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## eHealth platform – G19 report

### Hub service “putTransaction” : functional description

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Version	Date	Description
1.0	20/12/2010	First release hub – metahub system
1.1	26/03/2015	Review

### Introduction

This document aims to provide the *functional description* of the service ‘putTransaction’ that could be provided by one hub to its clients.

The description is limited to functional elements: purpose, business XML messages. Pragmatic considerations such as security and WSDL descriptions are out-of-scope of this document. The description does not include the overall usage conditions that have to be implemented by the hubs (e.g. regarding the legal aspects).

This document is a part of KMEHR specification. ( <https://www.ehealth.fgov.be/standards/kmehr/> )

The document is structured as follows:

We first provide a ‘functional description’ of the service (purpose, input and output parameters independently of their XML representation ...).

We then translate this functional description into a KMEHR service (i.e. we describe the expected input and output messages)

This document does not contain any XML example. Those examples are available on the kmehr site.

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# 1 Functional description

**Important remark:** this service description is provided in order to provide a complete specification. However, this operation is not a 'standard' functionality of a 'hub' in the scope of the hub-metahub project as described in the note the 'standard functionalities of a hub'<sup>1</sup> since the 'standard functionalities' of a hub do not include the storage of medical records. However, such a service could typically, for instance, be provided a GP storage server.

<b>Service name</b>	putTransaction
<b>Purpose</b>	This service should be used to declare and to store a given transaction within a hub
<b>Input parameters</b>	<ul style="list-style-type: none"> <li>- a complete transaction<sup>2</sup> T with, at least, the following information             <ul style="list-style-type: none"> <li>- the identification of the patient P</li> <li>- types of transaction (at least a recognized type must be provided)</li> <li>- the identification of the transaction within the caller system</li> <li>- the author(s) A (healthcare responsible(s) of the transaction);</li> <li>- the medical date and time of the transaction</li> </ul> </li> <li>- the date and time DT of recording within the caller system</li> <li>- the sender S of the request, i.e. the healthcare party that performs the operation call</li> <li>- information about the request (id/date/time)</li> </ul>
<b>Output parameters</b>	<ul style="list-style-type: none"> <li>- the initial request</li> <li>- an acknowledge indicating the completion of the request</li> <li>- the identifier attributed by the hub to the transaction</li> </ul>
<b>Post-condition</b>	<ul style="list-style-type: none"> <li>- If there is no transaction with the provided identifier, the summary of the transaction is stored.</li> <li>- If this transaction is already recorded within the hub (according to the provided identification number) with a date and time anterior to DT, the transaction is updated and a new hub identifier is attributed to the transaction. The patient and the author cannot be changed. <i>This roughly corresponds to a new version of this transaction</i></li> </ul>
<b>Possible exceptions</b>	<ul style="list-style-type: none"> <li>- Technical error</li> </ul>

<sup>1</sup> This note is available at the url

FR:

<https://www.ehealth.fgov.be/fr/page/website/home/platform/standards.html>, NL :

<https://www.ehealth.fgov.be/nl/page/website/home/platform/standards.html>

<sup>2</sup> At this level, we do not include in this specification the elements related to the message level encryption mechanisms.

	<ul style="list-style-type: none"> <li>- Invalid data               <ul style="list-style-type: none"> <li>- Invalid sender (according to the rules of the hub)</li> <li>- Invalid patient identifier</li> <li>- Invalid 'type of transaction' /no recognized type of transaction</li> <li>- Invalid transaction identifier</li> <li>- Invalid medical author</li> </ul> </li> <li>- S is not accredited within the hub</li> <li>- S is not allowed to perform the operation according to the hub rules</li> <li>- No consent of the required type for P</li> <li>- A is not recognized within the hub</li> <li>- Not allowed update : patient or author changed</li> <li>- A more recent update has been performed</li> </ul>
<b>Comments</b>	<ul style="list-style-type: none"> <li>- <b>Identification of the patient:</b> we strongly recommend the use of the INSS number. However, at the request of some hubs, each hub may make the choice to use a local identification system for this service. Let us recall that all interhub exchanges will exclusively rely on the INSS number.</li> <li>- <b>About the 'Sender':</b> the sender must at least identify the organization responsible of the caller system. According to the hub implementation (e.g. regarding logging and access management), it could also identify the healthcare party corresponding to the end-user).</li> <li>- <b>Encryption :</b> the transaction must be encrypted by the sender, with the hub as the receiver. Encryption is done using the public key of the hub.</li> </ul>

## 2 Message description

### 2.1 Syntax: XSchema

<b>Operation name</b>	PutTransaction
<b>Input data</b>	request x kmehrmessage
<b>Output data</b>	response x acknowledge x transaction

### 2.2 Semantics: rules and interpretation

#### 2.2.1 Input data

The 'request' parameter gathers the elements relative to the information about the request (id, date, time), sender of the request.

