

Therapeutic Link WS
Cookbook
Version 2.0

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eHealth platform

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All are free to circulate this document with reference to the URL source.

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To the attention of: “IT expert” willing to integrate this web service.

1. Document management

1.1 Document history

Version	Date	Author	Description of changes / remarks
1.0	31/10/2012	eHealth platform	First public version
1.1	28/08/2014	eHealth platform	- New type of proof : ISI+ Card - New user profiles and healthcare party (HC party) categories : dentist and midwife - Additional error codes
1.2	07/01/2015	eHealth platform	Migration therapeutic links targeting pharmacy-holders to pharmacies
1.3	10/08/2015	eHealth platform	- Additional end-user: Patient - Non-referral therapeutic relations - Extended default period of validity from six to fifteen months.
1.4	29/09/2016 Release 2016.2	eHealth platform	- Update ehealth contact url - Overlapped period of validity - Update Overview schema - New authors (Mandatory , Parent) - Update period of validity - Start date and End date - Update Proof - Update xsd definition and related examples - Update error codes and messages
1.5	17/11/2016 Release 2016.2.1	eHealth platform	New born consent management : - SSIN support card number is NOT required - Non-referral relations only
1.6	22/05/2019	eHealth platform	- New user profiles and healthcare party (HC party) - AR78 - The eID number of the patient is NOT required for hubs. - New method: HasTherapeuticLink
1.7	01/10/2019 (R2019.2)	eHealth platform	- Anonymization of data - Add new HC parties (AR78) - Removing SIS Card - Removing WA eHealth Consent (replace by PHV MyHealth)
1.8	28/07/2022	eHealth platform	§ 2.3 eHealth platform document references (updated) § 3.2 Status (added) § 5.1.3 WS-I Basic Profile (added) § 5.1.4 Tracing (added)
1.9	29/04/2024		Add new HC parties (AR78)

2.0	20/08/2025	eHealth platform	Remove deprecated information
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2. Introduction

2.1 Goal of the service

The existence of a therapeutic relationship is one of the fundamental prerequisites for the HC providers to access a patient's medical data. Therefore, the eHealth platform provides a relay service to the actors involved in the exchange, storage or referencing personal data to manage those therapeutic relationships and associated means of evidence¹.

This relay service is obviously limited to therapeutic links made available at the eHealth platform level by the 'owner' of this therapeutic link (such as the HC party declaring a therapeutic link or the actor responsible of a recognized specific database, e.g. for Global Medical File relationship).

A therapeutic link is a relationship between a patient and a HC party for a certain type of therapeutic relationship over a period of validity, depending on the given evidence. It is not possible to update an existing therapeutic link; to update information you first need to revoke the existing therapeutic link.

However, the period of validity of an active therapeutic link could be extended on the condition that

- the start date of the new period is greater or equal to the start date of the period to be extended
and
- the end date of the new period is greater than the end date of the period to be extended (overlap of period of validity)

The following operations (request-response operation type) will support the management of these links²:

PutTherapeuticLink	Used to declare the therapeutic links. Its main purpose is to allow the declaration of a therapeutic link.
RevokeTherapeuticLink	Used to revoke the therapeutic links. Its main purpose is to allow the termination (declaration) of the therapeutic link.
GetTherapeuticLink	Used to consult therapeutic links according to basic search parameters. Its main purpose is to allow the verification of the therapeutic links during the consultation process.
HasTherapeuticLink	Used to verify the therapeutic link.

The therapeutic links are managed according to the rules corresponding to the type of therapeutic link, through:

- specific **WS** by HC professionals as end-users through their usual software or through an authorized organization³,
- a dedicated web application, currently called **PHV MyHealth**⁴ with following end-users:
 - patients;

¹ Supported evidences are described in the paragraph 5.2.7

² Global Medical File(gmf) does support neither declaration nor revocation. Only physicians are allowed to consult 'gmf'

³ Only the consultation service is available for healthcare professionals through authorized organizations.

⁴ PHV MyHealth Web Application manages also patient consent and healthcare party exclusions.

General comments

- The proposed interfaces are **extensions** of the interfaces defined for the same purpose in the context of the Hub & MetaHub project (see <https://www.ehealth.fgov.be/standards/kmehr/nl/>). At the time of writing, those services are **not yet** integrated in this project.

Those interfaces are quite “generic” meaning they support various combinations of the input parameters. However, the service does not support all the possible combinations at the interface level. The rationale for this is mainly to preserve patient privacy, although there are sometimes technical reasons as well.

For more information about the rules and principles governing the rules and principles of utilization of this service, please consult the associated deliberations of the “Comité Sectoriel Section Santé”.

This document describes the use of the therapeutic link service as provided by the eHealth platform. In this cookbook, we explain the structure and content aspects of the possible requests and replies of a therapeutic link WS. Each type of message is illustrated with an example. Additionally, a list of possible errors is included in this document.

This information should allow the IT department of an organization to develop and use the WS call.

Some technical and legal requirements must be met to integrate the eHealth WSs into client applications.

This document is neither a development nor a programming guide for internal applications: eHealth partners retain full freedom within these areas. However, to interact in a smoothly, homogeneously and risk controlled manner with a maximum number of partners, eHealth partners must commit to comply with the specifications, data format, and release processes described within this document. Furthermore, our partners in the health sector must also comply with the business rules for validation and integration of data within their own applications in order to minimize errors and incidents.

2.2 eHealth platform document references

All the document references can be found on the eHealth portal⁵. These versions or any following versions can be used for the eHealth service.

ID	Title	Version	Date	Author
1	Glossary.pdf	1.0	1.1.2010	eHealth
2	Secure token service (STS) HolderofKey - Cookbook	1.6	25/01/2023	eHealth

⁵ <https://ehealth.fgov.be/ehealthplatform>

2.3 External document references

All documents can be found through the internet. They are available to the public, but not supported by eHealth.

ID	Title	Source	Date	Author
1	OASIS – Web services security – SAML Token Profile	http://www.oasis-open.org/committees/download.php/16768/wssv1.1-spec-os-SAMLTokenProfile.pdf	NA	NA
2	The Internet Engineering Task Force (IETF)	https://www.ietf.org/rfc/rfc2119.txt	NA	NA
3	BouncyCastle	http://www.bouncycastle.org/	NA	NA

2.4 Use of keywords

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in IETF RFC 2119.

3. Support

3.1 Helpdesk eHealth platform

3.1.1 Certificates

To access the secured eHealth platform environment you must obtain an eHealth platform certificate, used to identify the initiator of the request. In case you do not have one, please consult the chapter about the eHealth Certificates on the portal of the eHealth platform

- <https://www.ehealth.fgov.be/ehealthplatform/nl/ehealth-certificaten>
- <https://www.ehealth.fgov.be/ehealthplatform/fr/certificats-ehealth>

For technical issues regarding eHealth platform certificates

- Acceptance: acceptance-certificates@ehealth.fgov.be
- Production: support@ehealth.fgov.be

3.1.2 For issues in production

eHealth platform contact centre:

- Phone: 02 788 51 55 (on working days from 6 am till 6 pm)
- Mail: support@ehealth.fgov.be
- Contact Form :
 - <https://www.ehealth.fgov.be/ehealthplatform/nl/contact> (Dutch)
 - <https://www.ehealth.fgov.be/ehealthplatform/fr/contact> (French)

3.1.3 For issues in acceptance

Integration-support@ehealth.fgov.be

3.1.4 For business issues

- regarding an existing project: the project manager in charge of the application or service
- regarding a new project or other business issues: info@ehealth.fgov.be

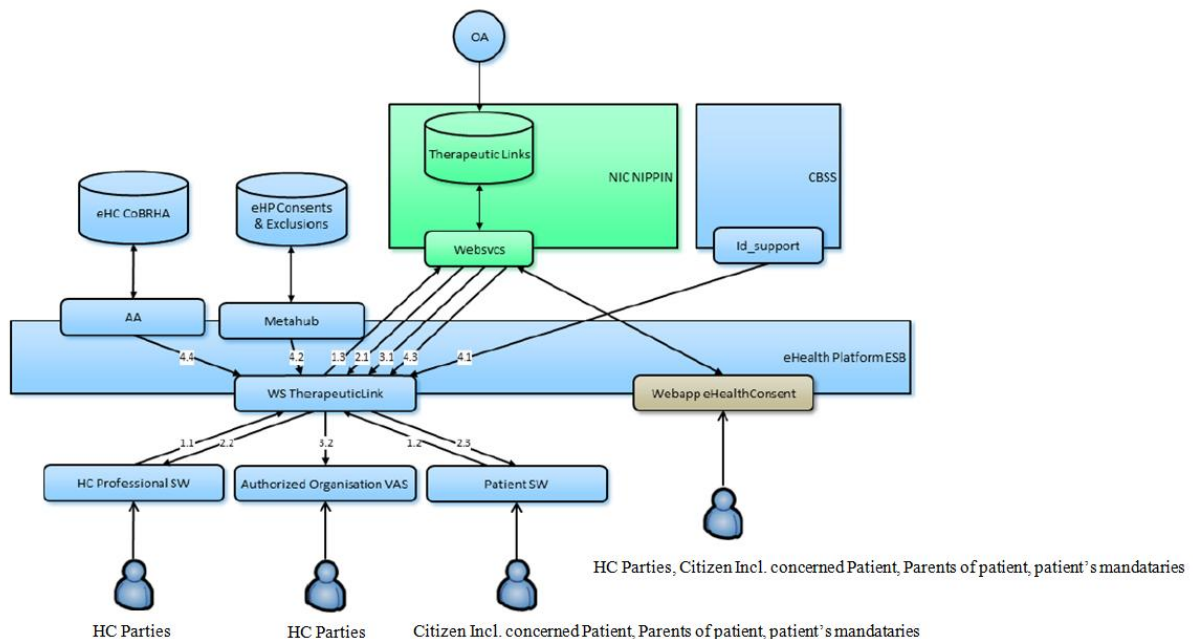
3.2 Status

The website <https://status.ehealth.fgov.be> is the monitoring and information tool for the ICT functioning of the eHealth services that are partners of the Belgian eHealth system.



4. Global overview

Schéma



The schema gives the users of this cookbook the overview of the management of the therapeutic links.

- The eHealth Consent WA will allow both patients (incl. patient's parents or mandataries) and authorized HC parties to manage the therapeutic links (declaration, revocation and consultation).
⇒ **Legacy: The eHealth Consent WA is replaced by PHV MyHealth WA**
(<https://www.myhealth.belgium.be>)
- The authorized HC parties, citizen (incl. concerned patients, parents of patients or patient's mandataries) are also able to perform the same operations throughout their usual software by calling the eHealth Therapeutic Links WS.
- The authorized HC organizations are permitted to verify the existence of therapeutic links before allowing the HC parties to access patients' medical data. This verification is done by calling the Therapeutic Link Consultation Web Service (WS) through their application.

5. Step-by-step

5.1 Technical requirements

5.1.1 Use of the eHealth SSO solution

This section specifies how to obtain a SAML token from the Secure Token Service (STS) to access the Therapeutic Link WS. There are different types of users, each requiring a different type of token to access the service. Therefore, this section will be updated each time a new type of user has been added. The remainder of this section describes the needed attributes for each type of user.

For more details on how STS works, see

<https://www.ehealth.fgov.be/ehealthplatform/fr/service-iam-identity-access-management>

5.1.1.1 HC Parties

5.1.1.1.1 Physician

The request for the SAML token is secured with the eID⁶ of the physician. The certificate used by the Holder-Of-Key (HOK) verification mechanism is an eHealth certificate⁷. The needed attributes are the following:

- The social security identification number of the physician:
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin and *urn:be:fgov:person:ssin*

Physician must also specify which information must be asserted by the eHealth platform:

- The social security identification number of the physician:
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin and *urn:be:fgov:person:ssin*
- To have access to the Therapeutic Link WS, the person must be a physician:
urn:be:fgov:person:ssin:ehealth:1.0:fpsph:doctor:boolean
- Physician uses his/her personal certificate:
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin:usersession:boolean

5.1.1.1.2 Nurse

The request for the SAML token is secured with the eID⁶ of the nurse. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The social security identification number of the nurse:
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin and *urn:be:fgov:person:ssin*

Nurse must also specify which information must be asserted by the eHealth platform:

- The social security identification number of the nurse:
urn:be:fgov:ehealth:1.0:certificateholder:person:ssin and *urn:be:fgov:person:ssin*
- To have access to the Therapeutic Link WS, the person must be a nurse:
urn:be:fgov:person:ssin:ehealth:1.0:fpsph:nurse:boolean

⁶ As fallback, in absence of the eID, the personal eHealth certificate can be used for authentication instead

- Nurse uses his/her personal certificate:
urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean

5.1.1.1.3 Dentist

The request for the SAML token is secured with the eID of the dentist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The social security identification number of the dentist:
urn:be:fgov:health:1.0:certificateholder:person:ssin and *urn:be:fgov:person:ssin*

Dentist must also specify which information must be asserted by the eHealth platform:

- The social security identification number of the dentist:
urn:be:fgov:health:1.0:certificateholder:person:ssin and *urn:be:fgov:person:ssin*
- To have access to the Therapeutic Link WS, the person must be a dentist:
urn:be:fgov:person:ssin:health:1.0:fpsph:dentist:boolean
- Dentist uses his/her personal certificate:
urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean

5.1.1.1.4 Midwife

The request for the SAML token is secured with the eID of the midwife. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The social security identification number of the midwife:
urn:be:fgov:health:1.0:certificateholder:person:ssin and *urn:be:fgov:person:ssin*

Midwife must also specify which information must be asserted by the eHealth platform:

- The social security identification number of the midwife:
urn:be:fgov:health:1.0:certificateholder:person:ssin and *urn:be:fgov:person:ssin*
- To have access to the Therapeutic Link WS, the person must be a midwife:
urn:be:fgov:person:ssin:health:1.0:fpsph:midwife:boolean
- Midwife uses his/her personal certificate:
urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean

5.1.1.1.5 Audician

The request for the SAML token is secured with the eID of the audician. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the audician:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Audician must also specify which information must be asserted by the eHealth platform:

- The SSIN of the audician :
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*



- The audician uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a audician:
 - *urn:be:fgov:person:ssin:health:1.0:fpsph:audician:boolean*

5.1.1.1.6 Physiotherapist

The request for the SAML token is secured with the eID of the physiotherapist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the physiotherapist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Physiotherapist must also specify which information must be asserted by the eHealth platform:

- The SSIN of the physiotherapist :
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The physiotherapist uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a physiotherapist:
 - *urn:be:fgov:person:ssin:health:1.0:fpsph:physiotherapist:Boolean*

5.1.1.1.7 Occupational Therapist

The request for the SAML token is secured with the eID of the occupational therapist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the occupational therapist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Occupational therapist must also specify which information must be asserted by the eHealth platform:

- The SSIN of the occupational therapist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The occupational therapist uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be an occupational therapist:
 - *urn:be:fgov:person:ssin:health:1.0:fpsph:occupationaltherapist:boolean*

5.1.1.1.8 Practical nurse

The request for the SAML token is secured with the eID of the practical nurse. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the practical nurse:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*



- *urn:be:fgov:person:ssin*

Practical nurse must also specify which information must be asserted by the eHealth platform:

- The SSIN of the practical nurse:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The practical nurse uses his/her personal certificate:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a practical nurse:
 - *urn:be:fgov:person:ssin:ehealth:1.0:fpsph:practicalnurse:boolean*

5.1.1.1.9 Dietician

The request for the SAML token is secured with the eID of the dietician. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the dietician:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Dietician must also specify which information must be asserted by the eHealth platform:

- The SSIN of the dietician:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The dietician uses his/her personal certificate:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a dietician:
 - *urn:be:fgov:person:ssin:ehealth:1.0:fpsph:dietician:boolean*

5.1.1.1.10 Audiologist

The request for the SAML token is secured with the eID of the audiologist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the audiologist:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Audiologist must also specify which information must be asserted by the eHealth platform:

- The SSIN of the audiologist:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The audiologist uses his/her personal certificate:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be an audiologist:
 - *urn:be:fgov:person:ssin:ehealth:1.0:fpsph:audiologist:boolean*



5.1.1.1.11 Podologist

The request for the SAML token is secured with the eID of the podologist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the podologist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Podologist must also specify which information must be asserted by the eHealth platform:

- The SSIN of the podologist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The podologist uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a podologist:
 - *urn:be:fgov:person:ssin:health:1.0:fpsph:podologist:boolean*

5.1.1.1.12 Truss maker

The request for the SAML token is secured with the eID of the truss maker. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the truss maker:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Truss maker must also specify which information must be asserted by the eHealth platform:

- The SSIN of the truss maker:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The truss maker uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a truss maker:
 - *urn:be:fgov:person:ssin:health:1.0:fpsph:trussmaker:Boolean*

5.1.1.1.13 OT mobility improvement

The request for the SAML token is secured with the eID of the OT mobility improvement. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the OT mobility improvement:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

OT mobility improvement must also specify which information must be asserted by the eHealth platform:

- The SSIN of the OT mobility improvement:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*



- *urn:be:fgov:person:ssin*
- The OT mobility improvement uses his/her personal certificate:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be an OT mobility improvement:
 - *urn:be:fgov:person:ssin:ehealth:1.0:fpsph:otmobilityimprovement:boolean*

5.1.1.1.14 OT bandages orthosiology

The request for the SAML token is secured with the eID of the OT bandages orthosiology. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following :

- The SSIN of the OT bandages orthosiology:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

OT bandages orthosiology must also specify which information must be asserted by the eHealth platform:

- The SSIN of the OT bandages orthosiology:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The OT bandages orthosiology uses his/her personal certificate:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be an OT bandages orthosiology:
 - *urn:be:fgov:person:ssin:ehealth:1.0:fpsph:otbandagesorthosiology:boolean*

5.1.1.1.15 OT prosthesiology

The request for the SAML token is secured with the eID of the OT prosthesiology. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the OT prosthesiology:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

OT prosthesiology must also specify which information must be asserted by the eHealth platform:

- The SSIN of the OT prosthesiology:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The OT prosthesiology uses his/her personal certificate:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be an OT prosthesiology
 - *urn:be:fgov:person:ssin:ehealth:1.0:fpsph:otprosthesiology:boolean*

5.1.1.1.16 OT shoe technology

The request for the SAML token is secured with the eID of the OT shoe technology. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the OT shoe technology:



- *urn:be:fgov:health:1.0:certificateholder:person:ssin*
- *urn:be:fgov:person:ssin*

OT shoe technology must also specify which information must be asserted by the eHealth platform:

- The SSIN of the OT shoe technology:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The OT shoe technology uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be an OT shoe technology:
 - *urn:be:fgov:person:ssin:health:1.0:fpsph:otshoetechnology:boolean*

5.1.1.1.17 Logopedist

The request for the SAML token is secured with the eID of the logopedist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the logopedist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Logopedist must also specify which information must be asserted by eHealth:

- The SSIN of the logopedist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The logopedist uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a logopedist:
 - *urn:be:fgov:person:ssin:health:1.0:fpsph:logopedist:boolean*

5.1.1.1.18 Orthoptist

The request for the SAML token is secured with the eID of the orthoptist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the orthoptist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Orthoptist must also specify which information must be asserted by the eHealth platform:

- The SSIN of the orthoptist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The orthoptist uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a orthoptist:



- *urn:be:fgov:person:ssin:ehealth:1.0:fpsph:orthoptist:boolean*

5.1.1.1.19 Optometrist

The request for the SAML token is secured with the eID of the optometrist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the optometrist:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Optometrist must also specify which information must be asserted by the eHealth platform:

- The SSIN of the optometrist:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The optometrist uses his/her personal certificate:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be an optometrist:
 - *urn:be:fgov:person:ssin:ehealth:1.0:fpsph:optometrist:boolean*

5.1.1.1.20 Lab technologist

The request for the SAML token is secured with the eID of the lab technologist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the lab technologist:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Lab technologist must also specify which information must be asserted by the eHealth platform:

- The SSIN of the lab technologist:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The lab technologist uses his/her personal certificate:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a lab technologist:
 - *urn:be:fgov:person:ssin:ehealth:1.0:fpsph:labtechnologist:boolean*

5.1.1.1.21 Imaging technologist

The request for the SAML token is secured with the eID of the imaging technologist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the imaging technologist:
 - *urn:be:fgov:ehealth:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Imaging technologist must also specify which information must be asserted by the eHealth platform:

- The SSIN of the imaging technologist:



- *urn:be:fgov:health:1.0:certificateholder:person:ssin*
- *urn:be:fgov:person:ssin*
- The imaging technologist uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a imaging technologist:
 - *urn:be:fgov:person:ssin:health:1.0:fpsph:imagingtechnologist:boolean*

5.1.1.1.22 Clinical orthopedic pedagogue

The request for the SAML token is secured with the eID of the clinical orthopedic pedagogue. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the clinical orthopedic pedagogue:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Clinical orthopedic pedagogue must also specify which information must be asserted by the eHealth platform:

- The SSIN of the clinical orthopedic pedagogue:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The clinical orthopedic pedagogue uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a clinical orthopedic pedagogue:
 - *urn:be:fgov:person:ssin:health:1.0:fpsph:clinicalorthopedicpedagogue:boolean*

5.1.1.1.23 Clinical psychologist

The request for the SAML token is secured with the eID of the clinical psychologist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:

- The SSIN of the clinical psychologist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Clinical psychologist must also specify which information must be asserted by the eHealth platform:

- The SSIN of the clinical psychologist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The clinical psychologist uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a clinical psychologist:
 - *urn:be:fgov:person:ssin:health:1.0:fpsph:clinicalpsychologist:boolean*

5.1.1.1.24 Dental hygienist

The request for the SAML token is secured with the eID of the dental hygienist. The certificate used by the HOK verification mechanism is an eHealth certificate. The required attributes are the following:



- The SSIN of the dental hygienist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*

Dental hygienist must also specify which information must be asserted by the eHealth platform:

- The SSIN of the dental hygienist:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin*
 - *urn:be:fgov:person:ssin*
- The dental hygienist uses his/her personal certificate:
 - *urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean*
- To have access to the Therapeutic Link WS, the person must be a clinical psychologist:
 - *urn:be:fgov:person:ssin:health:1.0:fpsph:dentalhygienist:boolean*

5.1.1.1.25 Pharmacy

Pharmacies must specify several attributes in the request. The request to the STS is secured with the eID of the pharmacist starting the session. The certificate of the pharmacy, issued by the eHealth platform, is used by the HOK mechanism. The attributes that need to be provided in the request are the following:

- The SSIN of the person starting the session (must be a pharmacist):
urn:be:fgov:health:1.0:certificateholder:person:ssin and *urn:be:fgov:person:ssin*
- The identification of the pharmacy:
urn:be:fgov:health:1.0:pharmacy:nihi-number
- The identification of the pharmacy holder:
urn:be:fgov:person:ssin:health:1.0:pharmacy-holder

Pharmacies must also specify which information is to be asserted by the eHealth platform. To have access to the Therapeutic Link WS, the following data must be validated:

- The SSIN of the person starting the session (must be a pharmacist, this is verified by eHealth): :
urn:be:fgov:health:1.0:certificateholder:person:ssin and *urn:be:fgov:person:ssin*
- The NIHI number of the pharmacy (the link between the pharmacy and the pharmacist starting the session is not verified, any pharmacist can start the session):
urn:be:fgov:health:1.0:pharmacy:nihi-number
- The pharmacy must be a recognized pharmacy:
urn:be:fgov:health:1.0:pharmacy:nihi-number:recognisedpharmacy:boolean
- The identification of the pharmacy holder (SSIN), i.e. the pharmacist responsible for all activities performed in the pharmacy:
urn:be:fgov:person:ssin:health:1.0:pharmacy-holder
- The identification of the pharmacy holder (NIHI11), i.e. the pharmacist responsible for all activities performed in the pharmacy:
urn:be:fgov:person:ssin:health:1.0:pharmacy-holder:certified:nihi11
- The pharmacy holder must be the certified pharmacy holder:
urn:be:fgov:health:1.0:pharmacy:nihi-number:person:ssin:health:1.0:pharmacy-holder:boolean



- To have access to the therapeutic link WS, the person must be a pharmacist:
urn:be:fgov:person:ssin:health:1.0:fpsph:pharmacist:boolean
- Pharmacist uses his/her personal certificate:
urn:be:fgov:health:1.0:certificateholder:person:ssin:usersession:boolean

5.1.1.1.26 Authorized HC organization

The SAML token request is secured with the eHealth certificate⁶ of the organization (the certificate contains the CBE number either of the organization or, for the organizations that do not have CBE number, an identifier provided by the eHealth platform called 'eHP number'). The certificate used for the HOK verification mechanism is the same eHealth certificate. The required attributes are the following:

- The CBE or eHP number of the organization:
urn:be:fgov:health:1.0:certificateholder:enterprise:cbe-number or
urn:be:fgov:health:1.0:certificateholder:enterprise:ehp-number and respectively
urn:be:fgov:kbo-bce:organization:cbe-number or
urn:be:fgov:kbo-bce:organization:ehp-number

The organization must also specify which information must be asserted by the eHealth platform:

- The CBE or eHP number of the organization:
urn:be:fgov:health:1.0:certificateholder:enterprise:cbe-number or
urn:be:fgov:health:1.0:certificateholder:enterprise:ehp-number
- To have access to the therapeutic link WS, the organization must be authorized for using the therapeutic link functionality *urn:be:fgov:health:1.0:certificateholder:enterprise:cbe-number:cbe_therapeutic_link_authorized:boolean*
or
urn:be:fgov:health:1.0:certificateholder:organization:ehp-number:ehp_therapeutic_link_authorized:boolean

5.1.1.2 Citizen

5.1.1.2.1 Patient

The request for the SAML token is secured with the eID of the patient (no fallback session is possible). The certificate used by the HOK verification mechanism is also a certificate from the eID. The required attributes are the following

- The SSIN of the patient: *urn:be:fgov:health:1.0:certificateholder:person:ssin* and
urn:be:fgov:person:ssin

Patients must also specify which information must be asserted by eHealth:

- The SSIN of the patient: *urn:be:fgov:health:1.0:certificateholder:person:ssin* and
urn:be:fgov:person:ssin

5.1.1.2.2 Parent

The request for the SAML token is secured with the eID of the parent (no fallback session is possible). The certificate used by the HOK verification mechanism is also a certificate from the eID. The required attributes are the following:

- The SSIN of the parent: *urn:be:fgov:health:1.0:certificateholder:person:ssin* and *urn:be:fgov:person:ssin*

The user must also specify which information must be asserted by the eHealth platform:

- The SSIN: *urn:be:fgov:health:1.0:certificateholder:person:ssin* and *urn:be:fgov:person:ssin*
The user is a recognized parent : *urn:be:fgov:person:ssin:health:1.0:recognisedparent:boolean*



5.1.1.2.3 Mandatory

The request for the SAML token is secured with the eID of the mandatory (no fallback session is possible). The certificate used by the HOK verification mechanism is also a certificate from the eID. The required attributes are the following:

- The SSIN of the mandatory: *urn:be:fgov:health:1.0:certificateholder:person:ssin* and *urn:be:fgov:person:ssin*
- The type of mandate for which the user is a mandatory: *urn:be:fgov:health:1.0:servicename:external* set with value *medicaldatamanagement*

The user must also specify which information must be asserted by eHealth:

- The SSIN of the patient: *urn:be:fgov:health:1.0:certificateholder:person:ssin* and *urn:be:fgov:person:ssin*
- The user is a recognized mandatory: *urn:be:fgov:person:ssin:health:1.0:recognisedmandatory:boolean*

5.1.2 Security policies to apply

We expect that you use SSL one way for the transport layer.

