COOKBOOK

Safe operations : functional description

Version 1.4

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1 Document management

1.1 History of the document

Version	Date	Description of the amendments / comments
1.0	15/08/2017	First version; introductive document mainly elaborated for software providers participating to the minilab session organized on the 29/09/2017.
1.1	31/10/2017	No more difference in the PutTransactionSet response: Vitalink and RSW/RSB both return 1 id for each received transaction
1.2	12/01/2018	Corrections in XML examples.
1.3	18/09/2018	Pagination-related changes for GetTransactionList and GetPatientAuditTrail services
1.4	26/11/2018	Update of ehealth reference links
1.4b	27/04/2021	Typos correction : wrong link in references section

1.2 Purpose of the document

This document is for developpers, analysts and software producers involved in the process of integration of their software solution to the services delivered by the different 'regional Safes' dedicated to the health data storage and sharing in support to the continuity of care:

- Vitalink for Flanders region,
- RSW for Wallonia region, and
- RSB-BGN for Brussels region.

It describes the main functional principles and operations underlying the consulation and feeding of the health data stored in those platforms.

This document does not aim to replace the other existing documentations. It rather intends to complete those documents and to provide to its readers a kind of 'roadbook' throughout these documents.

This document is a technical document. It does not tackle the regulatory and business points.

Preferably the readers are experienced with XML and web services technologies and know about Kmehr codification of health records, and SAML basics.

The core of this document is composed of three main sections. We first recall, in Section 2, the context and provide an overview of the global architecture and principles. Section 3 lists the possible kind of users. Section 4 functionnaly describes the operations provided by the "regional safes".

2 Context and principles

We just provide here a short summary of the 'safes' context in order to support the general understanding of the reader. However, this document does not replace the 'business' and 'regulatory' documentations that remain the only 'authentic documentations'.

2.1 General 'safe' principles

There are three 'regional safes' dedicated to the storage and sharing of health data in support to the continuity of care:

- Vitalink for Flanders region,
- The Inter-Med component of RSW for Wallonia region, and
- The BruSafe component of RSB-BGN for Brussels region.

These 'regional safes' take place in the global exchange system described by the document
Règlement du partage de données de santé entre les systèmes de santé connectés via le répertoire de références de la plate-forme eHealth
Reglement betreffende de uitwisseling van gezondheidsgegevens tussen gezondheidssystemen verbonden via het verwijzingsrepertorium van het eHealth-platform

According to these regulations, some specific data is stored in one single safe. The 'storage' safe is determined for each patient by the official residence place as known in the Belgian authentic sources. The healthcare professional or institution connects independently of this rule only to its usual safe. It is the safe that determines where to find and store the data.

At the time of writing, this rule covers the 'sumehr' and the 'medication scheme'. However it should be applied to other data in the future.

2.2 Architecture principles: aligned behaviors

The three safes propose a minimal set of common operations that respect a common standard specification. Each safe can propose additional specific interfaces but those are out-of scope of this document.

The retained current standard relies on the standards defined by the eHealth platform. More precisely, the exposed interfaces are (soap) webservices that

- respect the standard defined by the eHealth platform, in particular in the context of the 'hubs and metahub' project, for the authentification and encryption features;
- make use of the 'Kmehr' standard operated by the eHealth platform for both webservices operations and message data structuration;
- are available in the eHealth platforms API 'connectors'.

2.2.1 Authentification

The standard interfaces supported by the three safes rely on the usage of the SAML protocol. More precisely to access the safe services, a request must provide an adequate 'SAML token' returned by the STS service of the ehealth platform (see ref. *Secure Token Service*).

The required SAML tokens are more deeply described in Section 3.

2.2.2 End-to-end encryption

For ensuring privacy during data transport, sensitive parts of messages are crypted from end to end (ETEE – End To End Encryption). As the recipient is always known for the operations we consider

here, we make use of a private/public key combination. This is done through the ETEE service from the eHealth platform.

For more information, see ref. *ETEE encryption*.

The usage of this encryption mechanism in the operations is described in the functional description of the generic 'kmehr webservices' (see next paragraph).

2.2.3 KMEHR webservices

The standard interfaces provided by the safes rely on the KMEHR "**intrahub** services" definided by the eHeath platform. See ref. *Kmehr Web Services*.

More precisely, the common architecture requires the use of **version 3** of this standard.

Section 4 provides a functional description of some of these operations in our specific usage context.

2.2.4 KMEHR messages

The standard interface makes use of the KMEHR structuration standard to represent the 'business data'. See ref. *Kmehr documentation* and *Kmehr XSchema*.

Regarding the 'Sumehr', the specification is available on the Kmehr standard site. See ref. *Sumehr.*

Regarding the mediaction scheme, the reader should consult the document *Safe_Cookbook_Medicatieschema*.

2.2.5 Connectors

KMEHR Intrahub services v3 are integrated in the '*eHealth platform services connectors*' (starting from release 3.14). See ref. *eHealth platform services connectors.*

The usage of those API will be familiar for those who already use them to connect to the "hubs". For the Vitalink users familiar with the Vitalink Connector and wanting to migrate to the Vitalink Gateway, we recommand to consult the specific documents from Vitalink: *Cookbook_Gateway*.

2.3 Architecture principles: specific behaviors

2.3.1 'Hub' versus 'Safe'

The main difference is that Hubs store decentralized data, shared among other Hubs. While a Safe stores centralized data.

Vitalink acts essentially as a Safe. The Vitalink Gateway gives access to documents stored in the Vitalink Central Platform, like medication schemes and sumehrs. Hub access is usually done through another connection.

RSB and RSW are both a Hub and a Safe, and act accordingly. The endpoint of connection is the same for both types of data storing, so access to one or another is completely transparent from the user (application) point of view. This way a single search request can return a mix of documents coming from Hub and Safe.

2.3.2 Regulation functionalities

The regulation functionalities respect the general aforementioned regulations for the three systems. However each system defines its set of rules to respect it according to the 'circle of trust principle' and may have some specific rules as long as they respect the minimal common set of rules. These are governance aspects that are not in the scope of this document.

However, those apects have impact on the proposed interfaces and behaviors of the systems. The most visible is that RSW and RSB will support all the operations of the intrahub services related tothe management of consents and therapeutic links whereas Vitalink will delegate these operations tothe eHealth platform.

2.3.3 Approach for 'organisations'

For organisations like hospitals, residential care houses, groups of nurses, the technical approach may differ between Vitalink and RSW/RSB (as well as the 'contractual' approach) although the functional operations remain common.

For RSW/RSB, it is strongly recommended to contact the support lines before to start any development.

Section 3 highlights this by precising which 'STS actor profile' are supported or not by the three systems.

2.3.4 Error codes

As a consequence of those specifications, error codes remain platform dependent.

For RSW/RSB, see *RSW codes d'erreur*

For Vitalink, see *Cookbook_Algemeen*

3 Actors

The users must prove to have a particular professional profile, to have access to some or all documents available. Their right to read, insert, modify or delete information depends on their professional profile.

Only the types of actors described hereafter could have access to the safe operations and data throughout the standard interfaces, as long as they fulfill other conditions (such as having a proven therapeutic link with the patient considered):

- physicians
- pharmacists
- dentists
- nurses
- midwifes

The SAML token must provide some assertions about the user. The *Attributes* to use in the *NameIdentifier* part and the *AttributeDesignator* part of the STS request are described for the different types of actors.

3.1 Physicians

AttributeName	AttributeNamespace
NameIdentifier	
urn:be:fgov:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin	urn:be:fgov:identification-namespace
AttributeDesignator	
urn:be:fgov:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:person:ssin:ehealth:1.0:doctor:nihii11	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:doctor:boolean	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:ehealth:1.0:givenname	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:ehealth:1.0:surname	urn:be:fgov:certified-namespace:ehealth

3.2 Pharmacists

AttributeName	AttributeNamespace
NameIdentifier	
urn:be:fgov:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:person:ehealth:1.0:pharmacy-holder	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:pharmacy:nihii-number	urn:be:fgov:identification-namespace
AttributeDesignator	
urn:be:fgov:person:ssin	urn:be:fgov:identification-namespace

urn:be:fgov:ehealth:1.0:certificateholder:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:person:ssin:ehealth:1.0:pharmacy-holder	urn:be:fgov:identification-namespace
urn:be:fgov:person:ssin:ehealth:1.0:pharmacy-holder:certified:nihii11	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:ehealth:1.0:pharmacy:nihii-number:person:ssin:ehealth:1.0:pharmacy-holder:boolean	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:ehealth:1.0:pharmacy:nihii-number	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:pharmacy:nihii-number:recognisedpharmacy:boolean	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:ehealth:1.0:givenname	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:ehealth:1.0:surname	urn:be:fgov:certified-namespace:ehealth

3.3 Dentists

AttributeName	AttributeNamespace
NameIdentifier	
urn:be:fgov:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin	urn:be:fgov:identification-namespace
AttributeDesignator	
urn:be:fgov:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:person:ssin:ehealth:1.0:dentist:nihii11	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:dentist:boolean	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:ehealth:1.0:givenname	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:ehealth:1.0:surname	urn:be:fgov:certified-namespace:ehealth

3.4 Nurses

AttributeName	AttributeNamespace
NameIdentifier	
urn:be:fgov:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin	urn:be:fgov:identification-namespace
AttributeDesignator	
urn:be:fgov:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:person:ssin:ehealth:1.0:nurse:nihii11	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:nurse:boolean	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:ehealth:1.0:givenname	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:ehealth:1.0:surname	urn:be:fgov:certified-namespace:ehealth

3.5 Midwifes

AttributeName	AttributeNamespace
NameIdentifier	
urn:be:fgov:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin	urn:be:fgov:identification-namespace
AttributeDesignator	
urn:be:fgov:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin	urn:be:fgov:identification-namespace
urn:be:fgov:person:ssin:ehealth:1.0:midwife:nihii11	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:midwife:boolean	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:ehealth:1.0:givenname	urn:be:fgov:certified-namespace:ehealth
urn:be:fgov:person:ssin:ehealth:1.0:surname	urn:be:fgov:certified-namespace:ehealth

3.6 Organisations

Access throughout 'STS profile' is only supported by Vitalink.

For RSW/RSB, please contact RSW/RSB support lines.

3.6.1 Home care (thuiszorg/soins à domicile)

AttributeName	AttributeNamespace
NameIdentifier	
urn:be:fgov:kbo-bce:organization:cbe-number	urn:be:fgov:identification-namespace
AttributeDesignator	
urn:be:fgov:kbo-bce:organization:cbe-number	urn:be:fgov:identification-namespace
urn:be:fgov:kbo-bce:organization:cbe-number:ehealth:1.0:wvg:vazg:homecare:boolean	urn:be:fgov:certified-namespace:ehealth

3.6.2 Nursing home care organisation (CBE)

AttributeName	AttributeNamespace
NameIdentifier	
urn:be:fgov:kbo-bce:organization:cbe-number	urn:be:fgov:identification-namespace
AttributeDesignator	
urn:be:fgov:kbo-bce:organization:cbe-number	urn:be:fgov:identification-namespace
urn:be:fgov:kbo-bce:organization:cbe-number:ehealth:1.0:wvg:vazg:nursing:boolean	urn:be:fgov:certified-namespace:ehealth

3.6.3 Nursing home care organisation (NIHII)

AttributeName	AttributeNamespace
NameIdentifier	

urn:be:fgov:ehealth:1.0:groupofnurses:nihii-number	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:groupofnurses:nihii-number	urn:be:fgov:identification-namespace
AttributeDesignator	
urn:be:fgov:ehealth:1.0:groupofnurses:nihii-number	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:groupofnurses:nihii-number	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:groupofnurses:nihii-number:recognisedgroupofnurses:boolean	urn:be:fgov:certified-namespace:ehealth

3.6.4 Residential care (woonzorgcentra/maisons de repos)

AttributeName	AttributeNamespace
NameIdentifier	
urn:be:fgov:kbo-bce:organization:cbe-number	urn:be:fgov:identification-namespace
AttributeDesignator	
urn:be:fgov:ehealth:1.0:certificateholder:enterprise:cbe-number	urn:be:fgov:identification-namespace
urn:be:fgov:kbo-bce:organization:cbe-number	urn:be:fgov:identification-namespace
urn:be:fgov:kbo-bce:organization:cbe-number:ehealth:1.0:wvg:vazg:residentialcarecenter:boolean	urn:be:fgov:certified-namespace:ehealth

3.6.5 Retirement home (rusthuis/maisons de retraite)

AttributeName	AttributeNamespace
NameIdentifier	
urn:be:fgov:ehealth:1.0:retirement:nihii-number	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:retirement:nihii-number	urn:be:fgov:identification-namespace
AttributeDesignator	
urn:be:fgov:ehealth:1.0:certificateholder:retirement:nihii-number	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:retirement:nihii-number	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:certificateholder:retirement:nihii-number:recognisedretirement:boolean	urn:be:fgov:certified-namespace:ehealth

3.6.6 Hospitals

AttributeName	AttributeNamespace
NameIdentifier	
urn:be:fgov:ehealth:1.0:certificateholder:hospital:nihii-number	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:hospital:nihii-number	urn:be:fgov:identification-namespace
AttributeDesignator	
urn:be:fgov:ehealth:1.0:certificateholder:hospital:nihii-number	urn:be:fgov:identification-namespace
urn:be:fgov:ehealth:1.0:hospital:nihii-number	urn:be:fgov:identification-namespace

urn:be:fgov:ehealth:1.0:certificateholder:hospital:nihii-number:recognisedhospital:boolean	urn:be:fgov:certified-namespace:ehealth

4 Web services operations

The standard interfaces provided by the safes rely on the KMEHR "**intrahub** services" defined by the eHeath platform. See ref. *Kmehr Web Services*. More precisely, the common architecture requires the use of **version 3** of this standard.

Those services are generic. Let's go deeper into the description of the operations involved in the access of unique medication schemes.