The 'kmehrmessage' parameter covers the transaction itself (including the minimal description elements);

the date and time of recording within the caller system.

## Encryption

We describe input data

- before encryption (unsealed)
- after encryption (sealed).

## Input data unsealed

Parameter	Attributes		Comments	
request	id [1]	Identification of the request within the caller system.		
	author [1]	The sender of the request represented as a sequence of <i>hparty</i> elements. It must at least contain the healthcare party corresponding to the organization responsible of the system.	This information must be coherent with the information provided in the technical identification and authentication system (e.g. certificate).	
	date [1]	Date of request		
	time [1]	Time of request		
kmehrmessage	header [1]	Identifies the sender and the receiver of the message as well as the message itself. See <a href="https://www.ehealth.fgov.be/standards/kmehr/content/page/38/header">https://www.ehealth.fgov.be/standards/kmehr/content/page/38/header</a>	The sender is the healthcare party performing the call, the receiver is the destination system for the transaction (the hub)	
	folder.patient [1]	Patient concerned by the transaction.		
	folder.transaction[1]	id [1]	Identifier of the transaction within the caller system.	
		cd [1-*	Type(s) of the transaction	At least one cd from CD-TRANSACTION
		date [1]	Date of the medical transaction	
		time [1]	Time of the medical transaction	

		author [1]	The authors of the document represented as a sequence of <i>hparty</i> elements	At least one <i>hparty</i> must be a physical person. The <i>hparty</i> are listed by granularity. The first is the most global (i.e. hospital) and the last is the most specific (i.e. physical person). The lower granularity is not mandatory but strongly recommended if it exists. Indeed, this information will be used to support consultation request.
		iscomplete [1]	Boolean to indicate that the document is complete	
		isvalidated [1]	Boolean to indicate that the document is valid	
		(heading or item or lnk or text ) sequence	Medical content of the transaction	
		recorddatetime [1]	Date/time of the recording within the caller system	

### Input data sealed

Parameter	Attributes		Comments
request	id [1]	Identification of the request within the caller system.	
	author [1]	The sender of the request represented as a sequence of <i>hparty</i> elements. It must at least contain the healthcare party corresponding to the organization responsible of the system.	This information must be coherent with the information provided in the technical identification and authentication system (e.g. certificate).
	date [1]	Date of request	
	time [1]	Time of request	

kmehrmessage	header [1]	Identifies the sender and the receiver of the message as well as the message itself. See <a href="https://www.ehealth.fgov.be/standards/kmehr/content/page/38/header">https://www.ehealth.fgov.be/standards/kmehr/content/page/38/header</a>		The sender is the healthcare party performing the call, the receiver is the destination system for the transaction (the hub)
	Base64Encrypted Data [1]	cd [1]	Type of encryption	
		Base64Encrypted Value[1]	Base 64 encrypted value of the transaction	

## 2.2.2 Output data

The 'response' parameter gathers the elements relative to the information about the response (id, date, time), initial request, the sender of the response.

The 'acknowledge' parameter gathers the element relative to the service completion, errors or exceptions that occurred during the service execution (only if the service completion is set to 'false').

The 'transaction' parameter gathers the element relative to the identification of the transaction provided by the hub

Parameter	Attributes		Comments
response	id [1]	Id of the response within the target hub	
	author [1]	Sender of the response (i.e.. the target hub)	
	date [1]	Date of response	
	time [1]	Time of response	
	request [1]	Initial request	
acknowledge	iscomplete [1]	Indicates if the execution has been successfully completed	In this case, this field is set to true if the transaction has been recorded within the hub.
	error [0-*	Indicates the error/exception descriptions	
transaction	id [1-*	Id of the transaction	Contains the id given by the hub

