

BelRAI 2.0 Web services Consultation Cookbook

Version 1.1

Date: 05/06/2023



Table of contents

Table of contents	2
1 Document management.....	4
1.1 Document History	4
2 Introduction.....	5
2.1 Goal of the service	5
2.2 Goal of the document	5
2.3 eHealth platform document references	6
2.3.1 External document references	6
3 Support.....	7
3.1 Helpdesk eHealth platform	7
3.1.1 Certificates.....	7
3.1.2 For issues in production.....	7
3.1.3 For issues in acceptance	7
3.1.4 For business issues.....	7
3.1.5 Status	7
4 Step-by-step	8
4.1 End-to-End Encryption	8
4.1.1 WS-I Basic Profile 1.1	8
4.1.2 Tracing	8
4.1.3 Technical requirements	9
4.1.4 Use of the eHealth SSO solution.....	9
4.1.5 Security policies to apply	9
5 Invoking the BelRAI web services	11
5.1 Conditions for Acceptance testing	11
5.1.1 Application for eHealth certificate for the organisation.....	11
5.1.2 Whitelist of organisations.....	11
5.1.3 Software requirements.....	11
6 Principles for using the web services.....	12
6.1 Access to patient data	12
6.1.1 Informed consent	12
6.1.2 Therapeutic relation	12
6.1.3 Circle of Trust.....	12
7 Methods offered.....	13
7.1 Types of BelRAI assessments	13

7.2	Type of organizational healthcare parties.....	14
7.2.1	Type of individual healthcare parties	14
7.2.2	Format of the exchanged assessment	14
7.2.3	General information	14
7.2.4	GetTransactionList	17
7.2.5	GetTransactionList Response.....	18
7.2.6	GetTransaction	18
7.2.7	GetTransaction Response	19
8	Error and failure messages	34
8.1	Business errors	34
8.2	Technical errors	37
9	Method examples.....	40
9.1	GetTransactionList – Request	40
9.2	GetTranactionList – Response.....	41
9.3	GetTransaction – Request.....	43
9.4	GetTransaction – Response	44

1 Document management

1.1 Document History

Version	Date	Status	Description of the alterations/comments
1	14/10/2022	Final	Initial version of the cookbook
2	05/06/2023	Draft	<ul style="list-style-type: none">• 7.2.7.1: added explanation for MyBelRAI• BelRAI Error list: corrections

2 Introduction

2.1 Goal of the service

The BelRAI 2.0 project fits into action point 8 of the eHealth Action Plan for the years 2013 to 2018, "Introduction of a uniform assessment tool", with the following objectives:

- Generalize the use of BelRAI in Belgium for all vulnerable people who are confronted with complex and multidimensional problems (medical and/or mobility problems, food, hygiene, disability, etc.).
- Have an IT tool which is user-friendly, can be adapted to the environment of the field actors and facilitates multidisciplinary cooperation.

The "BelRAI 2.0" project aims to fully support action point 8 of the eHealth plan, by rolling out a web application, web service, mobile app, demo application and a database, which will allow to scale the vulnerability, care needs and self-reliance of people. It is a multidisciplinary application transcending regions and communities.

BelRAI 2.0 aims to measure a person's care needs in a standardized and structured manner. The figure below shows the different interfaces offered by BelRAI.

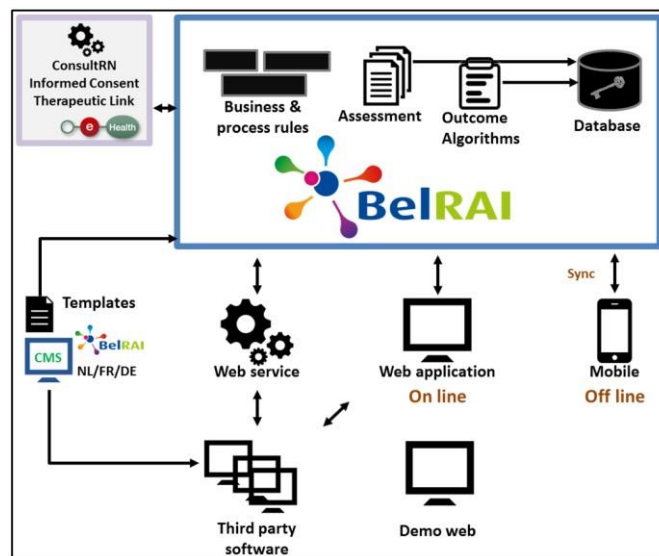


Figure 1: High level architecture BelRAI

2.2 Goal of the document

The purpose of this cookbook is to make BelRAI accessible to organizations that only wish to consult BelRAI evaluations. The document is aimed at developers who want to integrate BelRAI consultation methods into an external software application. For the full integration, please refer to BelRAI 2.0 Cookbook.

2.3 eHealth platform document references

All the document references can be found on the eHealth platform portal¹. These versions or any following versions can be used for the eHealth platform services.

ID	Title	Version	Date	Author
1	STS Cookbook	1.6	25/01/2023	eHealth platform
2	End-to-End Encryption Known recipient	2.9	18/07/2022	eHealth platform
3	BelRAI 2.0 Cookbook	1.12	27/02/2023	eHealth platform
4	Verklaring op eer/ Déclaration sur l'honneur (Circle-of-Trust - CoT)	1.0	21/03/2022	eHealth platform

2.3.1 External document references

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

ID	Title	Source	Date	Author
1	OASIS – WSs security – SAML Token Profile 1.1	https://www.oasis-open.org/committees/download.php/16768/wssv1.1-spec-os-SAMLSecurityProfile.pdf	01/02/2006	OASIS Standard
2	Basic Profile Version 1.1	http://www.w3.org/Profiles/BasicProfile-1.1-2004-08-24.html	24/08/2004	Web Services Interoperability Organization

¹ <https://www.ehealth.fgov.be/ehealthplatform/>

3 Support

3.1 Helpdesk eHealth platform

3.1.1 Certificates

Certificates are required to communicate with the BelRAI web service. The entry point to reach the WS (webservice) is an eHealth URL. In order to access the secured eHealth environment you have to obtain an x509 eHealth certificate delivered by a trusted party used to identify the initiator of the request. A certificate is bound with the encryption token key, and is a requirement to be able to generate an encryption token.

- <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 7 am till 8 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

3.1.5 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 Step-by-step

4.1 End-to-End Encryption

In order to secure the information exchanged between the service user and BelRAI WS, most of the requests and responses contain encrypted data. Encryption is performed with a public encryption key belonging to the recipient. This means that a request sent to BelRAI WS has to use BelRAI public encryption token and the response will use the public encryption key of the service user that sent the request to encrypt the data (The public encryption token key is required in the request). The eHealth platform delivers the procedures to create a pair of private/public keys and the public encryption token².

Process of decryption upon consulting of data (GetTransaction):

- Verify validity of signature
- Decrypt KMEHR data using your private key.

Therefore, the GetTransaction request has to contain your public key used to encrypt the GetTransaction response.

In XML, the encrypted data is represented in base64 binary format, translating each byte of binary data into an ASCII string format. Thus from XML data, this representation has first to be decoded into byte using the base64 encoding scheme before being decrypted.

Note: While the base64 files are in ASCII format, they should still be encoded using the UTF-8 format.

4.1.1 WS-I Basic Profile 1.1

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

4.1.2 Tracing

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

<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]*\\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

² For more information, please consult <https://www.ehealth.fgov.be/ehealthplatform/nl/service-systeem-voor-end-to-end-vercijfering> (NL) or <https://www.ehealth.fgov.be/ehealthplatform/fr/service-systeme-de-cryptage-end-to-end> (FR)

4.1.3 Technical requirements

All the xml requests submitted to the WS, must be encoded in the UTF-8 format.

4.1.4 Use of the eHealth SSO solution

For each WS accessed on the eHealth platform, authentication ensures that the requester is admitted. eHealth certificates are used to trust the requester. In order to use BelRAI WS, prior authentication has to be made on STS with the use of the eHealth Certificate and with specific parameters. An assertion is generated which can be used to make a call and access the BelRAI WS.

The complete overview of the profile and a step-by-step implementation to start protecting a new application with SSO @ eHealth is described in the eHealth STS cookbook.

In order to implement a call to the eHealth STS you can reuse the implementation as provided in the "eHealth technical connector":

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

Nevertheless, eHealth implementations use standards and any other compatible technology (WS stack for the client implementation) can be used instead.

The attributes that need to be provided and the attributes that should be certified by the eHealth platform in order to obtain a token valid for BelRAI WS 2.0 are described in following section. To access the BelRAI WS 2.0, the response token must contain "true" for all of the certification attributes. If you obtain "false", contact the eHealth platform to verify that the requested test cases were correctly configured (See section 3).

4.1.5 Security policies to apply

See section 4.1 for the update in the TLS configuration.

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

As WS security policy, we expect:

- A timestamp (the date of the request), with a time to live of one minute. If the message does not arrive during this minute, it will not be treated).
- The signature with the certificate of
 - the timestamp, (the one mentioned above)
 - the body (the message itself)
 - the binary security token: an eHealth certificate or a SAML token issued by STS

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

A document explaining how to implement this security policy can be obtained at the eHealth platform. (See STS cookbook which can be found on the eHealth portal).

For an organisation willing to use the BelRAI 2.0 WS we expect the following attributes:

- holder of a certificate
- the identifier of an organization
- the recognised attribute
- the recognised COT attribute (see 6.3 for more information)

An example:

```
<saml:AttributeDesignator AttributeName="urn:be:fgov:ehealth:1.0:certificateholder:hospital:nihi-  
number" AttributeNamespace="urn:be:fgov:identification-namespace"/>  
<saml:AttributeDesignator AttributeName="urn:be:fgov:ehealth:1.0:hospital:nihi-  
number:recognisedhospital:boolean" AttributeNamespace="urn:be:fgov:certified-namespace:ehealth"/>  
<saml:AttributeDesignator AttributeName="urn:be:fgov:ehealth:1.0:organization:belrai:recognisedcot:boolean  
" AttributeNamespace="urn:be:fgov:certified-namespace:ehealth"/>
```

For an individual care provider willing to use the BelRAI 2.0 WS we expect the following attributes:

- the holder of a certificate
- the identifier of the person
- the recognised profession attribute

An example:

```
<saml:AttributeDesignator AttributeName="urn:be:fgov:ehealth:1.0:certificateholde  
r:person:ssin" AttributeNamespace="urn:be:fgov:identification-namespace"/>  
<saml:AttributeDesignator AttributeName="urn:be:fgov:person:ssin" AttributeNamesp  
ace="urn:be:fgov:identification-namespace"/>  
<saml:AttributeDesignator AttributeName="urn:be:fgov:person:ssin:doctor:boolean"  
AttributeNamespace="urn:be:fgov:certified-namespace:ehealth"/>
```

5 Invoking the BelRAI web services

This chapter discusses the conditions and procedure for invoking the BelRAI web services. The conditions are discussed first, followed by an explanation of the process. If the conditions are not respected, the web services will not be accessible.