4.0 Summary of main operations

Method	Description	Usage
GetTransactionList	Get list of available transactions for a patient	All types of transactions
GetTransactionSet	Get a set of strongly related transactions	medication schemes
PutTransactionSet	Update a set of strongly related transactions	medication schemes
GetLatestUpdate	Get date/time of last change of a type of transaction	All types of transactions
GetTransaction	Get a simple transaction	All types of transactions, except medication schemes
PutTransaction	Save a simple transaction	All types of transactions, except medication schemes
RevokeTransaction	Delete (dereference) a transaction	All types of transactions, except medication schemes
GetPatientAuditTrail	Get list of access to transactions of a patient	All types of transactions

4.1 GetTransactionList

4.1.1 Purpose

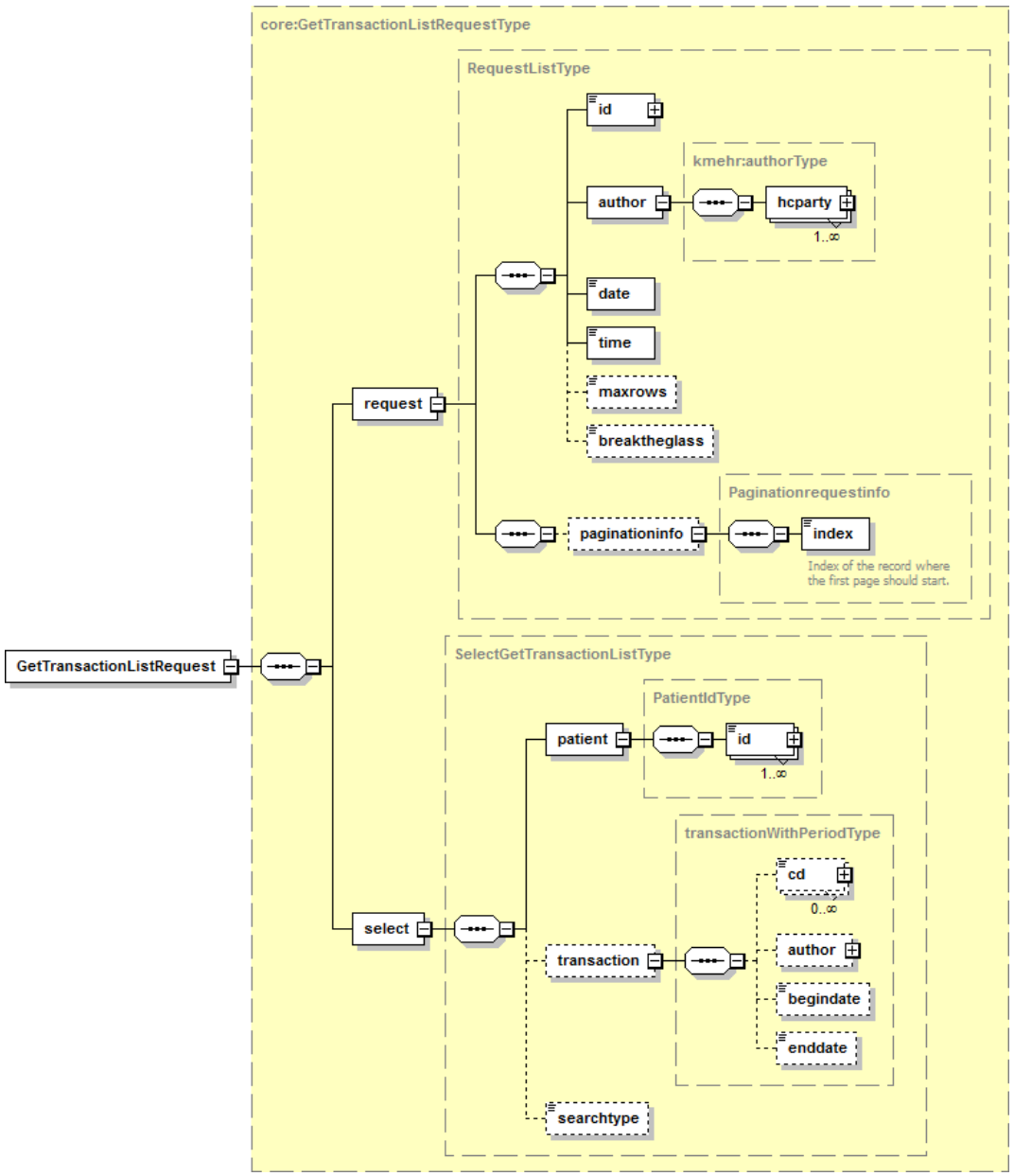
The GetTransactionList method is used to to get the list of available transactions (documents) for a given patient, that meets the selection criteria. If available, the medication scheme of the patient will be represented as a unique line in the list of results.

For the detailed specifications, see ref. *intrahub getTransactionList 3.0 specification.*

4.1.2 GetTransactionListRequest

The GetTransactionListRequest message contains two parts:

- *request* contains the parameters of the request itself,
- *select* are the search criteria.



4.1.2.1 Input data

request/id[1]	the identification of the request within the caller system
request/author[1]	the sender of the request, as a sequence of *hcparty* elements identifying the end user person, optionnaly preceded for instance by the organization, department, and so. The end user application software should also be identified. There is a minor difference between hubs (D1)
request/date[1] request/time[1]	the date and time of the request
request/maxrows[0..1]	the maximum number of results returned by the search
request/breaktheglass[0..1]	activates an emergency procedure; this is hub specific (D2)
request/paginationinfo[0..1]	the pagination information which contain the index of the record where the page should start(D3)
select/patient[1]	the patient for whom transactions list is requested, as one or more id (typically the INSS number)
select/transaction[0..1] /cd[0..*] /author[0..1] /begindate[0..1] /enddate[0..1]	if omitted, the list of all transactions will be returned; list of CD-TRANSACTION requested; optionnaly "*" means any to select only the transactions written by a particular hcparty to restrict the selection to transactions posterior to … to restrict the selection to transactions anterior to …
select/searchtype[0..1]	use *local* to limit the search at the level of the hub/safe of connexion use *global* to search everywhere Note: a *local* search of a *medicationscheme* will return an empty list if that unique medication scheme is actually stored in another safe. A *global* search should be used whenever possible.

4.1.2.2 Differences between platforms

	Vitalink	RSW (Intermed) et RSB (BruSafe)
D1 request/author	the NIS code of the address of the end user person is required.	the address of the requestor person is ignored
D2 request/breaktheglass	can be invoqued, if necessary, when a therapeutic link is not available; a reason must be given.	this parameter is ignored: a therapeutic link must exists (at least an emergency therapeutic link)
D3 request/paginationinfo	can be specify if list exceeds the max supported by the plaform	this parameter is not supported; there is no max size for the list.

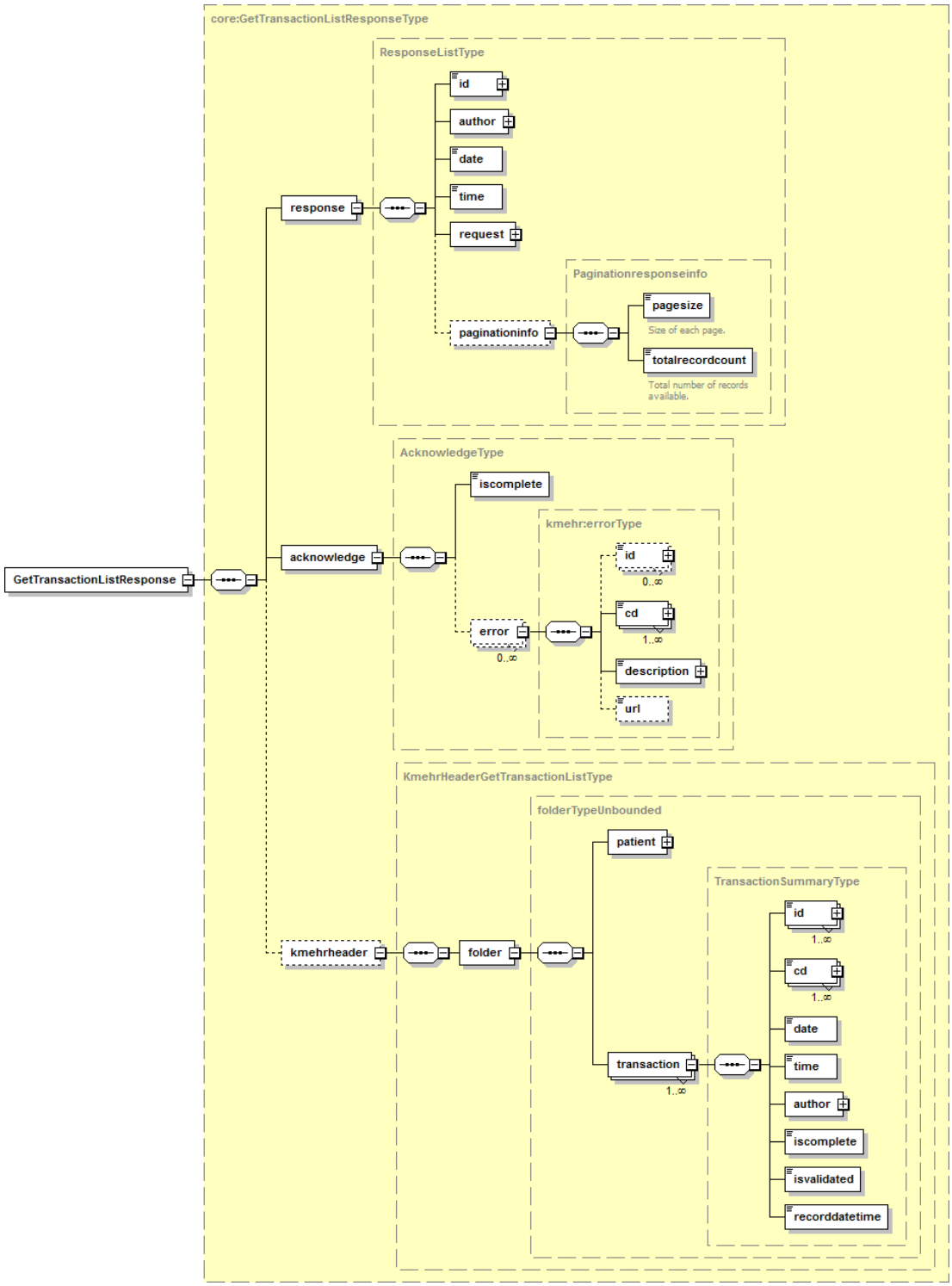
4.1.2.3 Example of request

```
<v3:GetTransactionListRequest xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:v31="http://www.ehealth.fgov.be/hubservices/core/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd" xmlns:v3="http://www.ehealth.fgov.be/hubservices/protocol/v3">
    <v31:request>
        <v31:id S="ID-KMEHR" SV="1.0">GTL-1-005</v31:id>
        <v31:author>
            <!--Hub Information-->
            <v1:hcparty>
                <v1:id S="ID-HCPARTY" SV="1.0">1990000629</v1:id>
                <v1:cd S="CD-HCPARTY" SV="1.7">hub</v1:cd>
                <v1:name>TEST HUB ORG</v1:name>
            </v1:hcparty>
            <!-- organizationInformation-->
            <v1:hcparty>
                <v1:id S="ID-HCPARTY" SV="1.0">71099218</v1:id>
                <v1:id S="ID-ENCRYPTION-ACTOR" SV="1.0">71099218</v1:id>
                <v1:cd S="CD-HCPARTY" SV="1.7">orghospital</v1:cd>
                <v1:cd S="CD-ENCRYPTION-ACTOR" SV="1.0">NIHII-HOSPITAL</v1:cd>
                <v1:name>TEST HOSPITAL ORG</v1:name>
            </v1:hcparty>
            <!-- personInformation-->
            <v1:hcparty>
                <v1:id SV="1.0" S="ID-HCPARTY">10082555045</v1:id>
                <v1:id SV="1.0" S="INSS">71050643439</v1:id>
                <v1:cd SV="1.1" S="CD-HCPARTY">persphysician</v1:cd>
                <v1:firstname>Toto</v1:firstname>
                <v1:familyname>LeHéros</v1:familyname>
                <!-- Connector properties:  region.info (required, unless access as a patient)-->
                <v1:address>
                    <v1:cd S="CD-ADDRESS" SV="1.0">careaddress</v1:cd>
                    <v1:nis>21004</v1:nis>
                </v1:address>
            </v1:hcparty>
            <!-- software Information -->
            <v1:hcparty>
                <v1:id SV="1.0" S="LOCAL" SL="endusersoftwareinfo">software id</v1:id>
                <v1:cd SV="1.1" S="CD-HCPARTY">application</v1:cd>
                <v1:name>Software name</v1:name>
            </v1:hcparty>
        </v31:author>
        <v31:date>2017-01-13+01:00</v31:date>
        <v31:time>13:42:09.238+01:00</v31:time>
        <!-- pagination Information -->
        <v31:paginationinfo>
            <v31:index>1</v31:index>
        </v31:paginationinfo>
    </v31:request>
    <v31:select>
        <v31:patient>
            <v31:id S="INSS" SV="1.0">82121210976</v31:id>
        </v31:patient>
        <v31:transaction>
            <v31:cd S="CD-TRANSACTION" SV="1.6">medicationscheme</v31:cd>
            <v31:cd S="CD-TRANSACTION" SV="1.6">sumehr</v31:cd>
        </v31:transaction>
        <v31:searchtype>local</v31:searchtype>
    </v31:select>
</v3:GetTransactionListRequest>
```

4.1.3 GetTransactionListResponse

The response message contains three parts:

- *response* contains technical data about the message, including the original request;
- *acknowledge* gives informations about the level of completion of the service: success or failure and error messages
- *kmehrheader* is the 'payload' of the message with the patient and the list of the main metadata of the seleted transactions.



4.1.3.1 Output data

response/id[1]	The identification of the response within the callee system (i.e. hub/safe)
response/author[1]	The identification of the target system (hub/safe)
response/date[1] response/time[1]	Date and time of the response
response/request[1]	Copy of the original request
response/paginationinfo[0..1]	pagination informations of the results (D4)
/pagesize[1]	the size of each page which is returned
/totalrecordcount[1]	the total number of records available
acknowledge/iscomplete[1]	true indicates the success: a list of results is available (eventually truncated) false in case of any error or exception
acknowledge/error[0..*]	id, code and description of errors
kmehrheader/folder	
/patient[1]	Data about the patient
/transaction[1..*]	One element for each document selected; the medication scheme is presented as one element
/id[1..*]	Identifier of the transaction; contains at least one LOCAL id in the referential system of the owner of the document; this can be a structured string or a pure abstract value, but in any case, no assumption can be done on the composition or the persistence of that id.
/cd[1..*]	Code of the type of the transaction; at least one CD-TRANSACTION code (e.g. sumehr, dischargereport, medicationscheme,…) For special documents, another cd is used (CD-HUBSERVICE) to specify the method to be used to retrieved the document. In the case of medicationscheme, the method GetTransactionSet must be used to retrieve the whole document, as in this example: <cd S="CD-TRANSACTION" SV="1.0">medicationscheme</cd> <cd S="**CD-HUBSERVICE**" SV = "1.0">**gettransactionset**</cd> If that code is not present, the default method is GetTransaction.
/date[1] /time[1]	Medical date and time of the transaction
/author[1]	Author of the document as sequence of hcparty from the most general (the hub owner of the document), to the most particular (the person); intermediate levels can be organization, department,… At least one hcparty must be a physical person. When no hub is specified, the document is supposed to come from the current hub of connection. If the document comes from another hub, the first hcparty must be a hub.
/iscomplete[1]	true to indicate that the document is complete; false otherwise
/isvalidated[1]	true to indicate that the document is validated; false otherwise
/recorddatetime[1]	date and time of the recording of the document within the system owner

4.1.3.2 Differences between platforms

	Vitalink	RSW (Intermed) et RSB (BruSafe)
D4	can be specify if list exceeds the	this parameter is not supported;

response/paginationinfo	max supported by the plaform	there is no max size for the list.

