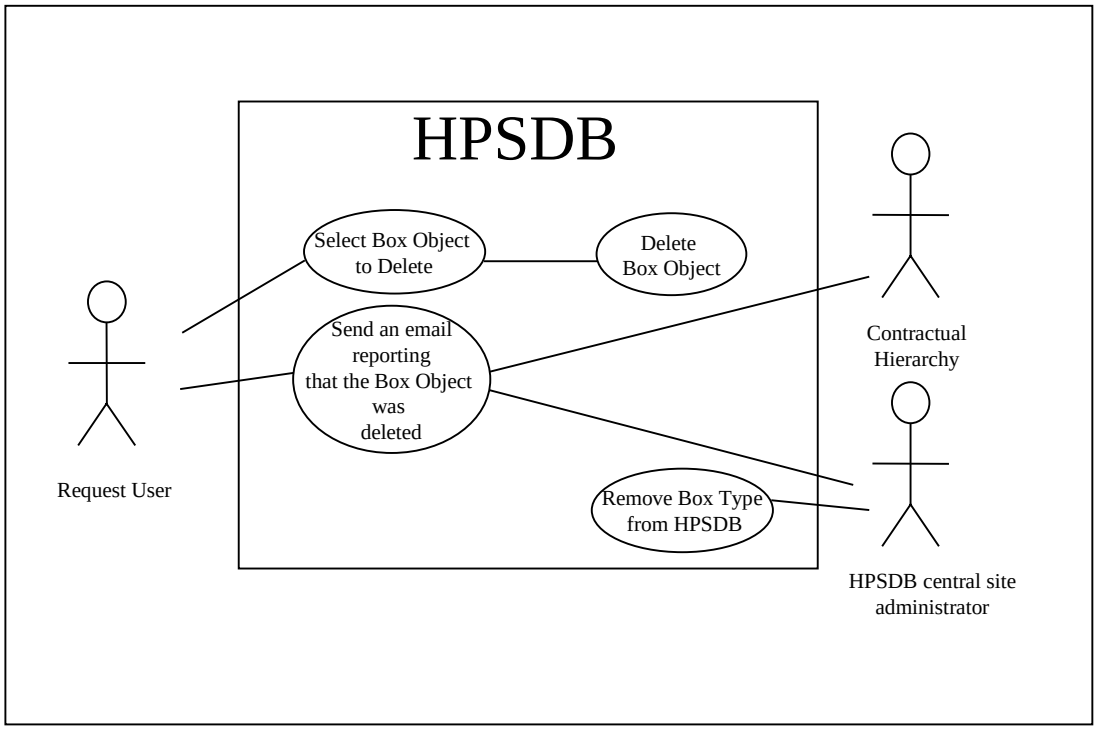


Figure 20-3~~20-2~~ UML Use Cases - Delete Box Object

21. TM PARAMETER AND TC PACKET VERIFICATION

For TM parameter items and telecommand items, it is possible to automatically or manually the fact that they have been verified in a test phase. When running tests, files are generated from test sequences in which are listed the parameters and telecommands verified, those files contain also the site on which the verification has occurred, the test sequence and its issue having generated it, the current validation date and the version (date) of the database. Those files are used to flag the TM parameter and the telecommands verified and allow to trace which have not yet been verified.

The User must be aware that HPSDB doesn't support history of the TM Parameter and TC Packet verification, so only the last TM Parameter or TC packet verification is store. Only real subsystems or real models shall have verification data associated. This facility is available only at central site.

~~1.1~~21.1 TM Parameter and TC Packet Verification:

The TM Parameter and TC Packet verification can be automatic or manual:

For the User request automatic TM parameter/TC packet verification, the HPSDB Interface User :

- shall send an email requesting the verification, to the HPSDB central site manager, with a copy to the Contractual Hierarchy (TM / TC verification file attached)
- The HPSDB shall check if the verification is possible.
- The HPSDB shall send a report email to the HPSDB Interface User with the request result, with a copy to the Contractual Hierarchy

For the User request manual TM parameter/TC packet verification :

- shall send a template email (defined on § (Annex 1)TM Parameter TC Packet manual verification) requesting the verification, to the HPSDB central site manager, with a copy to the Contractual Hierarchy
- The HPSDB central site manager shall check if the verification is possible.
- The HPSDB central site shall send a report email to the HPSDB Interface User with the request result, and a copy to the Contractual Hierarchy If the request was denied the report email shall have a justification.