5.1 Conditions for Acceptance testing

5.1.1 Application for eHealth certificate for the organisation

In order to access the BelRAI WS, an eHealth Secure Token Service (STS) token is required. This token will authenticate the user, and will be used for all interactions with the BelRAI WS during the started session.

A token can only be obtained when the organization has a certificate that was handed out by the eHealth platform. Implementation testing of the BelRAI WS will take place on the acceptance environment. Therefore an acceptance certificate has to be obtained.

Organizations (with INAMI/RIZIV number) that can invoke BelRAI's WS³ are listed on the website: <https://www.ehealth.fgov.be/ehealthplatform/nl/service-BelRAI-belgian-resident-assessment-instrument-webservices> in the file "**BelRAI supported healthcare parties**".

5.1.2 Whitelist of organisations

Unlike the BelRAI web application, the web services do not verify the identity of the user from the organization. The responsibility of user management lies with the organization that invokes the web service.

For privacy and security reasons, BelRAI wants an additional security on its web services. After having received an eHealth certificate, the organization wanting to implement the BelRAI web services, must first request access to the whitelist of organizations in the acceptance environment.

5.1.3 Software requirements

The organization requesting the use of BelRAI's WS will need a specific software application which has to meet BelRAI's distinct requirements. As a supplier of customized software, you must meet the accreditation criteria as set out in the BelRAI terms of use which are available on the BelRAI website or on the content management system. For the homologation of BelRAI Consultation, the methods `getTransationList` & `getTransaction` will be homologated. The software that has been validated will receive a universal unique identifier (UUID). This identifier will be used to identify the calling software in each request. The UUID has to be added in an `hparty cd SV="1.0" S="LOCAL" SL="TOKEN"` (see `GetTransationList`, `GetTransaction` for more details).

³ This list will be extended in line with the integration of authentic sources of recognized legal entities.

6 Principles for using the web services

6.1 Access to patient data

Patient assessments can be retrieved from and uploaded to the BelRAI database, using the BelRAI WS. However, this should take into account the informed consent of the patient for the electronic sharing of health data and the therapeutic relation with the patient. You can find an explanation of informed consent on the eHealth website. If the web service user is an organization, the check of the therapeutic relation is the responsibility of the organization that signed the COT agreement (see chapter 6.3). If the web service user is an individual care provider, the check of therapeutic relation will be done by BelRAI.

6.1.1 Informed consent

"[...] is the permission that you, as a patient, give for the electronic and secure sharing of your health data between the persons treating you. These data are only shared in the context of the continuity and quality of medical care, taking into account the regulations for the protection of your private life. These are your data and they will be protected. You can at any time decide whether or not to share these data".⁴

If a patient has not given his informed consent, his health data may not be shared between healthcare providers. In this case, the BelRAI web service will only return evaluations of the patient if these evaluations were filled in by the organization that requests the evaluations.

6.1.2 Therapeutic relation

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 the actors, involved in the exchange, storage or referencing personal data, with a relay service to manage those therapeutic relationships and associated means of evidence.

If there is no therapeutic relation between the care provider and the patient, the care provider should only see his own evaluations.

If there is a therapeutic exclusion between the care provider and the patient, the care provider will no longer be able to use BelRAI WS 2.0 for this patient.

6.1.3 Circle of Trust

The organization willing to consult the evaluations should be part of the circle of trust.

A "Circle-of-Trust" is awarded to an organization active in the field of healthcare and emergency services which, with respect to its data users, takes and enforces information security measures at various levels and monitors compliance with them, so that other organizations and/or care and assistance providers and/or authorities and the citizens involved can reasonably rely on compliance with these security measures and do not have to organize or monitor them themselves.⁵

⁴ More information on informed consent can be found at
<https://www.health.belgium.be/nl/geinformeerde-toestemming-voor-de-uitwisseling-van-uw-medische-gegevens> (NI)
<https://www.health.belgium.be/fr/consentement-eclairé-pour-le-partage-electronique-de-vos-donnees-de-sante> (FR)
<https://www.health.belgium.be/de/aufgeklaerte-einwilligung-zum-austausch-ihrer-medizinischen-daten> (D)

⁵ More information on the circle of trust can be found on the eHealth platform (see document reference 4)

7 Methods offered

BelRAI Consultation offers two methods, namely:

- GetTransactionList: requesting a patient assessment list
- GetTransaction: requesting a specific assessment

Each of the assessments requested is complete. It is not possible to download an incomplete assessment.

7.1 Types of BelRAI assessments

BelRAI 2.0 accommodates different types of assessments. To exchange these evaluations with the central database, local lists are being used.

- belrai.form.id: identifier of the evaluation
- belrai-form-type: denominator of the type of evaluation. The table below lists all types available in BelRAI.

Assessment	CD-TRANSACTION TYPE
Palliative screener	palliative_screener
Palliative Care	palliative_care
Mental Health	mental_health
Long Term Care Facilities	long_term_care_facilities
Home Care	home_care
Community Mental Health	community_mental_health
BelRAI screener	belrai_screener
Acute Care - Admission Assessment	acute_care_admission_assessment
Acute Care – Review Assessment	acute_care_review_assessment
Acute Care - Discharge Assessment	acute_care_discharge_assessment
Acute Care - Comprehensive Geriatric Assessment Admission	acute_care_comp_geriatric_assessment_admission
Acute Care - Comprehensive Geriatric Assessment Review	acute_care_comp_geriatric_assessment_review
Acute Care - Comprehensive Geriatric Assessment Discharge	acute_care_comp_geriatric_assessment_discharge

An assessment downloaded from BelRAI via the web services is encrypted. The structure of the encrypted assessment is explained below.

7.2 Type of organizational healthcare parties

The list of accepted organizational healthcare parties that can use BelRAI can be found in the document “**BelRAI supported healthcare parties**” on:

<https://www.ehealth.fgov.be/ehealthplatform/nl/service-BelRAI-belgian-resident-assessment-instrument-webservices>.

7.2.1 Type of individual healthcare parties

The list of accepted individual healthcare parties that can use BelRAI can be found in the document “**BelRAI supported healthcare parties**” on:

<https://www.ehealth.fgov.be/ehealthplatform/nl/service-BelRAI-belgian-resident-assessment-instrument-webservices>.

7.2.2 Format of the exchanged assessment

As explained earlier, BelRAI Consultation offers two methods for exchanging the contents of an assessment, namely, GetTransactionList and GetTransaction. The two methods are compared below.

Method	Explanation	Results in transaction
GetTransactionList	Lists assessments with only metadata of the assessment	[0-N]
GetTransaction	Downloads an assessment from the BelRAI 2.0 database	[0-1]

7.2.3 General information

The getTransactionList & getTransaction uses the KMEHR-structure for the interaction with BelRAI. The xsd schema below shows the general information included in both KMEHR requests and responses. The general information is repeated in each of the methods described below.

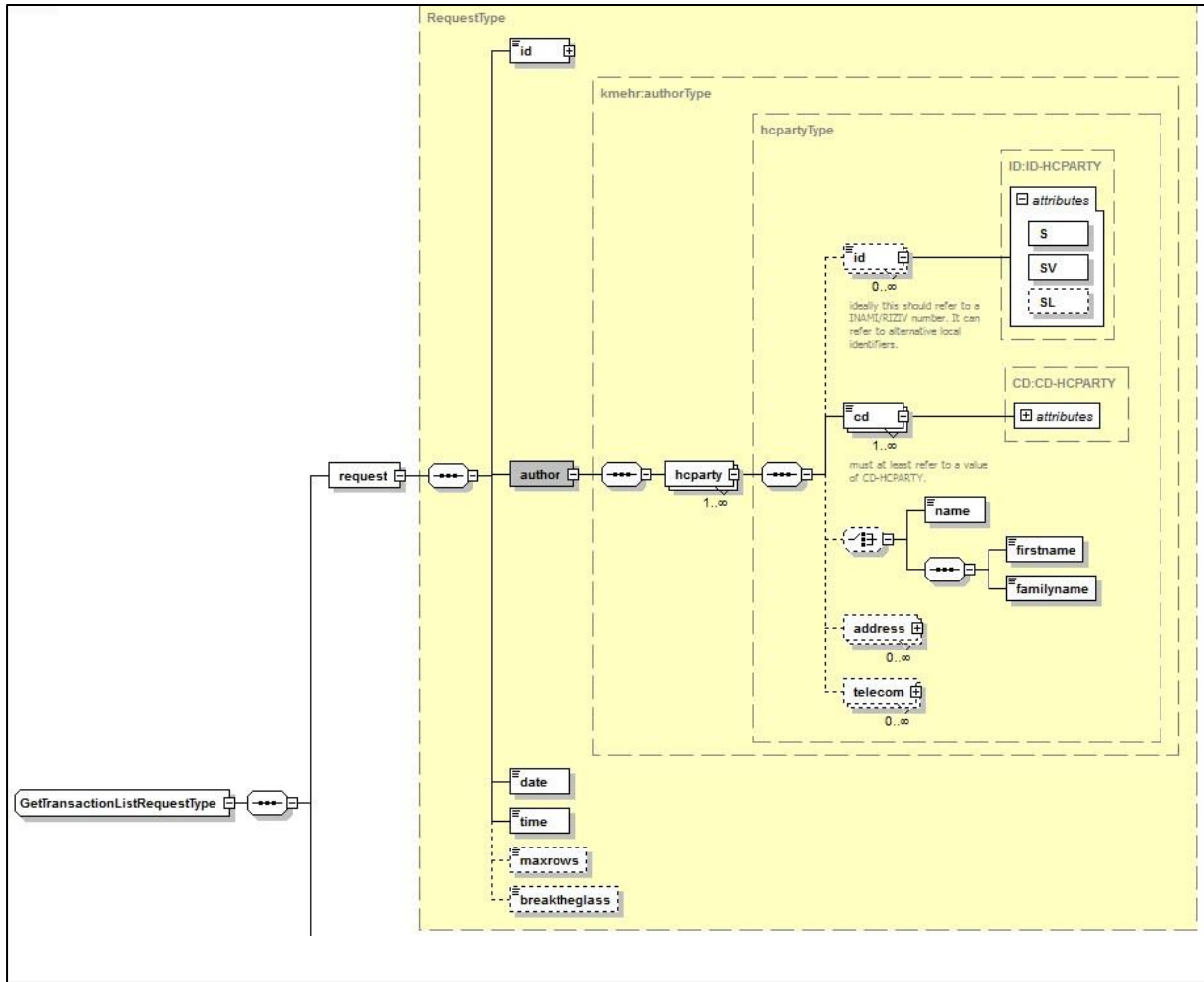


Figure 2: xsd schema: general information

This table provides an overview of the interpretation of the schema shown above:

Id [1-1]	<p>ID-KMEHR, consists of:</p> <ul style="list-style-type: none"> The first HParty of the sender (see HParty below) A dot A local unique identifier within the system sending the request/response <p>This composition is used when the ID-KMEHR is a part of the HEADER.</p> <p>If the ID-KMEHR occurs in the FOLDER, TRANSACTION, HEADING, or ITEM element, the value is a sequential number beginning with 1.</p>
author	<p>A transaction request or response is given by an organization which must be identified. In the case of a request, the identity of the person making the request must also be provided.</p>
Hparty [3-3]	<p>Generic element representing the healthcare party. For BelRAI web services there will be one or more HParty, namely:</p> <p><i>If the sender is an organization:</i></p>

	<ul style="list-style-type: none"> • Fields [as an organization] [1-1]: <ul style="list-style-type: none"> - ID-HCPARTY: INAMI/RIZIV number [0-1]. - CD-HCPARTY: Type of organization [1-1]. - Name of the organization: Name [1-1]. • Fields [as individual] [1-1]: <ul style="list-style-type: none"> - INAMI/RIZIV [0-1] - SSIN [1-1] - CD-HCPARTY: Type of individual [1-1] - Name [0-1] - First name [0-1] • Field [to identify the software] [1-1]: <ul style="list-style-type: none"> - cd SV="1.0" S="LOCAL" SL="TOKEN": UUID [1-1] <p><i>If the sender is an individual care provider:</i></p> <ul style="list-style-type: none"> • Fields [as individual] [1-1]: <ul style="list-style-type: none"> - INAMI/RIZIV [0-1] - SSIN [1-1] - CD-HCPARTY: Type of individual [1-1] - Name [0-1] - First name [0-1] • Field [to identify the software] [1-1]: <ul style="list-style-type: none"> - cd SV="1.0" S="LOCAL" SL="TOKEN": UUID [1-1]
date [1-1]	Date of the transaction
time [1-1]	Time of the transaction
Maxrows [0-1]	The number of transactions retrieved (only applicable for getTransactionList). If not specified, the default value is 10.

Specifically for a response, the following fields will be returned as well:

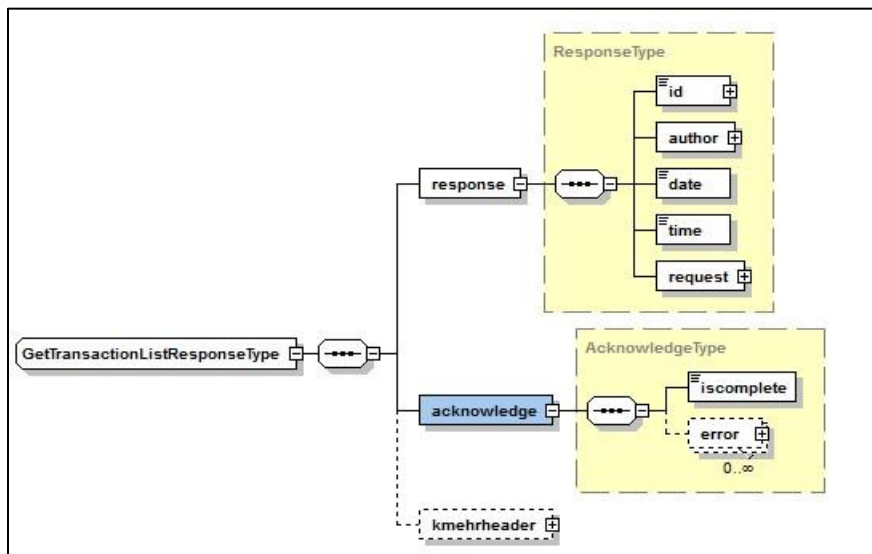


Figure 3: xsd schema: general information in a response

Request	Each response repeats the request.
Acknowledge	iscomplete [1-1] if this is true then the response will be displayed.
Error [0-*]	The error type is displayed here.

7.2.4 GetTransactionList

In addition to the general information discussed above, the following elements must be added to the GetTransactionList request:

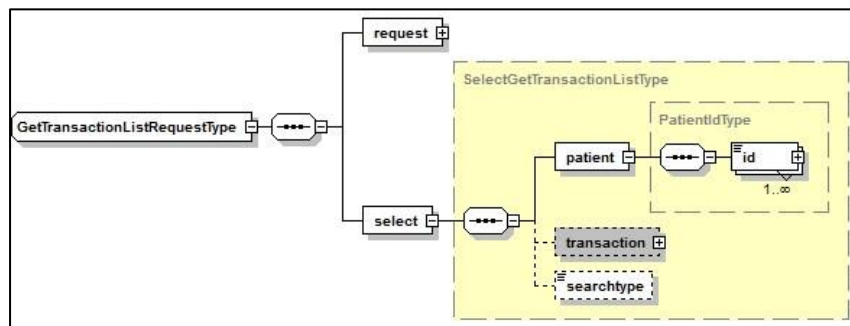


Figure 4: xsd schema: getTransactionList request

Patient	<p>Assessments are linked to a patient (client). This patient is identified by his National Register Number. If you want to request the list of patient assessments, the patient must be included in the request.</p> <p>Id: Patient National Register Number (SSIN) [1-1].</p>
---------	---

7.2.5 GetTransactionList Response

In addition to the general information described above, GetTransactionList's response provides a list of assessments performed on behalf of the client. Only closed evaluations can be consulted. These assessments can be found in the response as follows.

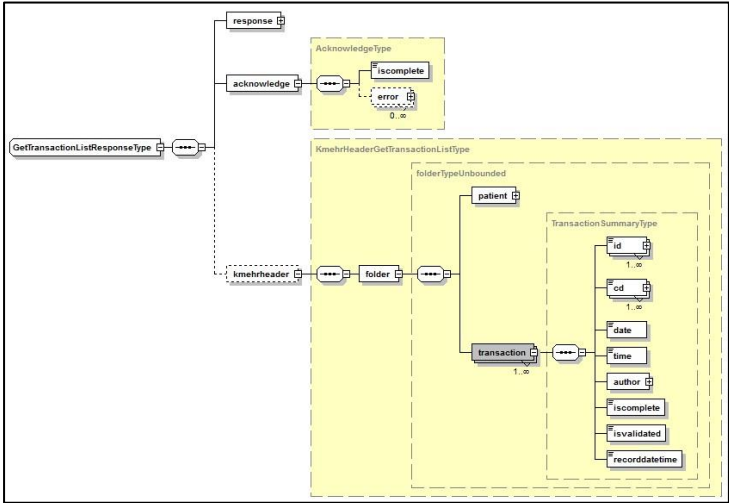


Figure 5: GetTransactionList response

kmehrheader [0-1]	<p>If the request is processed successfully, a kmehrheader is returned. This kmehrheader contains a folder with:</p> <p>Patient identification data:</p> <ul style="list-style-type: none"> • INSS • Firstname • Familyname • sex: will always be unknown • text: two values possible: <ul style="list-style-type: none"> - informed_consent_true - informed_consent_false <p>Multiple transactions: this is a list of assessments that have taken place on behalf of the client.</p>
-------------------	---

7.2.6 GetTransaction

The structure of the GetTransaction request is largely the same as that of the GetTransactionList. The major difference, however, is that with this method a specific assessment is requested.

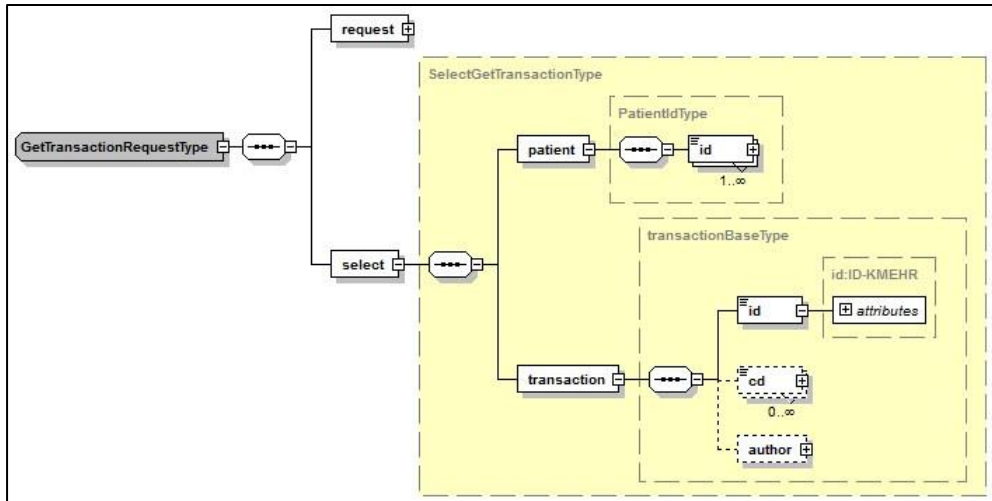


Figure 6: xsd schema: GetTransaction request

Id	TRANSACTION-ID: this is the id of the BelRAI assessment [1-1]. <code><v11:transaction> <v11:id S="LOCAL" SL="belrai.form.id" SV="1.0">43</v11:id></code> <code></v11:transaction></code>
----	--