WS security used in this manner is in accordance with the common standards. To call the therapeutic link WS:

- Add the business message to the soap body
- Add the following elements to the SOAP header:
 - **SAML Token:** The SAML Assertion received from the eHealth STS. This assertion needs to be forwarded exactly as received to avoid breaking the signature of the eHealth STS. The token needs to be added accordingly to the specifications of the OASIS SAML Token Profile (HOK) (Please refer to 'List of source' chapter).
 - Timestamp (with time-to-live of the message: one minute).
 - A **signature** that has been placed on the SOAPBody along with the timestamp and the certificate whose public key is referenced in the SAML Assertion.
- The signature element (mentioned above) needs to contain:
 - SignedInfo with References to the SOAPBody and the Timestamp.
 - KeyInfo with a SecurityTokenReference pointing to the SAML Assertion.

Also refer to the WSSP (WS Security Policy) in the WSDL⁸.

For more information on the SAML token as required to call the therapeutic link services (e.g. attributes required by different actors), please refer to the separate document (TL_sso.doc).

This will allow the eHealth platform to verify the integrity of the message and the identifier of the author.

A document explaining how to implement this security policy can be obtained at the eHealth platform.

The STS cookbook can be found on the eHealth portal.

5.1.3 WS-I Basic Profile 1.1

Your request must be WS-I compliant (See Chap 2.4 - External Document Ref).

5.1.4 Tracing

To use this service, the request SHOULD contain the following two http header values (see RFC)

⁸ WSDL's: <https://portal.api.ehealth.fgov.be/>

<https://datatracker.ietf.org/doc/html/rfc7231#section-5.5.3>):

1. User-Agent: information identifying the software product and underlying technical stack/platform. It MUST include the minimal identification information of the software such that the emergency contact (see below) can uniquely identify the component.
 - a. Pattern: {minimal software information}/{version} {minimal connector information}/{connector-package-version}
 - b. Regular expression for each subset (separated by a space) of the pattern: `[[a-zA-Z0-9-\\]]*\\V[0-9azA-Z-_.]*`
 - c. Examples:
User-Agent: myProduct/62.310.4 Technical/3.19.0
User-Agent: Topaz-XXXX/123.23.X freeconnector/XXXXX.XXX
2. From: email-address that can be used for emergency contact in case of an operational problem.
Examples:
From: info@mycompany.be

5.2 Process overview

5.2.1 KMEHR structure

This service is a 'KMEHR-based' WS. We strongly recommend to consult the documentation related to the KMEHR normative elements.

The KMEHR site aims to offer a central point for the documentation of the KMEHR normative elements.

<https://www.ehealth.fgov.be/standards/kmehr/en>

The following generic elements are, in particular, essential to build the request and the reply of therapeutic link WS.

5.2.1.1 *cd*

This is the key element used to code information: this section is completely based on the description from the KMEHR standard, as can be found on:

<https://www.ehealth.fgov.be/standards/kmehr/en/page/key-elements#cd>

5.2.1.2 *id*

This element is used to uniquely identify key elements like request, response of the WS, patient or HC party. It can also be used to specify any unique identifier. This section is completely based on the description provided by the KMEHR standard, which can be found on:

<https://www.ehealth.fgov.be/standards/kmehr/en/page/key-elements#id>

5.2.1.3 *HC party*

The *HC party* element is a generic element aiming to represent any kind of HC party: organization, physician, medical specialty, or even IT systems. This section is completely based on the description provided by the KMEHR standard, which can be found on:

<https://www.ehealth.fgov.be/standards/kmehr/en/page/hcparty>

5.2.2 The end-users

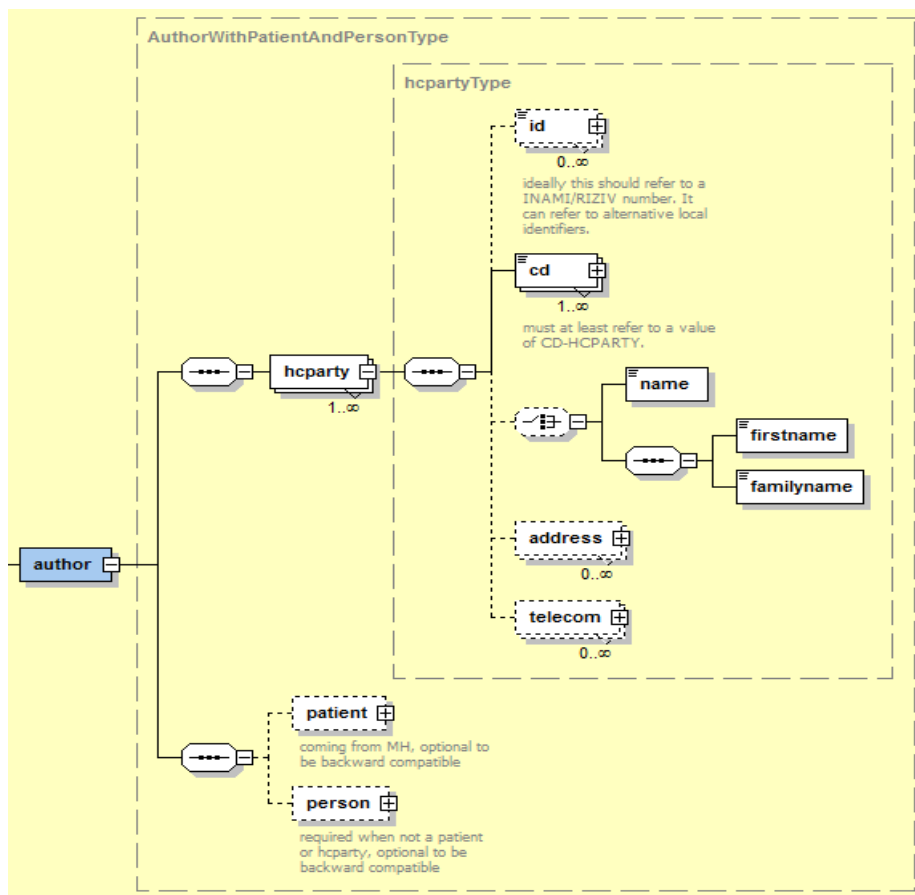
Before detailing the therapeutic link WS, this section will discuss the various end-users who can directly or indirectly use this WS. To identify these different types of end-users, additional information should be provided in the request message.

To avoid redundancy in describing individual requests and responses, we provide an overview of some possible end-users i.e. authors descriptions here.



Remark:

Please comply with the predefined sequence of the elements specified in the Author element of the examples as the validation of the request/response relies on this sequence to determine the end-user profile!



5.2.2.1 HC professional through his software

If the HC professional manages the therapeutic links throughout his usual software, then following identification must be provided:

- The identification of the HC professional: SSIN number, NIHI number (11 digits) if available, the HC professional category.

Additional information about the HC professional software may be added for audit purposes.

Below you will find the list of Khmer codes to specify (CD-HCPARTY) according to the profession of the HC Party:

Profession	Khmer code
Physician	persphysician
Nurse	persnurse
Dentist	persdentist
Midwife	persmidwife
Pharmacist	perspharmacist

Audician	persaudician
Audiologist	persaudiologist
Lab technologist	persbiologist
Dietician	persdietician
Logopedist	perslogopedist
Occupational therapist	persoccupationaltherapist
Orthoptist	persorthoptist
Optometrist	persoptometrist
Physiotherapist	persphysiotherapist
Podologist	perspodologist
Practical nurse	perspracticalnurse
Imaging technologist	perstechnician
Truss maker	perstrussmaker
OT mobility improvement	persmobilityimprover
OT bandages orthosiology	persbandagistorthosiology
OT prosthesiology	persprosthesiologist
OT shoe technology	persshoetechnologist
Clinical orthopaedic pedagogue	persclinicalorthopedagogue
Clinical psychologist	persclinicalpsychologist
Dental Hygienist	persoraldentalhygienist

Example:

```
<?xml version="1.0" encoding="UTF-8"?>
<PutTherapeuticLinkRequest
  xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v2 hubservices_protocol-2_1.xsd"
  xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2" xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
  xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <core:request>
    <core:id SV="1.0" S="ID-KMEHR">1990000332.20150810090927123</core:id>
    <core:author>
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">1987654322</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
        <kmehr:name>Physician application name</kmehr:name>
      </kmehr:hcparty>
      <!-- Healthcare professional identifier -->
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
        <kmehr:id SV="1.0" S="INSS">4xxxxxxxxx2</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">persphysician</kmehr:cd>
      </kmehr:hcparty>
    </core:author>
    <core:date>2015-08-10</core:date>
    <core:time>09:09:27.0Z</core:time>
  </core:request>
  <core:therapeuticlink>
    <!-- Patient identifier -->
    <core:patient>
```

```

        <core:id S="EID-CARDNO" SV="1.0" >5xxxxxxxxxx4</core:id>
        <core:id S="INSS" SV="1.0" >7xxxxxxxxxx2</core:id>
        <core:firstname>Patient first name</core:firstname>
        <core:familyname>Patient family name</core:familyname>
    </core:patient>
    <!-- Healthcare professional identifier -->
    <core:hcparty>
        <core:id SV="1.0" S="ID-HCPARTY">12345678910</core:id>
        <core:cd SV="1.0" S="INSS">4xxxxxxxxxx2</core:cd>
        <core:cd SV="1.1" S="CD-HCPARTY">persphysician</core:cd>
    </core:hcparty>
    <core:cd SV="1.1" S="CD-THERAPEUTICLINKTYPE">gpconsultation</core:cd>
    <core:startdate>2015-08-10</core:startdate>
    <core:enddate>2016-11-10</core:enddate>
</core:therapeuticlink>
<core:proof>
    <core:cd SV="1.1" S="CD-PROOFTYPE">eidreading</core:cd>
</core:proof>
</PutTherapeuticLinkRequest>

```

5.2.2.2 HC professional through an authorized organization

If the HC professional consults the therapeutic links through his organization, following identification must be provided:

- The identification of the authorized organization: CBE or EHP number, the HC party category.
- The identifier of the HC professional: SSIN number, NIHI number (11 digits) if available, the HC professional category.

Additional information about the organization software may be added for audit purposes.

Example:

```

<?xml version="1.0" encoding="UTF-8"?>
<GetTherapeuticLinkRequest
  xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v2 hubservices_protocol-2_1.xsd"
  xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2" xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
  xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <core:request>
    <core:id SV="1.0" S="ID-KMEHR">1990000332.20150810090927123</core:id>
    <core:author>
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">0187653112</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
        <kmehr:name>Organization application name</kmehr:name>
      </kmehr:hcparty>
      <!-- Organization identifier -->
      <kmehr:hcparty>
        <kmehr:id S="ID-HCPARTY" SV="1.0">123456789</kmehr:id>
        <kmehr:cd S="CD-HCPARTY" SV="1.0">orgpublichealth</kmehr:cd>
        <kmehr:name>Organization name</kmehr:name>
      </kmehr:hcparty>
      <!-- Healthcare professional identifier -->
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
        <kmehr:id SV="1.0" S="INSS">4xxxxxxxxxx2</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">persphysician</kmehr:cd>
      </kmehr:hcparty>
    </core:author>
    <core:date>2015-08-10</core:date>
    <core:time>10:58:00.0Z</core:time>
  </core:request>
  <core:select>
    <!-- Patient identifier -->
    <core:patient>
      <core:id S="INSS" SV="1.0" >7xxxxxxxxxx2</core:id>
    </core:patient>
    <!-- Healthcare professional identifier -->

```

```

    <core:hcparty>
      <core:id SV="1.0" S="ID-HCPARTY">12345678910</core:id>
      <core:id SV="1.0" S="INSS">4xxxxxxxxx2</core:id>
      <core:cd SV="1.1" S="CD-HCPARTY">persphysician</core:cd>
    </core:hcparty>
    <core:therapeuticlinkstatus>active</core:therapeuticlinkstatus>
  </core:select>
</GetTherapeuticLinkRequest>

```

5.2.2.3 HC professional within a Pharmacy (pharmacist)

If the HC professional is a pharmacist managing the therapeutic links⁹ through his usual software, the following identification must be provided in the specific order:

- The identifier of the pharmacy: NIHI (8 digits), the HC party category.
- The identifier of the pharmacy holder: SSIN number, if available NIHI (11 digits) number, the HC party category.
- If the end-user is different from the pharmacy holder, the identifier of the end-user (who must be a pharmacist): SSIN number, NIHI number (11 digits) if available, the HC party category.

Additional information about the HC professional software may be added for audit purposes.

Example :

```

<?xml version="1.0" encoding="UTF-8"?>
<PutTherapeuticLinkRequest
  xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v2 hubservices_protocol-2_1.xsd"
  xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2" xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
  xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <core:request>
    <core:id SV="1.0" S="ID-KMEHR">1990000332.20150810090927123</core:id>
    <core:author>
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">0123456789</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
        <kmehr:name>Pharmacy software name</kmehr:name>
      </kmehr:hcparty>
      <!-- Pharmacy identifier -->
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="ID-HCPARTY">123456789</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">orgpharmacy</kmehr:cd>
      </kmehr:hcparty>
      <!-- Pharmacy holder identifier -->
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
        <kmehr:id SV="1.0" S="INSS">8xxxxxxxxx6</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">perspharmacist</kmehr:cd>
      </kmehr:hcparty>
      <!-- Pharmacist end-user identifier -->
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
        <kmehr:id SV="1.0" S="INSS">4xxxxxxxxx3</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">perspharmacist</kmehr:cd>
      </kmehr:hcparty>
    </core:author>
    <core:date>2015-08-10</core:date>
    <core:time>09:09:27.0Z</core:time>
  </core:request>
  <core:therapeuticlink>
    <!-- Patient identifier -->

```

⁹ The therapeutic link between patient and pharmacist is established exclusively between patient and the pharmacy but this therapeutic link could be managed either by the pharmacy holder or by all pharmacists within the pharmacy.

```

<core:patient>
  <core:id S="EID-CARDNO" SV="1.0" >1xxxxxxxxx7</core:id>
  <core:id S="INSS" SV="1.0" >7xxxxxxxxx2</core:id>
  <core:firstname>Patient first name</core:firstname>
  <core:familyname>Patient family name</core:familyname>
</core:patient>
<!-- Pharmacy identifier -->
<core:hcparty>
  <core:id SV="1.0" S="ID-HCPARTY">123456789</core:id>
  <core:cd SV="1.1" S="CD-HCPARTY">orgpharmacy</core:cd>
  <core:name>Pharmacy name</core:name>
</core:hcparty>
<core:cd SV="1.1" S="CD-THERAPEUTICLINKTYPE">pharmacydelivery</core:cd>
<core:startdate>2015-08-10</core:startdate>
<core:enddate>2016-11-10</core:enddate>
</core:therapeuticlink>
<core:proof>
  <core:cd SV="1.1" S="CD-PROOFTYPE">eidreading</core:cd>
</core:proof>
</PutTherapeuticLinkRequest>

```

5.2.2.4 Citizen thought his software

5.2.2.4.1 As Patient

If the patient acts as author of the request through his software and manages the therapeutic links himself, the following identification must be provided:

- Patient software information
- The identification of the patient:
 - Patient SSIN number (mandatory);
 - Patient first name and family name may be added for the audit purpose.

Example:

```

<?xml version="1.0" encoding="UTF-8"?>
<RevokeTherapeuticLinkRequest
  xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v2 hubservices_protocol-2_1.xsd"
  xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2" xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
  xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <core:request>
    <core:id SV="1.0" S="ID-KMEHR">1990000332.20150810090927123</core:id>
    <core:author>
      <!-- Patient software identifier -->
      <kmehr:hcparty>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
        <kmehr:name>Patient software name</kmehr:name>
      </kmehr:hcparty>
      <!-- Patient identification -->
      <core:patient>
        <core:id S="INSS" SV="1.0">8xxxxxxxxx3</core:id>
        <core:firstname>I am</core:firstname>
        <core:familyname>Patient</core:familyname>
      </core:patient>
    </core:author>
    <core:date>2015-08-10</core:date>
    <core:time>09:09:27.0Z</core:time>
  </core:request>
  <core:therapeuticlink>
    <!-- Patient identifier -->
    <core:patient>
      <core:id S="INSS" SV="1.0">8xxxxxxxxx3</core:id>
    </core:patient>
    <!-- Healthcare professional identification -->
    <core:hcparty>
      <core:id SV="1.0" S="ID-HCPARTY">12345678910</core:id>
    </core:hcparty>
  </core:therapeuticlink>
</RevokeTherapeuticLinkRequest>

```

```

        <core:id SV="1.0" S="INSS">4xxxxxxxxx2</core:id>
        <core:cd SV="1.1" S="CD-HCPARTY">persphysician</core:cd>
    </core:hcparty>
    <core:cd SV="1.1" S="CD-THERAPEUTICLINKTYPE">patientmanagement</core:cd>
    <core:startdate>2015-08-10</core:startdate>
</core:therapeuticlink></RevokeTherapeuticLinkRequest>

```

5.2.2.4.2 As Parent or as Mandatory

If the citizen i.e. the person is Parent or Mandatory of the concerned patient and acts as the author of the request through his software managing the therapeutic links of the concerned patient the following identification must be provided:

- Person software information
- The identification of the person (parent or mandatory):
 - Person SSIN number (mandatory);
 - First name and family name of the person may be added for audit purpose.

Example – Author is Parent

```

<?xml version="1.0" encoding="UTF-8"?>
<PutTherapeuticLinkRequest
  xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2"
  xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2">
  <core:request>
    <core:id SV="1.0" S="ID-KMEHR">1990000332.20120419094127193</core:id>
    <core:author>
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">1990000332</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
        <kmehr:name>eHealth Consent</kmehr:name>
      </kmehr:hcparty>
      <!-- Parent of Patient -->
      <core:person>
        <kmehr:id S="INSS" SV="1.0">8xxxxxxxxx8</kmehr:id>
        <kmehr:firstname>I AM</kmehr:firstname>
        <kmehr:familyname>Parent</kmehr:familyname>
      </core:person>
    </core:author>
    <core:date>2016-09-10</core:date>
    <core:time>09:41:27.OZ</core:time>
  </core:request>
  <core:therapeuticlink>
    <!-- Patient -->
    <core:patient>
      <core:id S="INSS" SV="1.0">1xxxxxxxxx1</core:id>
      <core:firstname>I AM</core:firstname>
      <core:familyname>The Child</core:familyname>
    </core:patient>
    <core:hcparty>
      <core:id S="INSS" SV="1.0">2xxxxxxxxx8</core:id>
      <core:id S="ID-HCPARTY" SV="1.0">12345678910</core:id>
      <core:cd S="CD-HCPARTY" SV="1.1">persdentist</core:cd>
      <core:firstname>I AM</core:firstname>
      <core:familyname>Dentist</core:familyname>
    </core:hcparty>
    <core:cd S="CD-THERAPEUTICLINKTYPE" SV="1.1">patientmanagement</core:cd>
    <core:startdate>2016-09-10</core:startdate>
    <core:enddate>2017-12-10</core:enddate>
  </core:therapeuticlink>
</PutTherapeuticLinkRequest>

```

Example – Author is mandatory

```

<?xml version="1.0" encoding="UTF-8"?>
<PutTherapeuticLinkRequest

```



```

xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2"
xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2">
<core:request>
  <core:id SV="1.0" S="ID-KMEHR">1990000332.20120419094127193</core:id>
  <core:author>
    <kmehr:hcparty>
      <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">1990000332</kmehr:id>
      <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
      <kmehr:name>eHealth Consent</kmehr:name>
    </kmehr:hcparty>
    <!-- Mandatory -->
    <core:person>
      <kmehr:id S="INSS" SV="1.0">8xxxxxxxxx2</kmehr:id>
      <kmehr:firstname>I Am</kmehr:firstname>
      <kmehr:familyname>Mandatory</kmehr:familyname>
    </core:person>
  </core:author>
  <core:date>2016-09-10</core:date>
  <core:time>09:41:27.0Z</core:time>
</core:request>
<core:therapeuticlink>
  <!-- Patient -->
  <core:patient>
    <core:id S="INSS" SV="1.0">6xxxxxxxxx0</core:id>
    <core:firstname>I Am</core:firstname>
    <core:familyname>Patient</core:familyname>
  </core:patient>
  <core:hcparty>
    <core:id S="INSS" SV="1.0">2xxxxxxxxx8</core:id>
    <core:id S="ID-HCPARTY" SV="1.0">12345678910</core:id>
    <core:cd S="CD-HCPARTY" SV="1.1">persdentist</core:cd>
    <core:firstname>DENTIST</core:firstname>
    <core:familyname>METAHUBTST</core:familyname>
  </core:hcparty>
  <core:cd S="CD-THERAPEUTICLINKTYPE" SV="1.1">patientmanagement</core:cd>
  <core:startdate>2016-09-10</core:startdate>
  <core:enddate>2017-12-10</core:enddate>
</core:therapeuticlink>
</PutTherapeuticLinkRequest>

```

5.2.3 Therapeutic links with a third actor

We make a distinction between “non-referral” and “referral” therapeutic relationships.

- **Non-referral:** the HC party managing a therapeutic relationship is *the same as* the HC party involved in this link. As evidence, non-referral therapeutic relationship requires the SSIN of the selected patient and the support card number (e-ID ISI+) either by reading or the encoding them.

Reading the eID and entering the PIN code could be used for non-referral therapeutic links to extend or shorten the default validity period of fifteen months.

- **Referral:** the HC party operating on a therapeutic relationship is *different from* the HC party concerned by this link. For referral therapeutic relationships, the process requires exclusively the reading of the patient e-ID and entering the PIN code. The validity period referral therapeutic links is fixed to three months.