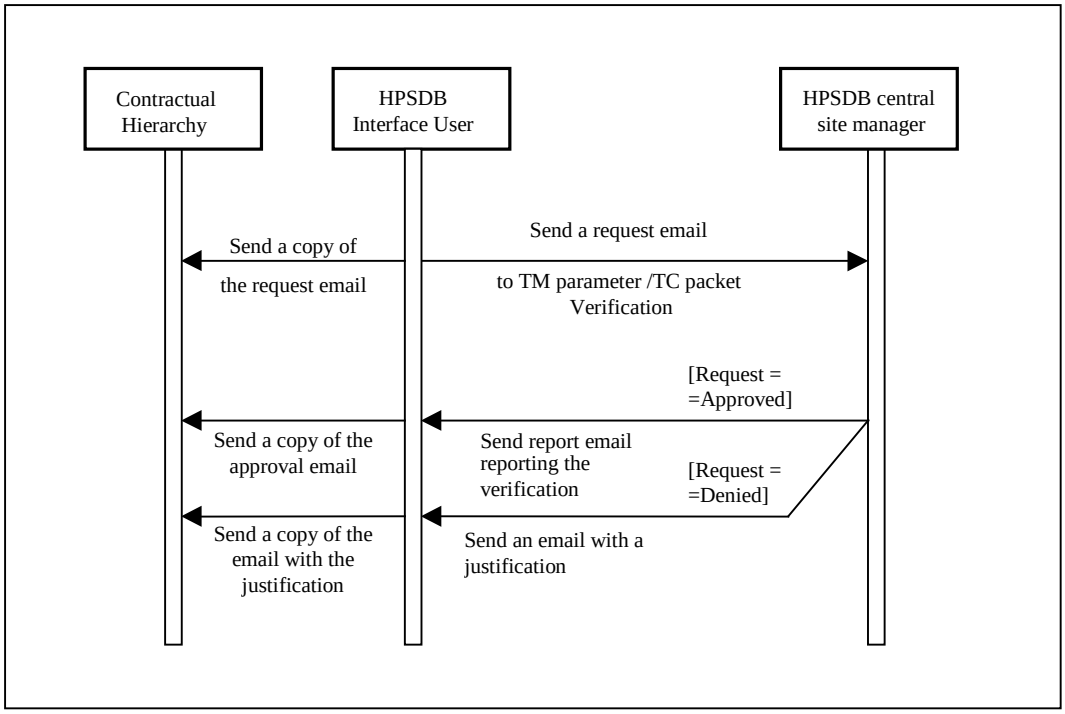


Figure 21-1~~21-1~~ UML Sequence Diagram - TM parameter and TC packet verification

Please note that :

HPSDB shall be updated only if verification date to be processed is greater to the current inside HPSDB.

HPSDB shall be updated only if verification date to be processed is greater than the reset date in case the verification record was reset (reset procedure defined below).

~~1.2~~21.2 Reset TM parameter and TC packet Verification

If the User deletes the TM parameter or the TC packet, the verifications are deleted automatically, but if the User resets the TM parameter or the TC packet verification, the verification is not physically deleted but is marked as such.

For the HPSDB Interface User reset a TM parameter /TC packet verification:

– shall select the data and shall choose the option to reset verification.

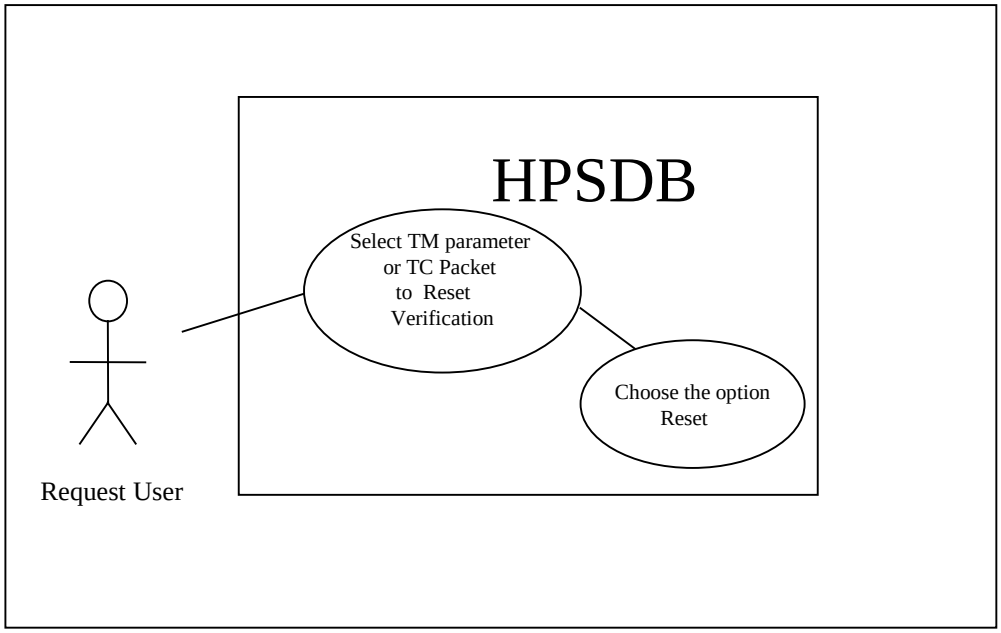


Figure 21-3~~21-2~~ UML Use Cases - Reset TM parameter and TC packet Verification

~~1.3~~21.3 Print / Display:

Facilities available on request :

- Print/Display the status result by the verification of a TM parameter or a TC packet.
- Display the Verification Data.
- Mask the Verification Data.

To use this facilities see § Print/Display.

22. ON/OFF COUNTING STATUS

The ON /OFF counting is a list of records containing the switch ON and corresponding switch OFF dates. the number of times this real element has been switch ON and the total duration during which it has been ON between two dates can be then calculated from those records. When running tests, files are generated from test sequences in which are listed the “real element” identifiers, the associated switch ON and OFF dates. Those files records are inserted inside HPSDB, but because can happen that the record file does not report the ON /OFF statuts, HPSDB has a facility to add it manulally.

ON/OFF counting status is available only at central site and with real elements. History of ON/Off status is stored on HPSDB.

If the User requests for an automatic ON/OFF counting status:

- The HPSDB Interface User shall send an email to the HPSDB central site administrator, requesting for an automatic ON/OFF counting status, , with a copy to the Contractual Hierarchy, (file with the ON / OFF information shall be attached to the email).
- The HPSDB central site manager shall load the ON /OFF counting status, and shall send a report email to the HPSDB Interface User, with a copy to the Contractual Hierarchy.
- If for some reason (technical, timing…) is not possible to make the ON/OFF counting status, the HPSDB central site manager shall send a report email to the HPSDB Interface User, with a copy to the Contractual Hierarchy.

If the User requests for an manual ON/OFF counting status:

- shall send a template email (defined on § (Annex 1)ON/OFF counting status Manually) to the HPSDB central site administrator, requesting for a manual ON/OFF counting status (with a copy to the contractual hierarchy).
- The HPSDB central site manager shall insert the manual ON /OFF counting status, and send a report email to the HPSDB Interface User, with a copy to the Contractual Hierarchy.
- If for some reason (technical, timing…) is not possible to insert the ON/OFF counting status, the HPSDB central site manager shall send a report email to the HPSDB Interface User (copy to the Contractual Hierarchy) with a justification..