7.2.7 GetTransaction Response

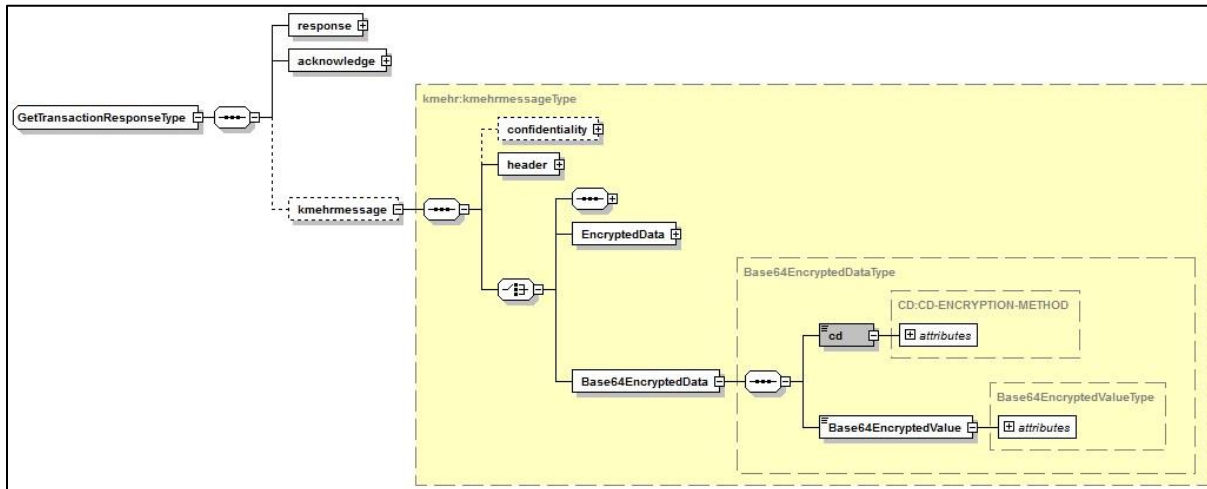


Figure 7: xsd schema: GetTransaction response

The GetTransaction response largely contains the same general fields as described above. Unlike GetTransactionList (where the list of transactions was requested), here a specific assessment is requested. Since sensitive information is exchanged during this process, the assessment is encrypted and included in the Base64EncryptedData.

7.2.7.1 Encrypted assessment

BelRAI assessments are sent with Base64EncryptedData. Base64EncryptedData contains an encrypted KMEHR, with the structure of the folder from the KMEHR message. This folder contains the exchanged assessment. The schema below shows the structure of this folder.

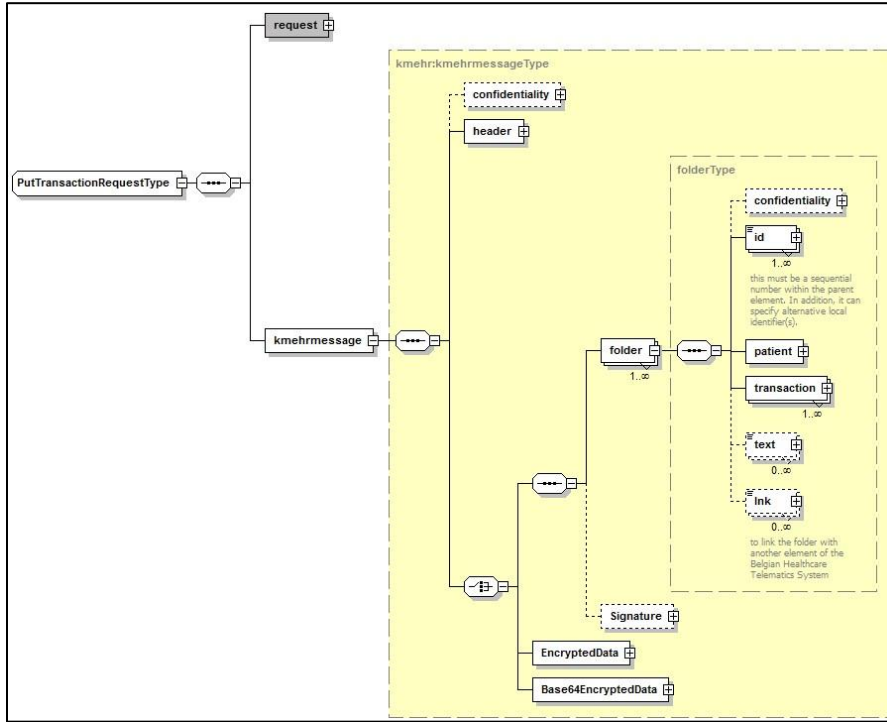


Figure 8: Structure of the folder

This structure contains the following information:

<p>Id [1-1]</p>	<p>ID-KMEHR, consists of:</p> <ul style="list-style-type: none"> • the first HCparty of the sender (see HCparty below) • a dot • a local unique identifier within the system sending the request/response. <p>This composition is used when the ID-KMEHR is a part of the HEADER.</p> <p>If the ID-KMEHR occurs in the FOLDER, TRANSACTION, HEADING, or ITEM element, the value is a sequential number beginning with 1.</p>
<p>Patient ID [1-1].</p>	<p>National Register Number of the client to which the assessment applies.</p> <p>Other data about the patient can be sent, but will not be held into account by BelRAI. All patient data will be fetched from the National Register using the National Register Number.</p>
<p>Transaction [1-1]</p>	<p>This contains the assessment with its metadata:</p> <ul style="list-style-type: none"> • ID [1-1]: Local ID of the transaction, this is not taken into account in BelRAI; • CD-TRANSACTION [1-1]: The value is contact report

	<ul style="list-style-type: none"> • cd S="LOCAL" SV="1.0" SL="belrai-form-type"[1-1]: this contains the type of the assessment (see 5.1) • cd S="LOCAL" SV="1.0" SL=" template-version" [1-1]: this contains the version of the template. The accepted version(s) will be communicated by the SPF Health. • putTransaction: cd S="LOCAL" SV="1.0" SL=" myBelRAIShare" [0-1]: a boolean (true of false) giving the opportunity to share immediately in MyBelRAI⁶ • getTransaction: cd S="LOCAL" SV="1.0" SL=" myBelRAIShareDate" [0-1]: date on which the evaluation was shared in myBelRAI. If not present, it means that it has not been shared yet. • Date [1-1]: Date on which the assessment was carried out o Must match the response of iA9 that can be found in Item-Text node <ul style="list-style-type: none"> o Format: YYYY-MM-DD • Time [1-1]: Time at which the assessment was carried out • Author [1-1]: the author [as an organization] doing the assessment <ul style="list-style-type: none"> o id: ID-HCPARTY: INAMI/RIZIV number [1-1]. o cd: CD-HCPARTY: Type of organization [1-1]. o name: Name of the organization [1-1]. • Iscomplete [1-1] • IsValidated [1-1] • Item-Text: this contains the Base64 encoded evaluation. The structure of this evaluation is described in 5.2.1 and 5.2.2. <ul style="list-style-type: none"> o Because of the validation of iA9, it is imperative that iA9 has the following format: YYYY-MM-DDThh:mm:ss+00:00 (example: iA9": "2020-02-18T00:00:00+02:00")
--	---

- An example of this data is shown below.

```

<folder xmlns="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns2="http://www.w3.org/2000/09/xmldsig#" xmlns:ns3="http://www.w3.org/2001/04/xmlenc#">
  <id S="ID-KMEHR" SV="1.12">Belrai.238941</id>
  <patient>
    <id S="INSS" SV="1.0">91###</id>
    <firstname>Jan</firstname>
    <familyname>Smets</familyname>
    <sex>
      <cd S="CD-SEX" SV="1.12">unknown</cd>
    </sex>
  </patient>
  <transaction>

```

⁶ myBelrai is an webapp where the client can consult simplified versions of his evaluations. If the care provider does not choose to share immediately the evaluation, it will automatically be shared after 7 days.

```

<id S="LOCAL" SV="1.0" SL="belrai.form.id">238941</id>
<cd S="CD-TRANSACTION" SV="1.12">contactreport</cd>
<cd S="LOCAL" SV="1.0" SL="belrai-form-type">home_care</cd>
<cd S="LOCAL" SV="1.0" SL="template-version">1.4</cd>
<date>2020-02-18Z</date>
<time>00:00:00.000Z</time>
<author>
  <hparty>
    <cd S="CD-HCPARTY" SV="1.12">application</cd>
    <name>Belrai</name>
  </hparty>
  <hparty>
    <id S="ID-HCPARTY" SV="1.12">71089914</id>
    <cd S="CD-HCPARTY" SV="1.12">orghospital</cd>
    <name>TEST ZIEKENHUIS ALPHA</name>
  </hparty>
  <hparty>
    <id S="ID-HCPARTY" SV="1.0">71050643439</id>
    <id S="INSS" SV="1.0">79###</id>
    <cd S="CD-HCPARTY" SV="1.12">persphysician</cd>
    <firstname>Piet</firstname>
    <familyname>Pienter</familyname>
  </hparty>
</author>
<iscomplete>>true</iscomplete>
<isvalidated>true</isvalidated>
<item>
  <text>
ew0KICAicmVzcG9uc2VzIiA6IHsNCiAgICAiaVUxIiA6ICI5NSIsDQogICAgImlVMiIgOiAiMjAyMi0wM
S0xOFQxMzo1NzoyOFoidQogIH0sDQogICJzY29yZXMiIDogeyB9DQp9</text>
  </item>
</transaction>
</folder>