4.1.3.3 Example of response

```
<ns3:GetTransactionListResponse xmlns="http://www.ehealth.fgov.be/hubservices/core/v3"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:ns3="http://www.ehealth.fgov.be/hubservices/protocol/v3" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns5="http://www.w3.org/2000/09/xmldsig#" xmlns:ns6="urn:be:fgov:ehealth:safe:common:decryptor:v3"
xmlns:ns7="urn:be:fgov:ehealth:safe:common:v3" xmlns:ns8="urn:be:fgov:ehealth:safe:internal:v3"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd">
    <response>
        <id S="ID-KMEHR" SV="1.0">1990001916.1e12b1dd-8672-4e13-866a-f80214fc55a5</id>
        <author>
            <ns2:hcparty>
                <ns2:id S="ID-HCPARTY" SV="1.0">1990001916</ns2:id>
                <ns2:cd S="CD-HCPARTY" SV="1.7">hub</ns2:cd>
                <ns2:name>VITALINK</ns2:name>
            </ns2:hcparty>
        </author>
        <date>2017-04-05+02:00</date>
        <time>16:04:15.626+02:00</time>
        <request>
            <id S="ID-KMEHR" SV="1.0">GTL-1-005</id>
            <author>
            <!--Hub Information-->
            <ns2:hcparty>
                <ns2:id S="ID-HCPARTY" SV="1.0">1990000629</ns2:id>
                <ns2:cd S="CD-HCPARTY" SV="1.7">hub</ns2:cd>
                <ns2:name>TEST HUB ORG</ns2:name>
            </ns2:hcparty>
            <!-- organizationInformation-->
            <ns2:hcparty>
                <ns2:id S="ID-HCPARTY" SV="1.0">71099218</ns2:id>
                <ns2:id S="ID-ENCRYPTION-ACTOR" SV="1.0">71099218</ns2:id>
                <ns2:cd S="CD-HCPARTY" SV="1.7">orghospital</ns2:cd>
                <ns2:cd S="CD-ENCRYPTION-ACTOR" SV="1.0">NIHII-HOSPITAL</ns2:cd>
                <ns2:name>TEST HOSPITAL ORG</ns2:name>
            </ns2:hcparty>
            <!-- personInformation-->
            <ns2:hcparty>
                <ns2:id SV="1.0" S="ID-HCPARTY">10082555045</ns2:id>
                <ns2:id SV="1.0" S="INSS">71050643439</ns2:id>
                <ns2:cd SV="1.1" S="CD-HCPARTY">persphysician</ns2:cd>
                <ns2:firstname>Toto</ns2:firstname>
                <ns2:familyname>LeHéros</ns2:familyname>
                <!-- Connector properties:  region.info (required, unless access as a patient)-->
                <ns2:address>
                    <ns2:cd S="CD-ADDRESS" SV="1.0">careaddress</ns2:cd>
                    <ns2:nis>21004</ns2:nis>
                </ns2:address>
            </ns2:hcparty>
            <!-- software Information -->
            <ns2:hcparty>
                <ns2:id SV="1.0" S="LOCAL" SL="endusersoftwareinfo">software id</ns2:id>
                <ns2:cd SV="1.1" S="CD-HCPARTY">application</ns2:cd>
                <ns2:name>Software name</ns2:name>
            </ns2:hcparty>
            </author>
            <date>2017-01-13+01:00</date>
            <time>13:42:09.238+01:00</time>
            <paginationinfo>
                <index>1</index>
            </paginationinfo>
        </request>
        <paginationinfo>
            <pagesize>25</pagesize>
            <totalrecordcount>45</ totalrecordcount>
        </paginationinfo>
    </response>
    <acknowledge>
        <iscomplete>true</iscomplete>
        <error>
            <ns2:cd S="LOCAL" SL="vitalinkstatuscode" SV="1.0">200</ns2:cd>
```

```
            <ns2:description L="en">The request was successfully completed.</ns2:description>
        </error>
    </acknowledge>
    <kmehrheader>
        <folder>
            <patient>
                <ns2:id S="INSS" SV="1.0">82121210976</ns2:id>
                <ns2:firstname>test</ns2:firstname>
                <ns2:familyname>patiënt</ns2:familyname>
                <ns2:sex>
                    <ns2:cd S="CD-SEX" SV="1.0">undefined</ns2:cd>
                </ns2:sex>
            </patient>
            <transaction>
                <id S="ID-KMEHR" SV="1.0">1</id>
                <id S="LOCAL" SL="vitalinkuri" SV="1.0">/subject/82121210976/medication-scheme</id>
                <cd S="CD-TRANSACTION" SV="1.6">medicationscheme</cd>
                <cd S="CD-HUBSERVICE" SV="1.0">gettransactionset</cd>
                <date>2017-03-27+02:00</date>
                <time>14:48:50+02:00</time>
                <author>
                    <ns2:hcparty>
                        <ns2:id S="ID-HCPARTY" SV="1.0">1990001916</ns2:id>
                        <ns2:cd S="CD-HCPARTY" SV="1.7">hub</ns2:cd>
                        <ns2:name>VITALINK</ns2:name>
                    </ns2:hcparty>
                    <ns2:hcparty>
                        <ns2:id S="INSS" SV="1.0">82012419934</ns2:id>
                        <ns2:id S="ID-HCPARTY" SV="1.0">10025840123</ns2:id>
                        <ns2:cd S="CD-HCPARTY" SV="1.7">persphysician</ns2:cd>
                        <ns2:firstname>Rémy</ns2:firstname>
                        <ns2:familyname>Drijkoningen</ns2:familyname>
                    </ns2:hcparty>
                </author>
                <iscomplete>true</iscomplete>
                <isvalidated>true</isvalidated>
                <recorddatetime>2017-03-27T14:48:50+02:00</recorddatetime>
            </transaction>
            <transaction>
                <id S="ID-KMEHR" SV="1.0">2</id>
                <id S="LOCAL" SL="vitalinkuri" SV="1.0">/subject/82121210976/sumehr/11111/1</id>
                <cd S="CD-TRANSACTION" SV="1.0">sumehr</cd>
                <date>2017-03-27+02:00</date>
                <time>14:48:50.208+02:00</time>
                <author>
                    <ns2:hcparty>
                        <ns2:id S="ID-HCPARTY" SV="1.0">1990001916</ns2:id>
                        <ns2:cd S="CD-HCPARTY" SV="1.7">hub</ns2:cd>
                        <ns2:name>VITALINK</ns2:name>
                    </ns2:hcparty>
                    <ns2:hcparty>
                        <ns2:id S="INSS" SV="1.0">82012419934</ns2:id>
                        <ns2:id S="ID-HCPARTY" SV="1.0">10025840123</ns2:id>
                        <ns2:cd S="CD-HCPARTY" SV="1.7">persphysician</ns2:cd>
                        <ns2:firstname>Rémy</ns2:firstname>
                        <ns2:familyname>Drijkoningen</ns2:familyname>
                    </ns2:hcparty>
                </author>
                <iscomplete>true</iscomplete>
                <isvalidated>true</isvalidated>
                <recorddatetime>2017-03-27T14:48:50.208+02:00</recorddatetime>
            </transaction>
            <transaction>
                <id S="ID-KMEHR" SV="1.0">3</id>
                <id S="LOCAL" SL="vitalinkuri" SV="1.0">/subject/82121210976/sumehr/94558/1</id>
                <cd S="CD-TRANSACTION" SV="1.0">sumehr</cd>
                <date>2017-04-05+02:00</date>
                <time>09:25:26+02:00</time>
                <author>
                    <ns2:hcparty>
                        <ns2:id S="ID-HCPARTY" SV="1.0">1990001916</ns2:id>
                        <ns2:cd S="CD-HCPARTY" SV="1.7">hub</ns2:cd>
                        <ns2:name>VITALINK</ns2:name>
                    </ns2:hcparty>
                    <ns2:hcparty>
                        <ns2:id S="ID-HCPARTY" SV="1.0">71099218</ns2:id>
```

```
                        <ns2:cd S="CD-HCPARTY" SV="1.7">orghospital</ns2:cd>
                        <ns2:name>TEST HOSPITAL ORG</ns2:name>
                    </ns2:hcparty>
                    <ns2:hcparty>
                        <ns2:id S="INSS" SV="1.0">82012419934</ns2:id>
                        <ns2:id S="ID-HCPARTY" SV="1.0">10025840123</ns2:id>
                        <ns2:cd S="CD-HCPARTY" SV="1.7">persphysician</ns2:cd>
                        <ns2:firstname>Rémy</ns2:firstname>
                        <ns2:familyname>Drijkoningen</ns2:familyname>
                    </ns2:hcparty>
                </author>
                <iscomplete>true</iscomplete>
                <isvalidated>true</isvalidated>
                <recorddatetime>2017-04-05T09:25:26+02:00</recorddatetime>
            </transaction>
        </folder>
    </kmehrheader>
</ns3:GetTransactionListResponse>
```


4.2 GetTransactionSet

4.2.1 Purpose

Usually, the GetTransaction method is used to get the detailed content of one transaction selected among the list obtained with GetTransactionList. But medication schemes are special documents as they contain several transactions:

- one transaction (type *medicationscheme*) for metadata about the whole scheme,
- zero or more transactions (type *medicationschemeelement*), one for each medication line,
- eventually, transactions (type *treatmentsuspension*) for suspensions of treatment related to a previous medication line.

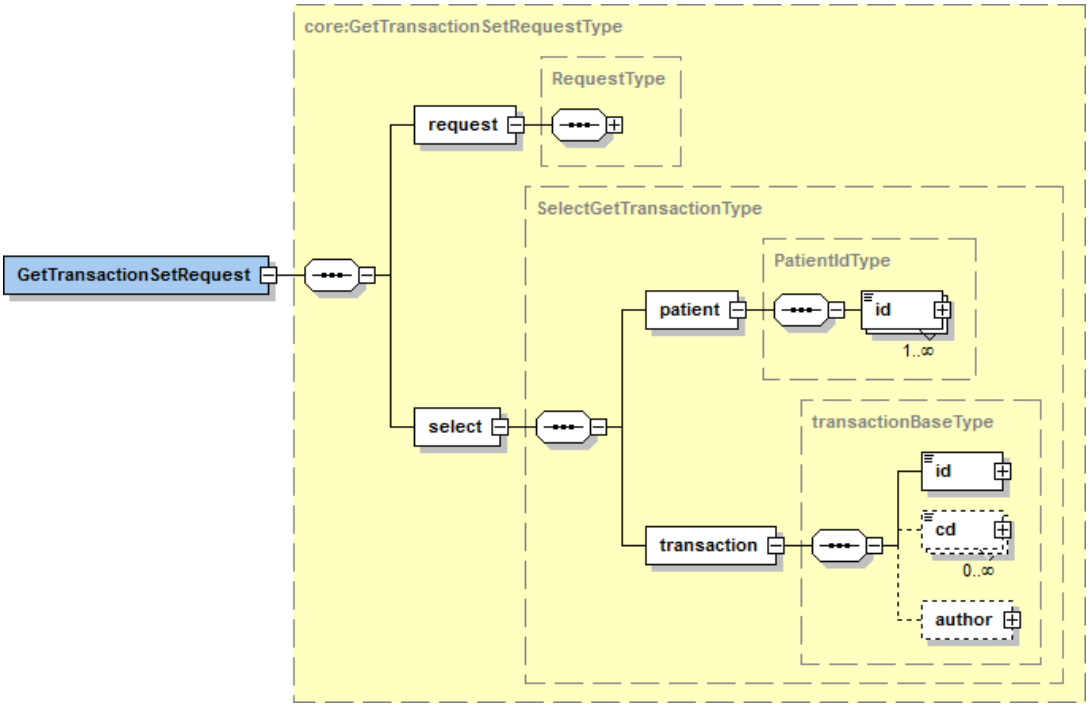
To get that collection of transactions as a whole, a new method, GetTransactionSet is necessary. As we saw in the previous section, that method is indicated in the GetTransactionListResponse as a CD-HUBSERVICE code. Note that there is no way to get only one line of medication or a subset of the scheme: the medication scheme must always be retrieved (and saved) in its entirety.

For the detailed specifications, see ref. *intrahub getTransactionSet 3.0 specification*.

4.2.2 GetTransactionSetRequest

The GetTransactionSetRequest message contains two parts:

- *request* (same as previous),
- *select* specifies both the patient and the transaction to retrieve.


core:GetTransactionSetRequestType
RequestType
request
SelectGetTransactionType
PatientIdType
GetTransactionSetRequest
patient
id
1..∞
select
transactionBaseType
id
cd
transaction
0..∞
author

4.2.2.1 Input data

request	Same as previous
select/patient[1]	The patient for whom transactions set is requested, as one or more id (typically the INSS number)
select/transaction/id[1]	The LOCAL identifier (within the system of the owner of the document) of the transaction set, as specified in the GetTransactionList response
select/transaction/cd[0..*]	Not used in this context
select/transaction/author[0..1]	The hub owner of the document; this information is mandatory when the owner of the document is not the hub you are connected to.

4.2.2.2 Example of request

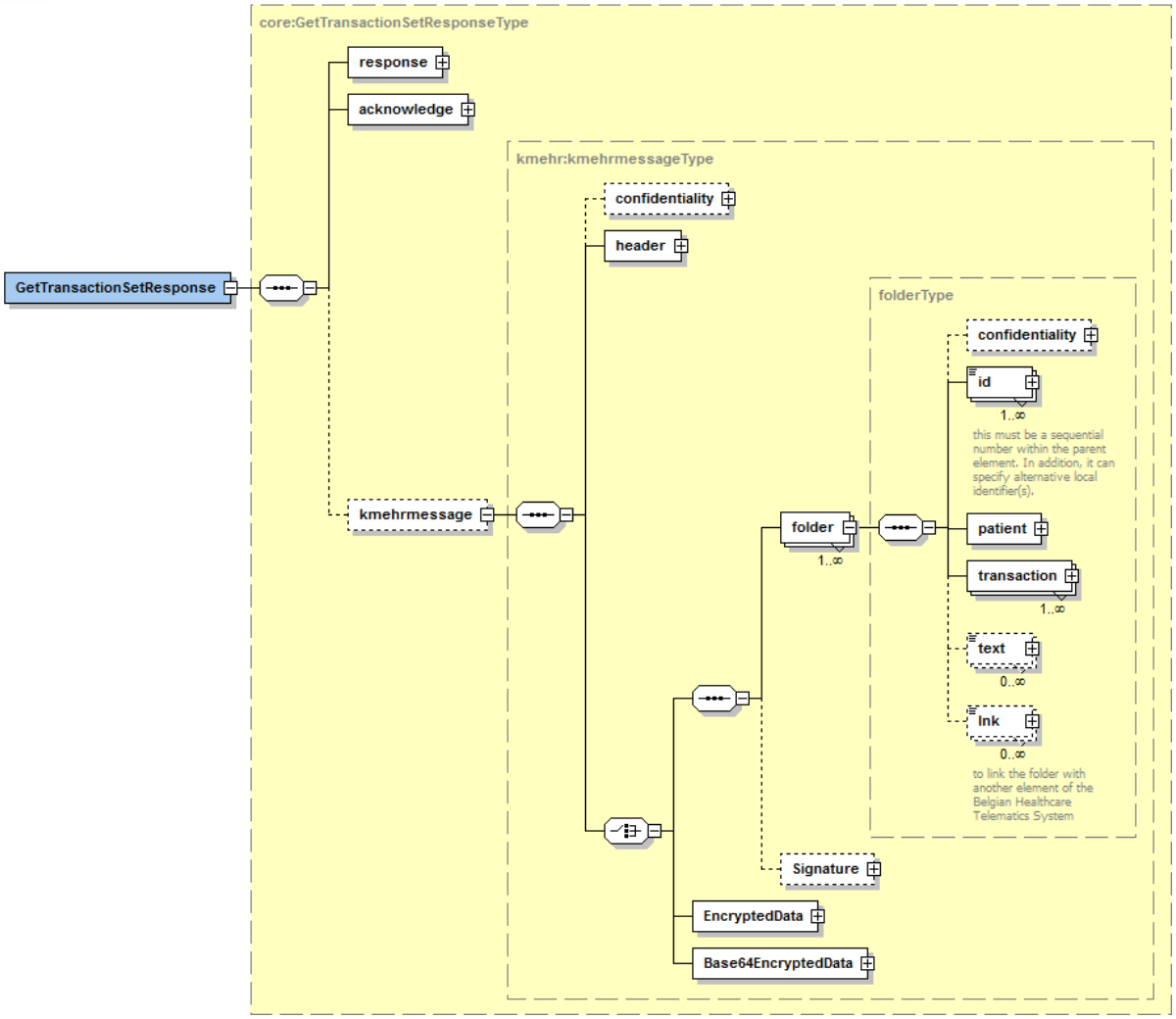
```
<v3:GetTransactionSetRequest xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:v31="http://www.ehealth.fgov.be/hubservices/core/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd" xmlns:v3="http://www.ehealth.fgov.be/hubservices/protocol/v3">
    <v31:request>
        …
    </v31:request>
    <v31:select>
        <v31:patient>
            <v31:id S="INSS" SV="1.0">82121210976</v31:id>
        </v31:patient>
        <v31:transaction>
            <v31:id S="LOCAL" SL="vitalinkuri" SV="1.0">/subject/82121210976/medication-scheme</ v31:id>
            < v31:author>
                < v31::hcparty>
                    < v31::id S="ID-HCPARTY" SV="1.0">1990001916</ v31::id>
                    < v31::cd S="CD-HCPARTY" SV="1.7">hub</ v31::cd>
                    < v31::name>VITALINK</ v31::name>
                </ v31::hcparty>
            </ v31:author>
        </v31:transaction>
    </v31:select>
</v3:GetTransactionSetRequest>
```