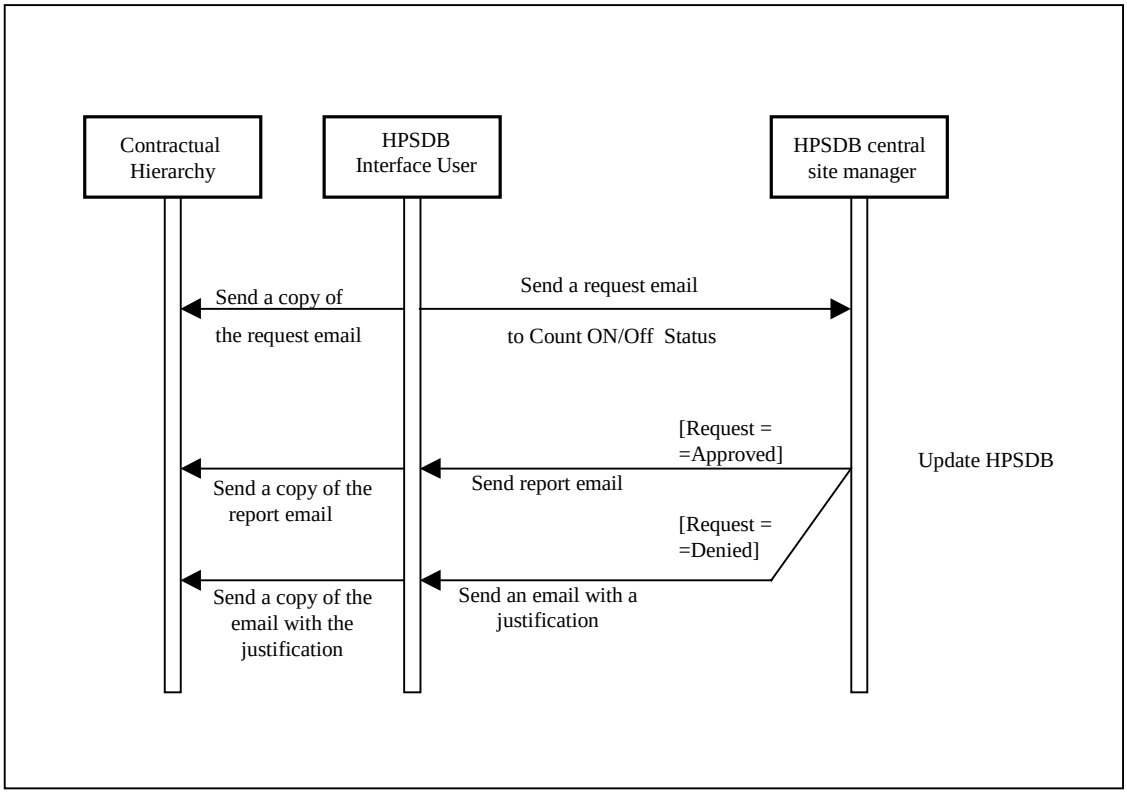


Figure 22-1~~22-1~~ UML Sequence Diagram – Manual/Automatic Count ON / OFF Status

~~1.1~~22.1 Print / Display:

Facilities available on request :

- Display/print the ON/Off Status Data. The display or print shall contain a detail list of the records with the total number of records and the Total On status duration.
- Mask the ON/Off Status Data.

To use this facilities see § Print/Display.

23. DOCUMENTATION

To explain the concept, and the objectives of the Documentation generated by HPSDB tools, is out of this document scope, so just a list of the Documentation that is available is given with the references to the chapter that explains the HPSDB Procedures.

Documentation List:

- Export Files (see § Import/Export).
- Bridge Files (see § Generate bridge files).
- Print (see § Print/Display).
- Consistency Check report (see § Consistency checks).
- ON/OFF status report (see § ON/OFF counting status).

24. INSTRUMENTS DATA

24.1 Loading Instruments data

- The instruments data (SCOS 2000 mib files format) shall be sent by email to the HPSDB Central site manager.
- The email shall also contain the elements name by position allocation on the subsystem.
- If the request is approved an email is sent by the HPSDB central site manager to the Instrument Interface User with the result of the loading. The following procedure is doene by HPSDB central site manager after loading the files:
  - The HPSDB Central site manager generates an XML file from the real data created by the loading facility inside of HPSDB
  - The XML file is re-ingested as theoretical data (tag EL_RE changed to EL_TH, and some more attributes as PTI…)
  - The instruments data (defined on the theoretical part of HPSDB) are validated.
- If the request was denied (technical reasons) an email with the justification is sent.

The SCOS mib files from instruments are loaded once inside of HPSDB, by the HPSDB central site manager. If an Update of the data is needed the procedure described on 24.2 Updating Instruments data, shall be followed.