```

7.2.7.2 Base 64 encoded assessment

The text node contains the Base64 encoded evaluation. The assessment from the BelRAI system is displayed as a JSON. The JSON groups key value pairs. The keys are the iCodes from the iMatrix of BelRAI. When uploading an assessment, only the object "responses" should be present. When consulting an evaluation, there will also be an object "scores" present. Therefore, when an assessment is downloaded from BelRAI, this assessment will also include the calculated results. This means that the download will not only contain "responses", but "scores" as well. The example below is illustrative, but gives an idea of what the JSON looks like.

```
{
```

```
"responses" : {
  "iJ2a" : "4",
  "iK4b" : "1",
  "iJ2b" : "4",
  "iK4c" : "1",
  "iJ2c" : "4",
  "iK4d" : "1",
  "iJ2d" : "4",
  "iK4e" : "1",
  "iN2a" : "3",
  "iJ2e" : "4",
  "iK4f" : "1",
  "iN2b" : "3",
  "iJ2f" : "4",
  "iN2c" : "3",
  "iJ2g" : "4",
  "iN2d" : "3",
  "iJ2h" : "4",
  "iN2e" : "3",
  "iJ2i" : "4",
  "iN2f" : "3",
  "iJ2j" : "4",
  "iN2g" : "3",
  "iJ2k" : "4",
  "iN2h" : "3",
  "iJ2l" : "4",
  "iN2i" : "3",
  "iJ2m" : "4",
  "iN2j" : "3",
  "iJ2n" : "4",
  "iN2k" : "3",
  "iJ2o" : "4",
  "iN2l" : "3",
  "iJ2p" : "4",
  "iH2" : "3",
  "iH1" : "8",
  "iH4" : "1",
```

```
"iH3" : "8",
"iM14" : "15",
"iH5" : "1",
"iM15" : "15",
"iM16" : "1",
"iM17" : "8",
"iK4a" : "1",
"iN1a" : "1",
"iN1b" : "1",
"iN1c" : "1",
"iN1d" : "1",
"iN1e" : "1",
"iN1f" : "1",
"iA13" : "5",
"iN1g" : "1",
"iN1h" : "1",
"iS2h" : "4",
"iS2i" : "4",
"iO1ex" : "8",
"iS2j" : "4",
"iS2k" : "4",
"iS2l" : "4",
"iS2m" : "4",
"iS2n" : "4",
"iS2o" : "4",
"iS2r" : "4",
"iA4" : "6",
"iA9" : "2021-07-05T16:36:52+02:00",
"iA8" : "7",
"iR7" : "5",
"iI1q" : "3",
"iI1r" : "3",
"iJ1" : "3",
"iI1s" : "3",
"iJ4" : "4",
"iI1t" : "3",
"iJ3" : "3",
```



```
"iA11b_res" : "24",
"iI1w" : "3",
"iJ7" : "8",
"iB2" : "2021-07-05T16:36:52+02:00",
"iG6a" : "4",
"iG6b" : "3",
"iJ2mm" : "4",
"iB6" : "8",
"iB7" : "1",
"iI1a" : "3",
"iI1b" : "3",
"iI1c" : "3",
"iI1d" : "3",
"iI1e" : "3",
"iI1f" : "3",
"iI1g" : "3",
"iI1h" : "3",
"iS3" : "3",
"iI1i" : "3",
"iI1j" : "3",
"iI1k" : "3",
"iI1l" : "3",
"iI1m" : "3",
"iI1n" : "3",
"iI1o" : "3",
"iI1p" : "3",
"iN2m" : "3",
"iJ2q" : "4",
"iK3" : "9",
"iN2n" : "3",
"iJ2r" : "4",
"iJ2s" : "4",
"iK5" : "3",
"iO2ex" : "1",
"iJ2t" : "4",
"iC1" : "5",
"iN6a" : "5",
```

```
"iN6b" : "5",
"iN6c" : "5",
"iG8a2" : "8",
"iR6a" : "1",
"iR6b" : "1",
"iT2" : "25",
"iR6c" : "1",
"iT1" : "2021-07-05T16:36:52+02:00",
"iT4" : "1",
"iA12a" : "9",
"iL2" : "1",
"iL1" : "5",
"iL4" : "1",
"iL3" : "1",
"iL6" : "1",
"iL5" : "1",
"iL7" : "4",
"iJ6a" : "1",
"iJ6b" : "1",
"iJ6c" : "1",
"iJ5d" : "1",
"iJ5e" : "5",
"iU2" : "2021-07-05T16:36:52+02:00",
"iA11a" : "24",
"iM3" : "8",
"iG12" : "99",
"iM2" : "1",
"iB5a" : "1",
"iB5b" : "1",
"iB5c" : "1",
"iG7a" : "1",
"iI1cc" : "3",
"iB5d" : "1",
"iG7b" : "1",
"iB5e" : "1",
"iJ5a" : "3",
"iJ5b" : "4",
```

```
"iJ5c" : "3",
"iG2d" : "8",
"iK2a" : "1",
"iG2e" : "8",
"iK2b" : "1",
"iG2f" : "8",
"iK2c" : "1",
"iG2g" : "8",
"iG2h" : "8",
"iG2i" : "8",
"iO2a" : "1",
"iG2j" : "8",
"iO2b" : "1",
"iO2c" : "1",
"iK2h" : "1",
"iO2d" : "1",
"iS2a" : "4",
"iO2e" : "1",
"iS2b" : "4",
"iO2f" : "1",
"iS2c" : "4",
"iS2d" : "4",
"iO2h" : "1",
"iS2e" : "4",
"iS2f" : "4",
"iS2g" : "4",
"iJ12" : "1",
"iJ8a" : "2",
"iJ8b" : "3",
"iG2a" : "8",
"iG2b" : "8",
"iG2c" : "8",
"iO1a" : "8",
"iO1b" : "8",
"iO1c" : "8",
"iI1xxxex" : "3",
"iO1d" : "8",
```

```

    "i01e" : "8",
    "iS1b" : "3",
    "i01f" : "8",
    "iG3" : "3",
    "iG5" : "8",
    "iG4" : "5"
  },
  "scores" : {
    "sADLH" : {
      "value" : "6",
      "label_translation_id" : "12606",
      "label_translation" : {
        "nl" : "Totale afhankelijkheid bij de 4 ADL-functies.",
        "fr" : "Dépendance totale pour les 4 fonctions AVQ.",
        "de" : "Vollständige Abhängigkeit für die 4 ADL-Funktionen."
      }
    },
    "sADLLF" : {
      "value" : "28",
      "label_translation_id" : "15600",
      "label_translation" : {
        "nl" : "Hogere scores (op een schaal van 0 tot 28) duiden op meer moeilijkheden bij het uitvoeren van activiteiten, een grotere afhankelijkheid of hulpbehoevendheid.",
        "fr" : "Des scores plus élevés (sur une échelle de 0 à 28) montrent plus de difficultés pour l'introduction d'activités, une plus grande dépendance envers une tierce personne.",
        "de" : "Hohe Werte (0 bis 28 auf der Skala) deuten auf größere Schwierigkeiten bei der Durchführung einer Aktivität hin, eine größere Abhängigkeit oder den Bedarf auf Hilfe hin."
      }
    },
    "sADLSF" : {
      "value" : "16",
      "label_translation_id" : "15700",
      "label_translation" : {
        "nl" : "Hogere scores (op een schaal van 0 tot 16) duiden op meer moeilijkheden bij het uitvoeren van activiteiten, een grotere afhankelijkheid of hulpbehoevendheid.",

```

"fr" : "Des scores plus élevés (sur une échelle de 0 à 16) montrent plus de difficultés pour l'introduction d'activités, une plus grande dépendance envers une tierce personne.",

"de" : "Hohe Werte (0 bis 16 auf der Skala) deuten auf größere Schwierigkeiten bei der Durchführung einer Aktivität hin, eine größere Abhängigkeit oder den Bedarf auf Hilfe hin."

```
    }  
  },  
  "sAGE" : {  
    "value" : "30"  
  },  
  "sPAIN" : {  
    "value" : "4",  
    "label_translation_id" : "12904",  
    "label_translation" : {  
      "nl" : "Dagelijks vreselijke of ondraaglijke pijn",  
      "fr" : "Douleur journalière atroce ou insupportable",  
      "de" : "Tägliche nichtaushaltbare Schmerzen"  
    }  
  },  
  "sPAIN1" : {  
    "value" : "3"  
  },  
  "sPURS" : {  
    "value" : "8",  
    "label_translation_id" : "13004",  
    "label_translation" : {  
      "nl" : "Zeer hoog risico",  
      "fr" : "Risque très élevé",  
      "de" : "Sehr hohes Risiko"  
    }  
  },  
  "xFALLS" : {  
    "value" : "3"  
  },  
  "cADD" : {  
    "value" : "1",  
    "label_translation_id" : "12301",
```

```

"label_translation" : {
  "nl" : "Geactiveerd wegens dagelijks roken en/of alcoholbehoefte.",
  "fr" : "Activé : fume et consomme de l'alcool quotidiennement.",
  "de" : "Aktiviert: raucht und trinkt regelmäßig Alkohol."
}
},
"ccARDIO" : {
  "value" : "1",
  "label_translation_id" : "11801",
  "label_translation" : {
    "nl" : "Geactiveerd wegens één of meerdere cardiorespiratoire symptomen.",
    "fr" : "Activé en raison de la présence d'un ou plusieurs symptômes cardio-respiratoires.",
    "de" : "Aktiviert aufgrund einem oder von mehreren kardio-pulmonalen Symptomen."
  }
},
"cdrUG" : {
  "value" : "1",
  "label_translation_id" : "12201",
  "label_translation" : {
    "nl" : "Geactiveerd wegens hoge prioriteit: meer dan negen verschillende geneesmiddelen gecombineerd met een onstabiele gezondheid.",
    "fr" : "Activé en raison d'une priorité élevée : combinaison de plus de neuf médicaments différents avec une santé instable.",
    "de" : "Aktiviert aufgrund von hohem Risiko: Kombination von mehr als neun verschiedenen Medikamenten mit einem instabilen Gesundheitszustand."
  }
},
"cfALLS" : {
  "value" : "2",
  "label_translation_id" : "11502",
  "label_translation" : {
    "nl" : "Geactiveerd wegens een hoog risico op valincidenten, gebaseerd op veel gerapporteerde valincidenten in de laatste 30 dagen.",
    "fr" : "Activé en raison d'un risque élevé de chutes, basé sur beaucoup de chutes rapportées dans les 30 derniers jours.",

```

```

        "de" : "Aktiviert: hohes Sturzrisiko, aufgrund mehrerer Stürze innerhalb
der letzten 30 Tage."
    }
},
"cFEEDTB" : {
    "value" : "0",
    "label_translation_id" : "12100",
    "label_translation" : {
        "nl" : "Niet geactiveerd.",
        "fr" : "Non activé.",
        "de" : "Nicht aktiviert."
    }
},
"cPACTIV" : {
    "value" : "0",
    "label_translation_id" : "10100",
    "label_translation" : {
        "nl" : "Niet geactiveerd: geen mogelijkheid tot verbetering.",
        "fr" : "Pas activé : pas de possibilité d'amélioration.",
        "de" : "Nicht aktiviert: keine Möglichkeit der Verbesserung."
    }
},
"cPAIN" : {
    "value" : "2",
    "label_translation_id" : "11602",
    "label_translation" : {
        "nl" : "Geactiveerd als hoge prioriteit wegens hevige, vreselijke of ondraaglijke pijn ongeacht de frequentie.",
        "fr" : "Activé comme priorité élevée en raison de douleurs intenses, terribles ou insupportables indépendamment de la fréquence.",
        "de" : "Aktiviert mit hoher Priorität aufgrund von starken, heftigen oder nichtaushaltbaren Schmerzen unabhängig von der Frequenz."
    }
},
"cPULCER" : {
    "value" : "1",
    "label_translation_id" : "11701",
    "label_translation" : {