4.2.3 GetTransactionSetResponse

The response message contains three parts:

- *response* contains technical data about the message, including the original request;
- *acknowledge* gives information about the level of completion of the service: success or failure and error messages
- *kmehrmessage* is the 'payload' of the message with a *header* indicating sender and recipient, and one folder with the patient and the list transactions composing the medication scheme.

The structure is the same as for the GetTransaction. The difference is that, as their names implies, GetTransaction returns only one transaction, while GetTransactionSet returns a set of transactions.



4.2.3.1 Output data

response	Same as previous
acknowledge/iscomplete[1]	*true* indicates the success: the transactions set is available in the *kmehrmessage* *false* in case of any error or exception
acknowledge/error[0..*]	*id*, *code* and *description* of errors
kmehrmessage/header[1]	identifies the sender and the receiver of the message
kmehrmessage/folder[1]	Only one folder is allowed; it is normaly encrypted (with the public key of recipient) and and then base64-coded; the result is then placed in the Base64EncryptedData element.
/id[1]	The *id* (ID-KMEHR) of the folder; usually "1"
/patient[1]	Data about the patient concerned by the medication scheme
/transaction[1..*]	The complete medication scheme: one "meta-transaction" of type *medicationscheme* followed by zero or more transactions of type *medicationschemeelement*, optionnaly completed with transactions of type *treatmentsuspension*
/id[1]	*LOCAL id* of the transaction (i.e. id in the referential system of the hub or safe)
/author[1..*]	for the first transaction, the first hcparty of the author chain is normally the hub owner of the document; if not, the transaction is supposed to be stored in the current hub/safe (to which the user application is directly connected)

The details about the content of the transactions for a medication scheme are exposed in ref . *Safe_Cookbook_Medicatieschema.*

4.2.3.2 Example of response

```
<ns3:GetTransactionSetResponse xmlns="http://www.ehealth.fgov.be/hubservices/core/v3"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:ns3="http://www.ehealth.fgov.be/hubservices/protocol/v3" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns5="http://www.w3.org/2000/09/xmldsig#" xmlns:ns6="urn:be:fgov:ehealth:safe:internal:v3"
xmlns:ns7="urn:be:fgov:ehealth:safe:common:decryptor:v3" xmlns:ns8="urn:be:fgov:ehealth:safe:common:v3">
    <response>
        …
    </response>
    <acknowledge>
        <iscomplete>true</iscomplete>
        <error>
            <ns2:cd S="LOCAL" SL ="vitalinkstatuscode" SV="1.0">200</ns2:cd>
            <ns2:description L="en">The request was successfully completed.</ns2:description>
        </error>
    </acknowledge>
    <kmehrmessage>
        <ns2:header>
            <ns2:standard>
                <ns2:cd S="CD-STANDARD" SV="1.0">20120401</ns2:cd>
            </ns2:standard>
            <ns2:id S="ID-KMEHR" SV="1.0">3-147d0ada-a23c-419f-b0c1-fa7f4ae8c1ea</ns2:id>
            <ns2:sender>
                <ns2:hcparty>
                    <ns2:id S="ID-HCPARTY" SV="1.0">Gateway</ns2:id>
                    <ns2:cd S="CD-HCPARTY" SV="1.0">hub</ns2:cd>
                </ns2:hcparty>
            </ns2:sender>
            <ns2:recipient>
                <ns2:hcparty>
                    <ns2:id S="ID-HCPARTY" SV="1.0">1990000629</ns2:id>
                    <ns2:cd S="CD-HCPARTY" SV="1.7">hub</ns2:cd>
                    <ns2:name>TEST HUB ORG</ns2:name>
                </ns2:hcparty>
                <ns2:hcparty>
                    <ns2:id S="ID-HCPARTY" SV="1.0">71099218</ns2:id>
                    <ns2:id S="ID-ENCRYPTION-ACTOR" SV="1.0">71099218</ns2:id>
                    <ns2:id S="ID-ENCRYPTION-APPLICATION" SV="1.0"/>
                    <ns2:cd S="CD-HCPARTY" SV="1.7">orghospital</ns2:cd>
                    <ns2:cd S="CD-ENCRYPTION-ACTOR" SV="1.0">NIHII-HOSPITAL</ns2:cd>
                    <ns2:name>TEST HOSPITAL ORG</ns2:name>
                </ns2:hcparty>
                <ns2:hcparty>
                    <ns2:id S="ID-HCPARTY" SV="1.0">10025840123</ns2:id>
                    <ns2:id S="INSS" SV="1.0">82012419934</ns2:id>
                    <ns2:cd S="CD-HCPARTY" SV="1.7">PHYSICIAN</ns2:cd>
                    <ns2:firstname>Rémy</ns2:firstname>
                    <ns2:familyname>Drijkoningen</ns2:familyname>
                    <ns2:address>
                        <ns2:cd S="CD-ADDRESS" SV="1.0">careaddress</ns2:cd>
                        <ns2:nis>21004</ns2:nis>
                    </ns2:address>
                </ns2:hcparty>
            </ns2:recipient>
        </ns2:header>
        <ns2:Base64EncryptedData>
            <ns2:cd S="CD-ENCRYPTION-METHOD">CMS</ns2:cd>
            <ns2:Base64EncryptedValue>
                <!-- encrypted folder -->
            </ns2:Base64EncryptedValue>
        </ns2:Base64EncryptedData>
    </kmehrmessage>
</ns3:GetTransactionSetResponse>
```

4.3 PutTransactionSet

4.3.1 Purpose

Just as PutTransaction is used to update one transaction at a time, PutTransactionSet is used to update a set of related transactions in one operation. Typically a medication scheme, is such a set, composed of one or many transactions (see previous section).

For the detailed specifications, see ref. *intrahub putTransactionSet 3.0 specification*.

The update of the medication scheme must always be based on the most recent version of the entire scheme. If you are not sure that your local version is up to date, just call the GetLatestUpdate method (see next section), or invoque a GetTransactionSet based on the stored scheme *id* (and hub owner) to get the latest available version. If you do not have the medication scheme *id* on hand, invoque first GetTransactionList. Note that the localization and identification of a medication scheme can be changed at any moment (due to internal Safe's rules), so there no guaranty that the identification you store locally can be used forever.

To modify one or more medication lines (for instance change the posology), simply change the values in the corresponding transactions into the scheme, update the metadata in the first *medicationscheme* transaction and invoque the method.

To insert new medications, insert new transactions of type *medicationschemeelement* into the current scheme.

To remove obsolete medications (treatments that have been terminated for instance), delete the corresponding transactions in the scheme.

To suspend a treatment, append a transaction *treatmentsuspension* linked to the transaction *medicationschemeelement* to be suspended.

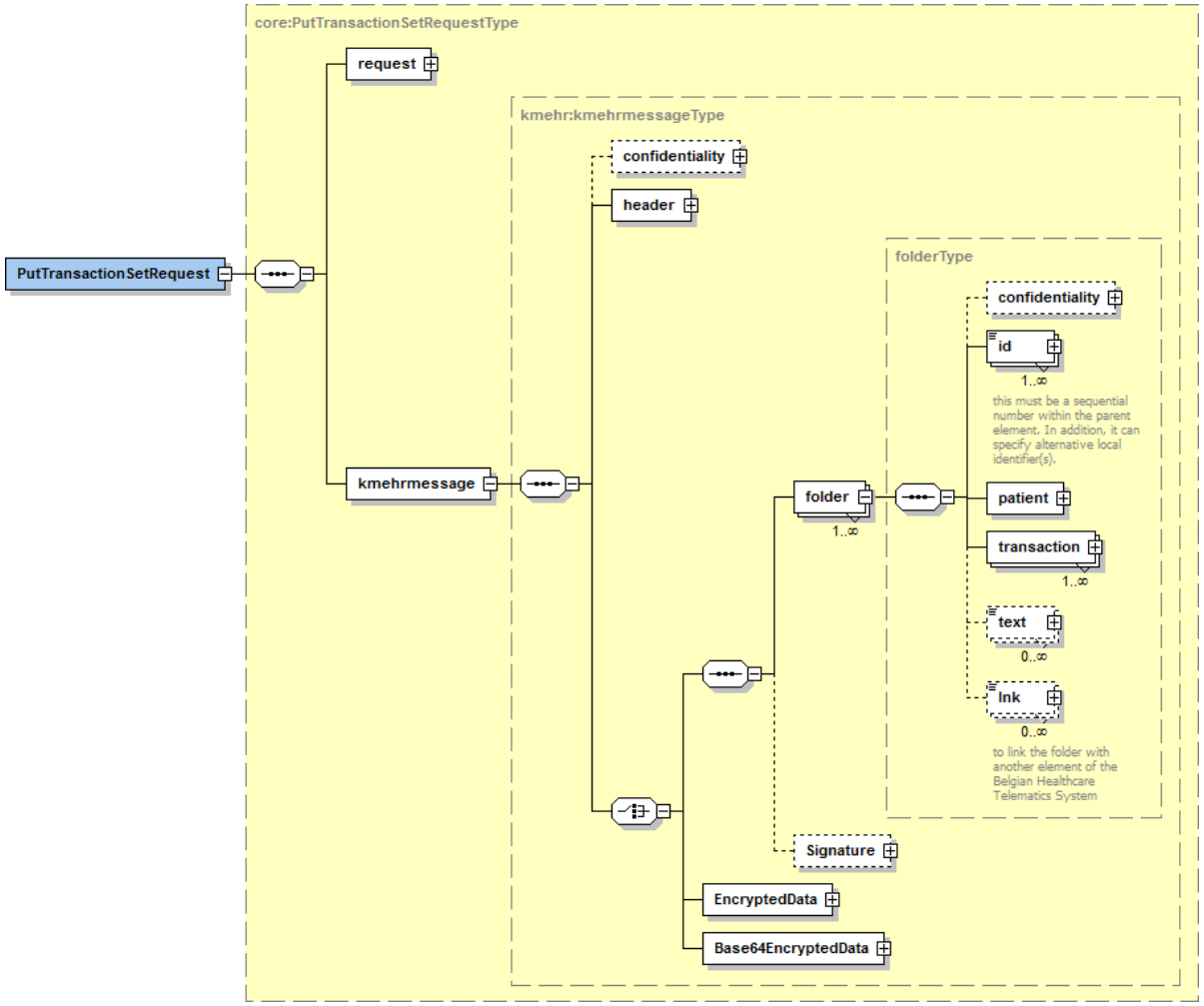
Note that if a patient doesn't have a medication scheme yet (a GetTransactionList returns no such document), you don't have to create it explicitly: start with a "meta-transaction" (*medicationscheme*), add the transactions of the necessary medication lines (*medicationschemeelement*) and invoque PutTransactionSet. As you don't know them, do not includethe *LOCAL id* in the transactions and set their version to "0". The values will be assigned by the hub.

These operations and use cases are fully explained in ref. *Safe_Cookbook_Medicatieschema.*

4.3.2 PutTransactionSetRequest

The request message contains two parts:

- *request* (same as previous),
- *kmehrmessage* containing a header with the sender and recipient of the message, and one folder with the patient and the list transactions composing the medication scheme to be updated.



4.3.2.1 Input data

Request	Same as previous
kmehrmessage/header[1]	identifies the sender and the receiver of the message
kmehrmessage/folder[1]	Only one folder is allowed; it is normaly encrypted (with the public key of recipient) and and then base64-coded; the result is then placed in the Base64EncryptedData element.
/id[1]	The id (ID-KMEHR) of the folder; usually "1"
/patient[1]	Data about the patient concerned by the medication scheme
/transaction[1..*]	The complete medication scheme: one "meta-transaction" of type *medicationscheme* followed by zero or more transactions of type *medicationschemeelement*, optionnaly completed with transactions of type *treatmentsuspension*

4.3.2.2 Example of request

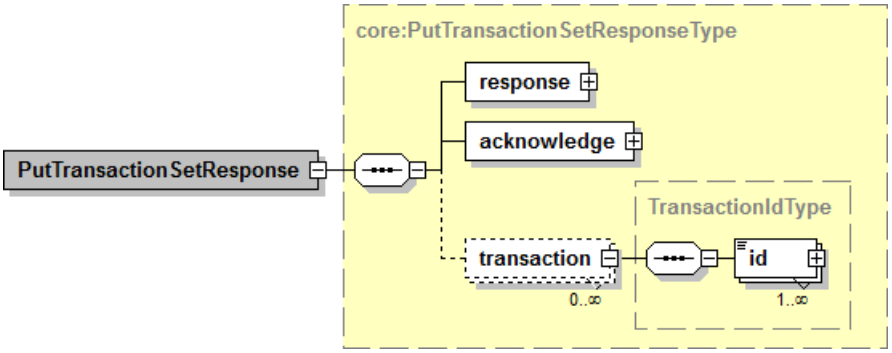
```
<v3:PutTransactionSetRequest xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:v31="http://www.ehealth.fgov.be/hubservices/core/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:v3="http://www.ehealth.fgov.be/hubservices/protocol/v3"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd">
    <v31:request>
        …
    </v31:request>
    <v31:kmehrmessage>
        <v1:header>
            …
        </v1:header>
        <v1:Base64EncryptedData>
            <v1:cd S="CD-ENCRYPTION-METHOD" SV="1.0">CMS</v1:cd>
            <v1:Base64EncryptedValue>
                <!-- encrypted folder -->
            </v1:Base64EncryptedValue>
        </v1:Base64EncryptedData>
    </v31:kmehrmessage>
</v3:PutTransactionSetRequest>
```

Details about how to compose the transactions of the medication scheme can be found in ref. *Safe_Cookbook_Medicatieschema*.