Currently, the following HC party categories are authorized to manage therapeutic links: physician, nurse, dentist, midwife, and pharmacist.

As physician, the HC party end-user is permitted to manage the referral therapeutic links for the patient and other HC party within either the same or different authorized HC party categories.

If the HC party end-user is not a physician, he or she is only allowed to manage referral links for the patient and other HC party within the same HC party category.



5.2.4 Method PutTherapeuticLink

5.2.4.1 Functional description

Service name	PutTherapeuticLink
Purpose	This service should be used to declare a therapeutic link between a patient and a HC party.
Input parameters	• The information about the transaction: – id, date, time of the request; – identifier of the 'end-user'¹⁰. • The information determining the therapeutic link • The identification data of the concerned patient: – SSIN (mandatory) – e-ID card number (mandatory if the given proof is the e-ID card reading, e-ID card encoding or the e-ID card reading with PIN code)¹¹; – ISI+ card number (mandatory if the given proof is the reading of the ISI+ card)¹¹; – Patient's first name and family name (family name must contain at least one character). • The identification data of the concerned HC party • If the HC party is a HC professional: – SSIN number (mandatory) and NIHL number (11 digits) if available; – category of the HC party (mandatory); – optionally, first name and family name. • If the HC party is an organization e.g. pharmacy: – NIHL number (8 digits, mandatory); – category of the HC party (mandatory); – optionally, the name of the organization. • The type of the therapeutic link (mandatory)¹². • The period of validity of the therapeutic link. • The inclusive start date is optional. If provided, the start date must be equal to the declaration date which is the date when the declaration request is processed (the current date) otherwise, the request will be rejected.

¹⁰ Please refer to the paragraph 5.2.2 'The end-users'

¹¹ The proof and related support card numbers are not mandatory if the author is Citizen or the concerned patient is a new-born (will be discarded if provided)

¹² If the author of the declaration is Citizen, then only 'patientmanagement' as therapeutic link type is supported. If the concerned patient is a new-born, then only non-referral relations are allowed. If the author of the declaration is a professional of the AR78, then only 'consultation as therapeutic link type is supported.'

	If not provided, the start date is set to the date when the declaration request is processed i.e. the current date. • The exclusive end date is optional and depends on the given evidence: – eID or ISI+ reading or eID encoding If provided, then the end date must be equal to start date plus (+) the default period of validity. Otherwise, the end date is discarded and set to w/ the ED = SD + the default validity period. If not provided, then the end date is set to w/ the ED = SD + the default validity. For a non-referral relation, the default validity period is defined as follows: ED = SD + 15 months – eID signing i.e. reading + PIN code entering ○ Non-referral relation ▪ If provided, the end date must be greater than the SD. ▪ If not provided, the end date is set to w/ the ED = SD + the default validity period which is 15 months. ○ Referral relation ▪ If provided then the end date must be equal to start date plus (+) the default validity period otherwise the end date is discarded and set to w/ the ED = SD + the default validity period. ▪ If not provided then the end date is set to w/ the ED = SD + the default validity period. The default validity period is ED = SD + 3 months <i>Note:</i> for overlapping relations, the start date of the new period must be greater than or equal to the start date of the period to be extended and the end date of the new period must be greater than the end date of the period to be extended. • The comment to justify the declaration (optional, if provided must be less than or equal to 256 characters). • The information about the evidence of the declaration (mandatory).¹³ • The type of proof (mandatory if the evidence is given). • The binary proof including the encryption method and the binary value. This information is only mandatory if the type of proof is the reading of the eID
--	---

¹³ Applied only when the author is an healthcare party, the concept of the proof is not applied (not mandatory) when the author is Citizen or the concerned patient is a new born (0 < patient < 3 months). If the proof is provided, then the SSIN support card number must be provided accordingly: case of the author is Citizen, then the provided card number is discarded (not submitted to compliant validation e.g. format, checksum or SSIN vs card number combination) else the provided card number must be valid and compliant.

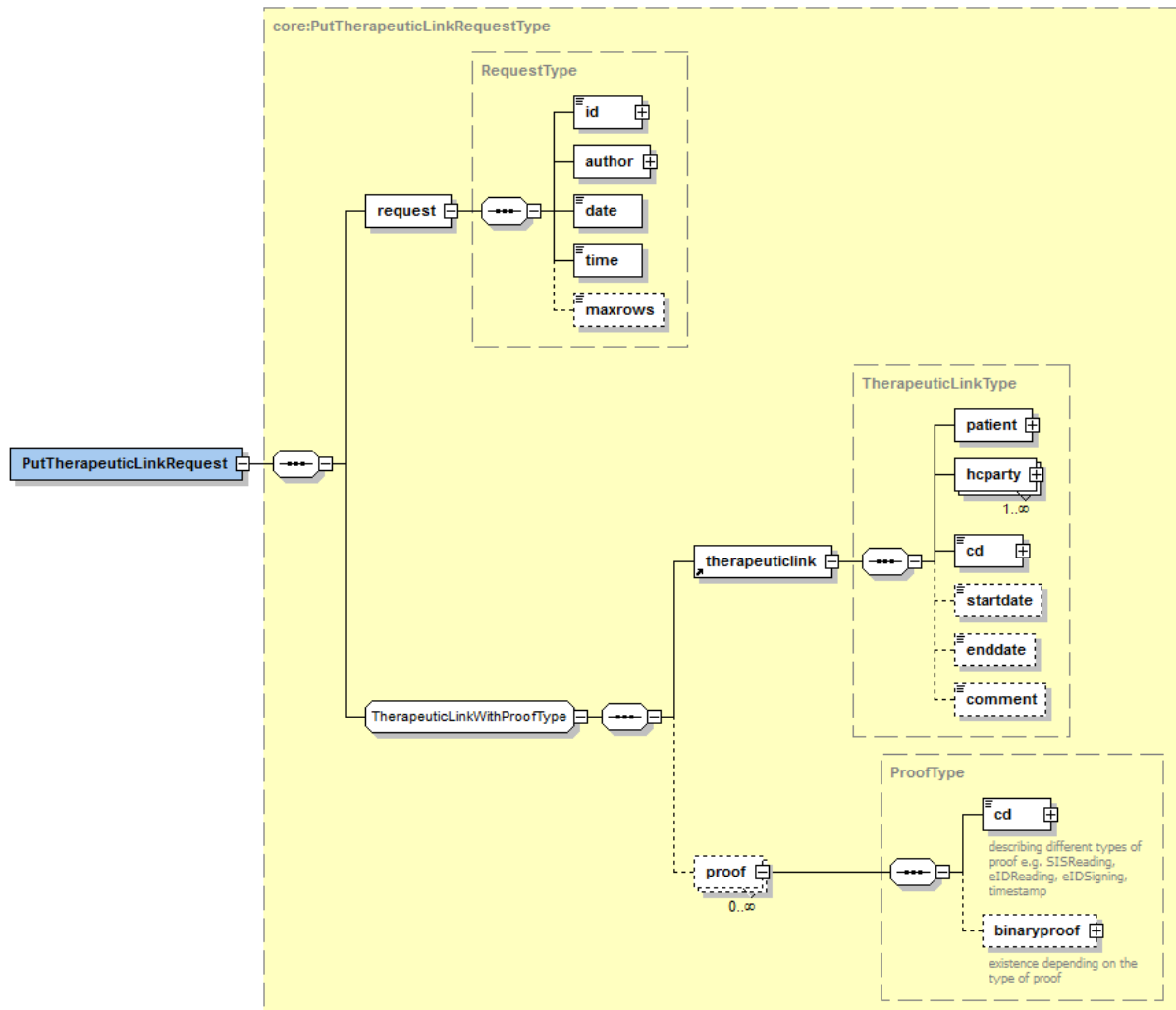
	card with PIN code entering (mandatory in the case of referral declaration ¹⁴).
Output parameters	1) The information about the response: • Id, date, time of the response; • identification of the sender of the response; • initial request. 2) An acknowledge indicating the completion of the request: • status of the completion; • possible errors including the error code and its description.
Post-condition	• the request is logged; • the therapeutic link is created in DB.
Possible exceptions	1) Technical error. 2) Invalid or incorrect data: • sender is not allowed to perform the declaration according to the predefined rules. • HC party performing the declaration is excluded by the concerned patient in the case of referral declaration. • active therapeutic link does not exist between the HC party performing the declaration and the concerned patient in the case of referral declaration. • HC party performing the declaration does not belong to the same HC party category as the HC party concerned by the therapeutic link. • invalid patient (invalid SSIN or SSIN does not correspond to the provided support card number). • invalid HC party (incorrect NIHI or NIHI does not correspond to the HC party category). • invalid therapeutic link type. • invalid period of relation. • end date is anterior to the declaration date. • missing or invalid proof. • given proof does not correspond to the provided support card number. • valid therapeutic link of the same type and for the same HC party already exists.
Comments	• Identification of patient: patient is identified by his SSIN number. • Identification of HC party: – HC professional is identified by the SSIN number, the NIHI number (if available) and the HC party category. – HC organization is identified by the NIHI number and the HC party category. • Identification of therapeutic link: therapeutic link is identified by the identifier of the concerned patient, the identifier of the concerned HC party, the type and the period of the validity of the therapeutic link. Hence, it is possible to have several active therapeutic links between patient and HC party.

¹⁴ We speak about 'Referral' when the healthcare professional that performs the operations (end-user) is different from the healthcare professional concerned by the therapeutic link.

- **Update of therapeutic link:** it is not possible to update the therapeutic link. To update information one must first revoke the existing therapeutic link.

5.2.4.2 Input argument “PutTherapeuticLinkRequest”

A request from the end-user for the declaration of a therapeutic link appears as follows:



The ‘**request**’ parameter gathers the elements regarding:

- the information about the request (id, date, time);
- the author of the request (end-user).

The ‘**therapeuticlink**’ parameter covers

- the patient identifier;
- the HC party identifier;
- the therapeutic link data including the type of therapeutic link and the period of validity.

Optionally, the ‘**proof**’ parameter covers:

- the type of proof;

- the binary value of the proof.

Parameter	Attributes		Comments
request [1]	id [1]	Identifier of the request within the caller system	Identifies the message within the system according to ID-KMEHR identification system ¹⁵ . Must contain a value with 50 alphanumeric characters as maximum length.
	author [1]	Sender of the request represented either by a sequence of <i>hparty</i> elements or patient. It must at least contain the requestor end-user identifier. ¹⁶	This information must be coherent with the information provided in the technical identification and authentication system (i.e. certificate and SAML ¹⁷ assertion)
	date [1]	Date of the request.	Format YYYY-MM-DD
	time [1]	Time of the request.	Format hh:mm:ss
	maxrows[0-1]	n/a	
therapeuticlink [1]	patient [1]	Identification of the patient concerned by the therapeutic link.	Identification data of the patient composing of INSS and support card number. The xsd's element ' <i>name</i> ' cannot be used for the declaration but ' <i>firstname</i> ' and ' <i>familyname</i> ' instead, the element ' <i>familyname</i> ' must contain at least one character while the element ' <i>firstname</i> ' can be empty.
	hparty[1-n]	Identification of the HC party concerned by the therapeutic link.	Currently, the service supports only one HC Party The <i>hparty</i> must contain the category of the HC party and at least the SSIN (case of professional), NIHII (case of organization) corresponding to its HC party category. The HC party category refers to a value of KMEHR table CD-HCPARTY.

¹⁵ Please refer to <https://www.ehealth.fgov.be/standards/kmehr/content/page/38/header>

¹⁶ Please refer to the section 5.2.2 The end-users

¹⁷ See cookbook STS service

	cd [1]	The type identifying the therapeutic link.	Corresponds to a value of the KMEHR table CD-THERAPEUTICLINKTYPE.
	startdate [0-1]	The inclusive start date of the validity period of the therapeutic link.	Format YYYY-MM-DD
	enddate [0-1]	The exclusive end date of the validity period of therapeutic link.	Format YYYY-MM-DD
	comment [0-1]	The comment justifying the declaration.	The maximum length is 256.
proof [0-*	cd [1]	The type identifying the proof.	Corresponds to a value of the KMEHR table CD-PROOFTYPE. (https://www.ehealth.fgov.be/standards/kmehr/content/page/tables/197/proof-type) For instance, only one proof is supported, and only the reading and encoding of support card number, as well as the reading of eID with PIN code are allowed.
	binaryproof [0-1]	The binary value of the proof.	Existence depending on the type of proof. The binary proof is mandatory if the type of proof is the reading of the eID card with PIN code entering. For instance, the supported method for binary operation is CMS (Cryptographic Message Syntax).

Example: PutTherapeuticLinkRequest.xml

```

<?xml version="1.0" encoding="UTF-8"?>
<PutTherapeuticLinkRequest
  xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v2 hubservices_protocol-2_1.xsd"
  xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2" xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
  xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <core:request>
    <core:id SV="1.0" S="ID-KMEHR">1990000332.20150810090927123</core:id>
    <core:author>
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">1987654322</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
        <kmehr:name>Physician application name</kmehr:name>
      </kmehr:hcparty>
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
        <kmehr:id SV="1.0" S="INSS">6xxxxxxxxxx1</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">persphysician</kmehr:cd>
      </kmehr:hcparty>
    </core:author>
    <core:date>2015-08-10</core:date>
    <core:time>09:09:27.0Z</core:time>
  </core:request>
  <core:therapeuticlink>
    <core:patient>

```



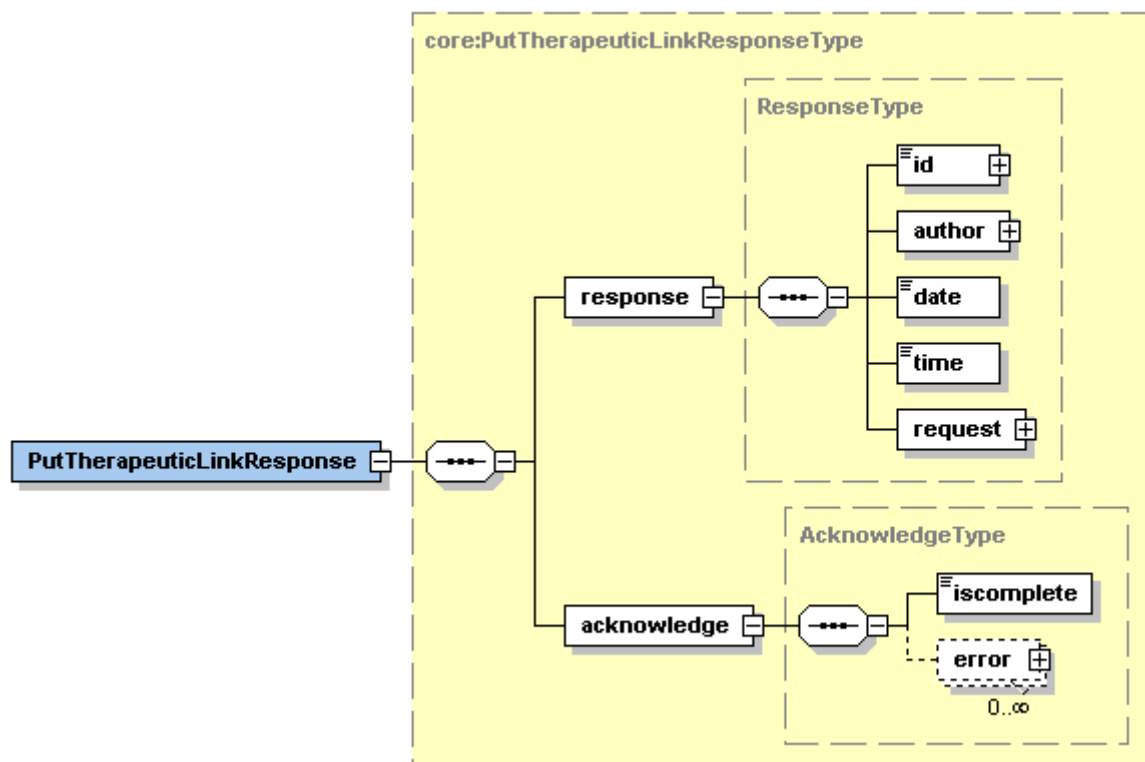
```

<core:id S="EID-CARDNO" SV="1.0">5xxxxxxxxx2</core:id>
<core:id S="INSS" SV="1.0">8xxxxxxxxx9</core:id>
<core:firstname>Patient first name</core:firstname>
<core:familyname>Patient family name</core:familyname>
</core:patient>
<core:hcparty>
  <core:id SV="1.0" S="ID-HCPARTY">12345678910</core:id>
  <core:id SV="1.0" S="INSS">6xxxxxxxxx1</core:id>
  <core:cd SV="1.1" S="CD-HCPARTY">persphysician</core:cd>
</core:hcparty>
<core:cd SV="1.1" S="CD-THERAPEUTICLINKTYPE">gpconsultation</core:cd>
<core:startdate>2015-08-10</core:startdate>
<core:enddate>2016-11-10</core:enddate>
</core:therapeuticlink>
<core:proof>
  <core:cd SV="1.1" S="CD-PROOFTYPE">eidreading</core:cd>
</core:proof>
</PutTherapeuticLinkRequest>

```

5.2.4.3 Output argument “PutTherapeuticLinkResponse”

The reply, as sent back by the PutTherapeuticLink method, is discussed below.



The ‘**response**’ parameter gathers the elements relative to:

- the information about the response (id, date, time);
- the sender of the response;
- the initial request.

The ‘**acknowledge**’ parameter gathers the elements relative to:

- the service completion (*iscomplete*);
- the errors or exceptions occurred during the service execution.

Parameter	Attributes		Comments
response [1]	id [1]	Identifier of the response within the responder system.	
	author [1]	Sender of the response.	
	date [1]	Date of the response.	Format YYYY-MM-DD
	time [1]	Time of the response.	Format hh:mm:ss
	request [1]	The author part of the initial request.	
acknowledge [1]	iscomplete [1]	Indicates whether the execution has been successfully completed.	The execution is successful if the therapeutic link has been stored correctly in DB.
	error [0-*]	Indicates the error/exception descriptions.	

Example: PutTherapeuticLinkResponse.xml

- **Successful completion**

```
<?xml version="1.0" encoding="UTF-8"?>
<PutTherapeuticLinkResponse
  xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v2 hubservices_protocol-2_1.xsd"
  xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2" xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
  xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <core:response>
    <core:id S="ID-KMEHR" SV="1.0">1990000332.20150810090927345</core:id>
    <core:author>
      <kmehr:hcparty>
        <kmehr:id S="ID-HCPARTY" SV="1.0">123456789</kmehr:id>
        <kmehr:cd S="CD-HCPARTY" SV="1.0">orgpublichealth</kmehr:cd>
        <kmehr:name>Responder organization</kmehr:name>
      </kmehr:hcparty>
    </core:author>
    <core:date>2015-08-10</core:date>
    <core:time>09:09:28.0Z</core:time>
    <core:request>
      <core:id SV="1.0" S="ID-KMEHR">1990000332.20150810090927123</core:id>
      <core:author>
        <kmehr:hcparty>
          <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">1987654322</kmehr:id>
          <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
          <kmehr:name>Physician application name</kmehr:name>
        </kmehr:hcparty>
        <kmehr:hcparty>
          <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
          <kmehr:id SV="1.0" S="INSS">6xxxxxxxxxx1</kmehr:id>
          <kmehr:cd SV="1.1" S="CD-HCPARTY">persphysician</kmehr:cd>
        </kmehr:hcparty>
      </core:author>
      <core:date>2015-08-10</core:date>
      <core:time>09:09:27.0Z</core:time>
    </core:request>
  </core:response>
  <core:acknowledge>
    <core:iscomplete>true</core:iscomplete>
  </core:acknowledge>
</PutTherapeuticLinkResponse>
```

- **Unsuccessful completion**

```
<?xml version="1.0" encoding="UTF-8"?>
```

<PutTherapeuticLinkResponse

```
xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v2 hubservices_protocol-2_1.xsd"
xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2" xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <core:response>
    <core:id S="ID-KMEHR" SV="1.0">1990000332.20150810090927345</core:id>
    <core:author>
      <kmehr:hcparty>
        <kmehr:id S="ID-HCPARTY" SV="1.0">123456789</kmehr:id>
        <kmehr:cd S="CD-HCPARTY" SV="1.0">orgpublichealth</kmehr:cd>
        <kmehr:name>Responder organization</kmehr:name>
      </kmehr:hcparty>
    </core:author>
    <core:date>2015-08-10</core:date>
    <core:time>09:09:28.0Z</core:time>
    <core:request>
      <core:id SV="1.0" S="ID-KMEHR">11990000332.20150810090927123</core:id>
      <core:author>
        <kmehr:hcparty>
          <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">1987654322</kmehr:id>
          <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
          <kmehr:name>Physician application name</kmehr:name>
        </kmehr:hcparty>
        <kmehr:hcparty>
          <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
          <kmehr:id SV="1.0" S="INSS">6xxxxxxxxx1</kmehr:id>
          <kmehr:cd SV="1.1" S="CD-HCPARTY">persphysician</kmehr:c>
        </kmehr:hcparty>
      </core:author>
      <core:date>2015-08-10</core:date>
      <core:time>09:09:27.0Z</core:time>
    </core:request>
    </core:response>
    <core:acknowledge>
      <core:iscomplete>false</core:iscomplete>
      <core:error>
        <kmehr:cd SV="1.0" S="CD-ERROR">TL.INPUT.06</kmehr:cd>
        <kmehr:description L="en-us">Invalid patient identifier</kmehr:description>
      </core:error>
    </core:acknowledge>
  </PutTherapeuticLinkResponse>
```

5.2.4.4 Review of some error codes

When a business error occurred, the *iscomplete* field of the *acknowledge* element is set to *false*. The acknowledge block of the reply message sent after an error occurred appears as follows:

```
<acknowledge>
  <iscomplete>false</iscomplete>
  <error>
    <cd SV="1.0" S="CD-ERROR">error_code</cd>
    <description L="EN">error_description</description>
  </error>
</acknowledge>
```

The table below provides a non-exhaustive overview of some possible errors returned by the service for this method.

Error type	Code	Description
TL.ACCESS	TL.ACCESS.05	Author - The user is not authorized to perform the operation



Permission	TL.ACCESS.06	Author - The category of the author is different from the category of the HC party concerned by the therapeutic link
	TL.ACCESS.07	Author - The patient performing the operation is different from the one involved in the therapeutic link
TL.INPUT Invalid Input	TL.INPUT.05	Author - Missing patient identifier (SSIN)
	TL.INPUT.10	Author - Missing HC party identifier
	TL.INPUT.15	Author - Invalid HC party category
	TL.INPUT.19.02	Author - The person provided is not the responsible of the provided organization.
	TL.INPUT.30	Therapeutic link - Missing patient identifier (SSIN)
	TL.INPUT.35	Therapeutic link - Missing patient first name or family name
	TL.INPUT.40	Therapeutic link - Invalid SSIN of the HC party
	TL.INPUT.45	Therapeutic link - NIHI does not correspond to the HC party category
	TL.INPUT.47	Therapeutic link – HC party not found.

When business errors of the type “Invalid input” or “Permission” occur, please verify your request message. When a system error occurs and persists, please refer to the contact center.

5.2.5 Method RevokeTherapeuticLink

5.2.5.1 Functional description

Service name	RevokeTherapeuticLink
Purpose	This service should be used to revoke a therapeutic link between a patient and a HC party.
Input parameters	The information about the transaction: • id, date, time of the request; • identifier of the ‘end-user’¹⁸. The information determining the therapeutic link: • the identification data of the concerned patient: – SSIN number (mandatory); – optionally, the support card number, if provided then they must be valid and compliant; – optionally, first name and family name. • the identification of the concerned HC party requiring: – If the HC party is a professional ○ SSIN number (mandatory) and NIHI number (11 digits) if available; ○ HC party category (mandatory); ○ optionally, first name and family name.

¹⁸ Please refer to the paragraph 5.2.2 ‘The end-users’.