```

```

      "nl" : "Geactiveerd wegens de aanwezigheid van een decubitus stadium II o
f hoger waarbij genezing het zorgdoel is.",
      "fr" : "Activé en raison de présence d'une escarre de stade II ou supéri
eur et pour lequel la guérison est le but des soins.",
      "de" : "Aktiviert wegen eines Dekubitus Stadium II oder mehr und bei dem
es das Ziel der Pflege ist diesen zu heilen."
    }
  },
  "cRESTR" : {
    "value" : "0",
    "label_translation_id" : "10500",
    "label_translation" : {
      "nl" : "Niet geactiveerd: de bewegingsvrijheid van de persoon wordt niet
beperkt door fixatiemateriaal.",
      "fr" : "Non activé : la liberté de mouvement de la personne n'est pas li
mitée par du matériel de contention.",
      "de" : "Nicht aktiviert: Die Bewegungsfreiheit der Person ist nicht durch
freiheitsbeschränkende Maßnahmen eingeschränkt."
    }
  },
  "cURIN" : {
    "value" : "0",
    "label_translation_id" : "12400",
    "label_translation" : {
      "nl" : "Niet geactiveerd : zwakke besluitvorming en/of beperkte cognitiev
e vaardigheden bij het begin van het onderzoek.",
      "fr" : "Non activé : processus décisionnel faible et/ou restrictions des
aptitudes cognitives lors du début de la recherche.",
      "de" : "Nicht aktiviert: schwache Entscheidungsfindung und oder Einschrän
kungen der kognitiven Fähigkeiten bei dem Beginn einer Recherche."
    }
  }
}
}

```

As mentioned above, there are two objects in the response:

- Responses [1]: containing the key-value pairs of iCode and the value of the response. The responses can be ignored for the homologation. **Only the scores should be implemented for the BelRAI consultation homologation.**
- Scores[0-1]: containing the calculated scores of the evaluation.

The 'scores' object will contain the name of the calculated score which will contain:

- Value [1] : the calculated score
- Label_translation_id [0-1]: reference to the corresponding label
- nl: [0-1] : label in Dutch of the corresponding score
- fr: [0-1]: label in French of the corresponding score
- de: [0-1]: label in German of the corresponding score

8 Error and failure messages

There are three different possible types of response:

- If there are no technical or business errors, a business response returns.
- If a business error occurred, it is contained in a business response that undergoes a regular transformation (see chapter 8.1 Business errors).
- In the case of a technical error, you will receive a SOAP fault exception (see chapter 8.2).

8.1 Business errors

belrai_001	Request not defined The 'request' element is missing or incomplete in the sent KMEHR structure.
belrai_002	Syntax error, missing a valid hcparty. The hcparty is wrong or a hcparty is missing
belrai_003	No valid syntax on careprovider HCparty Check the error message to identify the problem.
belrai_004	No valid syntax on organisation HCparty Check the error message to identify the problem.
belrai_006	Form not found in local database with the specified id Error that may occur with GetTransaction. The requested assessment was not found in BelRAI.
belrai_007	The specified form id fetched a form but this one does not match with the selected patient SSIN Error that may occur with GetTransaction. The requested assessment was found in BelRAI, but does not belong to the patient who was mentioned in the request.
belrai_008	The selected patient does not have any closed form yet Error that may occur with GetTransactionList. There are no finalised assessments for this patient yet.
belrai_010	No valid syntax on Transaction.
belrai_011	The folder should contain at least one valid KMEHR Id, at least one Patient and only one Transaction Error that may occur with PutTransaction. The message included does not contain the necessary information.
belrai_014	No valid syntax on Kmehrmessage Occurs when recipient in header is not correct.
belrai_015	No Patient SSIN specified Error that may occur with all methods. If no National Registration Number is specified for the patient, no assessments can be retrieved or uploaded.
belrai_017	Unknown error, contact the support team

belrai_018	Encryption/decryption error Error that occurs during the encryption or decryption of the assessment.
belrai_019	Missing attribute in SAML assertion Could be a mismatch between the organization from the first HC PARTY in the request and the organization from the SAML assertion.
belrai_020	Invalid or missing CN in SAML assertion
belrai_021	Invalid SSIN The SSIN is invalid, there is an therapeutic exclusion between the care provider & the patient or the SSIN is not yet known in BelRAI
belrai_023	This method is not supported by the BelRAI web services
belrai_024	Organization not authorized to access BelRAI.
belrai_025	This form is not closed.
belrai_026	No informed consent
belrai_027	KMEHR date and iA9 date are different Error on putTransaction. The date in the evaluation json (iA9) must be the same as the date in the encrypted folder.
belrai_028	syntax error on KMEHR date (or iA9 date) Format must be: <ul style="list-style-type: none"> • Date in encrypted folder: YYYY-MM-DD • iA9: YYYY-MM-DDThh:mm:ss+00:00
belrai_029	Bad Request submitting form to evaluation form
belrai_030	Evaluation type not found (e.a. bad BelRAI-form-type, bad template version)
Belrai_033	The software validation token is invalid Error that occurs when software token is not valid

Example

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <ns5:GetTransactionResponse xmlns:ns5="http://www.ehealth.fgov.be/kmehrserves/protocol/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#" xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns="http://www.ehealth.fgov.be/kmehrserves/core/v1">
      <response>
        <id S="ID-KMEHR" SV="1.12">8984</id>
        <author>
          <ns2:hcparty>
            <ns2:cd S="CD-HCPARTY" SV="1.12">application</ns2:cd>
            <ns2:name>Belrai</ns2:name>
          </ns2:hcparty>
        </author>
      </response>
    </ns5:GetTransactionResponse>
  </soap:Body>
</soap:Envelope>
```

```

        </ns2:hcparty>
    </author>
    <date>2022-01-17+01:00</date>
    <time>14:21:40.421+01:00</time>
    <request>
        <id S="ID-KMEHR" SV="1.0">94704860.12345</id>
        <author>
            <ns2:hcparty>
                <ns2:id S="ID-HCPARTY" SV="1.0">71089914</ns2:id>
                <ns2:cd S="CD-HCPARTY" SV="1.1">orghospital</ns2:cd>
                <ns2:name>TEST ZIEKENHUIS ALPHA</ns2:name>
            </ns2:hcparty>
            <ns2:hcparty>
                <ns2:id S="ID-HCPARTY" SV="1.0">71050643439</ns2:id>
                <ns2:id S="INSS" SV="1.0">79###</ns2:id>
                <ns2:cd S="CD-HCPARTY" SV="1.12">persphysician</ns2:cd>
                <ns2:firstname>Jan</ns2:firstname>
                <ns2:familyname>Smet</ns2:familyname>
            </ns2:hcparty>
            <ns2:hcparty>
                <ns2:cd S="LOCAL" SV="1.0" SL="TOKEN">f7943###</ns2:cd>
            </ns2:hcparty>
        </author>
        <date>2022-01-17</date>
        <time>14:42:12</time>
    </request>
</response>
<acknowledge>
    <iscomplete>>false</iscomplete>
    <error>
        <ns2:cd S="CD-ERROR" SV="1.0">belrai_006</ns2:cd>
        <ns2:cd S="LOCAL" SV="1.0" SL="ticket_number">1642461744124</ns2:cd>
        <ns2:description L="EN">Form with id "2389136" not found</ns2:description>
    </error>
</acknowledge>
</ns5:GetTransactionResponse>
</soap:Body>
</soap:Envelope>

```

8.2 Technical errors

Technical errors are errors inherent to the internal working of a WS. They are returned as SOAP Faults. The SOA Standard for Errorhandling specifies a structure for SystemError and BusinessError, thrown as SOAP Faults.

A **SystemError** MUST be thrown when a system failure occurred. It is not related to the business of the service. The SOA system error structure is as follows:

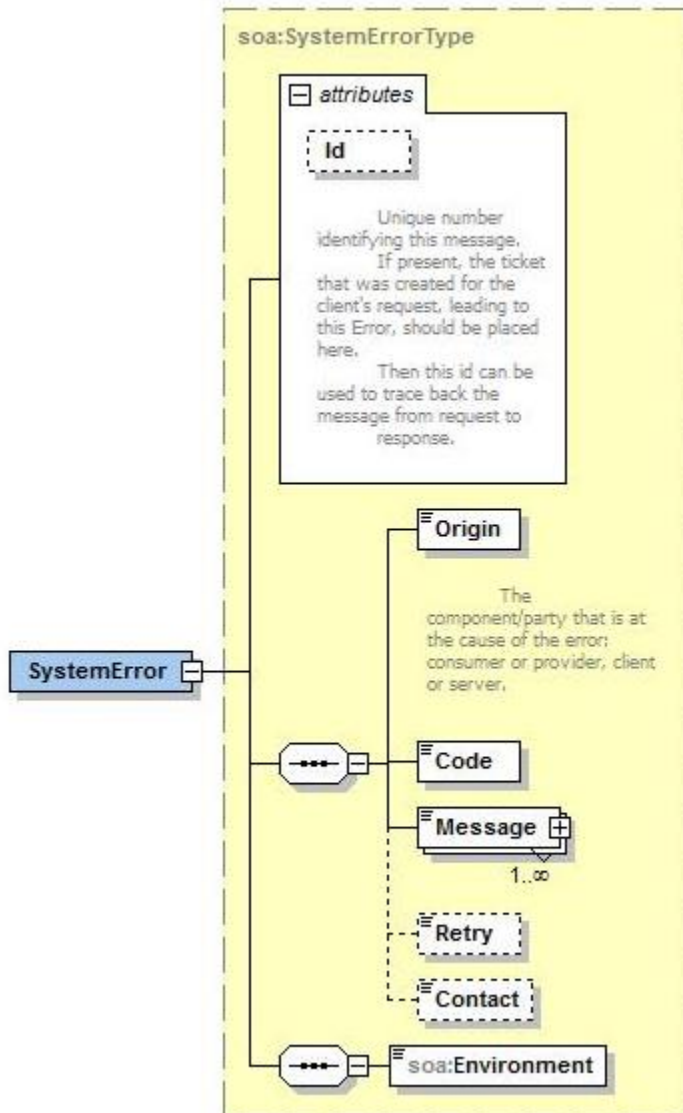


Figure 9: SystemError

The SystemError element MUST contain a unique Id attribute for tracing.

The Origin MUST be set to Server or Provider.

Retry SHOULD be set to true if the consumer can try again immediately without interventions.

Example:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
```

```

<soapenv:Fault>
  <faultcode>soapenv:Server</faultcode>
  <faultstring>SOA-
02001: Service is not available. Please contact service desk.</faultstring>
  <detail>
    <urn:SystemError Id="Id-
0ab63c6044370e219bb557dd" xmlns:urn="urn:be:fgov:health:errors:soa:v1">
      <Origin>Server</Origin>
      <Code>SOA-02001</Code>
      <Message xml:Lang="en">Service is not available. Please contact se
rvice desk.</Message>
      <urn:Environment>Acceptation</urn:Environment>
    </urn:SystemError>
  </detail>
</soapenv:Fault>
</soapenv:Body>
</soapenv:Envelope>

```

The SOAP Fault element has the following sub elements:

Element name	Descriptions	Mandatory
faultcode	A code identifying the fault	Yes
faultstring	A human readable explanation of the fault	Yes
faultactor	Information about the origin of the fault (who or what)	No
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.	No

The default SOAP fault code values are defined in an extensible manner allowing new SOAP fault code values to be defined while maintaining backwards compatibility with existing fault code values.