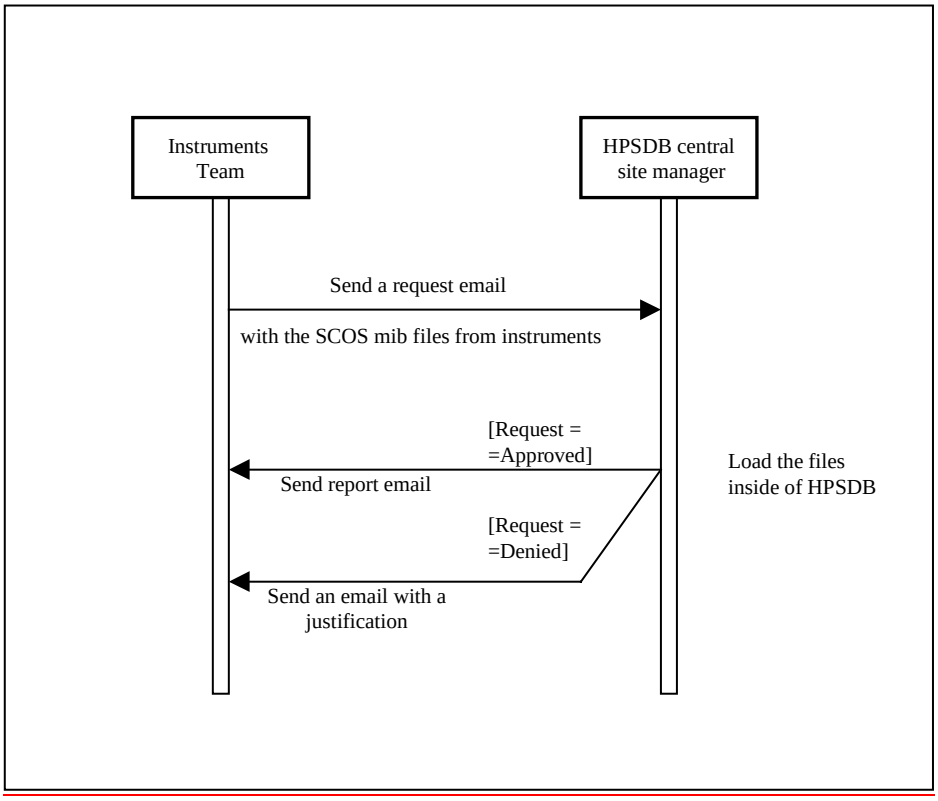


Figure 24-1 Loading Instruments Data

24.2 Updating Instruments data

– For updating data the instruments team shall ask for an internet access to HPSDB (see 9.1 Web connection procedure).

– The instrument responsable shall apply for an Interface User (see 8.1 Create the HPSDB Interface User)

– A login+Password will be provided by the HPSDB Central site Manager to the new Instrument Interface User.

– The instrument User can update Instrument data using the MMI (man machine interface) or using XML files.

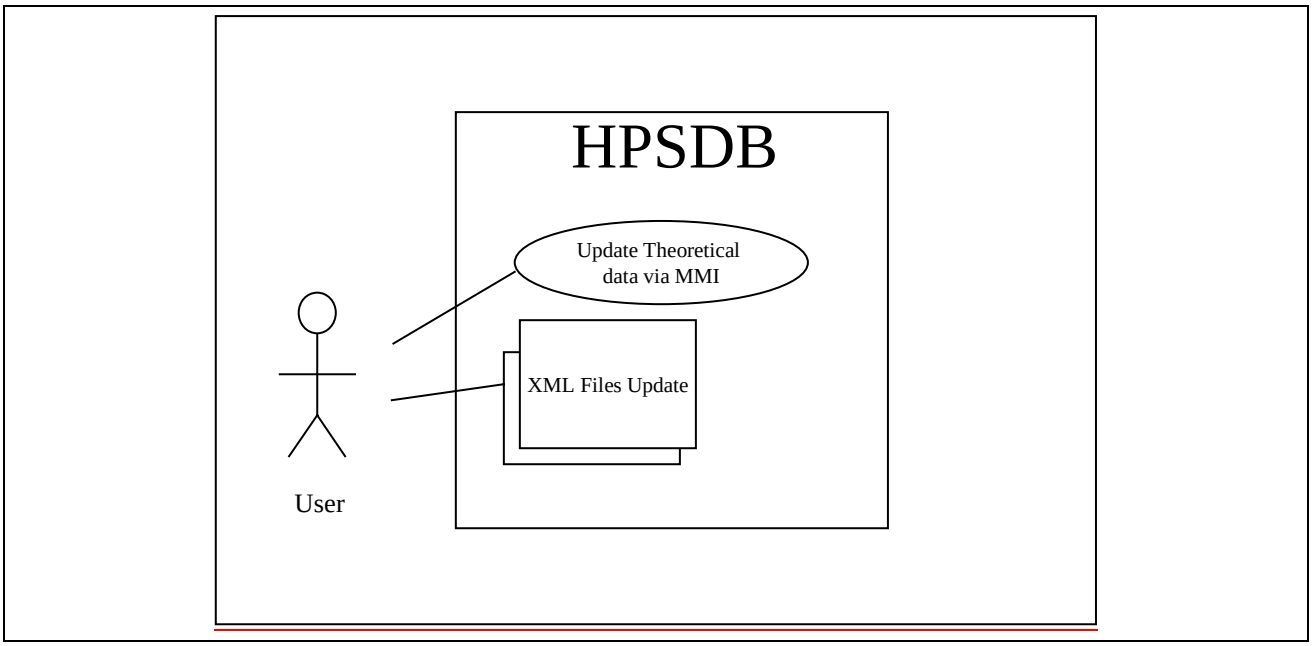


Figure 24-2 Instruments data Update

24.3 Missing Data of instruments

– The HPSDB central site manager, instantiates the theoretical data (ie creation of the real data)

– The missing data from Instruments as for instance limits, command verification stages….can be completed by the correspondent AIT team on the real data.

– The AIT team can update only real data.

– The theoretical data can only be updated by the Instrument team.