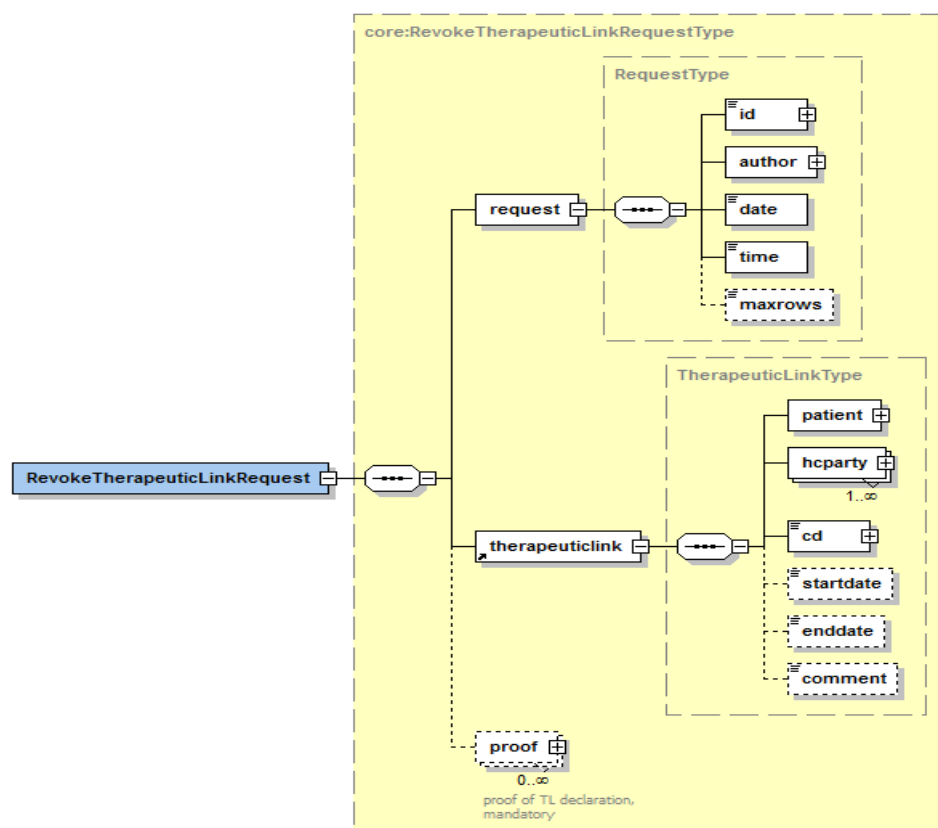
	- If the HC party is an organization: - o NIHL number (8 digits, mandatory); - o HC party category (mandatory); - o optionally, the name of the organization. • The type of the therapeutic link (mandatory); • Start Date and End date are both optional - Start date: If a start date is provided, it must match the start date of the active relation; otherwise, the request will be rejected (not found). If no start date is provided, the revocation is applied to any active therapeutic relation matching the input criteria i.e. patient, hcparty, therapeutic relation type - End date: (must be interpreted as '<i>revocation date</i>' and not the end date of the relation) • If an active therapeutic relation is found, the revocation date (whether provided or not) will be set to the date when the revocation request is processed (the current date). • The justification of the revocation (optional, if provided must be less than or equal to 256 characters). • The information about the evidence (mandatory only when the revocation is referral): - type of proof (mandatory if the evidence is given)¹⁹; - binary proof including the encryption method (mandatory) and the binary value (mandatory) only if the type of proof is the reading of the eID card with PIN code entering.
Output parameters	1) The information about the response: • id, date, time; • identification of the sender; • initial request. 2) An acknowledge indicating the completion of the request: • status; • possible errors including the error code with its description.
Post-condition	• the request is logged; • if found, the given therapeutic link is revoked in DB; • the overlapping validity periods of the same relation are revoked.
Possible exceptions	1) Technical error. 2) Invalid or incorrect data: • sender is not allowed to perform the revocation;

¹⁹ Applied only when the author is a healthcare party, the concept of the proof is not applied (not mandatory) when the author is Citizen or the concerned patient is a new born ($0 < \text{patient} < 3 \text{ months}$). If the proof is provided then the SSIN support card number must be provided accordingly: case of the author is Citizen then the provided card number is discarded (not submitted to compliant validation) else the provided card number must be valid and compliant.

	• HC party performing the revocation is excluded by the patient concerned in case of referral revocation; • there is no active therapeutic link between the HC party performing the revocation and the patient concerned in case of referral revocation; • HC party performing the revocation does not belong to the same professional category as the HC party involved in the therapeutic relationship; • invalid patient (invalid SSIN or SSIN does not correspond to the provided support card number); • invalid therapeutic link type. • the revocation end date is anterior to the start date; • no active therapeutic link of this type for the given HC party.
Comments	• Identification of patient: the SSIN number identifies the patient. • Identification of HC party: – The HC professional is identified by the SSIN number, the NIHI number (if available) and the HC party category; – The NIHI number and the HC party category identify the HC organization. • Identification of therapeutic link: the therapeutic link is identified by the identifier of the involved patient, the identifier of the concerned HC party, the type and the validity period of the therapeutic link.

5.2.5.2 Input argument “RevokeTherapeuticLinkRequest”

A request from the end-user for the revocation of a therapeutic link looks as follows:



The ‘**request**’ parameter gathers the elements relative to

- the information about the request (id, date, time);
- the author of the request (end-user).

The ‘**therapeuticlink**’ parameter covers

- the patient identifier;
- the HC party identifier;
- the therapeutic link data including the type of therapeutic link and the period of validity.

Optionally the ‘**proof**’ parameter covers

- the type of the proof;
- the binary value of the proof.

Parameter	Attributes		Comments
request [1]	id [1]	Identifier of the request within the caller system	Identifies the message within the system according to ID-KMEHR identification system ²⁰ .

²⁰ Please refer to <https://www.ehealth.fgov.be/standards/kmehr/content/page/38/header>

			It must contain a value with 50 alphanumeric characters maximum length.
	author [1]	Sender of the request represented either by a sequence of <i>hparty</i> elements or patient. It must at least contain the requestor end-user identifier. ²¹	This information must be coherent with the information provided in the technical identification and authentication system (i.e. certificate and SAML ²² assertion)
	date [1]	Date of the request.	Format YYYY-MM-DD
	time [1]	Time of the request.	Format hh:mm:ss
	maxrows [0-1]	n/a	
therapeuticlink [1]	patient [1]	Identification of the patient concerned by the therapeutic link.	INSS and optionally support card number.
	hparty[1-n]	Identification of the HC party concerned by the therapeutic link.	Currently, only 1 HC Party is supported by the service. The <i>hparty</i> must contain the category of the HC party and at least the SSIN (case of professional), NIHII (case of organization) corresponding to its HC party category. The HC party category refers to a value of KHEMER table CD-HCPARTY.
	cd [1]	The type identifying the therapeutic link.	Corresponds to a value of the KMEHR table CD-THERAPEUTICLINKTYPE.
	startdate [0-1]	The start date of the validity period of the therapeutic link.	Format YYYY-MM-DD
	enddate [0-1]	The date of the revocation.	Format YYYY-MM-DD
	comment [0-1]	The comment justifying the revocation.	The maximum length is 256 characters.
proof [0-*]	cd [1]	The type identifying the proof.	Corresponds to a value of the KMEHR table CD-PROOFTYPE. (https://www.ehealth.fgov.be/standards/kmehr/content/page/tables/197/proof-type)

²¹ Please refer to the section 5.2.2 The end-users

²² See cookbook STS service

			For instance, only one proof is supported: the reading and the encoding of support card number, as well as the reading of eID with PIN code.
	binaryproof [0-1]	The binary value of the proof.	Existence depending on the type of proof. The binary proof is mandatory if the type of proof is the reading of the eID card with PIN code entering. For instance, the supported method for binary operation is CMS (Cryptographic Message Syntax).

Example: RevokeTherapeuticLinkRequest.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<RevokeTherapeuticLinkRequest
  xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v2 hubservices_protocol-2_1.xsd"
  xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2" xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
  xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <core:request>
    <core:id SV="1.0" S="ID-KMEHR">1990000332.20150810090927123</core:id>
    <core:author>
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">0123456789</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
        <kmehr:name>Pharmacist application name</kmehr:name>
      </kmehr:hcparty>
      <!-- Pharmacy identifier -->
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="ID-HCPARTY">123456789</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">orgpharmacy</kmehr:cd>
      </kmehr:hcparty>
      <!-- Pharmacy holder identifier -->
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
        <kmehr:id SV="1.0" S="INSS">8xxxxxxxxx6</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">perspharmacist</kmehr:cd>
      </kmehr:hcparty>
      <!-- Pharmacist end-user identifier -->
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
        <kmehr:id SV="1.0" S="INSS">4xxxxxxxxx3</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">perspharmacist</kmehr:cd>
      </kmehr:hcparty>
    </core:author>
    <core:date>2015-08-10</core:date>
    <core:time>09:09:27.0Z</core:time>
  </core:request>
  <core:therapeuticlink>
    <!-- Patient identifier -->
    <core:patient>
      <core:id S="EID-CARDNO" SV="1.0" >1xxxxxxxxx9</core:id>
      <core:id S="INSS" SV="1.0">7xxxxxxxxx2</core:id>
      <core:firstname>Patient first name</core:firstname>
      <core:familyname>Patient family name</core:familyname>
    </core:patient>
    <!-- Pharmacy identifier -->
    <core:hcparty>
```

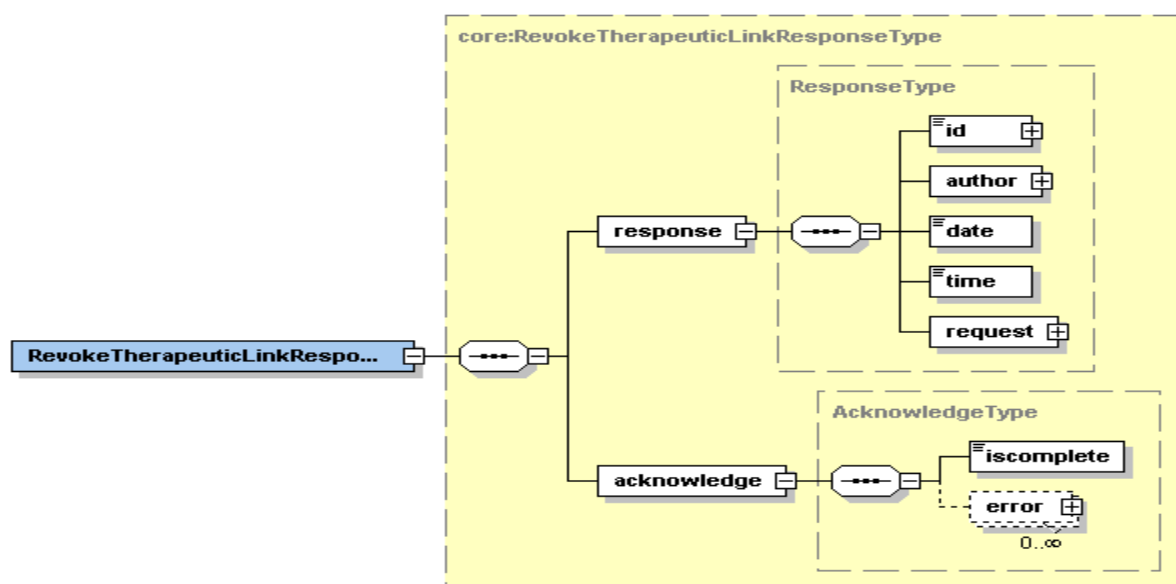
```

        <core:id SV="1.0" S="ID-HCPARTY">123456789</core:id>
        <core:cd SV="1.1" S="CD-HCPARTY">orgpharmacy</core:cd>
        <core:name>Pharmacy name</core:name>
    </core:hcparty>
    <core:cd SV="1.1" S="CD-THERAPEUTICLINKTYPE">pharmacydelivery</core:cd>
    <core:startdate>2015-08-10</core:startdate>
    <core:enddate>2015-11-10</core:enddate>
</core:therapeuticlink>
<core:proof>
    <core:cd SV="1.1" S="CD-PROOFTYPE">eidreading</core:cd>
</core:proof>
</RevokeTherapeuticLinkRequest>

```

5.2.5.3 Output argument “RevokeTherapeuticLinkResponse”

The reply, as sent back by the RevokeTherapeuticLink method, is discussed below.



The ‘**response**’ parameter gathers the elements relative to

- the information about the response (id, date, time);
- the sender of the response;
- the initial request.

The ‘**acknowledge**’ parameter gathers the elements relative to

- the service completion (*iscomplete*);
- the errors or exceptions that occurred during the service execution.

Parameter	Attributes		Comments
response [1]	id [1]	Identifier of the response within the responder system.	
	author [1]	Sender of the response.	
	date [1]	Date of the response.	Format YYYY-MM-DD
	time [1]	Time of the response.	Format hh:mm:ss

	request [1]	The author part of the initial request.	
acknowledge [1]	iscomplete [1]	Indicates whether the execution has been successfully completed.	The execution is successful if the therapeutic link has been correctly stored in DB.
	error [0-*]	Indicates the error/exception descriptions.	

Example: RevokeTherapeuticLinkResponse.xml

- **Successful completion**

```
<?xml version="1.0" encoding="UTF-8"?>
<RevokeTherapeuticLinkResponse
  xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v2 hubservices_protocol-2_1.xsd"
  xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2" xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
  xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <core:response>
    <core:id S="ID-KMEHR" SV="1.0">1990000332.20150810090927345</core:id>
    <core:author>
      <kmehr:hcparty>
        <kmehr:id S="ID-HCPARTY" SV="1.0">1820563481</kmehr:id>
        <kmehr:cd S="CD-HCPARTY" SV="1.0">orgpublichealth</kmehr:cd>
        <kmehr:name>Responder organization</kmehr:name>
      </kmehr:hcparty>
    </core:author>
    <core:date>2015-08-10</core:date>
    <core:time>09:09:28.0Z</core:time>
    <core:request>
      <core:id SV="1.0" S="ID-KMEHR">1990000332.20150810090927123</core:id>
      <core:author>
        <kmehr:hcparty>
          <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">0123456789</kmehr:id>
          <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
          <kmehr:name>Pharmacist application name</kmehr:name>
        </kmehr:hcparty>
        <!-- Pharmacy identifier -->
        <kmehr:hcparty>
          <kmehr:id SV="1.0" S="ID-HCPARTY">123456789</kmehr:id>
          <kmehr:cd SV="1.1" S="CD-HCPARTY">orgpharmacy</kmehr:cd>
        </kmehr:hcparty>
        <!-- Pharmacy holder identifier -->
        <kmehr:hcparty>
          <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
          <kmehr:id SV="1.0" S="INSS">8xxxxxxxxxx6</kmehr:id>
          <kmehr:cd SV="1.1" S="CD-HCPARTY">perspharmacist</kmehr:cd>
        </kmehr:hcparty>
        <!-- Pharmacist end-user identifier -->
        <kmehr:hcparty>
          <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
          <kmehr:id SV="1.0" S="INSS">4xxxxxxxxxx3</kmehr:id>
          <kmehr:cd SV="1.1" S="CD-HCPARTY">perspharmacist</kmehr:cd>
        </kmehr:hcparty>
      </core:author>
      <core:date>2015-08-10</core:date>
      <core:time>09:09:27.0Z</core:time>
    </core:request>
  </core:response>
  <core:acknowledge>
    <core:iscomplete>true</core:iscomplete>
  </core:acknowledge>
</RevokeTherapeuticLinkResponse>
```

- **Unsuccessful completion**

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<RevokeTherapeuticLinkResponse
```

```
  xsi:schemaLocation="http://www.ehealth.fgov.be/hubservices/protocol/v2 hubservices_protocol-2_1.xsd"
```

```
  xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2" xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
```

```
  xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

```
    <core:response>
```

```
      <core:id S="ID-KMEHR" SV="1.0">1990000332.20150810090927345</core:id>
```

```
      <core:author>
```

```
        <kmehr:hcparty>
```

```
          <kmehr:id S="ID-HCPARTY" SV="1.0">123456789</kmehr:id>
```

```
          <kmehr:cd S="CD-HCPARTY" SV="1.0">orgpublichealth</kmehr:cd>
```

```
          <kmehr:name>Responder organization</kmehr:name>
```

```
        </kmehr:hcparty>
```

```
      </core:author>
```

```
      <core:date>2015-08-10</core:date>
```

```
      <core:time>09:09:28.0Z</core:time>
```

```
    <core:request>
```

```
      <core:id SV="1.0" S="ID-KMEHR">1990000332.20150810090927123</core:id>
```

```
      <core:author>
```

```
        <kmehr:hcparty>
```

```
          <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">0123456789</kmehr:id>
```

```
          <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
```

```
          <kmehr:name>Pharmacist application name</kmehr:name>
```

```
        </kmehr:hcparty>
```

```
        <!-- Pharmacy identifier -->
```

```
        <kmehr:hcparty>
```

```
          <kmehr:id SV="1.0" S="ID-HCPARTY">123456789</kmehr:id>
```

```
          <kmehr:cd SV="1.1" S="CD-HCPARTY">orgpharmacy</kmehr:cd>
```

```
        </kmehr:hcparty>
```

```
        <!-- Pharmacy holder identifier -->
```

```
        <kmehr:hcparty>
```

```
          <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
```

```
          <kmehr:id SV="1.0" S="INSS">8xxxxxxxxxx6</kmehr:id>
```

```
          <kmehr:cd SV="1.1" S="CD-HCPARTY">perspharmacist</kmehr:cd>
```

```
        </kmehr:hcparty>
```

```
        <!-- Pharmacist end-user identifier -->
```

```
        <kmehr:hcparty>
```

```
          <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
```

```
          <kmehr:id SV="1.0" S="INSS">4xxxxxxxxxx3</kmehr:id>
```

```
          <kmehr:cd SV="1.1" S="CD-HCPARTY">perspharmacist</kmehr:cd>
```

```
        </kmehr:hcparty>
```

```
      </core:author>
```

```
      <core:date>2015-08-10</core:date>
```

```
      <core:time>09:09:27.0Z</core:time>
```

```
    </core:request>
```

```
  </core:response>
```

```
  <core:acknowledge>
```

```
    <core:iscomplete>false</core:iscomplete>
```

```
    <core:error>
```

```
      <kmehr:cd SV="1.0" S="CD-ERROR">TL.INPUT.06</kmehr:cd>
```

```
      <kmehr:description L="en-us">Invalid patient identifier</kmehr:description>
```

```
    </core:error>
```

```
  </core:acknowledge>
```

```
</RevokeTherapeuticLinkResponse>
```

5.2.5.4 Review of some error codes

When a business error occurred, then the *iscomplete* field of the *acknowledge* element is set to *false*. The *acknowledge* block of the reply message sent after an error occurred appears as follows:

```
<acknowledge>
```

```
  <iscomplete>false</iscomplete>
```

```
  <error>
```

```
    <cd SV="1.0" S="CD-ERROR">error_code</cd>
```

```
    <description L="EN">error_description</description>
```



</error>
</acknowledge>

The table below provides an overview of some possible errors returned by the service for this method.

This list is not exhaustive.

Error type	Code	Description
TL.ACCESS Permission	TL.ACCESS.05	Author - The user is not authorized to perform the operation.
	TL.ACCESS.06	Author - The author's category is different from the category of the HC party involved in the therapeutic link.
	TL.ACCESS.07	Author - The person performing the operation is different from the patient involved in the therapeutic link.
	TL.ACCESS.08	Author - The patient involved in the therapeutic link excludes the HC party.
TL.INPUT Invalid Input	TL.INPUT.05	Author - Missing patient identifier (SSIN)
	TL.INPUT.10	Author - Missing HC party identifier
	TL.INPUT.15	Author - Invalid HC party category
	TL.INPUT.25	Author - The pharmacist end-user is unknown of the pharmacy.
	TL.INPUT.30	Therapeutic link - Missing patient identifier (SSIN)
	TL.INPUT.40	Therapeutic link - Invalid SSIN of the HC party
	TL.INPUT.45	Therapeutic link - NIHL does not correspond to the HC party category.

- When business errors of type "Invalid input" or "Permission" occur, you should verify your request message.
- When a system error occurs and persists, you should refer to the contact center.
(See chapter 3)

5.2.6 Method GetTherapeuticLink

5.2.6.1 Functional description

Service name	GetTherapeuticLink
Purpose	This method allows users to verify the therapeutic links between a HC party and a patient. As usual, the service is built as generic as possible. Depending on the input parameters, the service can support the following functionalities²³: • verify a specific link between a patient and a HC party; • consult the list of therapeutic links related to a patient; • consult the list of therapeutic links between given HC party and given patient over a certain period.
Input parameters	1) The information about the request: • id, date, time; • identifier of the 'end-user' (author of the request); • number of the therapeutic links to consult (must be less or equal than 1000). 2) A set of criteria relative to the therapeutic link including at least, • the identification data of the concerned patient: – SSIN number (mandatory); – optionally, the support card number. • Optionally, the identification data of the concerned HC party: – If the HC party is a professional ○ SSIN number (mandatory) and NIHL number (11 digits) if available; ○ HC party category (mandatory); ○ optionally, first name and family name of the professional. – If the HC party is an organization ○ NIHL number (8 digits, mandatory); ○ HC party category (mandatory); ○ optionally, the name of the organization. • Optionally: – a (list of) therapeutic link type; – a time period [begin-date-end-date]²⁴; – status of the consulted therapeutic link: 'active'²⁵ (default value), 'inactive', 'all'. The parameters 'inactive' and 'all' do not currently support time period. 3) The information about the evidence (mandatory when the consultation is 'referral' or 'historic')

²³ According to the end-user some functionality are authorized or not, each caller is expected to respect those rules beyond the supported technical verifications.

²⁴ If the begin date is provided, then the end date must be also provided (and respectively).

²⁵ A therapeutic link is active when the current date is part of its period of validity.

	• type of the proof (mandatory if the evidence is given)²⁶; • only if the type of proof is the reading of the eID card with PIN code entering, the binary proof including the encryption method (mandatory) and the binary value (mandatory). Note : Case of non-referral consultation, the SSIN support card and the evidence are NOT mandatory. If the proof is provided in the request, then the card number must be included accordingly; however the card number will be discarded and not submitted for compliance validation (card format, checksum or SSIN vs card combination)
Output parameters	1) The information about the response: • id, date, time of the response; • identification of the sender of the response; • initial request. 2) An acknowledge indicating the completion of the request: • status of the completion; • optionally, the errors (error code and description). 3) A list of therapeutic links fulfilling the criteria related to the concerned patient and : • if a HC party is provided in the request, the therapeutic links of the concerned patient and the given HC party (A proof must be provided in the request if the given HC party is not the author) : – if the HC party is a professional being identified by his SSIN and HC party category, all the therapeutic links containing the given SSIN- HC party category are returned; – if the HC party is a professional being identified by his NIHII and HC party category, all the therapeutic links containing the given NIHII- HC party category are returned; – if the HC party is a professional being by his SSIN, NIHII and HC party category, all therapeutic links containing the given SSIN-HC party category, NIHII- HC party category and SSIN-NIHII-HC party category are returned; – if the HC party is an organization being identified by its NIHII and HC party category, all the therapeutic links containing the given NIHII-HC party category are returned. • if the HC party is not provided in the request: – if the proof is not provided: ○ if the author of the request acts as a HC professional, only the therapeutic links of the involved patient and author are returned; ○ if the author of the request acts for an organization, only the therapeutic links of the involved patient and HC organization of the author are returned. – if the proof is provided:

26 When the consultation is referral or historic (status is 'inactive' or 'all'), the type of proof must be the reading of eID card with PIN code entering. However, the concept of the proof is not applied when the author is Citizen or the concerned patient is new born.

	○ if the author of the request acts as a HC professional, the therapeutic links of the involved patient and author, the therapeutic links of the involved patient and HC parties are returned; ○ if the author of the request acts for a HC organization, the therapeutic links of the involved patient and organization, the therapeutic links of the involved patient and other concerned HC parties are returned. • and if a (list of) therapeutic link type is provided, the therapeutic link(s) matching this (these) type(s), else, all existing therapeutic links; • and if a time period is provided, the list will include therapeutic links found within this time period; otherwise, the list of all will include all existing therapeutic links according to the provided status (if provided); • and if a status is provided, the therapeutic link matching the provided status. By default, if no status ('active', 'inactive', 'all') is specified in the request, only active therapeutic links are returned; otherwise, the therapeutic links are returned according to the specified status. Following information is returned on each therapeutic link in the list: • the identification of the concerned patient; • the identification of the concerned HC party including the HC party category; • the type of the therapeutic link; • the validity period of the relation; • the comment of the operation, if any. The context of the operations relative to the therapeutic link²⁷: – the operation type (declaration, revocation); – the recorded date time (date time of the DB when the therapeutic link is created or revoked); – the author of the operation (only NIHL, if any and HC party category of the author are returned as the SSIN of the author cannot be disclosed legally). If no corresponding therapeutic links should be found, an empty list is returned.
Post-condition	The request is logged.
Possible exceptions	1) Technical error. 2) Invalid data: • sender is not allowed to perform the consultation; • the HC party performing the consultation is excluded by the involved patient in the case of referral consultation; • there is no therapeutic link between the HC party performing the consultation and the involved patient in the case of referral revocation; • the HC party performing the consultation does not belong to the same professional category as the HC professional involved in the therapeutic link; • invalid patient (invalid SSIN or SSIN does not correspond to the provided support card number); • invalid HC party (incorrect NIHL or NIHL does not correspond to the HC professional category); • invalid therapeutic link type;

²⁷ For instance, the context of the operation is not returned in the response if the therapeutic link is a 'gmd'.

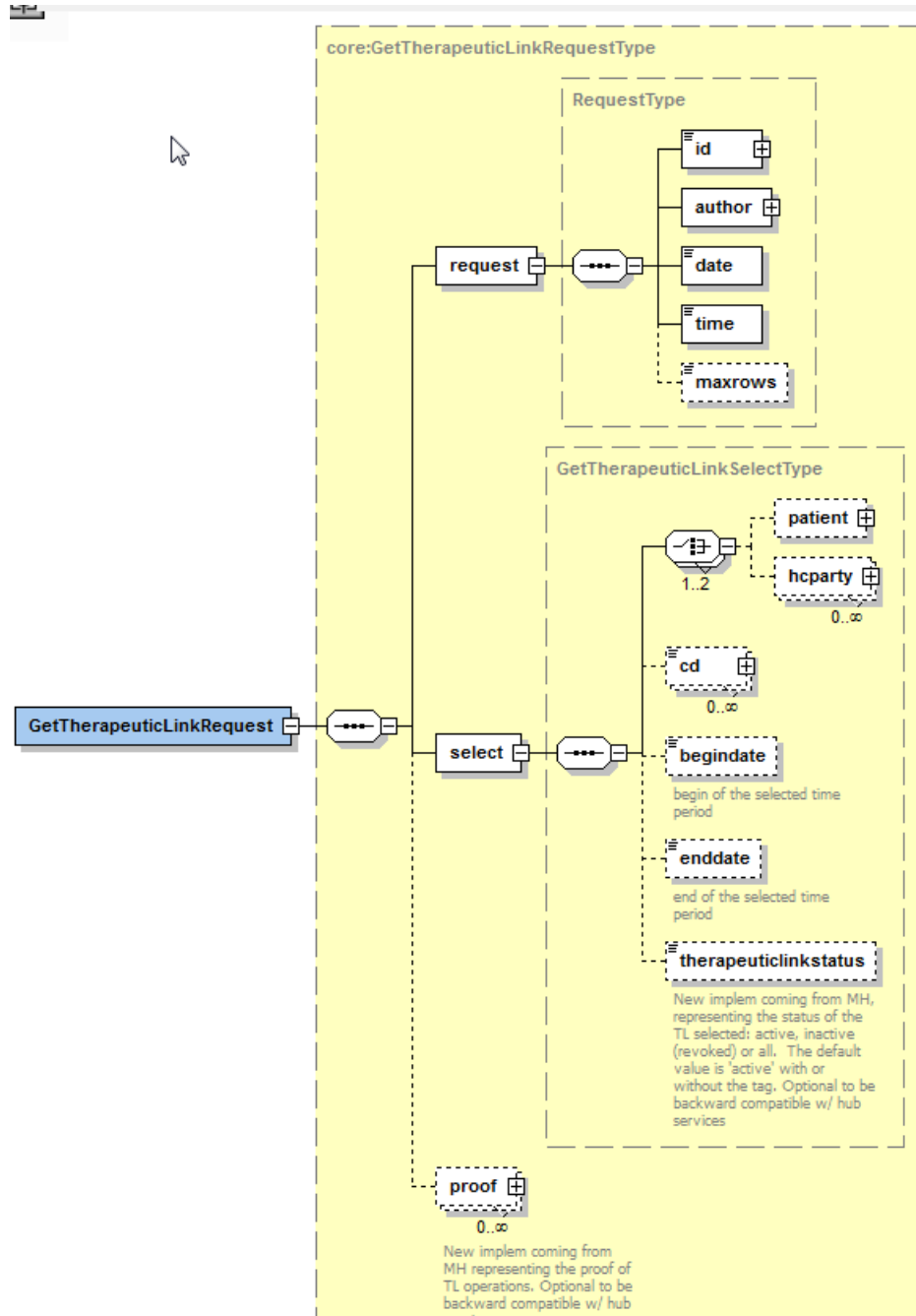
	• invalid time period; • missing or invalid proof; • too many results.
Comments	• Identification of patient: his/her SSIN number identifies the patient. • Identification of HC party: – The HC professional is identified by the SSIN number, the NIHL number (if available) and the HC party category; – The NIHL number and the HC party category identify the HC organization. • Identification of therapeutic link: The therapeutic link is identified by the identifier of the involved patient, the identifier of the involved HC party, the type and the period of the relation of the therapeutic link. Therefore, it is possible to have several active therapeutic links between patient and a HC party.

5.2.6.2 Input argument “GetTherapeuticLinkRequest”

A request from the user for a therapeutic link consultation looks as follows:

Remark:

Please comply as much as possible with the predefined sequence of the elements provided in the Select element as the validation of the request is based on this sequence!



The ‘request’ parameter gathers the elements relative to:

- the information about the request (id, date, time);
- the author of the request (end-user).

The 'select' parameter covers the selection criteria of the therapeutic link.

Parameter	Attributes		Comments
request [1]	id [1]	Identifier of the request within the caller system.	Identifies the message within the system according to ID-KMEHR identification system ²⁸ . It must contain a value with 50 alphanumeric as maximum length.
	author [1]	Sender of the request represented as a sequence of <i>hcparty</i> elements. It must at least contain the requestor end-user identifier.	This information must be coherent with the information provided in the technical identification and authentication system (i.e. certificate and SAML ²⁹ assertion)
	date [1]	Date of the request.	Date time of the consultation. Format YYYY-MM-DD
	time [1]	Time of the request.	Time of the consultation. Format hh:mm:ss
	maxrows [0-1]	Maximum number of results returned by the search.	The maximum of rows that can be requested is 1000. If more results are found, they will be omitted.
select [1]	patient [0-1]	Identification of the patient concerned by the therapeutic link (mandatory).	Patient contains the ID of patient: SSIN number.
	hcparty [1-N]	Identification of the HC party concerned by the therapeutic link.	Currently, only one HC Party is supported by the service. The <i>hcparty</i> must contain the category of the HC party and at least the SSIN (in case of professional), NIHII (in case of organization) corresponding to its HC party category. The HC party category refers to a value of KMEHR table CD-HCPARTY.
	cd [0-*]	The type identifying the therapeutic link.	Contains a value of the KMEHR table CD-THERAPEUTICLINKTYPE.
	begindate [0-1]	The beginning of the time period.	Format YYYY-MM-DD

²⁸ Please refer to <https://www.ehealth.fgov.be/standards/kmehr/content/page/38/header>

²⁹ See cookbook STS service

			'gmd' does not support time period.
	enddate [0-1]	The end of the time period.	Format YYYY-MM-DD 'gmd' does not support time period.
	therapeuticlinkstatus [0-1]	The status of the therapeutic link: 'active', 'inactive', 'all'.	
proof [0-*	cd [1]	The type identifying the proof.	Corresponds to a value of the KMEHR table CD-PROOFTYPE. (https://www.ehealth.fgov.be/standards/kmehr/content/page/tables/197/proof-type) For instance, only one form of proof is supported: the reading, encoding of support card number and the reading of eID with PIN code.
	binaryproof [0-1]	The binary value of the proof.	Existence depending on the type of proof. The binary proof is mandatory if the type of proof is the reading of the eID card with PIN code entering. For instance, the supported method for binary operation is CMS (Cryptographic Message Syntax).

Example: GetTherapeuticLinkRequest.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<GetTherapeuticLinkRequest xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2"
  xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2">
  <core:request>
    <core:id SV="1.0" S="ID-KMEHR">1990000332.20120419094127193</core:id>
    <core:author>
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="LOCAL" SL="application_ID">1990000332</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
        <kmehr:name>eHealth Consent</kmehr:name>
      </kmehr:hcparty>
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="INSS">5xxxxxxxxx1</kmehr:id>
        <kmehr:id SV="1.0" S="ID-HCPARTY">12345678910</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-HCPARTY">persphysician</kmehr:cd>
        <kmehr:firstname>FakeFirstName</kmehr:firstname>
        <kmehr:familyname>FakeLastName</kmehr:familyname>
      </kmehr:hcparty>
    </core:author>
    <core:date>${=String.format('%tF',new Date())}</core:date>
    <core:time>09:41:27.0Z</core:time>
  </core:request>
  <core:select>
    <core:patient>
      <core:id S="INSS" SV="1.0">8xxxxxxxxx8</core:id>
      <core:id S="EID-CARDNO" SV="1.0">5xxxxxxxxx0</core:id>
      <core:firstname>FakeFirstName</core:firstname>
      <core:familyname>FakeLastName</core:familyname>
    </core:patient>
  </core:select>
</GetTherapeuticLinkRequest>
```

```

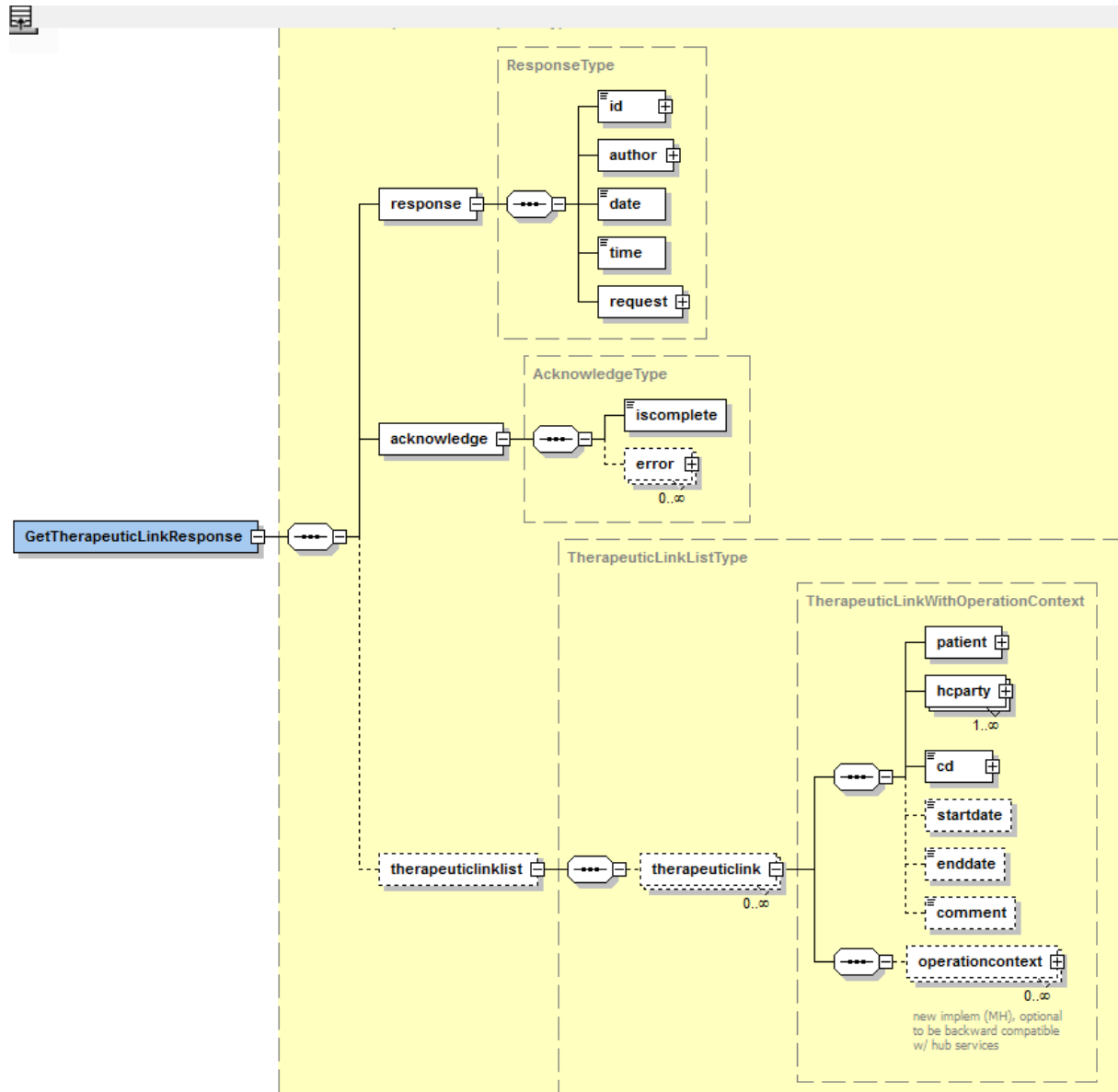
</core:patient>
<core:hcparty>
  <core:id S="INSS" SV="1.0">5xxxxxxxxx1</core:id>
  <core:id S="ID-HCPARTY" SV="1.0">12345678910</core:id>
  <core:cd S="CD-HCPARTY" SV="1.1">persphysician</core:cd>
  <core:firstname>FakeFirstName</core:firstname>
  <core:familyname>FakeLastName</core:familyname>
</core:hcparty>
</core:select>
<core:proof>
  <core:cd S="CD-PROOFTYPE" SV="1.0">eidsigning</core:cd>
  <core:binaryproof>
    <kmehr:cd S="CD-ENCRYPTION-METHOD" SV="String" DN="String" L="en">CMS</kmehr:cd>
    <kmehr:Base64EncryptedValue encoding="String">
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```

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OTA3BgVgOAOBATAUMCwGCCsGAQUFBFIBodHRwOi8vcmlvbmVwb3NpdG9yeS5laWQuYmVsZ2l1bS5i
ZTAdBgNVHQ4EFgQUuLxSAl9bGYWdJQGC8BncQl7QOCswEQYJYIZIAyB4QgEBBAQDAgAHMB8GA1Ud
IwQYMBAAFLi8bACPWxmFnSUbPAZ3ECOoDgrMAoGCSqGSIb3DQEBBQUAA4ICAQBFYjv/mKX+Vcyx
Eaccgkx4L8XvFKfIPXZjEnDnAtCCkROU/k5n1jVK+ODOn+Q4kJg6Nd7K47+zTXcrSettB2gVMsy
aCN9scy4phLX1qT48sThCjUtooxfloRypcdf14HcUPCYIASTCapZUoMnAbzfpzxm49lk/A2JWxA
hxXVRHwOuzTMMGiQ4W/VyVawxjwQMO8TneBDombmkXsl9bloOxWUhzA5dKlquosYvEodz8xDxrgZk
mZqYcPIKizCZlAPlZsSlCi5S3jgn3EUP+fd21q6ZXGU+50/qgoh/oUUAHRpedPQBES/FYc2lQZ2X
jhmeTwM+9Lk7tnzHeHp3dgCoOfceyPUaVkiXWwCNAvkvDVELvXfJpRxxwRfS5Ks5oafOfj81RzG
Ubmppw1zusOeCRwdWE8gPvbfWNQQC8MJquDI5HdeuzUesTXUqXeEkyAOo6YnF3goqGcLl9NXusji
egRUZ7B4XCVG52lTB7Wgd/wVfz53f4mAmYTGJXH+N/lrBBGKuTJ5XncJaliFUKxGP6VmNyaaLUF5
lITqC9CGHPLSXOGDokt2G9pNwFm2t7AcpwAmegkMnpgcgTd+qk2yljEaT8wf953jUAFedbpN3tX/
3i+uvHOOmWjQOxJg2lVKkC+bkWa2FrTBDdrlEWVaLrY+M+xeIctrCoWnP7u4xgAAMYIBzTCCAckC
AQEWzAzMQswCQYDVQQGEWJCRTEtMBEGA1UEAxMKQ2loaXplbiBDQTEPMAoGA1UEBRMGmJjAxNTEy
AhAAQAAAAAB/osmDTAcMPSMEDMAKGBSsOAwIAuBQCgXTAYBgkqhkiG9w0BCQMxCwYJKoZIhvcNAQcB
MBWGCsQSIb3DQEJBTBEPFwoxNjAzMDEwODM1MjlaMCMGCSqGSIb3DQEJBBDEWBRRdMJV/nrpY64EI
8yxx85CqQZPX6DANBgkqhkiG9w0BAQEFAASCAQBQA72iPEMz2qkayzWBvagGLC4w7tXLP949efvE
534nh6QrdNizH5WXZWwyvzWtz/n3Qxhx1o8tgaSPtuTod/Sl+S4wVOQZkxKw5jGhLJ2QCNLGHTSc
WnmNHptydoWqt+UM6HZJXamQpf/436oYB5uoYqOwMsCB64ZzwilshlC8suTf4loXuljwgHy/mSJP
GVobBpVeXbn/qEafkN+/hOrVovU+ucW+NAq1AYtLcsuZgVpcNhrRB1ODBpJGOTKbkCFZ6ZKtZ9pY
PqBJWY2+nEvsNxYoZKz8logVMXTqfvngEyEM5Vo2AVaScJl9RII8rzoAiXRu1HwFuTPC9bQekZGe
AAAAAAA</kmehr:Base64EncryptedValue>
</core:binaryproof>
</core:proof>
</GetTherapeuticLinkRequest>

5.2.6.3 Output argument “GetTherapeuticLinkResponse”

The reply, as sent back by the GetTherapeuticLink method, is discussed below.



The '**response**' parameter gathers the elements relative to:

- the information about the response (id, date, time);
- the sender of the response;
- the initial request.

The '**acknowledge**' parameter gathers the elements relative to:

- the service completion (*iscomplete*);
- the errors or exceptions that occurred during the service execution.

The '**therapeuticlinklist**' parameter covers the elements relative to:

- the therapeutic link elements including the context of the operation of the therapeutic link.

Parameter	Attributes			Comments	
response[1]	id [1]	Identifier of the response within the responder system.			
	author [1]	Sender of the response.			
	date [1]	Date of the response (YYYY-MM-DD)			
	time [1]	Time of the response (hh:mm:ss)			
	request [1]	Initial request.			
acknowledge[1]	iscomplete [1]	Indicates if the execution has been successfully completed.		If the conditions to compute a list of results (even empty) are fulfilled-, iscomplete is set to 'true', otherwise it is set to 'false'.	
	error [0-*]	Indicates the error/exception descriptions.			
therapeuticlinklist [0-1]	therapeuticlink [0-*]	patient [1]	Identification of the patient concerned by the therapeutic link. First name and family name.		In the case of 'gmd' first name and family name are not returned
		hcparty[1-N]	Identification of the HC party concerned by the therapeutic link. First name and family name if the HC party is a professional Name if the HC party is an organization		Currently the service supports only 1 HC party. In the case of 'gmd' first name and family name of the professional or name of the organization are not returned.
		cd [1]	The type of the therapeutic link.		
		startdate [0-1]	Start date of the therapeutic link.		Not returned in the case of 'gmd'.
		enddate [0-1]	End date of the therapeutic link.		Not returned in the case of 'gmd'.
		comment [0-1]	The comment of the therapeutic link operation.		Not returned in the case of 'gmd'.
			operation [1]	The type of the operation (declaration or revocation).	

		operationcontext [1-*] ³⁰	recorddatetime [1]	The date and time when the Therapeutic Link WS is recorded in the database.	
			author [0-1]	The author of the operation.	SSIN of the author managing Therapeutic Link WS is not returned.
			proof [0-*]	The proof applied on the context of the operation.	The proofs are included in the response but only the types of proof are returned; the binary values of the signed proofs are not returned as they are not relevant for the consultation.

³⁰ Not returned if the therapeutic link is 'gmd'.

Example: GetTherapeuticLinkResponse.xml

- **Successful completion with a list of therapeutic links**

```
<?xml version="1.0" encoding="UTF-8"?>
<v2:GetTherapeuticLinkResponse xmlns:v2="http://www.ehealth.fgov.be/hubservices/protocol/v2">
  <v21:response xmlns:v21="http://www.ehealth.fgov.be/hubservices/core/v2">
    <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
    <v21:author>
      <v1:hcparty xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
        <v1:id S="ID-HCPARTY" SV="1.0">123456789</v1:id>
        <v1:cd S="CD-HCPARTY" SV="1.0">orgpublichealth</v1:cd>
        <v1:name>eHealth platform</v1:name>
      </v1:hcparty>
    </v21:author>
    <v21:date>2016-09-30+02:00</v21:date>
    <v21:time>10:38:14.755+02:00</v21:time>
    <v21:request>
      <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
      <v21:author>
        <v1:hcparty xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
          <v1:id S="LOCAL" SL="application_ID" SV="1.0">1990000332</v1:id>
          <v1:cd S="CD-HCPARTY" SV="1.1">application</v1:cd>
          <v1:name>eHealth Consent</v1:name>
        </v1:hcparty>
        <v1:hcparty xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
          <v1:id S="INSS" SV="1.0">5xxxxxxxxx1</v1:id>
          <v1:id S="ID-HCPARTY" SV="1.0">12345678910</v1:id>
          <v1:cd S="CD-HCPARTY" SV="1.1">persphysician</v1:cd>
          <v1:firstname>FakeFirstName</v1:firstname>
          <v1:familyname>FakeLastName</v1:familyname>
        </v1:hcparty>
      </v21:author>
      <v21:date>2016-09-30</v21:date>
      <v21:time>09:41:27.0Z</v21:time>
    </v21:request>
  </v21:response>
  <v21:acknowledge xmlns:v21="http://www.ehealth.fgov.be/hubservices/core/v2">
    <v21:iscomplete>true</v21:iscomplete>
  </v21:acknowledge>
  <v21:therapeuticlinklist xmlns:v21="http://www.ehealth.fgov.be/hubservices/core/v2">
    <v21:therapeuticlink>
      <v21:patient>
        <v21:id S="INSS" SV="1.0">8xxxxxxxxx8</v21:id>
        <v21:firstname>FakeFirstName</v21:firstname>
        <v21:familyname>FakeLastName</v21:familyname>
      </v21:patient>
      <v21:hcparty>
        <v21:id S="ID-HCPARTY" SV="1.0">12345678910</v21:id>
        <v21:id S="INSS" SV="1.0">5xxxxxxxxx1</v21:id>
        <v21:cd S="CD-HCPARTY" SV="1.0">persphysician</v21:cd>
        <v21:firstname>FakeFirstName</v21:firstname>
        <v21:familyname>FakeLastName</v21:familyname>
      </v21:hcparty>
      <v21:cd S="CD-THERAPEUTICLINKTYPE" SV="1.0">gpconsultation</v21:cd>
      <v21:startdate>2016-09-30+02:00</v21:startdate>
      <v21:enddate>2017-12-30+01:00</v21:enddate>
      <v21:comment>Successful declaration</v21:comment>
      <v21:operationcontext>
        <v21:operation>declaration</v21:operation>
        <v21:recorddatetime>2016-09-30T08:33:59.230Z</v21:recorddatetime>
        <v21:author>
          <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
          <v21:author>
            <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
```



```

        <ns2:id S="LOCAL" SV="1.0" SL="application_ID"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">1990000332</ns2:id>
        <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">application</ns2:cd>
        <ns2:name
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">eHealth Consent</ns2:name>
    </v1:hcparty>
    <v1:hcparty
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
        <ns2:id S="ID-HCPARTY" SV="1.0"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">12345678910</ns2:id>
        <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">persphysician</ns2:cd>
        <ns2:firstname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeFirstName</ns2:firstname>
        <ns2:familyname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeLastName</ns2:familyname>
    </v1:hcparty>
    </v21:author>
    <v21:date>2016-09-30</v21:date>
    <v21:time>09:41:27.0Z</v21:time>
  </v21:author>
  <v21:proof>
    <v21:cd S="CD-PROOFTYPE" SV="1.0">eidreading</v21:cd>
  </v21:proof>
</v21:operationcontext>
</v21:therapeuticlink>
<v21:therapeuticlink>
  <v21:patient>
    <v21:id S="INSS" SV="1.0">8xxxxxxxxx8</v21:id>
    <v21:firstname>FakeFirstName</v21:firstname>
    <v21:familyname>FakeLastName</v21:familyname>
  </v21:patient>
  <v21:hcparty>
    <v21:id S="ID-HCPARTY" SV="1.0">12345678910</v21:id>
    <v21:id S="INSS" SV="1.0">5xxxxxxxxx1</v21:id>
    <v21:cd S="CD-HCPARTY" SV="1.0">persphysician</v21:cd>
    <v21:firstname>FakeFirstName</v21:firstname>
    <v21:familyname>FakeLastName</v21:familyname>
  </v21:hcparty>
  <v21:cd S="CD-THERAPEUTICLINKTYPE" SV="1.0">specialistconsultation</v21:cd>
  <v21:startdate>2016-09-30+02:00</v21:startdate>
  <v21:enddate>2019-06-27+02:00</v21:enddate>
  <v21:comment>Successful declaration</v21:comment>
</v21:operationcontext>
  <v21:operation>declaration</v21:operation>
  <v21:recorddatetime>2016-09-30T08:34:01.506Z</v21:recorddatetime>
  <v21:author>

```