Element name	Descriptions
versionMismatch	Found an invalid namespace for the SOAP Envelope element.
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.

Description of the possible SOAP fault exceptions:

Error code	Component	Description	Solution/Explanation
SOA-00001	Undefined	Service error	Default error sent to the consumer in case more details are unknown.
SOA-01001	Consumer	Service call not authenticated	From the security information provided: <ul style="list-style-type: none"> • or the consumer could not be identified • or the credentials provided are not correct
SOA-01002	Consumer	Service call not authorized	The consumer is identified and authenticated but is not allowed to call the given service.
SOA-02001	Provider	Service not available. Please contact service desk	An unexpected error has occurred <ul style="list-style-type: none"> • Retries will not work • Service desk may help with root cause analysis
SOA-02002	Provider	Service temporarily not available. Please try later	An unexpected error has occurred <ul style="list-style-type: none"> • Retries should work • If the problem persists service desk may help.
SOA-03001	Consumer	Malformed message	Default error for content related errors in case more details are lacking.
SOA-03002	Consumer	Message must be SOAP	Message does not respect the SOAP standard
SOA-03003	Consumer	Message must contain SOAP body	Message respects the SOAP standard, but body is missing
SOA-03004	Consumer	WS-I compliance failure	Message does not respect the WS-I standard
SOA-03005	Consumer	WSDL compliance failure	Message is not compliant with WSDL in Registry/Repository
SOA-03006	Consumer	XSD compliance failure	Message is not compliant with XSD in Registry/Repository
SOA-03007	Consumer	Message content validation failure	From the message content (conform XSD): <ul style="list-style-type: none"> • Extended checks on the element format failed • Cross-checks between fields failed

9 Method examples

Here you will find some examples of each method discussed above. These examples may help to construct the request.

9.1 GetTransactionList – Request

```
soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:v1="http://www.ehealth.fgov.be/kmehrservices/protocol/v1" xmlns:v11="http://www.ehealth.fgov.be/kmehrservices/core/v1" xmlns:v12="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
```

```
<soapenv:Header/>
```

```
<soapenv:Body>
```

```
<v1:GetTransactionListRequest>
```

```
<v11:request>
```

```
<v11:id S="ID-KMEHR" SV="1.0">71071801001</v11:id>
```

```
<v11:author>
```

```
<v12:hcparty>
```

```
<v12:id S="ID-HCPARTY" SV="1.0">71089914</v12:id>
```

```
<v12:cd S="CD-HCPARTY" SV="1.1">orghospital</v12:cd>
```

```
<v12:name>TEST ZIEKENHUIS ALPHA</v12:name>
```

```
</v12:hcparty>
```

```
<v12:hcparty>
```

```
<v12:id S="ID-HCPARTY" SV="1.0">71050643439</v12:id>
```

```
<v12:id S="INSS" SV="1.0">7910####</v12:id>
```

```
<v12:cd S="CD-HCPARTY" SV="1.12">persphysician</v12:cd>
```

```
<v12:firstname>Piet</v12:firstname>
```

```
<v12:familyname>Pienter</v12:familyname>
```

```
</v12:hcparty>
```

```
<v12:hcparty>
```

```
<v12:cd SV="1.0" S="LOCAL" SL="TOKEN">f7943####</v12:cd>
```

```
</v12:hcparty>
```

```
</v11:author>
```

```
<v11:date>2021-01-17</v11:date>
```

```
<v11:time>14:42:12</v11:time>
```

```
<v11:maxrows>50</v11:maxrows>
```

```
</v11:request>
```

```
<v11:select>
```

```
<v11:patient>
```

```
<v11:id S="INSS" SV="1.0">7910####</v11:id>
```

```
</v11:patient>
```

```
</v11:select>
```

```
</v1:GetTransactionListRequest>
```

```
</soapenv:Body>
```

```
</soapenv:Envelope>
```


9.2 GetTransactionList – Response

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <ns5:GetTransactionListResponse xmlns:ns5="http://www.ehealth.fgov.be/kmehrservices/protocol/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#" xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns="http://www.ehealth.fgov.be/kmehrservices/core/v1">
      <response>
        <id S="ID-KMEHR" SV="1.12">8994</id>
        <author>
          <ns2:hcparty>
            <ns2:cd S="CD-HCPARTY" SV="1.12">application</ns2:cd>
            <ns2:name>Belrai</ns2:name>
          </ns2:hcparty>
        </author>
        <date>2022-01-17+01:00</date>
        <time>15:56:10.188+01:00</time>
        <request>
          <id S="ID-KMEHR" SV="1.0">71071801001</id>
          <author>
            <ns2:hcparty>
              <ns2:id S="ID-HCPARTY" SV="1.0">71089914</ns2:id>
              <ns2:cd S="CD-HCPARTY" SV="1.1">orghospital</ns2:cd>
              <ns2:name>TEST ZIEKENHUIS ALPHA</ns2:name>
            </ns2:hcparty>
            <ns2:hcparty>
              <ns2:id S="ID-HCPARTY" SV="1.0">71050643439</ns2:id>
              <ns2:id S="INSS" SV="1.0">79###</ns2:id>
              <ns2:cd S="CD-HCPARTY" SV="1.12">persphysician</ns2:cd>
              <ns2:firstname>Piet</ns2:firstname>
              <ns2:familyname>Pienter</ns2:familyname>
            </ns2:hcparty>
            <ns2:hcparty>
              <ns2:cd S="LOCAL" SV="1.0" SL="TOKEN">f7943###</ns2:cd>
            </ns2:hcparty>
          </author>
          <date>2022-01-17</date>
          <time>14:42:12</time>
          <maxrows>2</maxrows>
        </request>
      </response>
      <acknowledge>
        <iscomplete>true</iscomplete>
      </acknowledge>
      <kmehrheader>
        <folder>
          <patient>
            <ns2:id S="INSS" SV="1.0">91###</ns2:id>
            <ns2:firstname>Bert</ns2:firstname>
            <ns2:familyname>Janssens</ns2:familyname>
            <ns2:sex>
              <ns2:cd S="CD-SEX" SV="1.12">unknown</ns2:cd>
            </ns2:sex>
          </patient>
        </folder>
      </kmehrheader>
    </ns5:GetTransactionListResponse>
  </soap:Body>
</soap:Envelope>
```

```

</ns2:sex>
  <ns2:text L="EN">informed_consent_true</ns2:text>
</patient>
<transaction>
  <id S="ID-KMEHR" SV="1.12">1</id>
  <id S="LOCAL" SV="1.0" SL="belrai.form.id">238940</id>
  <cd S="CD-TRANSACTION" SV="1.12">contactreport</cd>
  <cd S="LOCAL" SV="1.0" SL="belrai-form-type">home_care</cd>
  <cd S="LOCAL" SV="1.0" SL="template-version">1.4</cd>
  <date>2020-02-18Z</date>
  <time>00:00:00.000Z</time>
  <author>
    <ns2:hcparty>
      <ns2:cd S="CD-HCPARTY" SV="1.12">application</ns2:cd>
      <ns2:name>Belrai</ns2:name>
    </ns2:hcparty>
    <ns2:hcparty>
      <ns2:id S="ID-HCPARTY" SV="1.12">71089914</ns2:id>
      <ns2:cd S="CD-HCPARTY" SV="1.12">orghospital</ns2:cd>
      <ns2:name>TEST ZIEKENHUIS ALPHA</ns2:name>
    </ns2:hcparty>
    <ns2:hcparty>
      <ns2:id S="ID-HCPARTY" SV="1.0">71050643439</ns2:id>
      <ns2:id S="INSS" SV="1.0">79###</ns2:id>
      <ns2:cd S="CD-HCPARTY" SV="1.12">persphysician</ns2:cd>
      <ns2:firstname>Jean</ns2:firstname>
      <ns2:familyname>Dupont</ns2:familyname>
    </ns2:hcparty>
  </author>
  <iscomplete>true</iscomplete>
  <isvalidated>true</isvalidated>
  <recorddatetime>2020-02-18T00:00:00.000Z</recorddatetime>
</transaction>
<transaction>
  <id S="ID-KMEHR" SV="1.12">2</id>
  <id S="LOCAL" SV="1.0" SL="belrai.form.id">238939</id>
  <cd S="CD-TRANSACTION" SV="1.12">contactreport</cd>
  <cd S="LOCAL" SV="1.0" SL="belrai-form-type">home_care</cd>
  <cd S="LOCAL" SV="1.0" SL="template-version">1.4</cd>
  <date>2020-02-18Z</date>
  <time>00:00:00.000Z</time>
  <author>
    <ns2:hcparty>
      <ns2:cd S="CD-HCPARTY" SV="1.12">application</ns2:cd>
      <ns2:name>Belrai</ns2:name>
    </ns2:hcparty>
    <ns2:hcparty>
      <ns2:id S="ID-HCPARTY" SV="1.12">71089914</ns2:id>
      <ns2:cd S="CD-HCPARTY" SV="1.12">orghospital</ns2:cd>
      <ns2:name>TEST ZIEKENHUIS ALPHA</ns2:name>
    </ns2:hcparty>
  </author>
  <ns2:hcparty>

```