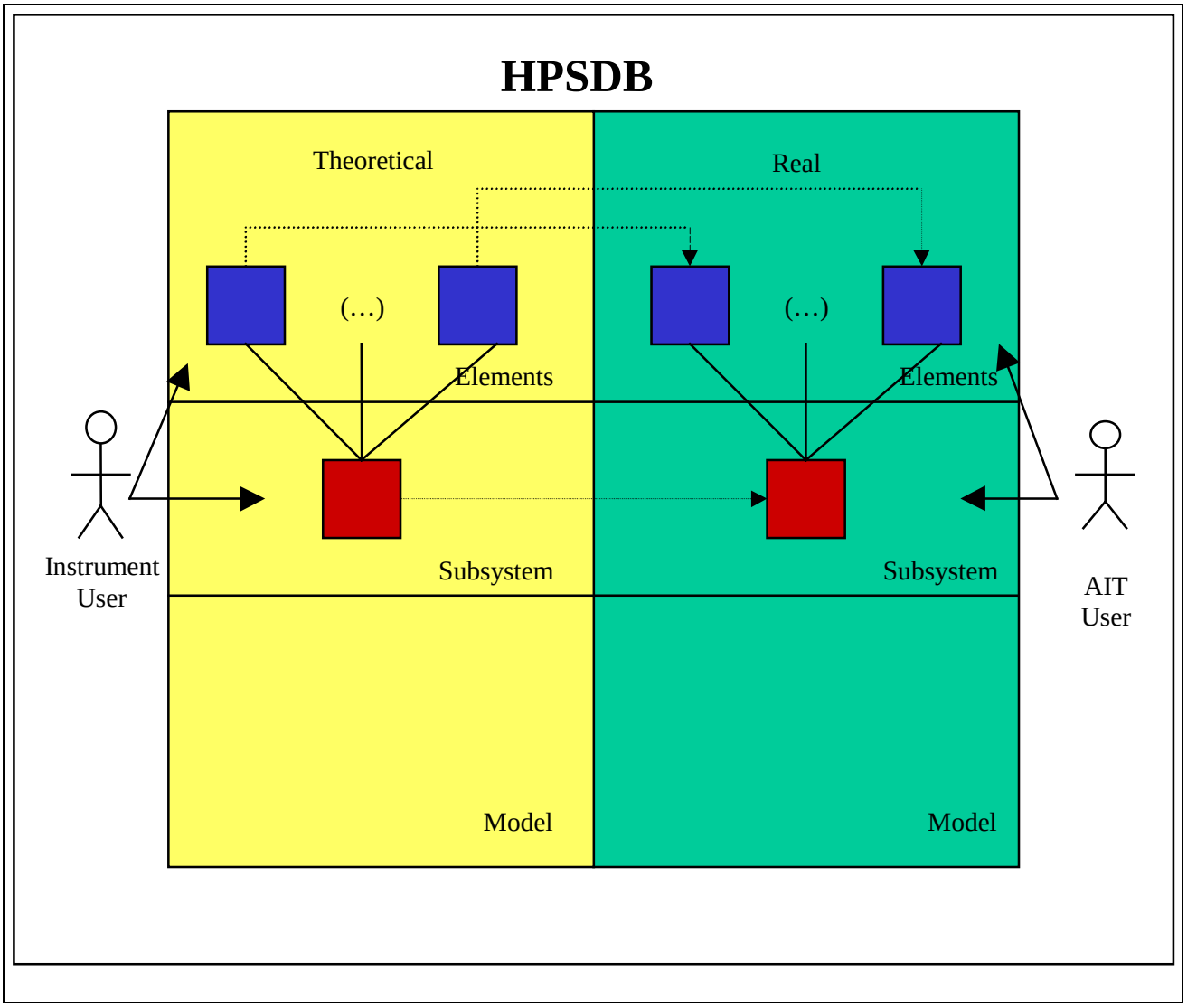


Figure 24-3 Missing Data from Instruments

24.4 Validation of Instruments data

Theoretical Data

– The theoretical Instruments data validation shall be requested by the Instruments Interface user using the procedure described on the chapter 12 Data Validation

Real Data

– The real data validation shall be requested by the AIT team to the HPSDB central site manger

  – A report of the changes performed since the last validation shall be sent by the HPSDB central site manager to the Instrument Interface User.

  – The Instrument interface User shall send an email with his agreement or with his disapproval and a justification.

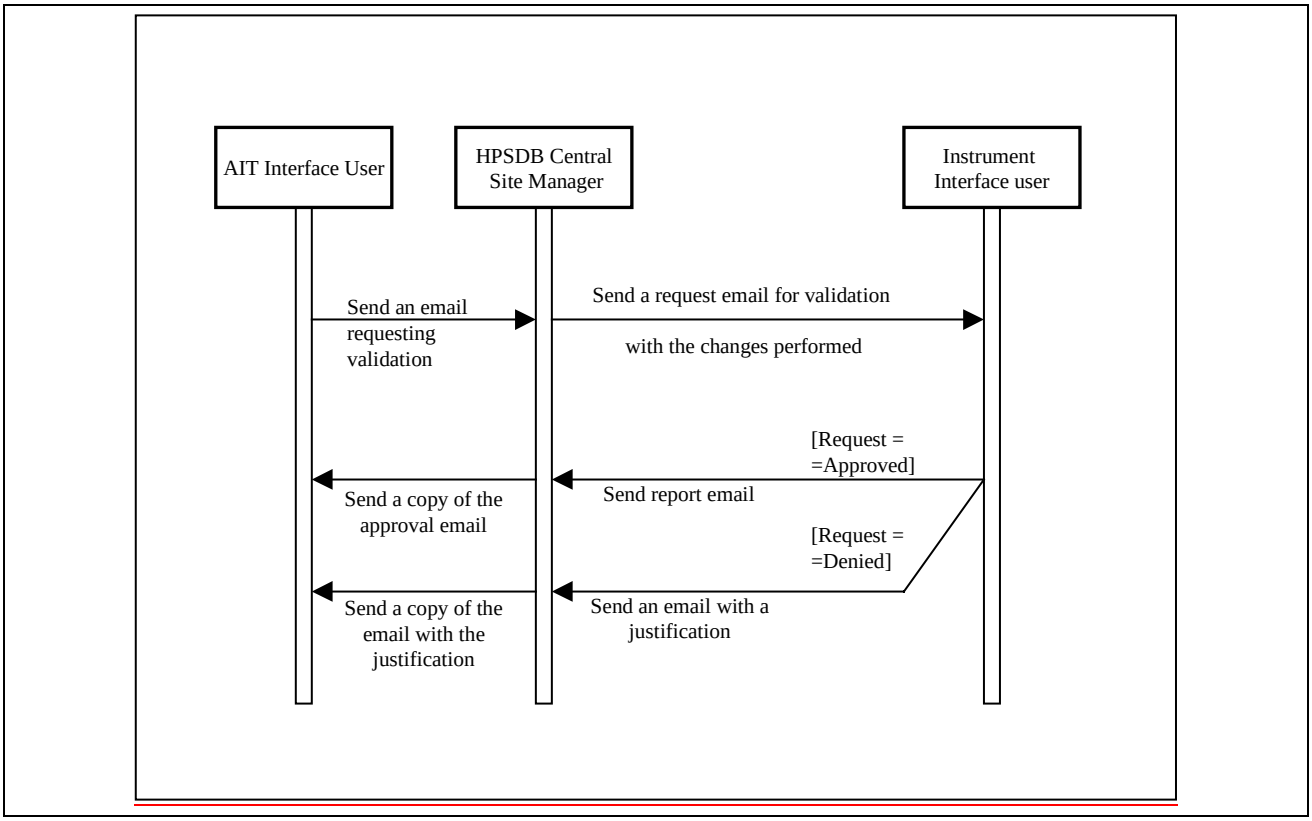


Figure 24-4 Validation Of Instruments Data

ANNEX 1

Available Request Templates

1. AVAILABLE REQUEST TEMPLATES

The templates defined bellow shall be saved in Word 97, and shall be attach to the request email.