4.3.3 PutTransactionSetResponse

The response message contains three parts:

- *response* contains technical data about the message, including the original request;
- *acknowledge* gives information about the level of completion of the service: success or failure and error messages
- *transaction*, containing the id of each received transactions.



4.3.3.1 Output data

response	Same as previous
acknowledge/iscomplete[1]	*true* indicates the success: the id(s) of the changed transactions(s) are available if the *transaction* part *false* in case of any error or exception
acknowledge/error[0..*]	*id*, *code* and *description* of errors
transaction[0..*]	the list of *id* returned by the hub; for each transaction received in the request, one LOCAL id is returned. Each medication line will then have its own id, but also the meta transaction (*medicationscheme*) and the *treatmentsuspension*. So N transactions in the request's folder will give N elements *transaction* in the response. Normally the id will be given in the order of their entry, but ID-KMEHR are also provided with the LOCAL id(*) for exact matching between the lines.

(*) LOCAL id must be understood in the sense of "*an id local to the safe that store the document*". No assertion can be made on the structure of that id. Client can store these id for internal puprpose but they should pay attention that the id can change when the medication scheme is migrated from one Safe to another, and that the client must refresh all the medication scheme if his internal copy has an obsolete version.

4.3.3.2 Example of response

```
<PutTransactionSetResponse xmlns="http://www.ehealth.fgov.be/hubservices/core/v3"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd">
    <response>
        …
    </response>
    <acknowledge>
        <iscomplete>true</iscomplete>
        <error>
                <cd S="CD-ERROR" SV="1.0">VALID</cd>
            </error>
    </acknowledge>
    <!-- A list of the transaction's ID -->
    <transaction>
```

```
            <id S="ID-KMEHR" SV="1.0">1</id>
            <id S="LOCAL" SL="RSWID" SV="1.0">12456</id>
        </transaction>
        <transaction>
            <id S="ID-KMEHR" SV="1.0">2</id>
            <id S="LOCAL" SL="RSWID" SV="1.0">4671</id>
        </transaction>
        <transaction>
            <id S="ID-KMEHR" SV="1.0">3</id>
            <id S="LOCAL" SL="RSWID" SV="1.0">4672</id>
        </transaction>
</PutTransactionSetResponse>
```

4.4 GetLatestUpdate

4.4.1 Purpose

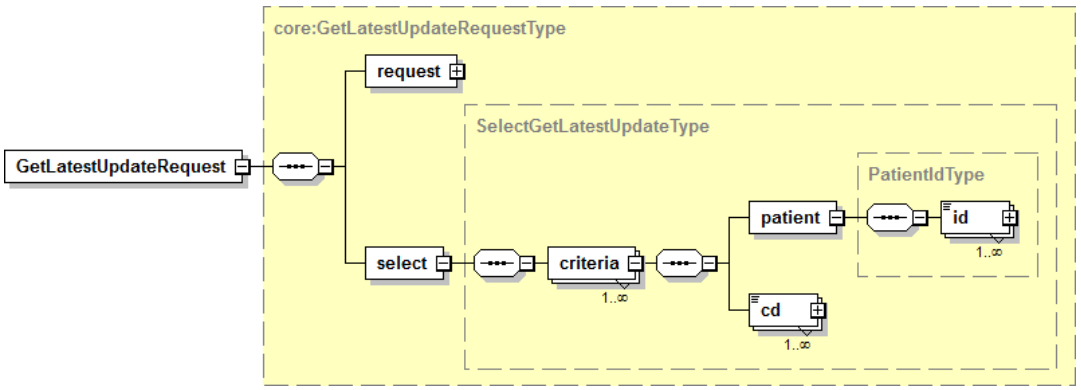
This method is used to get the latest change made to a type of transaction. This way, a user can make sure that his current version of that kind of document is still up to date or, on the contrary, he can realize that a more recent document has been put on the server.

For the detailed specifications, see ref. *intrahub getLatestUpdate 3.0 specification.*

4.4.2 GetLatestUpdateRequest

The GetLatestUpdateRequest message contains two parts:

- *request* contains the parameters of the request itself,
- *select* are the search criteria.



4.4.2.1 Input data

request	Same as previous
select/criteria[1..*]	one or more search criteria, each composed of:
patient[1]	The patient to whom transactions belong, as one or more id (typically the INSS number); note that it is possible to make a request for several patients, in which case one criteria is used for each patient
cd[1..*]	the type(s) of transactions of interest

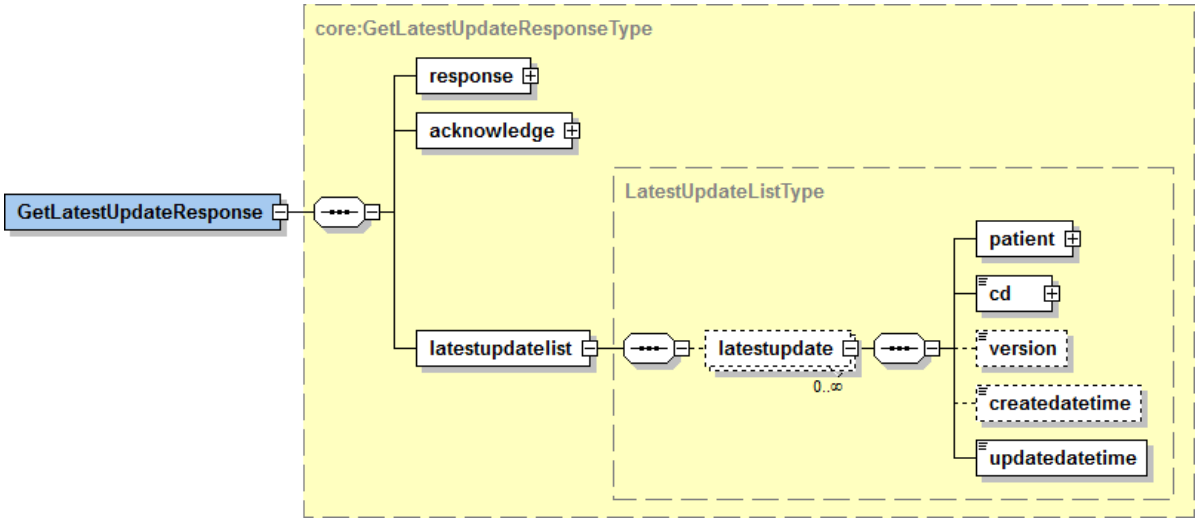
4.4.2.2 Example of request

```
<v3:GetLatestUpdateRequest xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:v31="http://www.ehealth.fgov.be/hubservices/core/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd" xmlns:v3="http://www.ehealth.fgov.be/hubservices/protocol/v3">
    <v31:request>
        ...
    </v31:request>
    <v31:select>
        <v31:criteria>
            <v31:patient>
                <v31:id S="INSS" SV="1.0">44070200337</v31:id>
            </v31:patient>
            <v31:cd S="CD-TRANSACTION" SV="1.0">sumehr</v31:cd>
            <v31:cd S="CD-TRANSACTION" SV="1.0">medicationscheme</v31:cd>
        </v31:criteria>
        <v31:criteria>
            <v31:patient>
                <v31:id S="INSS" SV="1.0">01234567890</v31:id>
            </v31:patient>
            <v31:cd S="CD-TRANSACTION" SV="1.0">sumehr</v31:cd>
        </v31:criteria>
    </v31:select>
</v3:GetLatestUpdateRequest>
```

4.4.3 GetLatestUpdateResponse

The response message contains three parts:

- *response* contains technical data about the message, including the original request;
- *acknowledge* gives information about the level of completion of the service: success or failure and error messages
- *latestupdatelist* contains the list of date/time informations requested.



4.4.3.1 Output data

response	Same as previous
acknowledge/iscomplete[1]	*true* indicates the success: a list of results is available (eventually truncated) *false* in case of any error or exception
acknowledge/error[0..*]	*id*, *code* and *description* of errors
latestupdatelist/latestupdate[0..*]	
/patient[1]	The id of the patient
/cd[1..*]	The type of transaction (CD-TRANSACTION)
/version[0..1]	optionnaly the version of the latest transaction of that type for that patient
/createdatetime[0..1]	optionnaly the date/time of creation of that transaction
/updatedatetime[1]	the date/time of last update of that transaction

4.4.3.2 Example of response

```
<ns3:GetLatestUpdateResponse xmlns="http://www.ehealth.fgov.be/hubservices/core/v3"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:ns3="http://www.ehealth.fgov.be/hubservices/protocol/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd">
    <response>
        …
    </response>
    <acknowledge>
        <iscomplete>true</iscomplete>
        <error>
            <ns2:cd S="LOCAL" SL ="vitalinkstatuscode" SV="1.0">200</ns2:cd>
            <ns2:description L="en">The request was successfully completed.</ns2:description>
        </error>
    </acknowledge>
    <latestupdatelist>
        <latestupdate>
            <patient>
                <id S="INSS" SV="1.0">44070200337</id>
            </patient>
            <cd S="CD-TRANSACTION" SV="1.0">sumehr</cd>
            <version>2</version>
            <!--<createdatetime>2017-01-10T13:42:09</createdatetime>-->
            <updatedatetime>2017-01-11T13:42:09</updatedatetime>
        </latestupdate>
        <latestupdate>
            <patient>
                <id S="INSS" SV="1.0">44070200337</id>
            </patient>
            <cd S="CD-TRANSACTION" SV="1.0">medicationscheme</cd>
            <version>6</version>
            <!--<createdatetime>2017-01-10T13:42:09</createdatetime>-->
            <updatedatetime>2017-01-11T13:42:09</updatedatetime>
        </latestupdate>
        <latestupdate>
            <patient>
                <id S="INSS" SV="1.0">01234567890</id>
            </patient>
            <cd S="CD-TRANSACTION" SV="1.0">sumehr</cd>
            <version>4</version>
            <!--<createdatetime>2017-01-10T13:42:09</createdatetime>-->
            <updatedatetime>2017-01-11T13:42:09</updatedatetime>
        </latestupdate>
    </latestupdatelist>
</ns3:GetLatestUpdateResponse>
```

4.5 GetTransaction

4.5.1 Purpose

The GetTransaction method is used to get the detailed content of a simple transaction (document). Examples of such documents are sumehr, dischargereport, labresult, etc. In the case of access to documents on a safe (as opposed to hub), only sumehrs are concerned (at the time of writing).

This is the default method to retrieve transactions referenced in the response of a GetTransactionList.

As stated in section 4.2 (GetTransactionSet), GetTransaction can not be used to retrieve a unique medication scheme. In this case, the GetTransactionList response uses a special tag to indicate the method to use:

```
<cd S="CD-TRANSACTION" SV="1.0">medicationscheme</cd>
<cd S="CD-HUBSERVICE" SV = "1.0">gettransactionset</cd>
```

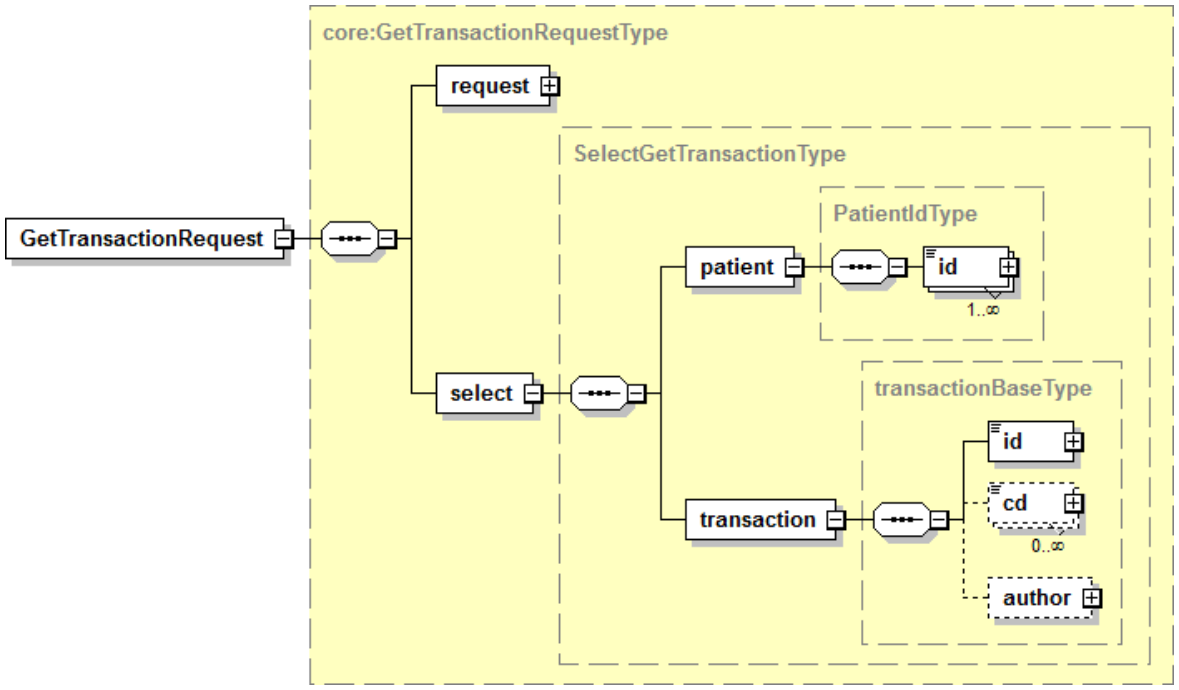
If that tag is not present (for backward compatibility), or indicates “gettransaction”, this method must be used.

For the detailed specifications, see ref. *intrahub getTransaction 3.0 specification.*

4.5.2 GetTransactionRequest

The GetTransactionRequest message contains two parts:

- *request* (same as previous),
- *select* specifies both the patient and the transaction to retrieve.



4.5.2.1 Input data

request	Same as previous
select/patient[1]	The patient for whom transactions is requested, as one or more id (typically the INSS number)
select/transaction/id[1]	The LOCAL identifier (within the system of the owner of the document) of the transaction, as specified in the GetTransactionList response
select/transaction/cd[0..*]	Not used in this context
select/transaction/author[0..1]	The hub owner of the document; this information is mandatory when the owner of the document is not the hub you are connected to.