```

        <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
        <v21:author>
            <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
                <ns2:id S="LOCAL" SV="1.0" SL="application_ID"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">1990000332</ns2:id>
                <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">application</ns2:cd>
                <ns2:name
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">eHealth Consent</ns2:name>
            </v1:hcparty>
        </v1:hcparty>
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
            <ns2:id S="ID-HCPARTY" SV="1.0"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">12345678910</ns2:id>
            <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">persphysician</ns2:cd>
            <ns2:firstname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeFirstName</ns2:firstname>
            <ns2:familyname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeLastName</ns2:familyname>
        </v1:hcparty>
    </v21:author>
    <v21:date>2016-09-30</v21:date>
    <v21:time>09:41:27.0Z</v21:time>
</v21:author>
<v21:proof>
    <v21:cd S="CD-PROOFTYPE" SV="1.0">eidsigning</v21:cd>
</v21:proof>
</v21:operationcontext>
</v21:therapeuticlink>
<v21:therapeuticlink>
    <v21:patient>
        <v21:id S="INSS" SV="1.0">8xxxxxxxxx8</v21:id>
        <v21:firstname>FakeFirstName</v21:firstname>
        <v21:familyname>FakeLastName</v21:familyname>
    </v21:patient>
    <v21:hcparty>
        <v21:id S="ID-HCPARTY" SV="1.0">12345678910</v21:id>
        <v21:id S="INSS" SV="1.0">6xxxxxxxxx1</v21:id>
        <v21:cd S="CD-HCPARTY" SV="1.0">persphysician</v21:cd>
        <v21:firstname>FakeFirstName</v21:firstname>
        <v21:familyname>FakeLastName</v21:familyname>
    </v21:hcparty>
    <v21:cd S="CD-THERAPEUTICLINKTYPE" SV="1.0">gppreferral</v21:cd>
    <v21:startdate>2016-09-30+02:00</v21:startdate>
    <v21:enddate>2016-12-30+01:00</v21:enddate>
    <v21:comment>Successful referral declaration</v21:comment>

```

```

        <v21:operationcontext>
            <v21:operation>declaration</v21:operation>
            <v21:recorddatetime>2016-09-30T08:34:04.546Z</v21:recorddatetime>
            <v21:author>
                <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
                <v21:author>
                    <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
                        <ns2:id S="LOCAL" SV="1.0" SL="application_ID"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">1990000332</ns2:id>
                        <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">application</ns2:cd>
                        <ns2:name
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">eHealth Consent</ns2:name>
                        </v1:hcparty>
                    <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
                        <ns2:id S="ID-HCPARTY" SV="1.0"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">12345678910</ns2:id>
                        <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">persphysician</ns2:cd>
                        <ns2:firstname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeFirstName</ns2:firstname>
                        <ns2:familyname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeLastName</ns2:familyname>
                        </v1:hcparty>
                    </v21:author>
                <v21:date>2016-09-30</v21:date>
                <v21:time>09:41:27.0Z</v21:time>
            </v21:author>
            <v21:proof>
                <v21:cd S="CD-PROOFTYPE" SV="1.0">eidsigning</v21:cd>
            </v21:proof>
        </v21:operationcontext>
    </v21:therapeuticlink>
    <v21:therapeuticlink>
        <v21:patient>
            <v21:id S="INSS" SV="1.0">8xxxxxxxxx8</v21:id>
            <v21:firstname>FakeFirstName</v21:firstname>
            <v21:familyname>FakeLastName</v21:familyname>
        </v21:patient>
        <v21:hcparty>
            <v21:id S="ID-HCPARTY" SV="1.0">12345678910</v21:id>
            <v21:id S="INSS" SV="1.0">67060405711</v21:id>
            <v21:cd S="CD-HCPARTY" SV="1.0">persphysician</v21:cd>
            <v21:firstname>FakeFirstName</v21:firstname>
            <v21:familyname>FakeLastName</v21:familyname>
        </v21:hcparty>
    </v21:therapeuticlink>

```

```

<v21:cd S="CD-THERAPEUTICLINKTYPE" SV="1.0">specialistreferral</v21:cd>
<v21:startdate>2016-09-30+02:00</v21:startdate>
<v21:enddate>2016-12-30+01:00</v21:enddate>
<v21:comment>Successful referral declaration</v21:comment>
<v21:operationcontext>
  <v21:operation>declaration</v21:operation>
  <v21:recorddatetime>2016-09-30T08:34:09.340Z</v21:recorddatetime>
  <v21:author>
    <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
    <v21:author>
      <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
        <ns2:id S="LOCAL" SV="1.0" SL="application_ID"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">1990000332</ns2:id>
        <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">application</ns2:cd>
        <ns2:name
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">eHealth Consent</ns2:name>
        </v1:hcparty>
      </v1:hcparty>
    </v21:author>
    <v21:date>2016-09-30</v21:date>
    <v21:time>09:41:27.0Z</v21:time>
  </v21:author>
  <v21:proof>
    <v21:cd S="CD-PROOFTYPE" SV="1.0">eidsigning</v21:cd>
  </v21:proof>
</v21:operationcontext>
</v21:therapeuticlink>
<v21:therapeuticlink>
  <v21:patient>
    <v21:id S="INSS" SV="1.0">8xxxxxxxxx8</v21:id>
    <v21:firstname>FakeFirstName</v21:firstname>
    <v21:familyname>FakeLastName</v21:familyname>
  </v21:patient>
  <v21:hcparty>
    <v21:id S="ID-HCPARTY" SV="1.0">123456789</v21:id>
    <v21:cd S="CD-HCPARTY" SV="1.0">orgpharmacy</v21:cd>
  </v21:hcparty>
</v21:therapeuticlink>

```

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        <v21:name>PHARMA TL MIG 1</v21:name>
      </v21:hcparty>
      <v21:cd S="CD-THERAPEUTICLINKTYPE" SV="1.0">pharmacistreferral</v21:cd>
      <v21:startdate>2016-09-30+02:00</v21:startdate>
      <v21:enddate>2016-12-30+01:00</v21:enddate>
      <v21:comment>Successful declaration pharmacist referral</v21:comment>
      <v21:operationcontext>
        <v21:operation>declaration</v21:operation>
        <v21:recorddatetime>2016-09-30T08:34:11.217Z</v21:recorddatetime>
        <v21:author>
          <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
          <v21:author>
            <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
              <ns2:id S="LOCAL" SV="1.0" SL="application_ID"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">1990000332</ns2:id>
              <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">application</ns2:cd>
              <ns2:name
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">eHealth Consent</ns2:name>
            </v1:hcparty>
          <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
            <ns2:id S="ID-HCPARTY" SV="1.0"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">12345678910</ns2:id>
            <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">persphysician</ns2:cd>
            <ns2:firstname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeFirstName</ns2:firstname>
            <ns2:familyname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeLastName</ns2:familyname>
          </v1:hcparty>
        </v21:author>
        <v21:date>2016-09-30</v21:date>
        <v21:time>09:41:27.oZ</v21:time>
      </v21:author>
      <v21:proof>
        <v21:cd S="CD-PROOFTYPE" SV="1.0">eidsigning</v21:cd>
      </v21:proof>
    </v21:operationcontext>
  </v21:therapeuticlink>
<v21:therapeuticlink>
  <v21:patient>
    <v21:id S="INSS" SV="1.0">8xxxxxxxxx8</v21:id>
    <v21:firstname>FakeFirstName</v21:firstname>
    <v21:familyname>FakeLastName</v21:familyname>
  </v21:patient>
</v21:hcparty>

```

```

        <v21:id S="ID-HCPARTY" SV="1.0">12345678910</v21:id>
        <v21:id S="INSS" SV="1.0">6xxxxxxxxx1</v21:id>
        <v21:cd S="CD-HCPARTY" SV="1.0">persnurse</v21:cd>
        <v21:firstname>FakeFirstName</v21:firstname>
        <v21:familyname>FakeLastName</v21:familyname>
    </v21:hcparty>
    <v21:cd S="CD-THERAPEUTICLINKTYPE" SV="1.0">nursereferral</v21:cd>
    <v21:startdate>2016-09-30+02:00</v21:startdate>
    <v21:enddate>2016-12-30+01:00</v21:enddate>
    <v21:comment>Successful declaration nurse referral</v21:comment>
    <v21:operationcontext>
        <v21:operation>declaration</v21:operation>
        <v21:recorddatetime>2016-09-30T08:34:13.947Z</v21:recorddatetime>
        <v21:author>
            <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
            <v21:author>
                <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
                    <ns2:id S="LOCAL" SV="1.0" SL="application_ID"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">1990000332</ns2:id>
                    <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">application</ns2:cd>
                    <ns2:name
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">eHealth Consent</ns2:name>
                </v1:hcparty>
            </v1:hcparty>
        </v21:author>
        <v21:date>2016-09-30</v21:date>
        <v21:time>09:41:27.0Z</v21:time>
    </v21:author>
    <v21:proof>
        <v21:cd S="CD-PROOFTYPE" SV="1.0">eidsigning</v21:cd>
    </v21:proof>
    </v21:operationcontext>
</v21:therapeuticlink>
<v21:therapeuticlink>
    <v21:patient>
        <v21:id S="INSS" SV="1.0">8xxxxxxxxx8</v21:id>

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```

        <v21:firstname>FakeFirstName</v21:firstname>
        <v21:familyname>FakeLastName</v21:familyname>
    </v21:patient>
    <v21:hcparty>
        <v21:id S="ID-HCPARTY" SV="1.0">12345678910</v21:id>
        <v21:id S="INSS" SV="1.0">2xxxxxxxxx8</v21:id>
        <v21:cd S="CD-HCPARTY" SV="1.0">persdentist</v21:cd>
        <v21:firstname>FakeFirstName</v21:firstname>
        <v21:familyname>FakeLastName</v21:familyname>
    </v21:hcparty>
    <v21:cd S="CD-THERAPEUTICLINKTYPE" SV="1.0">referral</v21:cd>
    <v21:startdate>2016-09-30+02:00</v21:startdate>
    <v21:enddate>2016-12-30+01:00</v21:enddate>
    <v21:comment>Successful declaration dentist referral</v21:comment>
    <v21:operationcontext>
        <v21:operation>declaration</v21:operation>
        <v21:recorddatetime>2016-09-30T08:34:16.346Z</v21:recorddatetime>
        <v21:author>
            <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
            <v21:author>
                <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
                    <ns2:id S="LOCAL" SV="1.0" SL="application_ID"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">1990000332</ns2:id>
                    <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">application</ns2:cd>
                    <ns2:name
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">eHealth Consent</ns2:name>
                </v1:hcparty>
            </v1:hcparty>
        </v21:author>
        <v21:date>2016-09-30</v21:date>
        <v21:time>09:41:27.0Z</v21:time>
    </v21:author>
    <v21:proof>
        <v21:cd S="CD-PROOFTYPE" SV="1.0">eidsigning</v21:cd>
    </v21:proof>
</v21:operationcontext>

```

```

</v21:therapeuticlink>
<v21:therapeuticlink>
  <v21:patient>
    <v21:id S="INSS" SV="1.0">8xxxxxxxxx8</v21:id>
    <v21:firstname>FakeFirstName</v21:firstname>
    <v21:familyname>FakeLastName</v21:familyname>
  </v21:patient>
  <v21:hcparty>
    <v21:id S="ID-HCPARTY" SV="1.0">12345678910</v21:id>
    <v21:id S="INSS" SV="1.0">2xxxxxxxxx7</v21:id>
    <v21:cd S="CD-HCPARTY" SV="1.0">persmidwife</v21:cd>
    <v21:firstname>FakeFirstName</v21:firstname>
    <v21:familyname>FakeLastName</v21:familyname>
  </v21:hcparty>
  <v21:cd S="CD-THERAPEUTICLINKTYPE" SV="1.0">referral</v21:cd>
  <v21:startdate>2016-09-30+02:00</v21:startdate>
  <v21:enddate>2016-12-30+01:00</v21:enddate>
  <v21:comment>Successful declaration midwife referral</v21:comment>
  <v21:operationcontext>
    <v21:operation>declaration</v21:operation>
    <v21:recorddatetime>2016-09-30T08:34:19.556Z</v21:recorddatetime>
    <v21:author>
      <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
      <v21:author>
        <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
          <ns2:id S="LOCAL" SV="1.0" SL="application_ID"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">1990000332</ns2:id>
          <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">application</ns2:cd>
          <ns2:name
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">eHealth Consent</ns2:name>
          </v1:hcparty>
        <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
          <ns2:id S="ID-HCPARTY" SV="1.0"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">12345678910</ns2:id>
          <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">persphysician</ns2:cd>
          <ns2:firstname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeFirstName</ns2:firstname>
          <ns2:familyname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeLastName</ns2:familyname>
          </v1:hcparty>
        </v21:author>
      <v21:date>2016-09-30</v21:date>
      <v21:time>09:41:27.0Z</v21:time>
    </v21:author>
  </v21:author>

```

```

        <v21:proof>
            <v21:cd S="CD-PROOFTYPE" SV="1.0">eidsigning</v21:cd>
        </v21:proof>
    </v21:operationcontext>
</v21:therapeuticlink>
<v21:therapeuticlink>
    <v21:patient>
        <v21:id S="INSS" SV="1.0">8xxxxxxxxx</v21:id>
        <v21:firstname>FakeFirstName</v21:firstname>
        <v21:familyname>FakeLastName</v21:familyname>
    </v21:patient>
    <v21:hcparty>
        <v21:id S="INSS" SV="1.0">2xxxxxxxx</v21:id>
        <v21:cd S="CD-HCPARTY" SV="1.0">persphysician</v21:cd>
        <v21:firstname>FakeFirstName</v21:firstname>
        <v21:familyname>FakeLastName</v21:familyname>
    </v21:hcparty>
    <v21:cd S="CD-THERAPEUTICLINKTYPE" SV="1.0">gpreferral</v21:cd>
    <v21:startdate>2016-09-30+02:00</v21:startdate>
    <v21:enddate>2016-12-30+01:00</v21:enddate>
    <v21:comment>Successful declaration midwife referral</v21:comment>
    <v21:operationcontext>
        <v21:operation>declaration</v21:operation>
        <v21:recorddatetime>2016-09-30T08:34:22.679Z</v21:recorddatetime>
        <v21:author>
            <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
            <v21:author>
                <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
                    <ns2:id S="LOCAL" SV="1.0" SL="application_ID"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">1990000332</ns2:id>
                    <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">application</ns2:cd>
                    <ns2:name
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">eHealth Consent</ns2:name>
                </v1:hcparty>
            </v1:hcparty>
        </v21:author>
    </v21:author>
    <v1:hcparty
xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
        <ns2:id S="ID-HCPARTY" SV="1.0"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">12345678910</ns2:id>
        <ns2:cd S="CD-HCPARTY" SV="1.1"
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">persphysician</ns2:cd>
        <ns2:firstname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeFirstName</ns2:firstname>
        <ns2:familyname
xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#"
xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="urn:be:cin:mycarenet:esb:common:v2" xmlns:ns6="urn:be:cin:nippin:esb:therapeuticLink:v2"
xmlns:ns7="urn:be:cin:types:v1" xmlns:ns8="urn:be:cin:nip:async:attributeBatch">FakeLastName</ns2:familyname>
    </v1:hcparty>
</v21:author>

```

```

        <v21:date>2016-09-30</v21:date>
        <v21:time>09:41:27.0Z</v21:time>
    </v21:author>
    <v21:proof>
        <v21:cd S="CD-PROOFTYPE" SV="1.0">eidsigning</v21:cd>
    </v21:proof>
    </v21:operationcontext>
</v21:therapeuticlink>
</v21:therapeuticlinklist>
</v2:GetTherapeuticLinkResponse>

```

- **Successful completion with empty list**

```

<v2:GetTherapeuticLinkResponse xmlns:v2="http://www.ehealth.fgov.be/hubservices/protocol/v2">
    <v21:response xmlns:v21="http://www.ehealth.fgov.be/hubservices/core/v2">
        <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
        <v21:author>
            <v1:hcparty xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
                <v1:id S="ID-HCPARTY" SV="1.0">123456789</v1:id>
                <v1:cd S="CD-HCPARTY" SV="1.0">orgpublichealth</v1:cd>
                <v1:name>eHealth platform</v1:name>
            </v1:hcparty>
        </v21:author>
        <v21:date>2016-09-30+02:00</v21:date>
        <v21:time>10:38:14.755+02:00</v21:time>
        <v21:request>
            <v21:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</v21:id>
            <v21:author>
                <v1:hcparty xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
                    <v1:id S="LOCAL" SL="application_ID" SV="1.0">1990000332</v1:id>
                    <v1:cd S="CD-HCPARTY" SV="1.1">application</v1:cd>
                    <v1:name>eHealth Consent</v1:name>
                </v1:hcparty>
                <v1:hcparty xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
                    <v1:id S="INSS" SV="1.0">5xxxxxxxxx1</v1:id>
                    <v1:id S="ID-HCPARTY" SV="1.0">12345678910</v1:id>
                    <v1:cd S="CD-HCPARTY" SV="1.1">persphysician</v1:cd>
                    <v1:firstname>FakeFirstName</v1:firstname>
                    <v1:familyname>FakeLastName</v1:familyname>
                </v1:hcparty>
            </v21:author>
            <v21:date>2016-09-30</v21:date>
            <v21:time>09:41:27.0Z</v21:time>
        </v21:request>
    </v21:response>
    <v21:acknowledge xmlns:v21="http://www.ehealth.fgov.be/hubservices/core/v2">
        <v21:iscomplete>true</v21:iscomplete>
    </v21:acknowledge>
    <v21:therapeuticlinklist xmlns:v21="http://www.ehealth.fgov.be/hubservices/core/v2"/>
</v2:GetTherapeuticLinkResponse>

```

- **Unsuccessful completion**

```

<?xml version="1.0" encoding="UTF-8"?>
<GetTherapeuticLinkResponse
  xsi:schemaLocation="urn:be:fgov:ehealth:metahub:protocol:v2 ../ehealth-metahub/XSD/metahub_protocol-2_o.xsd"
  xmlns="urn:be:fgov:ehealth:metahub:protocol:v2" xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:core="urn:be:fgov:ehealth:metahub:core:v2">
    <core:response>
        <core:id S="ID-KMEHR" SV="1.0">1990000332.20150810090927345</core:id>
        <core:author>
            <kmehr:hcparty>
                <kmehr:id S="ID-HCPARTY" SV="1.0">123456789</kmehr:id>
                <kmehr:cd S="CD-HCPARTY" SV="1.0">orgpublichealth</kmehr:cd>
                <kmehr:name>Responder organization</kmehr:name>
            </kmehr:hcparty>
        </core:author>
        <core:date>2015-08-10</core:date>
        <core:time>09:01:00.0Z</core:time>
    </core:response>
</GetTherapeuticLinkResponse>

```

```

<core:request>
  <core:id SV="1.0" S="ID-KMEHR">1990000332.20150810090927123</core:id>
  <core:author>
    <kmehr:hcparty>
      <kmehr:id SV="1.0" S="LOCAL" SL="eHP application id">1990000332</kmehr:id>
      <kmehr:cd SV="1.1" S="CD-HCPARTY">application</kmehr:cd>
      <kmehr:name>eHealthConsent</kmehr:name>
    </kmehr:hcparty>
  </core:author>
  <core:patient>
    <core:id SV="1.0" S="INSS">7xxxxxxxxx2</core:id>
  </core:patient>
</core:request>
</core:response>
<core:acknowledge>
  <core:iscomplete>false</core:iscomplete>
  <core:error>
    <kmehr:cd SV="1.0" S="CD-ERROR">TL.INPUT.06</kmehr:cd>
    <kmehr:description L="en-us">Invalid patient identifier</kmehr:description>
  </core:error>
</core:acknowledge>
</GetTherapeuticLinkResponse>

```

5.2.6.4 Review of some error codes

When a business error occurred, then the *iscomplete* field of the *acknowledge* element is set to *false*. The acknowledge block of the reply message sent after an error occurred looks as follows:

```

<acknowledge>
  <iscomplete>false</iscomplete>
  <error>
    <cd SV="1.0" S="CD-ERROR">error_code</cd>
    <description L="EN">error_description</description>
  </error>
</acknowledge>

```

The table below provides an overview of some possible errors returned by the service for this method.

This list is not exhaustive.

Error type	Code	Description
TL.ACCESS Permission	TL.ACCESS.05	Author - The user is not authorized to perform the operation.
	TL.ACCESS.06	Author - The category of the author is different from the category of the HC party involved in the therapeutic link.
	TL.ACCESS.07	Author - The person performing the operation is different from the patient involved in the therapeutic link.
	TL.ACCESS.08	Author - The HC party is excluded by the patient involved in the therapeutic link.
	TL.ACCESS.09	Author – There is no active therapeutic link between the author and the involved patient.
	TL.ACCESS.14	Therapeutic Link - Only therapeutic links between patient and HC party are supported.
TL.INPUT Invalid Input	TL.INPUT.05	Author - Missing patient identifier (SSIN)
	TL.INPUT.10	Author - Missing HC party identifier
	TL.INPUT.15	Author - Invalid HC party category
	TL.INPUT.30	Therapeutic link - Missing patient identifier (SSIN)

	TL.INPUT.40	Therapeutic link - Invalid SSIN of the HC party
	TL.INPUT.50	Therapeutic Link - Invalid type of therapeutic link
	TL.INPUT.51	Therapeutic Link - The type of therapeutic link is not allowed for the operation.
	TL.INPUT.65	Therapeutic Link - Invalid time period
	TL.INPUT.70	Proof - Missing proof
	TL.INPUT.80	Proof – Certificate is not made to be signed.
TL.OTHER other	TL.OTHER.20	Author - Authentic source failure for validation

When business errors of the type “Invalid Input” or “Permission” occur, you should verify your request message. When a system error occurs and persists, please refer to the contact center. (See section 3)

5.2.7 Method HasTherapeuticLink

5.2.7.1 Functional description

Service name	HasTherapeuticLink
Purpose	This method allows users to check the existence of therapeutic links between a HC party and a patient. It takes the identification of both patient and HC party, along with an (optional) type of therapeutic link, as input. It returns ‘true’ if a therapeutic link of this type exists between the patient and the HC party. If no type is specified, any type of therapeutic link will be considered.
Input parameters	- The information about the request: - id, date, time of the request; - the identifier of the ‘end-user’ (author of the request); - the number of the therapeutic links to consult (must be less or equal than 1000). - A set of criteria relative to the therapeutic link including at least, - the identification data of the concerned patient: - SSIN number (mandatory); - optionally, the support card number. - the identification data of the concerned HC party: - If the HC party is a professional - SSIN number (mandatory) and NIHII number (11 digits) if available; - HC party category (mandatory); - optionally, first name and family name of the professional. - If the HC party is an organization - NIHII number (8 digits, mandatory); - HC party category (mandatory); - optionally, the name of the organization. - Optionally: - a (list of) therapeutic link type;
Output parameters	- The information about the response: - id, date, time of the response;

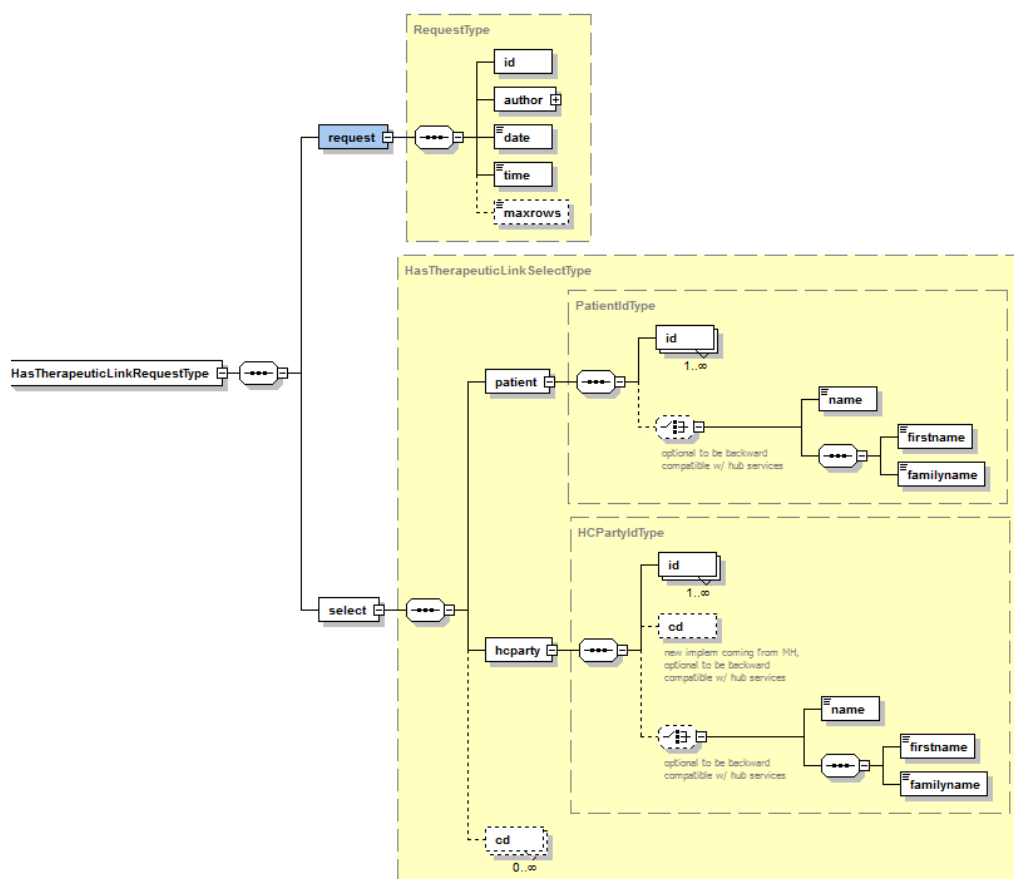
	• identification of the sender of the response; • initial request. 2. An acknowledge indicating the completion of the request: • status of the completion; • optionally the errors (error code and description). 3. A boolean value. It returns 'true' there is a therapeutic link of this type between the patient and the HC party. If no therapeutic links matching the criteria are found, the value 'false' is returned. If no type is specified, any type of therapeutic link is considered.
Post-condition	The request is logged.
Possible exceptions	1. Technical error. 2. Invalid data: • sender is not allowed to perform this operation; • the professional category of the HC party performing the operation is different from the one of the HC professional involved in the therapeutic link; • invalid patient (invalid SSIN or SSIN does not correspond to the provided support card number); • invalid HC party (incorrect NIHL or NIHL does not correspond to the HC professional category); • invalid therapeutic link type.
Comments	• Identification of patient: his/her SSIN number identifies the patient. • Identification of HC party: – the SSIN number of the HC professional, the NIHL number (if available) and the HC party category; – the NIHL number and the HC party category of the HC organization. • Identification of therapeutic link: The therapeutic link is identified by the patient's identifier, the HC provider's identifier, the type, and the period of the therapeutic link. Thus, it is possible to have multiple active therapeutic links between patient and a HC party.