1.1 Create User Template

HERSCHEL PLANCK	CREATE USER
	REFERENCE :
	DATE :
	ISSUE : 01/01 PAGE :

1. New User Identification:

Name:

Telephone:

Email:

Company:

2. User Category:

AIT ( ) Flight Dynamic Data ( ) Operations ( ) Software ( )

3. Read Access Level *

Element ( ) Subsystem ( ) Model ( )

List of Identifiers:

* For consultant User

4. Write Access Level

Element ( ) Subsystem ( ) Model ( )

Theoretical ( ) Real ( )

List of Identifiers:

Answer

5. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

Note: Password and Login shall be sent to the User by email.

1.2 Delete User Template

HERSCHEL PLANCK	DELETE USER
	REFERENCE :
	DATE :
	ISSUE : PAGE :

1. Delete User Identification:

Name:

Login:

2. Justification:

Answer

3. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

1.3 Modify User Template

HERSCHEL PLANCK	MODIFY USER
	REFERENCE :
	DATE :
	ISSUE : PAGE :

1. Modify User Identification:

(Old Information)	(New Information)
Name:	Name:
Login:	
Telephone:	Telephone:
Email:	Email:
Company:	Company:
Category:	Category:

2. Read Access Level Modification *

Element ( ) Subsystem ( ) Model ( )

List of Identifiers:

* For consultant User

3. Write Access Level Modification

Element ( ) Subsystem ( ) Model ( )

Theoretical ( ) Real ( )

List of Identifiers:

4. Justification

Answer

5. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

1.4 Generic Data change request Template

HERSCHEL PLANCK	GENERIC DATA CHANGE REQUEST
	REFERENCE :
	DATE :
	ISSUE : PAGE:

1. Priority level

High Priority ( ) Medium Priority ( ) Low Priority ( )

2. Change type:

Create ( ) Modify ( ) Delete ( )

3. Data type:

File Name:

Note: A File with the change shall be send in annex with the email

Justification:

Date to apply the Change (Optional):

Answer:

1. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

1.5 Parameterisation Data change request Template

HERSCHEL PLANCK	PARAMETERISATION DATA CHANGE REQUEST
	REFERENCE :
	DATE :
	ISSUE : PAGE:

1. Priority level

Low Priority ( ) Medium Priority ( ) High Priority ( )

2. Change type:

Create ( ) Modify ( ) Delete ( )

3. Data type:

File Name:

Note: A File with the change shall be send in annex with the email

Justification:

Date to apply the Change (Optional):

Answer:

4. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

1.6 Data Validation Template

HERSCHEL PLANCK	DATA VALIDATION
	REFERENCE :
	DATE :
	ISSUE: 01/01 PAGE :

1. Priority Level

Low Priority ( ) Medium Priority ( ) High Priority ( )

2. Identifiers:

List of Box Object Identifiers Item selection for each box object

3. Justification:

Date to apply the Request (Optional):

Answer:

4. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

1.7 Site comparison

HERSCHEL PLANCK	SITE COMPARISON
	REFERENCE :
	DATE :
	ISSUE: 01/01 PAGE :

1. Priority Level :

Low Priority ( ) Medium Priority ( ) High Priority ( )

2. Data selection:

Element ( ) Subsystem ( ) Model ( )

Theoretical ( ) Real ( )

Identifier:

3. Justification:

Date to apply the Request (Optional):

Answer:

4. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

5. Export File Data *:

Export File Name:

Export File date:

Level Identifier (subsystem or model):

* To be filled if the request is approved

1.8 Import / Export

HERSCHEL PLANCK	IMPORT / EXPORT
	REFERENCE :
	DATE :
	ISSUE: 01/01 PAGE :

1. Priority Level

Low Priority ( ) Medium Priority ( ) High Priority ( )

2. Export File *:

Export File Name:

Export File date:

* To be filled if the request is made by the central site manager

3. Data Selection

Element ( ) Subsystem ( ) Model ( )

Theoretical ( ) Real ( )

Identifier:

4. Justification:

Date to apply the Request (Optional):

Answer:
5. Request Result: Approved ( ) Denied ( ) Date: Justification:
6. Export File *: Export File Name: Export File date: * To be filled if the request has been made by the central site manager

1.9 Log / Log Download

HERSCHEL PLANCK	LOG / LOG DOWNLOAD
	REFERENCE :
	DATE :
	ISSUE: 01/01 PAGE :

1. Priority Level

Low Priority ( ) Medium Priority ( ) High Priority ( )

2. Log File *:

Mirror site:

Log File Name:

Log File date:

* To be filled if the request is made by the mirror site manager

3. Justification:

Date to apply the Request (Optional):

Answer:

4. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

5. Log File *:

Log File Name:

Log File date:

* To be filled if the request has been made by the central site manager

1.10 Working Area Bridge Files Generation

HERSCHEL PLANCK	WORKING AREA BRIDGE FILES
	REFERENCE :
	DATE :
	ISSUE : 01/01 PAGE :

1. Priority Level

Low Priority ( ) Medium Priority ( ) High Priority ( )

2. Type of files:

CCS ( ) Sws( ) Software ( ) FDD( )

3. Category

AIT ( ) Operation ( ) Software ( ) FDD ( )

4. Bridge files information:

Identifier:

Site:

Central ( ) Mirror ( ) Mirror site name:

5. Justification:

Date to apply the Request (Optional):

Answer:

6. Answer Author Identification:

Name:

7. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

1.11 Archiving Area Bridge Files Generation

HERSCHEL PLANCK	**ARCHIVING AREA BRIDGE FILES**
	REFERENCE :
	DATE :
	ISSUE : 01/01 **PAGE** :

1. Priority Level

Low Priority ( ) Medium Priority ( ) High Priority ( )