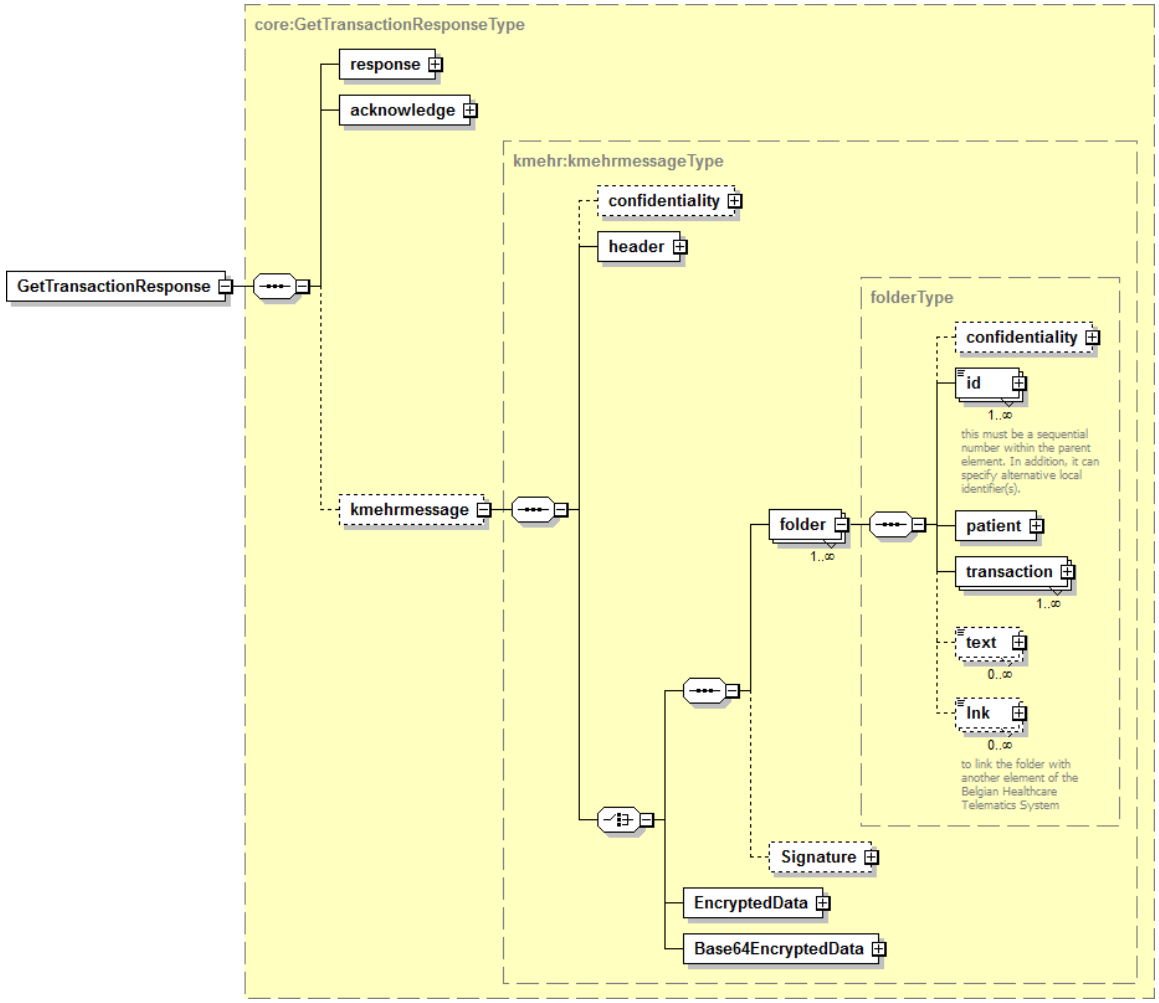
4.5.2.2 Example of request

```
<v3:GetTransactionRequest xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:v31="http://www.ehealth.fgov.be/hubservices/core/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd" xmlns:v3="http://www.ehealth.fgov.be/hubservices/protocol/v3">
    <v31:request>
        …
    </v31:request>
    <v31:select>
        <v31:patient>
            <v31:id S="INSS" SV="1.0">44070200337</v31:id>
        </v31:patient>
        <v31:transaction>
            <v31:id S="LOCAL" SL=" vitalinkuri " SV="1.0">/subject/44070200337/sumehr</v31:id>
            < v31:author>
                < v31::hcparty>
                    < v31::id S="ID-HCPARTY" SV="1.0">1990001916</ v31::id>
                    < v31::cd S="CD-HCPARTY" SV="1.7">hub</ v31::cd>
                    < v31::name>VITALINK</ v31::name>
                </ v31::hcparty>
            </ v31:author>
        </v31:transaction>
    </v31:select>
</v3:GetTransactionRequest>
```

4.5.3 GetTransactionResponse

The response message contains three parts:

- *response* contains technical data about the message, including the original request;
- *acknowledge* gives information about the level of completion of the service: success or failure and error messages
- *kmehrmessage* is the 'payload' of the message with a *header* indicating sender and recipient, and one folder with the patient and the (unique) transaction.



4.5.3.1 *Output data*

response	Same as previous
acknowledge/iscomplete[1]	*true* indicates the success: the transactions set is available in the *kmehrmessage* *false* in case of any error or exception
acknowledge/error[0..*]	*id*, *code* and *description* of errors
kmehrmessage/header[1]	identifies the sender and the receiver of the message
kmehrmessage/folder[1]	Only one folder is allowed; it is normaly encrypted (with the public key of the recipient) and then base64-coded; the result is then placed in the Base64EncryptedData element.
/id[1]	The *id* (ID-KMEHR) of the folder; usually "1"
/patient[1]	Data about the patient concerned by the transaction
/transaction[1]	The content of the transaction
/id[1]	*LOCAL id* of the transaction (i.e. id in the referential system of the hub or safe)
/author[1..*]	the first hcparty of the author chain is normally the hub owner of the document; if not, the transaction is supposed to be stored in the current hub/safe (to which the user application is directly connected)

Details on codification of transactions can be found if ref. *Kmehr transactions,* and more specifically for sumehrs, in ref. *Sumehr*.

4.5.3.2 Example of response

```
<ns3:GetTransactionResponse xmlns="http://www.ehealth.fgov.be/hubservices/core/v3"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:ns3="http://www.ehealth.fgov.be/hubservices/protocol/v3" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns5="http://www.w3.org/2000/09/xmldsig#" xmlns:ns6="urn:be:fgov:ehealth:safe:internal:v3"
xmlns:ns7="urn:be:fgov:ehealth:safe:common:decryptor:v3" xmlns:ns8="urn:be:fgov:ehealth:safe:common:v3"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd">
    <response>
        …
    </response>
    <acknowledge>
        <iscomplete>true</iscomplete>
        <error>
            <ns2:cd S="LOCAL" SL ="vitalinkstatuscode" SV="1.0">200</ns2:cd>
            <ns2:description L="en">The request was successfully completed.</ns2:description>
        </error>
    </acknowledge>
    <kmehrmessage>
        <ns2:header>
            <ns2:standard>
                <ns2:cd S="CD-STANDARD" SV="1.0">20100601</ns2:cd>
            </ns2:standard>
            <ns2:id S="ID-KMEHR" SV="1.0">3-1ca80362-5866-424d-a7c9-edefe5914abb</ns2:id>
            <ns2:date>2017-01-13+01:00</ns2:date>
            <ns2:time>13:42:09+01:00</ns2:time>
            <ns2:sender>
                <ns2:hcparty>
                    <ns2:id S="ID-HCPARTY" SV="1.0">Gateway</ns2:id>
                    <ns2:cd S="CD-HCPARTY" SV="1.0">hub</ns2:cd>
                </ns2:hcparty>
            </ns2:sender>
            <ns2:recipient>
                <ns2:hcparty>
                    <ns2:id S="ID-HCPARTY" SV="1.0">1990000629</ns2:id>
                    <ns2:cd S="CD-HCPARTY" SV="1.7">hub</ns2:cd>
                    <ns2:name>TEST HUB ORG</ns2:name>
                </ns2:hcparty>
                <ns2:hcparty>
                    <ns2:id S="ID-HCPARTY" SV="1.0">71099218</ns2:id>
                    <ns2:id S="ID-ENCRYPTION-ACTOR" SV="1.0">71099218</ns2:id>
                    <ns2:id S="ID-ENCRYPTION-APPLICATION" SV="1.0"/>
                    <ns2:cd S="CD-HCPARTY" SV="1.7">orghospital</ns2:cd>
                    <ns2:cd S="CD-ENCRYPTION-ACTOR" SV="1.0">NIHII-HOSPITAL</ns2:cd>
                    <ns2:name>TEST HOSPITAL ORG</ns2:name>
                </ns2:hcparty>
                <ns2:hcparty>
                    <ns2:id S="ID-HCPARTY" SV="1.0">10025840123</ns2:id>
                    <ns2:id S="INSS" SV="1.0">82012419934</ns2:id>
                    <ns2:cd S="CD-HCPARTY" SV="1.7">PHYSICIAN</ns2:cd>
                    <ns2:firstname>Rémy</ns2:firstname>
                    <ns2:familyname>Drijkoningen</ns2:familyname>
                    <ns2:address>
                        <ns2:cd S="CD-ADDRESS" SV="1.0">careaddress</ns2:cd>
                        <ns2:nis>21004</ns2:nis>
                    </ns2:address>
                </ns2:hcparty>
            </ns2:recipient>
        </ns2:header>
        <ns2:Base64EncryptedData>
            <ns2:cd S="CD-ENCRYPTION-METHOD" SV="1.0">CMS</ns2:cd>
            <ns2:Base64EncryptedValue>
                <!-- encrypted folder -->
            </ns2:Base64EncryptedValue>
        </ns2:Base64EncryptedData>
    </kmehrmessage>
</ns3:GetTransactionResponse>
```

4.6 PutTransaction

4.6.1 Purpose

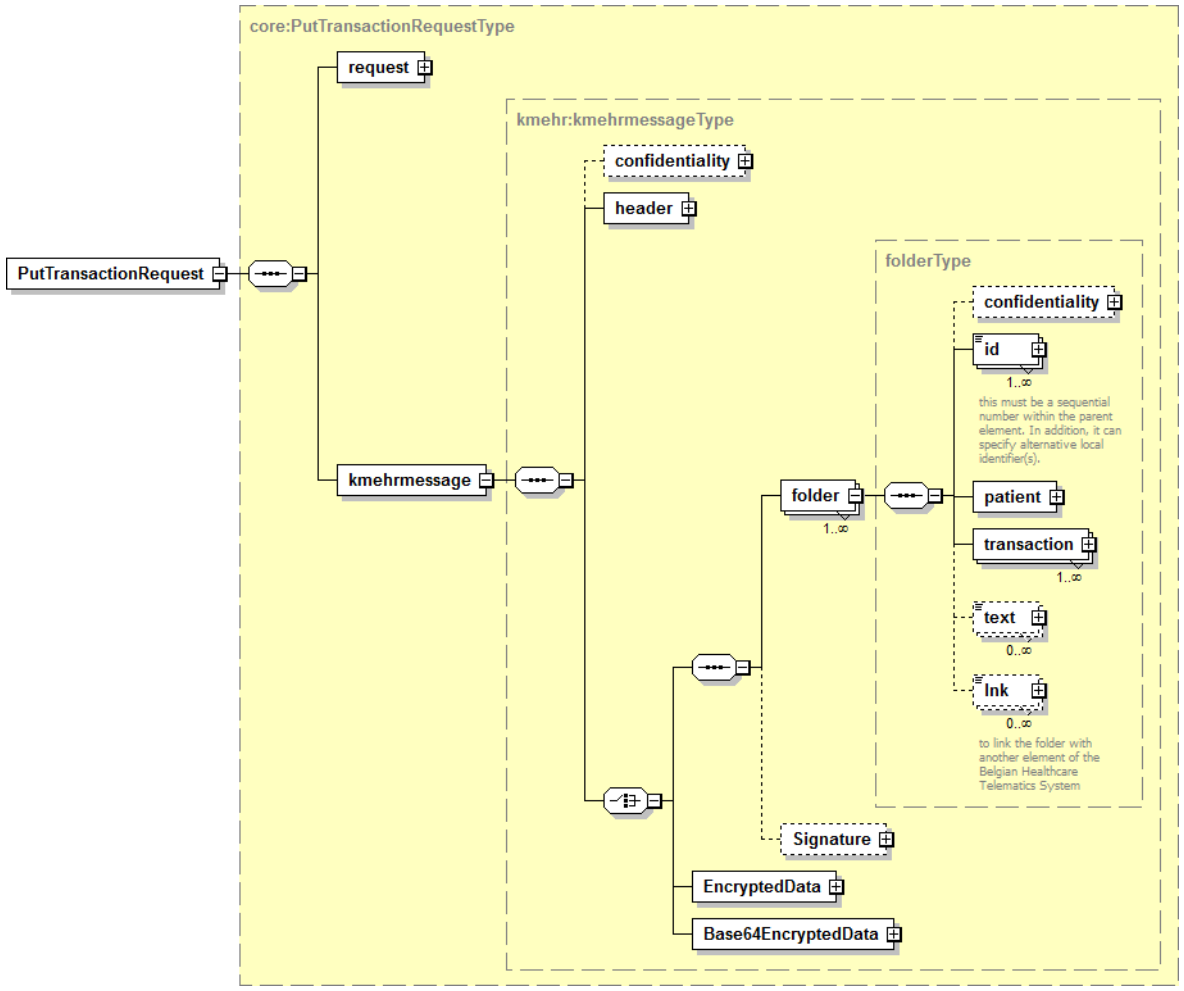
The PutTransaction method is used to declare (in a hub) or to store (in a safe) a simple transaction (document). In the safe context, which is the purpose of this cookbook, the transactions of interest are sumehr (at the time of writing).

For the detailed specifications, see ref. *intrahub putTransaction 3.0 specification*.

4.6.2 PutTransactionResquest

The request message contains two parts:

- *request* (same as previous),
- *kmehrmessage* containing a header with the sender and recipient of the message, and one folder with the patient and the transaction (sumehr) to be created or updated.