```

        <ns2:id S="ID-HCPARTY" SV="1.0">71050643439</ns2:id>
        <ns2:id S="INSS" SV="1.0">79###</ns2:id>
        <ns2:cd S="CD-HCPARTY" SV="1.12">persphysician</ns2:cd>
        <ns2:firstname>Sara</ns2:firstname>
        <ns2:familyname>Roos</ns2:familyname>
    </ns2:hcparty>
</author>
<iscomplete>true</iscomplete>
<isvalidated>true</isvalidated>
<recorddatetime>2020-02-18T00:00:00.000Z</recorddatetime>
</transaction>
</folder>
</kmehrheader>
</ns5:GetTransactionListResponse>
</soap:Body>
</soap:Envelope>

```

9.3 GetTransaction – Request

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:v1="http://www.ehealth.fgov.be/kmehrservices/protocol/v1" xmlns:v11="http://www.ehealth.fgov.be/kmehrservices/core/v1" xmlns:v12="http://www.ehealth.fgov.be/standards/kmehr/schema/v1">
  <soapenv:Header/>
  <soapenv:Body>
    <v1:GetTransactionRequest>
      <v11:request>
        <v11:id S="ID-KMEHR" SV="1.0">94704860.12345</v11:id>
        <v11:author>
          <v12:hcparty>
            <v12:id S="ID-HCPARTY" SV="1.0">71089914</v12:id>
            <v12:cd S="CD-HCPARTY" SV="1.1">orghospital</v12:cd>
            <v12:name>TEST ZIEKENHUIS ALPHA</v12:name>
          </v12:hcparty>
          <v12:hcparty>
            <v12:id S="ID-HCPARTY" SV="1.0">71050643439</v12:id>
            <v12:id S="INSS" SV="1.0">7910###</v12:id>
            <v12:cd S="CD-HCPARTY" SV="1.12">persphysician</v12:cd>
            <v12:firstname>Piet</v12:firstname>
            <v12:familyname>Pienter</v12:familyname>
          </v12:hcparty>
          <v12:hcparty>
            <v12:cd SV="1.0" S="LOCAL" SL="TOKEN">f7943###</v12:cd>
          </v12:hcparty>
        </v11:author>
        <v11:date>2022-01-17</v11:date>
        <v11:time>14:42:12</v11:time>
      </v11:request>
      <v11:select>
        <v11:patient>
          <v11:id S="INSS" SV="1.0">910###</v11:id>
        </v11:patient>
        <v11:transaction>

```

```

    <v11:id S="LOCAL" SV="1.0" SL="belrai.form.id">238937</v11:id>
  </v11:transaction>
</v11:select>
</v1:GetTransactionRequest>
</soapenv:Body>
</soapenv:Envelope>

```

9.4 GetTransaction – Response

```

<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <ns5:GetTransactionResponse xmlns:ns5="http://www.ehealth.fgov.be/kmehrservices/protocol/v1" xmlns:ns4="http://www.w3.org/2001/04/xmlenc#" xmlns:ns3="http://www.w3.org/2000/09/xmldsig#" xmlns:ns2="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns="http://www.ehealth.fgov.be/kmehrservices/core/v1">
      <response>
        <id S="ID-KMEHR" SV="1.12">9003</id>
        <author>
          <ns2:hcparty>
            <ns2:cd S="CD-HCPARTY" SV="1.12">application</ns2:cd>
            <ns2:name>Belrai</ns2:name>
          </ns2:hcparty>
        </author>
        <date>2022-01-18+01:00</date>
        <time>09:07:12.689+01:00</time>
        <request>
          <id S="ID-KMEHR" SV="1.0">94704860.12345</id>
          <author>
            <ns2:hcparty>
              <ns2:id S="ID-HCPARTY" SV="1.0">71089914</ns2:id>
              <ns2:cd S="CD-HCPARTY" SV="1.1">orghospital</ns2:cd>
              <ns2:name>TEST ZIEKENHUIS ALPHA</ns2:name>
            </ns2:hcparty>
            <ns2:hcparty>
              <ns2:id S="ID-HCPARTY" SV="1.0">71050643439</ns2:id>
              <ns2:id S="INSS" SV="1.0">79###</ns2:id>
              <ns2:cd S="CD-HCPARTY" SV="1.12">persphysician</ns2:cd>
              <ns2:firstname>Piet</ns2:firstname>
              <ns2:familyname>Pienter</ns2:familyname>
            </ns2:hcparty>
            <ns2:hcparty>
              <ns2:cd S="LOCAL" SV="1.0" SL="TOKEN">f7943###</ns2:cd>
            </ns2:hcparty>
            <ns2:hcparty>
              <ns2:id S="ID-HCPARTY" SV="1.0">1234</ns2:id>
              <ns2:cd S="CD-HCPARTY" SV="1.1">orgretirementhome</ns2:cd>
              <ns2:name>TEST BELRAI</ns2:name>
            </ns2:hcparty>
          </author>
          <date>2022-01-18</date>
          <time>14:42:12</time>
        </request>
      </response>
    </ns5:GetTransactionResponse>
  </soap:Body>
</soap:Envelope>

```

```

<acknowledge>
  <iscomplete>true</iscomplete>
</acknowledge>
<kmehrmessage>
  <ns2:header>
    <ns2:standard>
      <ns2:cd S="CD-STANDARD" SV="1.12">20150301</ns2:cd>
    </ns2:standard>
    <ns2:id S="ID-KMEHR" SV="1.12">Belrai.9004</ns2:id>
    <ns2:date>2022-01-18+01:00</ns2:date>
    <ns2:time>09:07:12.696+01:00</ns2:time>
    <ns2:sender>
      <ns2:hcparty>
        <ns2:cd S="CD-HCPARTY" SV="1.12">application</ns2:cd>
        <ns2:name>Belrai</ns2:name>
      </ns2:hcparty>
    </ns2:sender>
    <ns2:recipient>
      <ns2:hcparty>
        <ns2:id S="ID-HCPARTY" SV="1.0">71089914</ns2:id>
        <ns2:cd S="CD-HCPARTY" SV="1.1">orghospital</ns2:cd>
        <ns2:name>TEST ZIEKENHUIS ALPHA</ns2:name>
      </ns2:hcparty>
      <ns2:hcparty>
        <ns2:id S="ID-HCPARTY" SV="1.0">71050643439</ns2:id>
        <ns2:id S="INSS" SV="1.0">79###</ns2:id>
        <ns2:cd S="CD-HCPARTY" SV="1.12">persphysician</ns2:cd>
        <ns2:firstname>Piet</ns2:firstname>
        <ns2:familyname>Pienter</ns2:familyname>
      </ns2:hcparty>
      <ns2:hcparty>
        <ns2:cd S="LOCAL" SV="1.0" SL="TOKEN">f7943###</ns2:cd>
      </ns2:hcparty>
      <ns2:hcparty>
        <ns2:id S="ID-HCPARTY" SV="1.0">1234</ns2:id>
        <ns2:cd S="CD-HCPARTY" SV="1.1">orgretirementhome</ns2:cd>
        <ns2:name>TEST BELRAI</ns2:name>
      </ns2:hcparty>
    </ns2:recipient>
  </ns2:header>
  <ns2:Base64EncryptedData>
    <ns2:cd S="CD-ENCRYPTION-METHOD" SV="1.0">CMS</ns2:cd>
    <ns2:Base64EncryptedValue>MIAG###B</ns2:Base64EncryptedValue>
  </ns2:Base64EncryptedData>
</kmehrmessage>
</ns5:GetTransactionResponse>
</soap:Body>
</soap:Envelope>

```

Example of content of the Base64EncryptedValue

```
<folder xmlns="http://www.ehealth.fgov.be/standards/kmehr/schema/v1" xmlns:ns2="http://www.w3.org/2000/09/
xmldsig#" xmlns:ns3="http://www.w3.org/2001/04/xmlenc#">
  <id S="ID-KMEHR" SV="1.12">Belrai.39086</id>
  <patient>
    <id S="INSS" SV="1.0">7910###</id>
    <firstname>Piet</firstname>
    <familyname>Pienter</familyname>
    <sex>
      <cd S="CD-SEX" SV="1.12">unknown</cd>
    </sex>
  </patient>
  <transaction>
    <id S="LOCAL" SV="1.0" SL="belrai.form.id">39086</id>
    <cd S="CD-TRANSACTION" SV="1.12">contactreport</cd>
    <cd S="LOCAL" SV="1.0" SL="belrai-form-type">belrai_screener</cd>
    <cd S="LOCAL" SV="1.0" SL="template-version">1.4</cd>
    <date>2021-06-01Z</date>
    <time>00:00:00.000Z</time>
    <author>
      <hparty>
        <cd S="CD-HCPARTY" SV="1.12">application</cd>
        <name>Belrai</name>
      </hparty>
      <hparty>
        <id S="ID-HCPARTY" SV="1.12">71089914</id>
        <cd S="CD-HCPARTY" SV="1.12">1.1</cd>
        <name>TEST ZIEKENHUIS ALPHA</name>
      </hparty>
      <hparty>
        <id S="ID-HCPARTY" SV="1.0">71050643439</id>
        <id S="INSS" SV="1.0">7910###</id>
        <cd S="CD-HCPARTY" SV="1.12">persphysician</cd>
        <firstname>Piet</firstname>
        <familyname>Pinter</familyname>
      </hparty>
    </author>
    <iscomplete>true</iscomplete>
    <isvalidated>true</isvalidated>
  </item>
  <text>ewogICJyZXNwb25zZXMiIDogewogICAgIm1BOSIG0iAiMjAyMS0wNi0wMVQwMDowMDowMCSwMjowMCIsc2AgICAgIAUc
yZiIG0iAiMCIsc2AgICAgIAUcxaGEiIDogIjAiLAogICAgIm1HMmgiIDogIjAiLAogICAgIm1HMWhiIiA6ICwiIiwKICAgICJpRzFmYSIG0
iAiMCIsc2AgICAgIAUcyaIiIG0iAiMCIsc2AgICAgIAUcZmIiIDogIjAiLAogICAgIm1EMSIG0iAiMCIsc2AgICAgIAUcZGEiIDogIjAiLAo
gICAgIm1HMWRiIiA6ICwiIiwKICAgICJpRzFmYSIG0iAiMCIsc2AgICAgIAUcYyYiIG0iAiMCIsc2AgICAgIAUc
```