2. Type of files:

CCS ( ) SVF ( ) Software ( ) FDD( )

3. Category

AIT ( ) Operation ( ) Software ( ) FDD ( )

4. Bridge files information:

Date:

Site:

Identifier:

Central ( ) Mirror ( ) Mirror site name:

5. Justification:

Date to apply the Request (Optional):

Answer:

6. Answer Author Identification:

Name:

7. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

1.12 TM Parameter TC Packet manual verification

HERSCHEL PLANCK	**TM/TC MANUAL VERIFICATION**
	REFERENCE :
	DATE :
	ISSUE : 01/01 **PAGE** :

1. Priority Level

Low Priority ( ) Medium Priority ( ) High Priority ( )

2. Data Verification:

Site of verification:

Test Sequence:

Test Sequence Issue:

Date of Verification:

Version (date) of the database:

3. Justification (reason why the verification wasn't automatic):

Date to apply the Request (Optional):

Answer:

4. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

1.13 ON/OFF counting status Manually

HERSCHEL PLANCK	**ON/OF COUNTING STATUS MANUALLY**
	REFERENCE :
	DATE :
	ISSUE : 01/01 **PAGE** :

1. Priority Level

Low Priority ( ) Medium Priority ( ) High Priority ( )

2. ON/Off counting status

	ON		OFF	
List Of identifiers	Date	Time	Date	Time

3. Justification: (reason why the ON / OFF counting status wasn't automatic):

Date to apply the Request (Optional):

Answer:

4. Request Result:

Approved ( ) Denied ( )

Date:

Justification:

ANNEX 2

Templates User's Guide

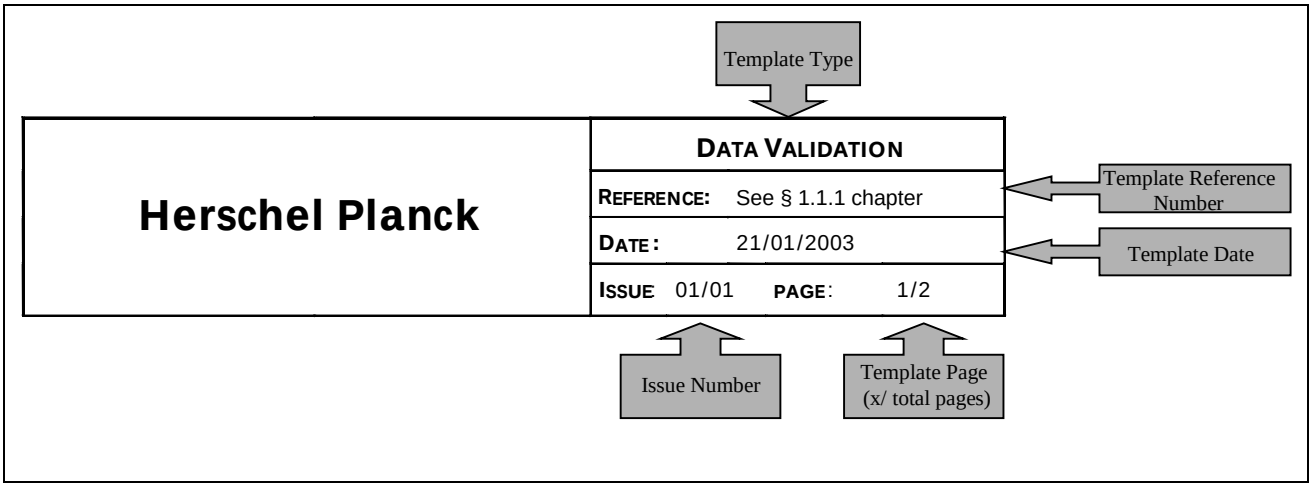
1. TEMPLATES USER´S GUIDE:

The templates defined in the this document (§ Annex 1) are structured in three parts, the Header, the Request and the Answer.

1.1 Template Header

The Header is composed with the following fields :

- Template Type,
- Template Reference Number (see § 1.1.1 Template Reference Number),
- Date,
- Issue,
- Page.



Annex 2 Figure 1 Template Header Example

1.1.1 Template Reference Number

The Template reference number shall be created white the following rules

1. First position : H (Hershel)
2. Second position : P (Planck)
3. Third position : 1 (applicable to Hershel and Planck)
4. Fourth position: Company mnemonic
5. Type of document: LT

6. Number of the template:

Template Type	**Reference**
Create User	1
Delete User	2
Modify User	3
Generic Data Change Request	4
Parameterisation Data Change Request	5
Data Validation	6
Site comparison	7
Import / Export	8
Log / Log Download	9
Working Area Bridge Files	10
Archiving Area Bridge Files	11
Tm/TC verification manually	12
On/Off counting status manually	13

Annex 2 Table 1– Template number

7. Number of the request (shall be unique for each company request).

Please note that all the positions shall be separated by the char "-".

Example:

Alcatel Space Interface User, send a request template for Tm/TC manual verification, the reference number of the request shall be:

HP-1-ASP- LT -12-1

For the second request of Tm/TC manual verification the reference number shall be :

HP-1-ASP- LT -12-2

(…)