4.6.2.1 Input data

request	Same as previous
kmehrmessage/header[1]	identifies the sender and the receiver of the message
kmehrmessage/folder[1]	Only one folder is allowed; it is normaly encrypted (with the public key of recipient) and and then base64-coded; the result is then placed in the Base64EncryptedData element.
/id[1]	The id (ID-KMEHR) of the folder; usually “1”
/patient[1]	Data about the patient concerned by the transaction
/transaction[1]	The content of the transaction
/id[1..*]	a *LOCAL id* in the user’s application optionnaly, if a *LOCAL id* of the transaction in the referential system of the hub or safe is provided, it means an update of a existing transaction (with version management); otherwise the operation is an insertion of a new document
/author[1..*]	for an existing document, the first hcparty of the author chain is normally the hub owner of the document; if not, the transaction is supposed to be stored in the current hub/safe (to which the user application is directly connected)

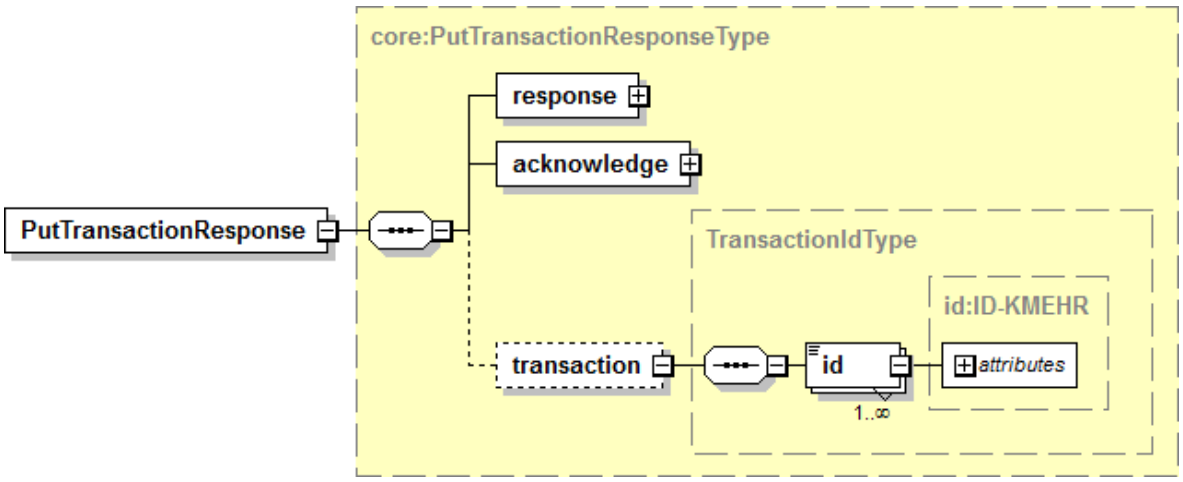
4.6.2.2 Example of request

```
<v3:PutTransactionRequest xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:v31="http://www.ehealth.fgov.be/hubservices/core/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd" xmlns:v3="http://www.ehealth.fgov.be/hubservices/protocol/v3">
    <v31:request>
        …
    </v31:request>
    <v31:kmehrmessage>
        <v1:header>
            …
        </v1:header>
        <v1:Base64EncryptedData>
            <v1:cd S="CD-ENCRYPTION-METHOD" SV="1.0">CMS</v1:cd>
            <v1:Base64EncryptedValue>
                <!-- encrypted folder -->
            </v1:Base64EncryptedValue>
        </v1:Base64EncryptedData>
    </v31:kmehrmessage>
</v3:PutTransactionRequest>
```

4.6.3 PutTransactionResponse

The response message contains three parts:

- *response* contains technical data about the message, including the original request;
- *acknowledge* gives information about the level of completion of the service: success or failure and error messages
- *transaction*, contains the id of the transaction created/updated in the safe referential.



4.6.3.1 Output data

response	Same as previous
acknowledge/iscomplete[1]	*true* indicates the success: the transaction was succesfully created/updated *false* in case of any error or exception
acknowledge/error[0..*]	*id*, *code* and *description* of errors
transaction[1]	the *id* returned by the hub for the transaction

4.6.3.2 Example of response

```
<ns3:PutTransactionResponse xmlns="http://www.ehealth.fgov.be/hubservices/core/v3"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:ns3="http://www.ehealth.fgov.be/hubservices/protocol/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd">
    <response>
        …
    </response>
    <acknowledge>
        <iscomplete>true</iscomplete>
        <error>
            <ns2:cd S="LOCAL" SL ="vitalinkstatuscode" SV="1.0">200</ns2:cd>
            <ns2:description L="en">The request was successfully completed.</ns2:description>
        </error>
    </acknowledge>
    <transaction>
        <id S="LOCAL" SL="VitalinkUri" SV="1.0">/subject/44070200337/sumehr/00577/1</id>
    </transaction>
</ns3:PutTransactionResponse>
```

4.7 RevokeTransaction

4.7.1 Purpose

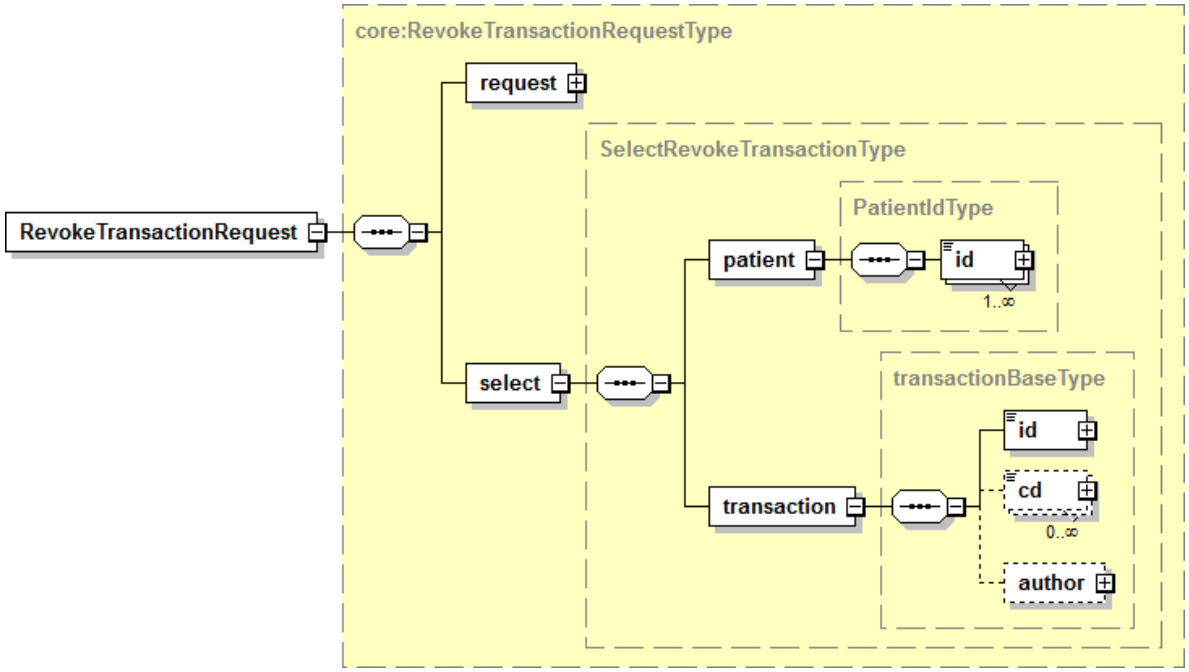
The RevokeTransaction is used to “unpublish” an existing transaction. At present, this can be done only by the author of the transaction. Normally in hub operations, it is only possible to revoke a local transaction (in the hub where the user is connected to). In the special case of sumehrs stored on the regional safes, RevokeTransaction will always operate on the safe where the document is stored, in a transparent way from the user’s point of view.

For the detailed specifications, see ref. **intrahub revokeTransaction 1.0 specification**.

4.7.2 RevokeTransactionResquest

The RevokeTransactionRequest message contains two parts:

- *request* (same as previous),
- *select* specifies both the patient and the transaction to revoke.



4.7.2.1 Input data

request	Same as previous
select/patient[1]	The patient for whom transactions is requested, as one or more id (typically the INSS number)
select/transaction/id[1]	The LOCAL identifier (within the system of the owner of the document) of the transaction, as specified in the GetTransactionList response
select/transaction/cd[0..*]	Not used in this context
select/transaction/author[0..1]	The hub owner of the document; this information is mandatory when the owner of the document is not the safe you are connected to.

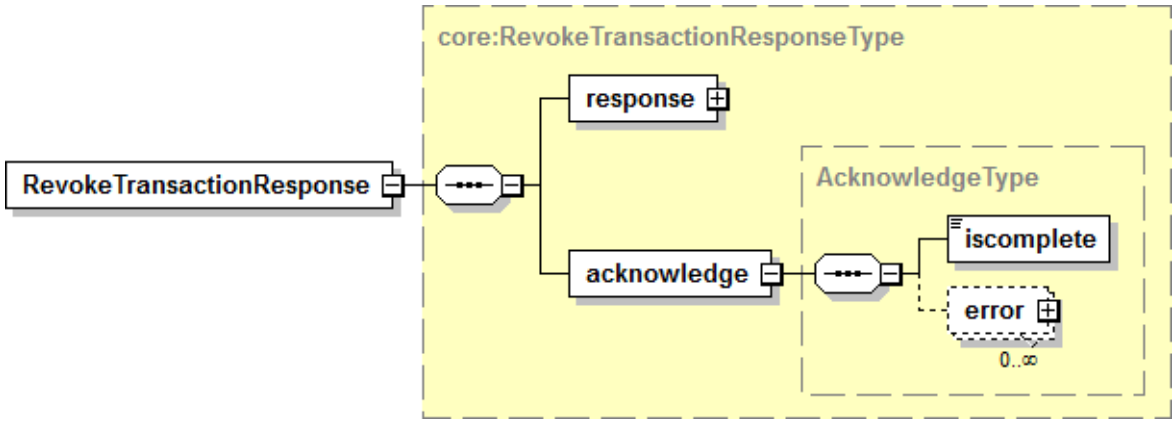
4.7.2.2 Example of request

```
<v3:RevokeTransactionRequest xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:v31="http://www.ehealth.fgov.be/hubservices/core/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd" xmlns:v3="http://www.ehealth.fgov.be/hubservices/protocol/v3">
    <v31:request>
        ...
    </v31:request>
    <v31:select>
        <v31:patient>
            <v31:id S="INSS" SV="1.0">44070200337</v31:id>
        </v31:patient>
        <v31:transaction>
            <v31:id S="LOCAL" SL=" vitalinkuri " SV="1.0">/subject/44070200337/sumehr/12345/2</v31:id>
            < v31:author>
                < v31::hcparty>
                    < v31::id S="ID-HCPARTY" SV="1.0">1990001916</ v31::id>
                    < v31::cd S="CD-HCPARTY" SV="1.7">hub</ v31::cd>
                    < v31::name>VITALINK</ v31::name>
                </ v31::hcparty>
            </ v31:author>
        </v31:transaction>
    </v31:select>
</v3:RevokeTransactionRequest>
```

4.7.3 RevokeTransactionResponse

The response message contains two parts:

- *response* contains technical data about the message, including the original request;
- *acknowledge* gives informations about the level of completion of the service: success or failure and error messages.



4.7.3.1 Output data

response	Same as previous
acknowledge/iscomplete[1]	*true* indicates the success: the transaction was retrieved and revoked ('logically deleted') *false* in case of any error or exception
acknowledge/error[0..*]	*id*, *code* and *description* of errors

4.7.3.2 Example of response

```
<ns3:RevokeTransactionResponse xmlns="http://www.ehealth.fgov.be/hubservices/core/v3"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:ns3="http://www.ehealth.fgov.be/hubservices/protocol/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd">
    <response>
        …
    </response>
    <acknowledge>
        <iscomplete>true</iscomplete>
        <error>
            <ns2:cd S="LOCAL" SL ="vitalinkstatuscode" SV="1.0">200</ns2:cd>
            <ns2:description L="en">The request was successfully completed.</ns2:description>
        </error>
    </acknowledge>
</ns3:RevokeTransactionResponse>
```

4.8 GetPatientAuditTrail

4.8.1 Purpose

The GetPatientAuditTrail method is used to obtain the information of user access on certains documents. The purpose is to answer questions like the following:

- who has consulted a given document ?
- who has consulted documents about a given patient ?
- for a given patient, what documents were accessed by a given healthcare party ?

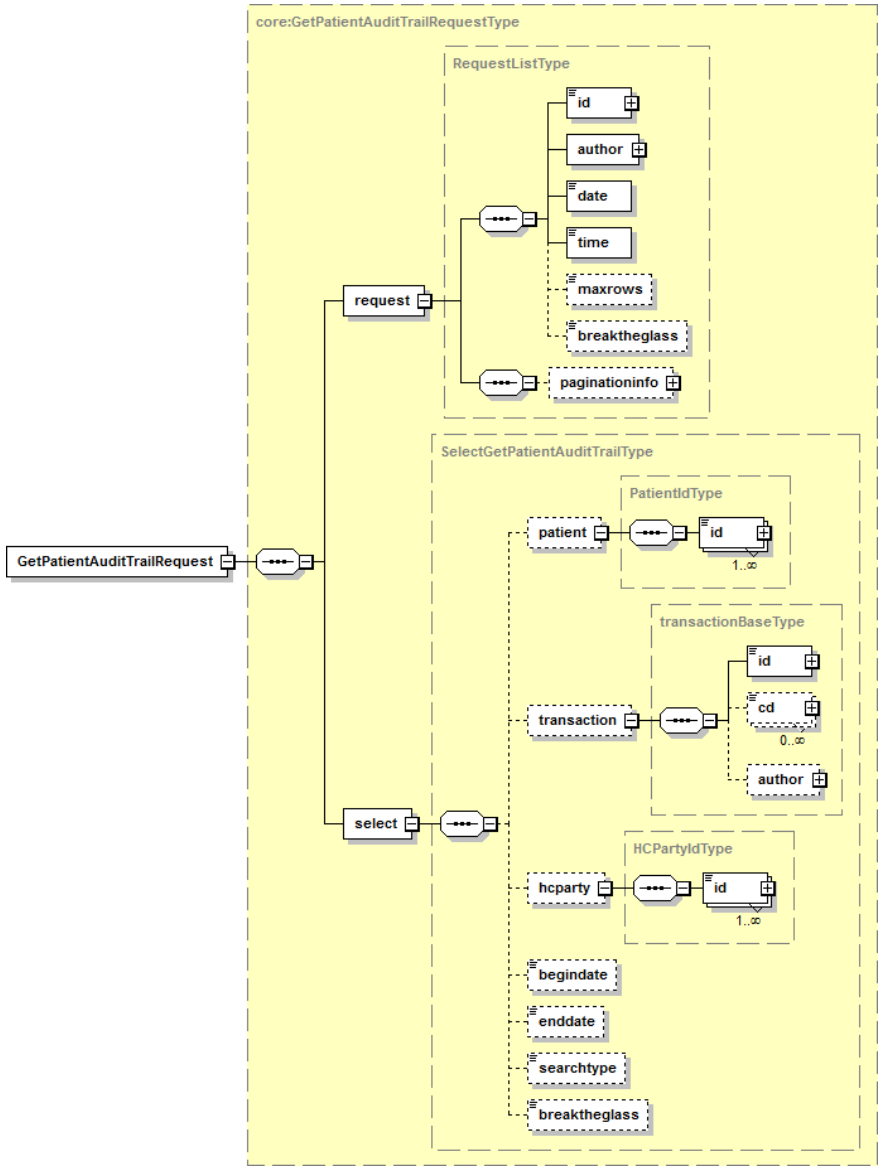
For now, “access” means a successful consultation of a document (through GetTransaction or GetTransactionSet) [D5].

For the detailed specifications, see ref. *intrahub getPatientAuditTrail 1.0 specification*.

4.8.2 GetPatientAuditTrail Resquest

The GetPatientAuditRequest message contains two parts:

- *request* (same as previous),
- *select* specifies the criteria of the search: patient, transaction, hcparty, and eventually restrictions about the date, the scope and modality of access.