5.2.7.2 Input argument “HasTherapeuticLinkRequest”

A request from the user for a therapeutic link consultation looks as follows

Remark:

Please comply as much as possible with the predefined sequence of the elements provided in the Select element as the validation of the request is based on this sequence!



The ‘**request**’ parameter gathers the elements relative to:

- the information about the request (id, date, time);
- the author of the request (end-user).

The ‘**select**’ parameter covers the selection criteria of the therapeutic link.

Parameter	Attributes		Comments
request [1]	id [1]	Identifier of the request within the caller system.	Identifies the message within the system according to ID-KMEHR identification system ³¹ . It must contain a value with 50 alphanumeric characters as maximum length.

³¹ Please refer to <https://www.ehealth.fgov.be/standards/kmehr/content/page/38/header>

	author [1]	Sender of the request represented as a sequence of <i>hcparty</i> elements. It must at least contain the requestor end-user identifier.	This information must be coherent with the information provided in the technical identification and authentication system (i.e. certificate and SAML ³² assertion)
	date [1]	Date of the request.	Date time of the consultation. Format YYYY-MM-DD
	time [1]	Time of the request.	Time of the consultation. Format hh:mm:ss
select [1]	patient [0-1]	Identification of the patient concerned by the therapeutic link (mandatory).	Contains the patient's ID: SSIN number.
	hcparty [1-N]	Identification of the HC party concerned by the therapeutic link.	Currently, only one HC Party is supported by the service. The <i>hcparty</i> must contain the category of the HC party and at least the SSIN (in case of professional), NIHII (in case of organization) corresponding to its HC party category. The HC party category refers to a value of KMEHR table CD-HCPARTY.
	cd [0-*]	The type identifying the therapeutic link.	Contains a value of the KMEHR table CD-THERAPEUTICLINKTYPE.

Example: HasTherapeuticLinkRequest.xml

```
<HasTherapeuticLinkRequest xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2"
xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2">
  <core:request>
    <core:id SV="1.0" S="ID-KMEHR">1990000332.20120419094127193</core:id>
    <core:author>
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="LOCAL"
SL="application_ID">1990000332</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-
HCPARTY">application</kmehr:cd>
        <kmehr:name>eHealth Consent</kmehr:name>
      </kmehr:hcparty>
      <kmehr:hcparty>
        <kmehr:id SV="1.0" S="INSS">5xxxxxxxxx1</kmehr:id>
        <kmehr:id SV="1.0" S="ID-
HCPARTY">12345678910</kmehr:id>
        <kmehr:cd SV="1.1" S="CD-
HCPARTY">persphysician</kmehr:cd>
        <kmehr:firstname>FakeFirstName</kmehr:firstname>
        <kmehr:familyname>FakeLastName</kmehr:familyname>
      </kmehr:hcparty>
    </core:author>
  </core:request>
</HasTherapeuticLinkRequest>
```

³² See cookbook STS service

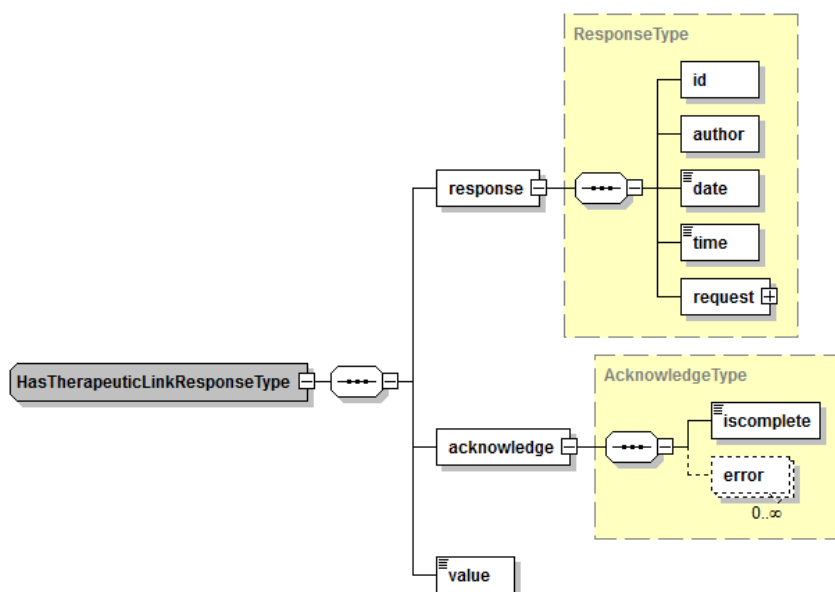
```

</core:author>
<core:date>${=String.format('%tF',new Date())}</core:date>
<core:time>09:41:27.0Z</core:time>
</core:request>
<core:select>
  <core:patient>
    <core:id S="INSS" SV="1.0">8xxxxxxxxx7</core:id>
  </core:patient>
  <core:hcparty>
    <core:id S="INSS" SV="1.0">5xxxxxxxxx1</core:id>
    <core:cd S="CD-HCPARTY" SV="1.1">persphysician</core:cd>
  </core:hcparty>
</core:select>
</HasTherapeuticLinkRequest>

```

5.2.7.3 Output argument “HasTherapeuticLinkResponse”

The reply, as sent back by the HasTherapeuticLink method, is discussed below.



The ‘**response**’ parameter gathers the elements relative to:

- the information about the response (id, date, time);
- the sender of the response;
- the initial request.

The ‘**acknowledge**’ parameter gathers the elements relative to:

- the service completion (*iscomplete*);
- the errors or exceptions that occurred during the service execution.

The ‘**value**’ parameter covers the existence of the therapeutic link:

- true if a therapeutic link exists between the patient and the HC party;
- false if no therapeutic links corresponding to the criteria could be found.

Parameter	Attributes		Comments
response[1]	id [1]	Identifier of the response within the responder system.	
	author [1]	Sender of the response.	
	date [1]	Date of the response (YYYY-MM-DD)	
	time [1]	Time of the response (hh:mm:ss)	
	request [1]	Initial request.	
acknowledge[1]	iscomplete [1]	Indicates if the execution has been successfully completed.	If the conditions were fulfilled to compute a list of results – whether empty or not -, 'iscomplete' is set to 'true'; it is set to 'false' otherwise.
	error [0-*	Indicates the error/exception descriptions.	
value [1]	The boolean value of the result: • true if a therapeutic link exists between the patient and the HC party • false if no therapeutic links corresponding to the criteria could be found		If no type is specified, any type of therapeutic link is considered.



Example: HasTherapeuticLinkResponse.xml

- **Successful completion with a therapeutic link found**

```
<v2:HasTherapeuticLinkResponse xmlns:v2="http://www.ehealth.fgov.be/hubservices/protocol/v2">
  <v21:response xmlns:v21="http://www.ehealth.fgov.be/hubservices/core/v2">
    <v21:id S="ID-KMEHR" SV="1.0">_46424ff7db58f61d0f43315395c7f7de</v21:id>
    <v21:author>
      <v1:hcparty xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
        <v1:id S="ID-HCPARTY" SV="1.0">123456789</v1:id>
        <v1:cd S="CD-HCPARTY" SV="1.1">orgpublichealth</v1:cd>
        <v1:name>eHealth platform</v1:name>
      </v1:hcparty>
    </v21:author>
    <v21:date>2018-10-08</v21:date>
    <v21:time>17:04:36</v21:time>
    <core:request xmlns:v1="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
      xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2"
      xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
      xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2" xmlns:wsu="http://docs.oasis-
      open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
      <core:id S="ID-KMEHR" SV="1.0">1990000332.20120419094127193</core:id>
      <core:author>
        <kmehr:hcparty>
          <kmehr:id S="LOCAL" SL="application_ID"
            SV="1.0">1990000332</kmehr:id>
          <kmehr:cd S="CD-HCPARTY" SV="1.1">application</kmehr:cd>
          <kmehr:name>eHealth Consent</kmehr:name>
        </kmehr:hcparty>
        <kmehr:hcparty>
          <kmehr:id S="INSS" SV="1.0">5xxxxxxxxx1</kmehr:id>
          <kmehr:id S="ID-HCPARTY" SV="1.0">12345678910</kmehr:id>
          <kmehr:cd S="CD-HCPARTY" SV="1.1">persphysician</kmehr:cd>
          <kmehr:firstname>FakeFirstName</kmehr:firstname>
          <kmehr:familyname>FakeLastName</kmehr:familyname>
        </kmehr:hcparty>
      </core:author>
      <core:date>2018-10-08</core:date>
      <core:time>09:41:27.0Z</core:time>
    </core:request>
  </v21:response>
  <v21:acknowledge xmlns:v21="http://www.ehealth.fgov.be/hubservices/core/v2">
    <v21:iscomplete>true</v21:iscomplete>
  </v21:acknowledge>
  <v21:value xmlns:v21="http://www.ehealth.fgov.be/hubservices/core/v2">true</v21:value>
</v2:HasTherapeuticLinkResponse>
```

- **Unsuccessful completion**

```
<v2:HasTherapeuticLinkResponse>
  <v21:response>
    <v21:id S="ID-KMEHR" SV="1.0">__FRNLPA1NCBHG</v21:id>
    <v21:author>
      <v1:hcparty>
        <v1:id S="ID-HCPARTY" SV="1.0">123456789</v1:id>
        <v1:cd S="CD-HCPARTY" SV="1.1">orgpublichealth</v1:cd>
        <v1:name>eHealth platform</v1:name>
      </v1:hcparty>
    </v21:author>
    <v21:date>2018-10-08</v21:date>
    <v21:time>17:47:52</v21:time>
    <v21:request>
      <core:id S="ID-KMEHR" SV="1.0"
        xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2"
        xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
        xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">1990000332.20120419094127193</core:id>
```



```

        <core:author xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2"
xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
            <kmehr:hcparty>
                <kmehr:id S="LOCAL" SL="application_ID"
SV="1.0">1990000332</kmehr:id>
                <kmehr:cd S="CD-HCPARTY" SV="1.1">application</kmehr:cd>
                <kmehr:name>eHealth Consent</kmehr:name>
            </kmehr:hcparty>
            <kmehr:hcparty>
                <kmehr:id S="INSS" SV="1.0">5xxxxxxxxx1</kmehr:id>
                <kmehr:id S="ID-HCPARTY" SV="1.0">12345678910</kmehr:id>
                <kmehr:cd S="CD-HCPARTY" SV="1.1">persphysician</kmehr:cd>
                <kmehr:firstname>FakeFirstName</kmehr:firstname>
                <kmehr:familyname>FakeLastName</kmehr:familyname>
            </kmehr:hcparty>
        </core:author>
        <core:date xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2"
xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">2018-10-08</core:date>
        <core:time xmlns="http://www.ehealth.fgov.be/hubservices/protocol/v2"
xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">09:41:27.0Z</core:time>
    </v21:request>
</v21:response>
<v21:acknowledge>
    <v21:iscomplete>false</v21:iscomplete>
    <v21:error>
        <v1:cd S="CD-ERROR" SV="1.0">TL.INPUT.40</v1:cd>
        <v1:description L="en">Therapeutic link - Invalid SSIN of the the HC
party</v1:description>
    </v21:error>
</v21:acknowledge>
</v2:HasTherapeuticLinkResponse>

```

5.2.7.4 Review of some error codes

When a business error occurred, the *iscomplete* field of the *acknowledge* element is set to *false*. The acknowledge block of the reply message sent after an error occurred appears as follows:

```

<acknowledge>
    <iscomplete>false</iscomplete>
    <error>
        <cd SV="1.0" S="CD-ERROR">error_code</cd>
        <description L="EN">error_description</description>
    </error>
</acknowledge>

```

The table below provides an overview of some possible errors returned by the service for this method.

This list is not exhaustive.

Error type	Code	Description
TL.ACCESS Permission	TL.ACCESS.05	Author - The user is not authorized to perform the operation.
	TL.ACCESS.06	Author - The author's category is different from the one of the HC party involved in the therapeutic link.
	TL.ACCESS.07	Author - The person performing the operation is different from the patient involved in the therapeutic link.
	TL.ACCESS.08	Author - The HC party is excluded by the patient involved in the therapeutic link.

	TL.ACCESS.09	Author – There is no active therapeutic link between the author and the patient involved.
	TL.ACCESS.14	Therapeutic Link - Only therapeutic links between patient and HC party are supported.
TL.INPUT Invalid Input	TL.INPUT.05	Author - Missing patient identifier (SSIN)
	TL.INPUT.10	Author - Missing HC party identifier
	TL.INPUT.15	Author - Invalid HC party category
	TL.INPUT.30	Therapeutic link - Missing patient identifier (SSIN)
	TL.INPUT.40	Therapeutic link - Invalid SSIN of the HC party
	TL.INPUT.50	Therapeutic Link - Invalid type of therapeutic link
	TL.INPUT.51	Therapeutic Link - The type of therapeutic link is not allowed for the operation.
TL.OTHER other	TL.OTHER.20	Author - Authentic source failure for validation

When business errors of the type “Invalid Input” or “Permission” occur, you should verify your request message. When a system error occurs and persists, please refer to the contact center. (See section 3)

5.2.8 Proof³³

5.2.8.1 Functional definition

A proof represents the ‘technical’ means used to ‘prove’ (validate) the therapeutic relation. More generally, a proof can be associated with an operation performed on a therapeutic link. These proofs can have various ‘natures’ represented by the ‘type of the proof’. These types of proof are part of the open list of proof published on

<https://www.ehealth.fgov.be/standards/kmehr/content/page/tables/197/proof-type>

Currently, the eHealth platform supports only these cards and these types of proof:

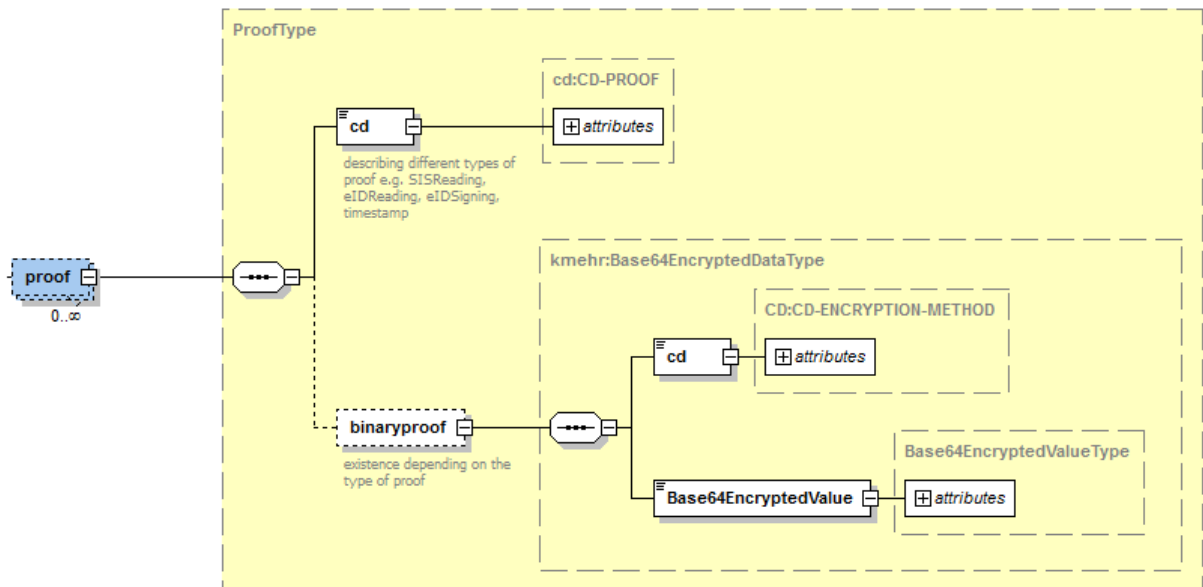
- Card eID vs Proof
 - ‘eidreading’
 - ‘eidencoding_housecall’
 - ‘eidencoding_nocard’
 - ‘eidencoding_techproblem’
 - ‘eidsigning’ (e-ID reading with PIN code)
- Card ISI+ vs Proof: ‘isireading’

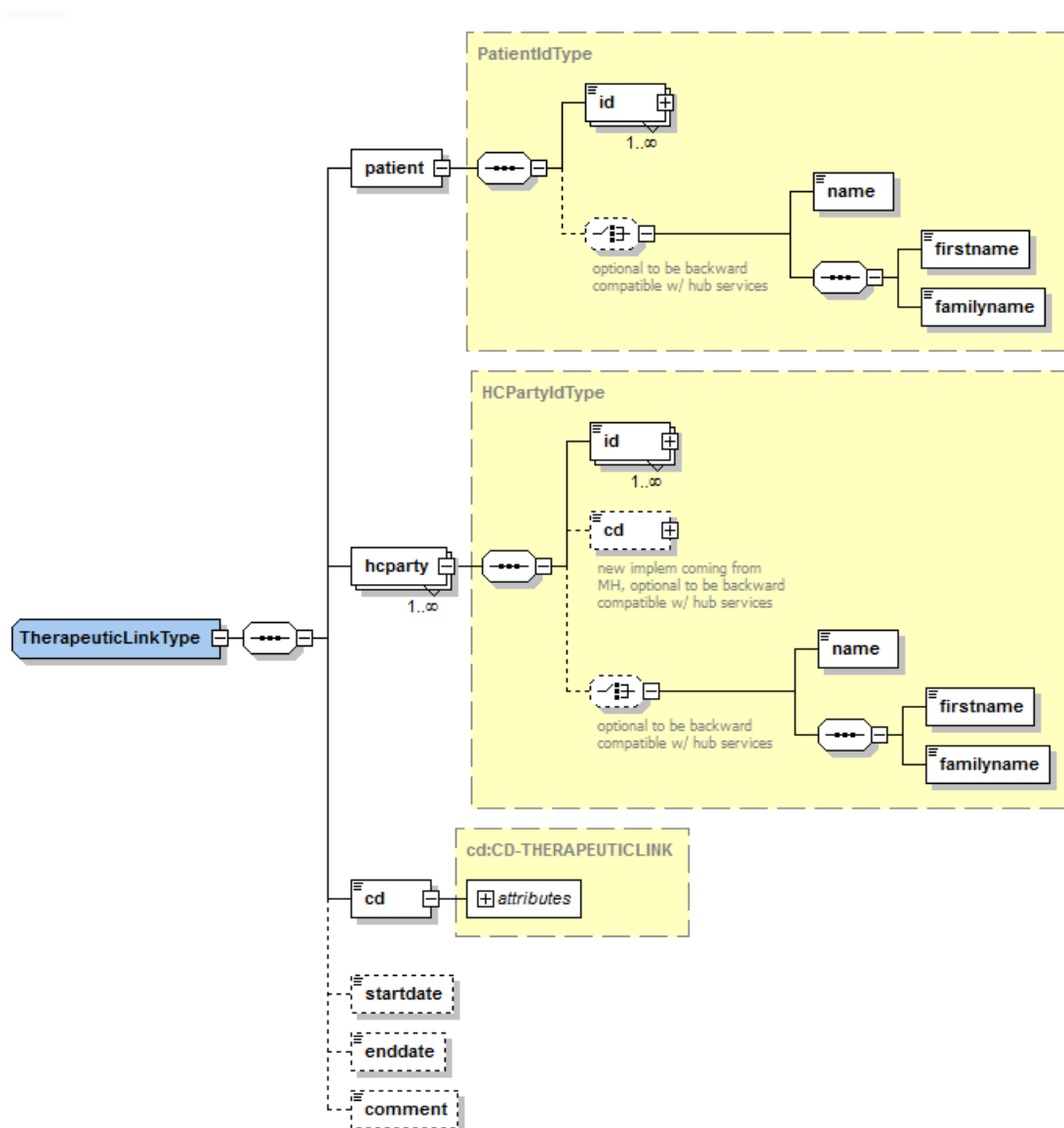
The ‘reading’ or the ‘encoding’ types consist of the reading or the encoding of the patient Belgian electronic identity card, the Belgian social identity card (ISI+) to retrieve the patient SSIN and support card number. They are required to manage non-referral therapeutic links while the management of referral therapeutic links or the extension of validity period of non-referral therapeutic links requires the ‘eidsigning’ type of proof.

The ‘signing’ consists of the reading of the Belgian electronic identity card with PIN code entering. This signature involves binary operations. This binary proof is a digital signature. The format of the binary proof can remain valid over long periods. This includes evidence to its validity even if the signer or verifying party later attempts to deny (i.e., repudiates) the validity of the signature.

The following figure describes the composition of the xsd proof element.

³³ The concept of the proof is not applied when the author is Patient (Citizen)





The proof is made on the existing therapeutic link element of the therapeutic link xml schema design. It is composed of:

- patient identification
 - patient SSIN
 - patient electronic id card number
 - patient name or first name and family name
- author identification
 - author SSIN, if any
 - author NIHII, if any
 - author HC professional category e.g. 'physician', 'nurse'...
- the context of therapeutic link.
- the start date and the end date representing the validity period of the signature. During this period, the signature is reusable.
- The comment may be left empty.

Once signed, the mentioned information is submitted to a validation except the context of the therapeutic link hence the context is set to a default value 'ignored.'

5.2.8.2 Technical definition

There are 3 methods available to create the required proofs; it's the task of the caller to choose the correct type for the therapeutic link (see specification)

Example of Proof

```
...
<core:proof xmlns:kmehr="http://www.ehealth.fgov.be/standards/kmehr/schema/v1"
xmlns:core="http://www.ehealth.fgov.be/hubservices/core/v2">
  <core:cd SV="1.1" S="CD-PROOFTYPE">eidsigning</core:cd>
  <core:binaryproof>
    <kmehr:cd SV="1.0" S="CD-ENCRYPTION-METHOD">CMS</kmehr:cd>
    <kmehr:Base64EncryptedValue ">... </kmehr:Base64EncryptedValue>
  </core:binaryproof>
</core:proof>
...
```

Example of content of base64encryptedValue before signing

For the content, the xml type TherapeuticlinkType is reused, but it has a different meaning: it simply indicates that the HC party performs this action for the patient, and is proving that the patient is present. It may be considered as a temporary mandate for the HC party.