1.2 Template Request

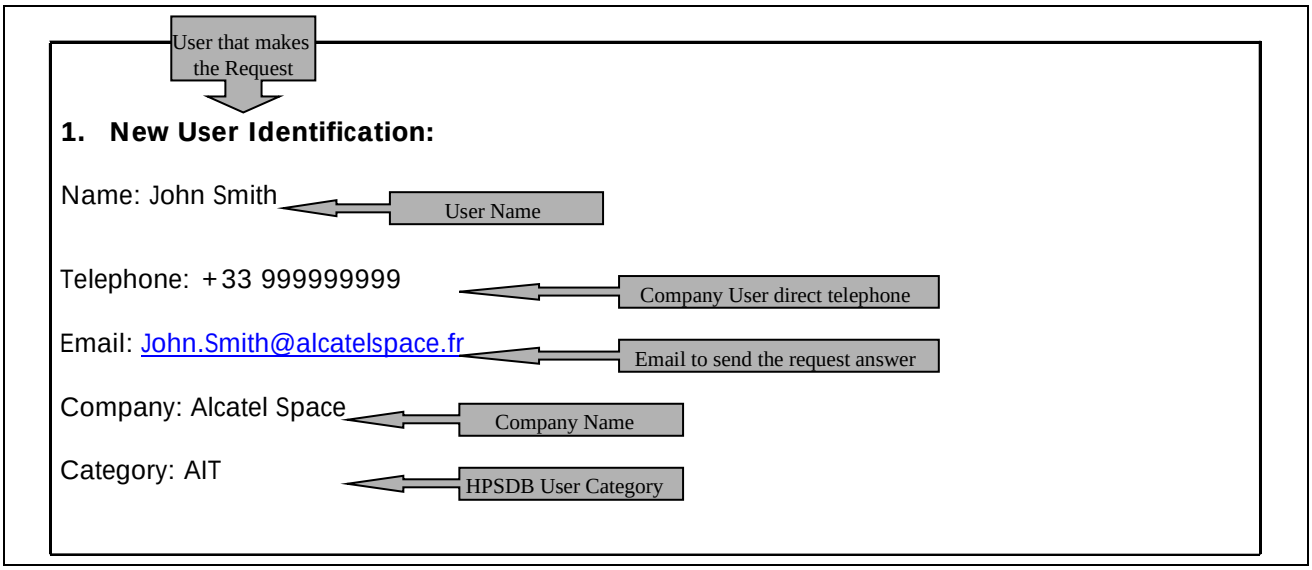
The Request part , contains a field with the justification of the request and the date to apply the request (except the templates used to User's management).

The rest of the fields are depending of the template's type.

What is pretended in each field, is identified by the field name.

For the Template acceptance, all the fields shall be correctly filled and the template shall be send by email to the HPSDB central site manager.

Just for demonstrate what each field is expecting, an example of a HPSDB Interface User Identification is in the figure bellow.



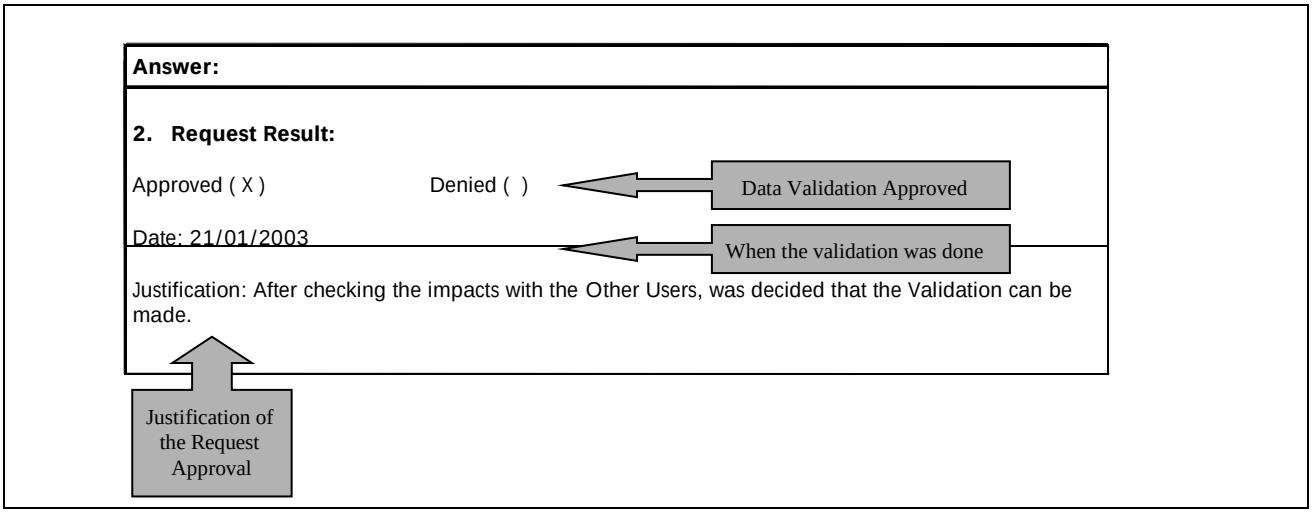
Annex 2 Figure 2 New User Identification

1.3 Template Answer

All the Requests shall have an answer. The answer shall be send by email User that made the request (Interface User, HPSDB manager). The answer information is on the same template as the request.

The spaces below “Answer Author Identification” are reserved to the answer.

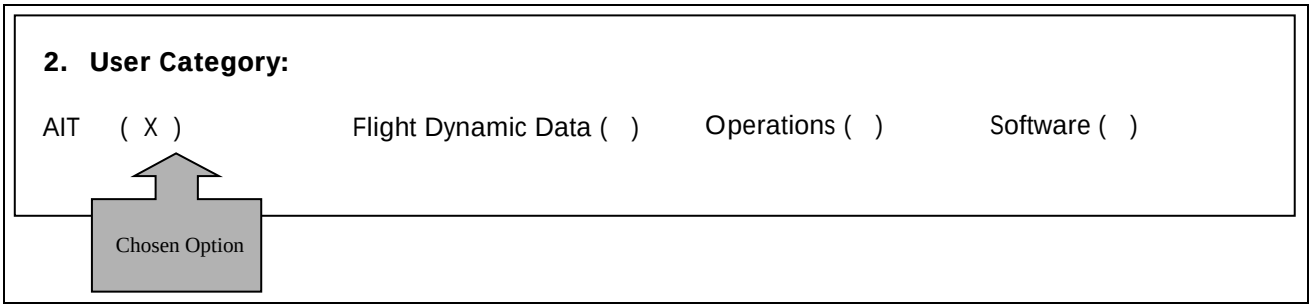
An example of an answer to a Data Validation request is given below.



Annex 2 Figure 3 Example of an answer to a Data Validation Request

1.4 Options Fields:

When a template as a field similar to the following example, for marking the choose option the User shall enter a "X".



Annex 2 Figure 4 Signalising a chosen option

END OF THE DOCUMENT