4.8.2.1 Input data

request	Same as previous
request/paginationinfo[0..1]	the pagination information which contain the index of the record where the page should start(D6)
select/patient[0..1]	The patient concerned by the transaction access
select/transaction[0..1] /id[1] /cd /author[0..1]	The particular transaction to audit The id of the transaction The type of transaction (CD-TRANSACTION) or type of access method (CD-HUBSERVICE) The hub owner of that transaction (in interhub operation)
select/hcparty[0..1]	The hcparty concerned by the transaction access
select/begindate[0..1]	To limit results to: access done after a given date(D7)
select/enddate[0..1]	To limit results to: access done before a given date(D7)
select/searchtype[0..1]	Use *local* to limit the search at the level of the hub/safe of connexion; use *global* to search everywhere
select/breaktheglass[0..1]	Whether or not the access was made through a 'break-the-glass' procedure; this is hub-specific (D8)

4.8.2.2 Differences between platforms

	Vitalink	RSW (Intermed) et RSB (BruSafe)
D5 transaction access	Vitalink reports on all operations except the GetLatestUpdate.	report successful consultation of documents
D6 request/paginationinfo	can be specify if list exceeds the max supported by the plaform	this parameter is not supported; there is no max size for the list.
D7 select period	When no begin or enddate is given, only the results from the previous month are returned.	When no begin or enddate is given, all accesses are returned, within the limit of maxrows
D8 select/breaktheglass	supports 'break-the-glass' access	always require intrahub access with therapeutic link; in local requests this parameter will be ignored; in interhub requests, it will be propagated to the target hub

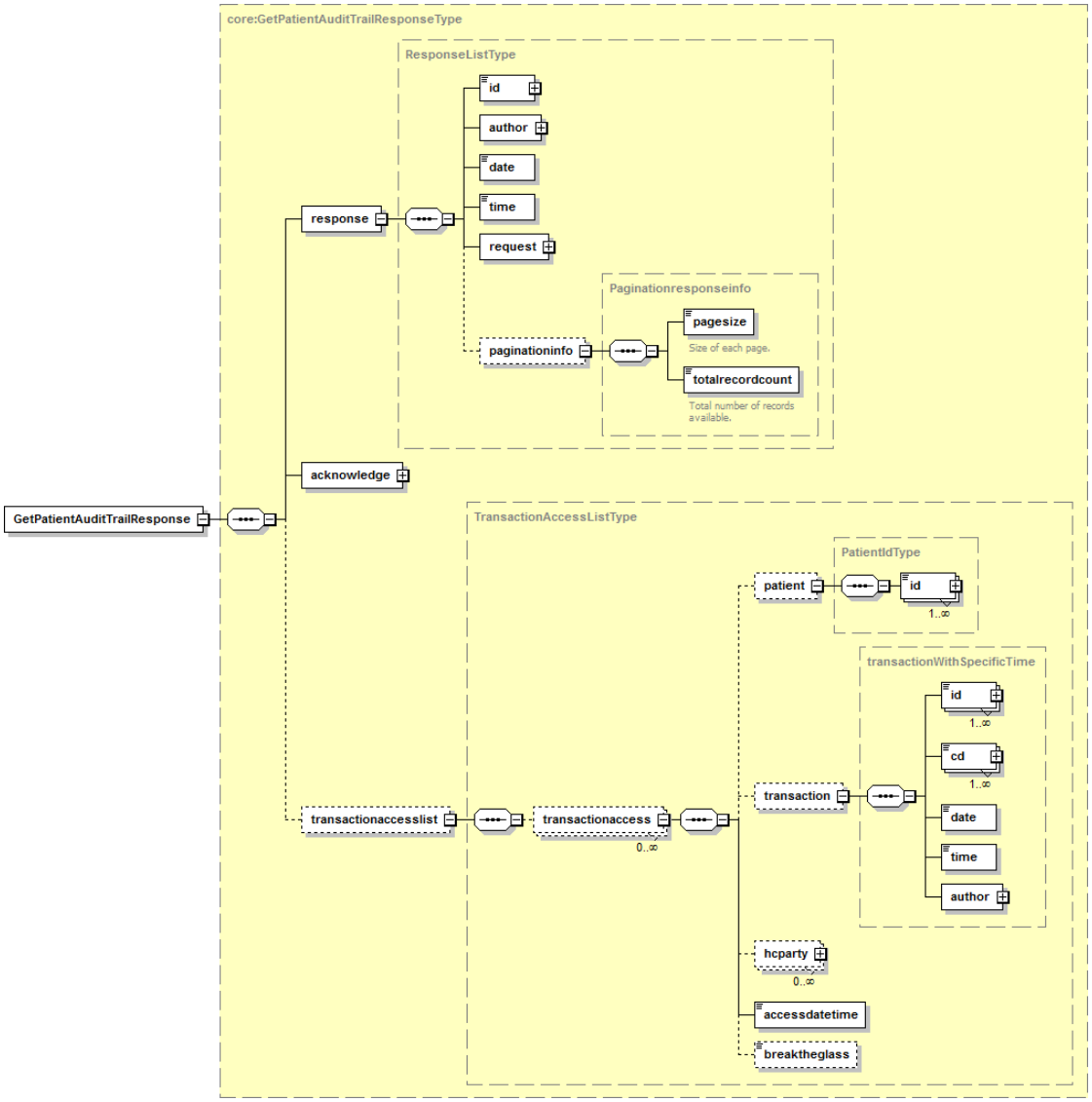
4.8.2.3 Example of request

```
<v3:GetPatientAuditTrailRequest xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:v31="http://www.ehealth.fgov.be/hubservices/core/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd" xmlns:v3="http://www.ehealth.fgov.be/hubservices/protocol/v3">
    <v31:request>
        …
    </v31:request>
    <v31:select>
        <!-- The patient of who you want the audit trail-->
        <v31:patient>
            <v31:id S="INSS" SV="1.0">44070200337</v31:id>
        </v31:patient>
        <!-- The data of which you want the audit trail-->
        <v31:transaction>
            <v31:id S="LOCAL" SL=" vitalinkuri " SV="1.0">/subject/44070200337/sumehr</v31:id>
            < v31:author>
                < v31::hcparty>
                    < v31::id S="ID-HCPARTY" SV="1.0">1990001916</ v31::id>
                    < v31::cd S="CD-HCPARTY" SV="1.7">hub</ v31::cd>
                    < v31::name>VITALINK</ v31::name>
                </ v31::hcparty>
            </ v31:author>
        </v31:transaction>
        <!-- The healthcare party concerned by the transaction access-->
        <v31:hcparty>
            <v31:id SV="1.0" S="ID-HCPARTY">10082555045</v31:id>
            <v31:id SV="1.0" S="INSS">71050643439</v31:id>
        </v31:hcparty>
        <v31:begindate>2017-01-01</v31:begindate>
        <v31:enddate>2017-03-31</v31:enddate>
        <!-- The transaction access was a break-the-glass procedure -->
        <v31:breaktheglass>true</v31:breaktheglass>
    </v31:select>
</v3:GetPatientAuditTrailRequest>
```

4.8.3 GetPatientAuditTrail Response

The response message contains three parts:

- *response* contains technical data about the message, including the original request;
- *acknowledge* gives information about the level of completion of the service: success or failure and error messages
- *transactionaccesslist* contains the list of all *transactionaccess*.



4.8.3.1 Output data

response	Same as previous
response/paginationinfo[0..1]	pagination informations of the results(D9)
/pagesize[1]	the size of each page which is returned
/totalrecordcount[1]	the total number of records available
acknowledge/iscomplete[1]	*true* indicates the success: a list of access is available *false* in case of any error or exception
acknowledge/error[0..*]	id, code and description of errors
transactionaccesslist	List of access, if any
/transactionaccess[0..*]	Detail of one access
/patient[0..1]	Identifier of the patient concerned
/transaction[0..1]	id, type, date/time and author of the transaction accessed
/hcparty[0..*]	Identification of which made the access, as a chain of hcparty (for instance hub, org, dept, person)
/accessdatetime[1]	The timestamp of the access
/breaktheglass[0..1]	The reason invoqued, in case of an access made through a 'break-the-glass' procédure

4.8.3.2 Differences between platforms

	Vitalink	RSW (Intermed) et RSB (BruSafe)
D9 request/paginationinfo	can be specify if list exceeds the max supported by the plaform	this parameter is not supported; there is no max size for the list.

4.8.3.3 Example of response

```
<ns3:GetPatientAuditTrailResponse xmlns="http://www.ehealth.fgov.be/hubservices/core/v3"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:ns3="http://www.ehealth.fgov.be/hubservices/protocol/v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v3 ../xsd-hubservices-3.0.1-BETA/ehealth-
hubservices/XSD/hubservices_protocol-3_0.xsd">
    <response>
        …
    </response>
    <acknowledge>
        <iscomplete>true</iscomplete>
        <error>
            <ns2:cd S="LOCAL" SL ="vitalinkstatuscode" SV="1.0">200</ns2:cd>
            <ns2:description L="en">The request was successfully completed.</ns2:description>
        </error>
    </acknowledge>
    <transactionaccesslist>
        <transactionaccess>
            <patient>
                <id S="INSS" SV="1.0">44070200337</id>
            </patient>
            <transaction>
                <id S="LOCAL" SV="1.0" SL="vitalinkuri">/subject/44070200337/sumehr/12345/2</id>
                <cd S="CD-TRANSACTION" SV="1.0">sumehr</cd>
                <date>2017-01-13</date>
                <time>13:42:09</time>
                <author>
                    <ns2:hcparty>
                        <ns2:id SV="1.0" S="ID-HCPARTY">71099911</ns2:id>
                        <ns2:cd SV="1.1" S="CD-HCPARTY">orghospital</ns2:cd>
                        <ns2:name>Hôpital DuTest</ns2:name>
                    </ns2:hcparty>
                    <ns2:hcparty>
                        <ns2:id S="ID-HCPARTY" SV="1.0">18977653001</ns2:id>
                        <ns2:id SV="1.0" S="INSS">52011334573</ns2:id>
                        <ns2:cd S="CD-HCPARTY" SV="1.0">persphysician</ns2:cd>
                    </ns2:hcparty>
                </author>
            </transaction>
            <!-- the healthcare party who accessed the data-->
            <hcparty>
                <ns2:id SV="1.0" S="ID-HCPARTY">10082555045</ns2:id>
                <ns2:id SV="1.0" S="INSS">71050643439</ns2:id>
                <ns2:cd S="CD-HCPARTY" SV="1.0">persphysician</ns2:cd>
                <ns2:firstname>Pierre</ns2:firstname>
                <ns2:familyname>Dupont</ns2:familyname>
            </hcparty>
            <!-- the date and time of access -->
            <accessdatetime>2017-01-14T13:42:09</accessdatetime>
            <breaktheglass>Here comes the reason of the emergency</breaktheglass>
        </transactionaccess>
    </transactionaccesslist>
</ns3:GetPatientAuditTrailResponse>
```

5 References

Règlement du partage de données de santé entre les systèmes de santé connectés via le répertoire de références de la plate-forme eHealth
Reglement betreffende de uitwisseling van gezondheidsgegevens tussen gezondheidssystemen verbonden via het verwijzingsrepertorium van het eHealth-platform
Délibération n° 14/016 du 18 février 2014, modifiée en dernier lieu le 21 février 2017, portant sur le règlement du partage de données de santé entre les systèmes de santé connectés via le répertoire de références de la plate-forme eHealth.
https://www.ehealth.fgov.be/ehealthplatform/file/view/b9b13ed4ccd793207a226d9750e2d812?filename=14-016-f032-sector_commitee.pdf

"Reglement betreffende de uitwisseling van gezondheidsgegevens tussen gezondheidssystemen verbonden via het verwijzingsrepertorium van het eHealth-platform"
Beraadslaging nr. 14/016 van 18 februari 2014, laatst gewijzigd op 21 februari 2017, betreffende het Reglement betreffende de uitwisseling van gezondheidsgegevens tussen gezondheidssystemen verbonden via het verwijzingsrepertorium van het eHealth-platform.
https://www.ehealth.fgov.be/ehealthplatform/file/view/AWEEm4T9JW4b-4n3_Asq?filename=g-reglement_nl_modif_2015_05.pdf

Secure Token Service
https://www.ehealth.fgov.be/ehealthplatform/fr
https://www.ehealth.fgov.be/ehealthplatform/nl

ETEE encryption
Système de cryptage end-to-end.
https://www.ehealth.fgov.be/ehealthplatform/fr/service-systeme-de-cryptage-end-to-end
Systeem voor end-to-end vercijfering.
https://www.ehealth.fgov.be/ehealthplatform/nl/service-systeem-voor-end-to-end-vercijfering

Kmehr Web Services
https://www.ehealth.fgov.be/standards/kmehr/en/web-services

Sumehr
https://www.ehealth.fgov.be/standards/kmehr/en/transactions/summarised-electronic-healthcare-record-v11

Safe_Cookbook_Medicatieschema
See document "Vitalink Business project: the medication scheme" sent conjointly.

eHealth platform services connectors
https://www.ehealth.fgov.be/ehealthplatform/fr/service-ehealth-platform-services-connectors

RSW codes d'erreur
https://www.reseausantewallon.be/SiteCollectionDocuments/Cookbooks/RSW_errorcodes_FR.pdf

Cookbook_Gateway
http://www.vitalink.be/downloads-en-technische-documentatie-cookbooks

Cookbook_Algemeen
http://www.vitalink.be/downloads-en-technische-documentatie-cookbooks

Kmehr documentation
https://www.ehealth.fgov.be/standards/kmehr

Kmehr XSchema
https://www.ehealth.fgov.be/standards/kmehr/en/page/xschema

Kmehr transactions
https://www.ehealth.fgov.be/standards/kmehr/en/transactions

intrahub getTransactionList 3.0 specification
https://www.ehealth.fgov.be/standards/kmehr/en/data/file/view/5278827d1fb9af7ad521cafd6aeb974d?name=20170209_intrahub_gettransactionlist_3_0_specification.pdf

intrahub getTransactionSet 3.0 specification
https://www.ehealth.fgov.be/standards/kmehr/en/data/file/view/3b947ab70149ba46a400f6260a6d9121?name=20170209_intrahub_gettransactionset_3_0_specification.pdf

intrahub putTransactionSet 3.0 specification
https://www.ehealth.fgov.be/standards/kmehr/en/data/file/view/9ff22b03f12b77837c25a87179b809a9?name=20170209_intrahub_puttransactionset_3_0_specification.pdf

intrahub getLatestUpdate 3.0 specification
https://www.ehealth.fgov.be/standards/kmehr/en/data/file/view/36848fe33a02219b409b0034a6b8e71b?name=20170209_intrahub_getlatestupdate_3_0_specification.pdf

intrahub getTransaction 3.0 specification
https://www.ehealth.fgov.be/standards/kmehr/en/data/file/view/a79e632d9f7505865eec6633ae7bce1b?name=20170209_intrahub_gettransaction_3_0_specification.pdf

intrahub putTransaction 3.0 specification
https://www.ehealth.fgov.be/standards/kmehr/en/data/file/view/e407269fecb53b3fe2f5740470a4f599?name=20170209_intrahub_puttransaction_3_0_specification.pdf

intrahub revokeTransaction 1.0 specification
https://www.ehealth.fgov.be/standards/kmehr/en/data/file/view/AWDaVlEpQ7prLpOJcHxf?name=20100730_intrahub_revoketransaction_1_0_specificat.pdf

intrahub getPatientAuditTrail 1.0 specification
https://www.ehealth.fgov.be/standards/kmehr/en/data/file/view/AWDaV0PaQ7prLpOJcHxh?name=20100730_intrahub_getpatientaudittrail_1_0_specifi.pdf