Example xml, with some comments in red

```
...
<therapeuticlink xmlns="http://www.ehealth.fgov.be/hubservices/core/v2">
  <patient>
    <!-- retrieved from eid card -->
    <!-- mandatory -->
    <id SV="1.0" S="INSS">{niss number patient}</id>
    <!-- optional -->
    <id SV="1.0" S="EID-CARDNO">{eid card number patient}</id>
    <!-- optional -->
    <firstname>{first name patient}</firstname>
    <!-- optional -->
    <familyname>{last name patient}</familyname>
  </patient>
  <hcparty>
    <!-- retrieved from request author -->
    <!-- one of INSS of ID-HCPARTY is mandatory -->
    <id SV="1.0" S="INSS">{niss number professional}</id>
    <id SV="1.0" S="ID-HCPARTY">{nihii number professional}</id>
    <!-- mandatory -->
    <cd SV="1.1" S="CD-HCPARTY">{category professional}</cd>
    <!-- optional -->
    <firstname>{firstname professional}</firstname>
    <!-- optional -->
    <familyname>{last name professional}</familyname>
  </hcparty>
  <!-- since this part is not actually a therapeuticlink ( type is reused ) we put the type to ignored -->
  <cd SV="1.0" S="CD-THERAPEUTICLINKTYPE">ignored</cd>
  <!-- the current time -->
  <startdate>2013-04-29</startdate>
  <!-- we take a time five minutes in the future; to allow operations around midnight, only the date remains , which just before
  midnight could be the next day -->
  <enddate>2013-04-29</enddate>
</therapeuticlink>...
```

The content in the binary proof follows the Cryptographic Message Syntax. For further references see ietf - RFC-3852 and RFC-5126.

The credential from the eID is the one with the alias 'Signature' (Non-repudiation credential)



To be practical, we will add some code snippets in Java and .NET, to demonstrate how to create such a signature. This code creates a `CMSSignedDataGenerator` with BouncyCastle, which will generate a digest and sign it with the non-repudiation certificate.

Java

```
CMSPProcessable content = new CMSPProcessableByteArray({byte array with content to sign});

CMSSignedDataGenerator generator = new CMSSignedDataGenerator();

generator.addSigner({private key from credential}, {certificate from credential},
CMSSignedGenerator.DIGEST_SHA1);

Certificate[] certificateChain = {certificate chain from credential}

CertStore certStore = CertStore.getInstance("Collection", new
CollectionCertStoreParameters(Arrays.asList(certificateChain)), "BC");

generator.addCertificatesAndCRLs(certStore);

CMSSignedData signedData = generator.generate(content, true, {provider name from
credential}); // true indicates we want to encapsulate the encrypted data in the
result

BinaryProof binaryProof = new BinaryProof(CMS, signedData.getEncoded());
```

.Net

```
CmsProcessable msg = new CmsProcessableByteArray(Encoding.ASCII.GetBytes({byte
array with content to sign}));

IList certList = new ArrayList();

certList.Add(SignCert);

IX509Store x509Certs = X509StoreFactory.Create("Certificate/Collection", new
X509CollectionStoreParameters(certList));

CmsSignedDataGenerator gen = new CmsSignedDataGenerator();

gen.AddSigner(SignKP.Private, SignCert, CmsSignedDataGenerator.DigestShal);

gen.AddCertificates(x509Certs);

CmsSignedData signedData = gen.Generate(msg, true); // true indicates we want to
encapsulate the encrypted data in the result
```

6. Risks and security

6.1 Security

6.1.1 Business security

In case the development adds a use case based on an existing integration, the eHealth platform must be informed at least one month in advance. A detailed estimate of the expected load is necessary to be able to ensure an effective capacity management.

When technical issues occur with the WS, the partner can obtain support from the contact centre (See chapter 3).

If the eHealth platform identifies a bug or vulnerability in its software, the partner must update his application with the latest version of the software, within ten (10) business days.

If the partner finds a bug or vulnerability in the software or web service provided by the eHealth platform, he is obliged to contact and inform us immediately. He is not allowed, under any circumstances, to publish this bug or vulnerability.

6.1.2 Web service

WS security used in this manner is in accordance with the common standards. Your call will provide:

- SSL one way;
- Time-to-live of the message: one minute;
- Signature of the timestamp, body, and binary security token. This will allow the eHealth platform to verify the integrity of the message and the identity of the message author;
- No encryption on the message.

6.1.3 The use of username, password and token

The username, password, and token are strictly personal.

Each user is responsible for his username, password and token, and he is required keep them confidential.

It is prohibited to transfer them to partners and clients. Until inactivation, each user is responsible for any use, including use by a third party.

7. Test and release procedure

7.1 Procedure

This chapter explains the procedures for testing and releasing an application in acceptance or production.

7.1.1 Initiation

If you intend to use the eHealth service, please contact info@ehealth.fgov.be. The project department will provide you with the necessary information and mandatory documents.

7.1.2 Development and test procedure

You have to develop a client in order to connect to our WS. Most of the required integration info to integrate is published on the eHealth portal.

In some cases, the eHealth platform provides you with a mock-up service or test cases in order for you to test your client before releasing it in the acceptance environment.

7.1.3 Release procedure

When development tests are successful, you can request access to the acceptance environment of the eHealth platform. From this moment, you begin the integration and acceptance tests. The eHealth platform suggests testing a minimum of one month.

After successful acceptance tests, the partner sends his test and performance results, along with a sample of “eHealth request” and “eHealth answer” by email to his point of contact at the eHealth platform.

Once a release date has been agreed upon, the eHealth platform prepares the connection to the production environment and provides the partner with the necessary information. On the release day, the partner provides the eHealth platform with feedback on the test and performance results.

For further information and instructions, please contact: integration-support@ehealth.fgov.be.

7.1.4 Operational follow-up

Once in production, the partner using the eHealth platform service for one of his applications must always test in the acceptance environment first before releasing any adaptations of his application in production. In addition, he will inform the eHealth platform on the progress and test period.

7.2 Test cases

eHealth recommends performing tests for all of the following cases:

- PutTherapeuticLink: successful declaration of a therapeutic link;
- RevokeTherapeuticLink: successful revocation of a therapeutic link;
- GetTherapeuticLink: successful retrieving a (list of) therapeutic link;
- HasTherapeuticLink : successful check of the existence of a therapeutic link.

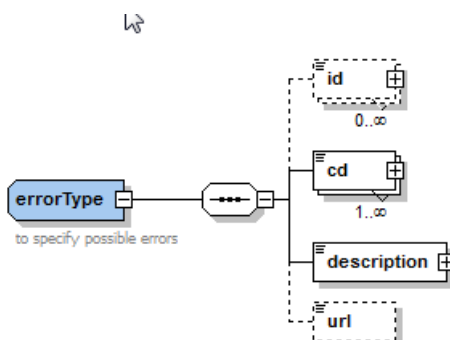
In addition, the organization should also run negative test cases.



8. Error and failure messages

8.1 Business errors

Below you will find the description of the business errors which can occur in Therapeutic Link WS (common to all errors returned by the service):



Field name	Descriptions
Id	Foreseen to handle the ID of the failed operation
Cd	The error code describing the type of the error. "cd" is a generic type described in the KMEHR standard, see also section: Generic structure.
Description	This field contains a short text description of the error. The attribute L of this field is the language code that can be set, for example, to "EN" for English.
url	Currently, the <i>url</i> field is unused.

The error codes of the Therapeutic Link WS are described hereunder

Error type	Code	Description
TL.ACCESS Permission	TL.ACCESS.05	Author - The user is not authorized to perform the operation.
	TL.ACCESS.06	Author - The category of the author is different from the category of the HC party involved in the therapeutic link.
	TL.ACCESS.07	Author - The person performing the operation is different from the patient involved in the therapeutic link.
	TL.ACCESS.08	Author - The HC party is excluded by the patient involved in the therapeutic link.
	TL.ACCESS.09	Author – There is no active therapeutic link between the author and the involved patient.
	TL.ACCESS.10	Therapeutic Link – There is a valid therapeutic link.

	TL.ACCESS.11	Therapeutic Link – No therapeutic link found.
	TL.ACCESS.12	Therapeutic Link - Therapeutic Link already revoked or could not be revoked.
	TL.ACCESS.14	Therapeutic Link - Only therapeutic links between patient and HC party are supported.
	TL.ACCESS.15	The info provided by the author must be the same as the info of the session (provided in STS token).
	TL.ACCESS.16	The ID of the provided Author HC party must be the same as the one of the HC party involved in the therapeutic links.
	TL.ACCESS.17	Author - Only one end user is allowed.
	TL.ACCESS.21	Author - Authentic source failure for enrichment.
	TL.ACCESS.30	No mandate was found between patient and author.
	TL.ACCESS.31	The mandate between patient and author is inactive.
	TL.ACCESS.32	The mandate between patient and author is expired.
	TL.ACCESS.33	The patient is not a recognised child of the author.
TL.INPUT Invalid Input	TL.INPUT.00	Invalid transaction identifier
	TL.INPUT.05	Author - Missing patient identifier (SSIN)
	TL.INPUT.06	Author - Invalid patient identifier
	TL.INPUT.07	Author - Invalid patient INSS - support card number pair
	TL.INPUT.10	Author - Missing HC party identifier
	TL.INPUT.10.01	Author - Invalid HC party identifier
	TL.INPUT.11	Author - Invalid SSIN of the HC party
	TL.INPUT.12	Author - Invalid NIHI of the HC party
	TL.INPUT.13	Author - NIHI does not correspond to the HC party SSIN.
	TL.INPUT.14	Author - NIHI does not correspond to the HC party category.
	TL.INPUT.15	Author - Invalid HC party category
	TL.INPUT.16	Author - Missing pharmacy identifier
	TL.INPUT.17	Author - Invalid pharmacy identifier (NIHI)
	TL.INPUT.18	Author - The provided pharmacy is not recognized.
	TL.INPUT.19	Author - Missing pharmacy holder identifier
	TL.INPUT.19.01	Author - The pharmacy holder provided in the request is not owner.
	TL.INPUT.19.02	Author - The responsible is not the responsible of the provided organization.
	TL.INPUT.20	Author - Invalid SSIN of pharmacy holder.
	TL.INPUT.20.01	Author - Invalid NIHI of the pharmacy holder

TL.INPUT.21	Author - Invalid SSIN of pharmacy end-user
TL.INPUT.21.01	Author - Invalid NIHI of the pharmacy end-user
TL.INPUT.21.02	Author - Missing SSIN of the pharmacy end-user
TL.INPUT.22	Author - NIHI does not correspond to the pharmacy holder SSIN.
TL.INPUT.22.01	Author - NIHI does not correspond to the HC party SSIN.
TL.INPUT.22.02	Author - NIHI does not correspond to the responsible SSIN.
TL.INPUT.23	Author - NIHI of the pharmacy holder does not correspond to the category.
TL.INPUT.24	Author - The pharmacy holder is not the certified holder of the given pharmacy.
TL.INPUT.25	Author - The pharmacist end-user is unknown to the pharmacy.
TL.INPUT.26	Author - Missing organization identifier
TL.INPUT.26.01	Author – Invalid name of the organization
TL.INPUT.27	Author - Invalid organization identifier
TL.INPUT.28	Author – Unsupported organization
TL.INPUT.28.01	Author - The provided organization is not recognized.
TL.INPUT.29	Author – Missing organization's responsible identifier
TL.INPUT.29.01	Author - Invalid organization's responsible identifier
TL.INPUT.29.02	Author - Invalid organization's responsible category
TL.INPUT.30	Therapeutic link - Missing patient identifier (SSIN)
TL.INPUT.31	Therapeutic link - Invalid patient identifier
TL.INPUT.31.01	Therapeutic link - Invalid patient identifier (more than 1 INSS)
TL.INPUT.31.02	Therapeutic link - Invalid patient identifier (INSS wrongly formatted)
TL.INPUT.31.03	Therapeutic Link - Invalid patient identifier (more than 1 CARDNO)
TL.INPUT.32	Therapeutic link - Missing patient support card number
TL.INPUT.35	Therapeutic link - Missing patient first name or family name
TL.INPUT.40	Therapeutic link - Invalid SSIN of the HC party
TL.INPUT.41	Therapeutic link - Invalid NIHI of the HC party
TL.INPUT.41.01	Therapeutic link - Invalid HC party identifier
TL.INPUT.42	Therapeutic link – NIHI does not correspond to the HC party SSIN
TL.INPUT.43	Therapeutic link – Missing HC party category

TL.INPUT.44	Therapeutic link – Invalid HC party category
TL.INPUT.44.01	Therapeutic link – The category of the targeted HC party is not supported.
TL.INPUT.45	Therapeutic link - NIHI does not correspond to the professional category.
TL.INPUT.45.01	Therapeutic link - SSIN does not correspond to the HC party category.
TL.INPUT.46	Therapeutic link - The pharmacist is not the pharmacy holder.
TL.INPUT.46.01	Therapeutic link - The pharmacist is holder of multiple pharmacies.
TL.INPUT.46.02	Therapeutic link - The pharmacist is no longer the holder of the pharmacy.
TL.INPUT.46.03	The service is not backwards compatible with the requests where the pharmacy holder targeted by therapeutic link is different from the one mentioned in the token.
TL.INPUT.46.04	The service is not backwards compatible for the requests with pharmacy holder targeted by therapeutic link.
TL.INPUT.47	Therapeutic link – HC party not found
TL.INPUT.48	Therapeutic link – The provided organization is not recognized.
TL.INPUT.48.01	Therapeutic link - Missing organization identifier
TL.INPUT.48.02	Therapeutic link - Invalid organization identifier
TL.INPUT.50	Therapeutic Link – Invalid type of therapeutic link
TL.INPUT.51	Therapeutic Link - The type of therapeutic link is not allowed for the operation
TL.INPUT.52	Therapeutic Link – GMD is not supported
TL.INPUT.60	Therapeutic Link – Invalid period of relation
TL.INPUT.61	Therapeutic Link - The start date of the relation must be equal or greater than the declaration date.
TL.INPUT.62	Therapeutic Link - The start date must be equal to the declaration date.
TL.INPUT.63	Therapeutic Link - The end date of the relation must be equal or greater than the start date.
TL.INPUT.64	Therapeutic Link - The end date is anterior to the current date.
TL.INPUT.64.01	Therapeutic Link - The end date must be equal to the start date plus three months.
TL.INPUT.64.02	Therapeutic Link - The end date must be equal to the start date plus fifteen months.
TL.INPUT.65	Therapeutic Link – Invalid time period

TL.INPUT.67	Therapeutic Link – If the begin date (end date) is provided then the end date (begin date) must be also provided.
TL.INPUT.67.01	Therapeutic Link – Revocation end date must be greater or equal to the original start date of relation and less than the original end date of the relation.
TL.INPUT.67.02	Therapeutic Link – Consultation ‘all’, ‘inactive’ are not supported with time period.
TL.INPUT.69	Therapeutic Link – Missing patient for consultation
TL.INPUT.70	Proof - Missing proof
TL.INPUT.71	Proof - Invalid proof
TL.INPUT.72	Proof - Invalid type of proof
TL.INPUT.73	Proof – The proof is insufficient to perform the operation.
TL.INPUT.74	Proof - Missing binary proof
TL.INPUT.75	Proof - Invalid method of binary operation
TL.INPUT.76	Proof - Invalid value of the binary proof
TL.INPUT.77	Proof - The proof was not signed by the patient involved in the therapeutic link.
TL.INPUT.78	Proof – Certificate expired
TL.INPUT.79	Proof – Certificate invalid
TL.INPUT.80	Proof – Certificate is not made to be signed
TL.INPUT.81	Proof – Certificate does not trust CA
TL.INPUT.82	Proof – The binary value of the patient does not correspond to the involved patient.
TL.INPUT.83	Proof – The binary value of the HC party does not correspond to the HC party author.
TL.INPUT.84	Proof- Card reading does not support binary proof
TL.INPUT.85	The proof element should not be provided
IDS2.INPUT.53	Patient Identification data - Format error
IDS2.INPUT.70	Patient Identification data - Invalid Combination – Card: eID (or Kids or E+) COMBINATION
	Patient Identification data - Invalid Combination – Card: eID (or Kids or E+) lost
	Patient Identification data - Invalid Combination – Card: eID (or Kids or E+) stolen
	Patient Identification data - Invalid Combination – Card: eID (or Kids or E+) destroyed
	Patient Identification data - Invalid Combination – Card: eID (or Kids or E+) expired
	Patient Identification data - Invalid Combination – Card: eID (or Kids or E+) dead

	Patient Identification data - Invalid Combination – Card: eID (or Kids or E+) old card
	Patient Identification data - Invalid Combination – Card: eID (or Kids or E+) cancelled
	Patient Identification data - Invalid Combination – Card: eID (or Kids or E+) card with invalid status
	Patient Identification data - Invalid Combination – Card: eID (or Kids or E+) undefined
	Patient Identification data - Invalid Combination – Card: isi COMBINATION
	Patient Identification data - Invalid Combination – Card: isi lost
	Patient Identification data - Invalid Combination – Card: isi stolen
	Patient Identification data - Invalid Combination – Card: isi destroyed
	Patient Identification data - Invalid Combination – Card: isi expired
	Patient Identification data - Invalid Combination – Card: isi dead
	Patient Identification data - Invalid Combination – Card: isi old card
	Patient Identification data - Invalid Combination – Card: isi cancelled
	Patient Identification data - Invalid Combination – Card: isi card with invalid status
	Patient Identification data - Invalid Combination – Card: isi data identification has changed
	Patient Identification data - Invalid Combination – Card: isi undefined
IDS2.INPUT.75	Patient Identification data – Data not found - MSG00000 – validation error
	Patient Identification data – Data not found - BVS00001 – refused by RN supplier
IDS2.INPUT.80	Patient Identification data - No result - Code: IDS00011 - Description: The CardNumber in the request is not valid (checksum error).
	Patient Identification data - No result - Code: MSG00001 - Description: no response receiving by RRN
	Patient Identification data - No result - Code: MSG00001 - Description: Person deceased.
	Patient Identification data - No result - Code: MSG00001 - Description: The SSIN has been radiated.

		Patient Identification data - No result - Code: MSG00001 - Description: Sorry, this operation is not done yet.
		Patient Identification data - No result - Code: MSG00001 - Description: There is an issue with the SSIN.
		Patient Identification data - No result - Code: MSG00005 - Description: The SSIN given in request does not exist.
		Patient Identification data - No result - Code: MSG00006 - Description: The SSIN given in request has been replaced.
		Patient Identification data - No result - Code: MSG00007 - Description: The SSIN provided in the request has been cancelled
		Patient Identification data - No result - Code: MSG00011 - Description: The SSIN provided in the request is not valid (checksum error)
TL.OTHER Other	TL.OTHER.5	More results than supported by the service.
	TL.OTHER.10	The maximum of rows that can be requested is 1000
	TL.OTHER.15	The maximum length of the comment is 256
	TL.OTHER.20	Author - Authentic source failure for validation
	TL.OTHER.22	Therapeutic Link - Authentic source failure for validation
NIP	NIP.AUTH.license	License invalid for Siemens
	NIP.INPUT.RequestValidation	An unexpected error occurred with the message: The proof element is not be provided.
	NIP.INPUT.RequestValidation	An unexpected error occurred with the message: select GMD and period not supported
	NIP.META.TIServiceBean	An unexpected error occurred with the message: there is a valid therapeutic link.
	NIP.META.TIServiceBean	An unexpected error occurred with the message: no therapeutic link found.
	NIP.GENERIC.TIProcessBean	An unexpected error occurred with the message: be.cin.nippin.kernel.core.exception.GenericCancelingException: therapeutic link has already been revoked or could not be revoked.
	NIP.AUTH.InvocationTargetException	an unexpected error occurred with the message: be.cin.nippin.kernel.core.exception.GenericException: StatusInfoException:cbe-number not in commoninput (code = 030220002)
	NIP.GENERIC.UndeclaredThrowableException	An unexpected error occurred with the message: javax.persistence.PersistenceException: org.hibernate.exception.GenericJDBCException: Cannot open connection

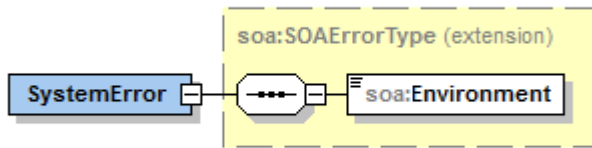
8.2 Technical errors

Technical errors are errors inherent to the internal working of a WS. They are returned as SOAP Faults.

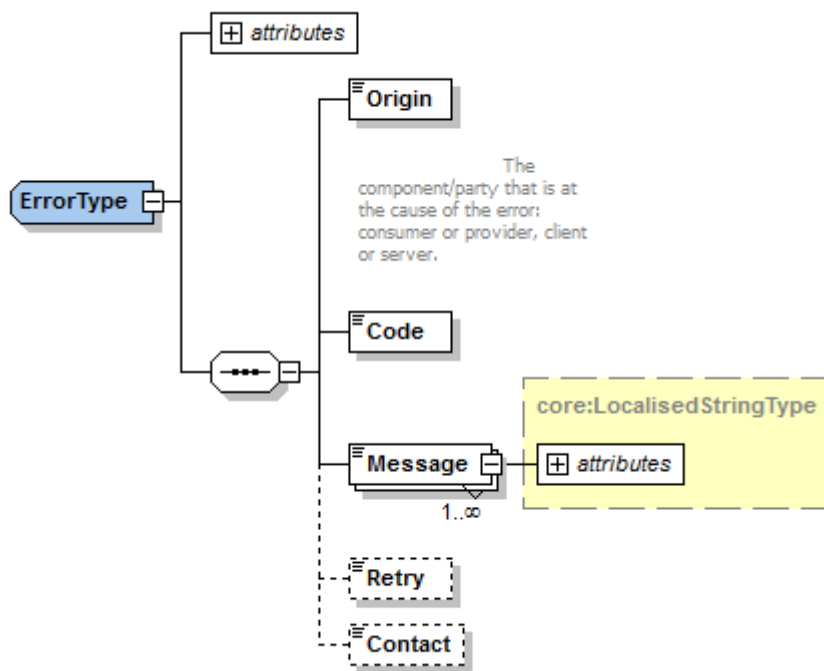


The structure is as follows:

- ehealth-errors-chema-soa-1_0.xsd



- ehealth-errors-schema-core-1_0.xsd



The SOAP Fault element has the following sub elements:

Element name	Descriptions	Optionality
Faultcode	A code for identifying the fault	Mandatory
Faultstring	A human readable explanation of the fault	Mandatory
Faultactor	Information about who caused the fault to happen (the origin)	Optional
Detail	Holds application specific error information related to the Body element. For example, it could include a java stack trace or any other kind of trace, used internally, to document on the cause of this error.	Optional

The default SOAP fault code values are defined in an extensible way allowing for the addition of new fault code values while maintaining backwards compatibility with existing ones.

Element name	Descriptions
VersionMismatch	Invalid namespace for the SOAP Envelope element found.
MustUnderstand	An immediate child element of the header element, with the mustUnderstand attribute set to "1", was not understood.
Client	The message was incorrectly formed or contained incorrect information.
Server	There was a problem with the server so the message could not proceed.

Example:

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope>
  <soapenv:Body>
    <soapenv:Fault>
      <faultcode>soapenv:Client</faultcode>
      <faultstring>SOA-01001</faultstring>
      <detail>
        <soa:SystemError Id="48da1f13-cbc2-40e9-9907-33cc52deabfo">
          <Origin>Consumer</Origin>
          <Code>SOA-01001</Code>
          <Message xml:lang="en">Service call not authenticated.</Message>
          <soa:Environment>Acceptation</soa:Environment>
        </soa:SystemError>
      </detail>
    </soapenv:Fault>
  </soapenv:Body>
</soapenv:Envelope>
```

Description of the possible SOAP fault exceptions

Code	Message
SOA-00001	Service error
SOA-01001	Service call not authenticated
SOA-01002	Service call not authorized
SOA-02001	Service temporarily not available. Please try later.
SOA-02002	Message must be SOAP
SOA-03001	Malformed message
SOA-03002	Message must be SOAP
SOA-03003	Message must contain SOAP body
SOA-03004	WS-I compliance failure
SOA-03005	WSDL compliance failure
SOA-03006	XSD compliance failure
SOA-03007	Message content validation failure