

**Directory WS  
Cookbook  
Version 1.12**

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**eHealth platform**

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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	30/07/2017	eHealth platform	Initial
1.1	10/08/2017	eHealth platform	Adding missing Link type 'EmployerStatutory' in chapter 9 Adding missing information on UDDI registry in chapter 5.1
1.2	08/09/2017	eHealth platform	Limit maximum number of Link elements to 1 in chapter 5.2.2
1.3	16/10/2017	eHealth platform	Extra explication about routing and no routing options in the OptionsEnumeration
1.4	13/12/2017	eHealth platform	Service modification. New "update" operation
1.5	17/01/2018	eHealth platform	Service modification. New "update" operation.
1.6	17/01/2018	eHealth platform	Maintenance rules added
1.7	27/02/2018	eHealth platform	EndDate nillable
1.8	16/05/2018	eHealth platform	Possibility to update StartDate
1.9	26/06/2018	eHealth platform	Fix error in example
1.10	06/08/2018	eHealth platform	Fix description for attributes Offset and MaxElements in GetLinks operation
1.11	21/10/2019	eHealth platform	Anonymization
1.12	09/08/2022	eHealth platform	§ 2.3 eHealth document references (updated) § 2.4 External document references (added) § 5.1.3 WS-I Basic Profile (added) § 5.1.4 Tracing (added)

## 2. Introduction

### 2.1 Goal of the service

The eHealth-platform created a directory allowing new projects, such as those for administrative simplification, to retrieve specific information not present in other authentic sources. This directory is a register, storing actors that are linked to each other with a certain quality code for a certain period. This directory can be consulted via the DAAttribute Service (DAAS).

The Directory Web Service (WS) is the service allowing privileged partners to add data to the directory.

### 2.2 Goal of the document

This document is not a development or programming guide for internal applications. Instead, it provides functional and technical information and allows an organization to integrate and use the eHealth platform service.

However, in order to interact in a smooth, homogeneous and risk controlled way with a maximum of partners, these partners must commit to comply with the requirements of specifications, data format and release processes of the eHealth platform as described in this document.

Technical and business requirements must be met, to allow the integration and validation of the eHealth platform service in the client application.

### 2.3 eHealth platform document references

On the portal of the eHealth platform, you can find all the referenced documents.<sup>1</sup> These versions, or any following ones, can be used for the eHealth platform service.

ID	Title	Version	Date	Author
1	SOA – Error guide	1.0	10/06/2021	eHealth platform
2	DAAS WS	1.8	19/07/2022	eHealth platform
3	STS – HolderofKey – Cookbook	1.5	13/07/2022	eHealth platform

### 2.4 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	Basic Profile Version 1.1	<a href="http://www.ws-i.org/Profiles/BasicProfile-1.1-2004-08-24.html">http://www.ws-i.org/Profiles/BasicProfile-1.1-2004-08-24.html</a>	24/08/2004	Web Services Interoperability Organization

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<sup>1</sup> [www.ehealth.fgov.be/ehealthplatform](http://www.ehealth.fgov.be/ehealthplatform)

## 3. Support

### 3.1 Helpdesk eHealth platform

#### 3.1.1 Certificates

In order to access the secured eHealth platform environment you have to 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](mailto:acceptance-certificates@ehealth.fgov.be)
- Production: [support@ehealth.fgov.be](mailto: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](mailto: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](mailto: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](mailto:info@ehealth.fgov.be)

### 3.2 Status

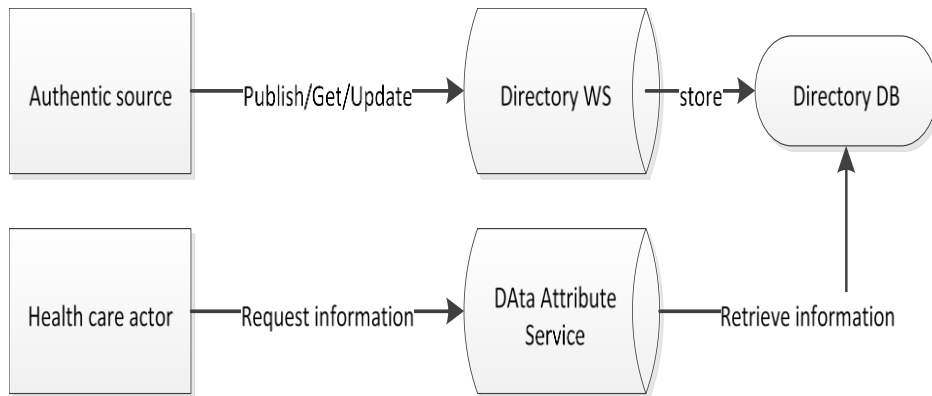
The website <https://status.ehealth.fgov.be> is the monitoring and information tool for the ICT functioning of the eHealth services that are partners of the Belgian eHealth system.



## 4. Global overview

Authentic sources publish specific data via the Directory WS into the Directory DB. They can also consult the information they published (but no other information).

A health care actor can – in function of the project – request information via the DAAS. The Directory DB is one of the resources used by the DAAS to retrieve the correct information.



## 5. Step-by-step

### 5.1 Technical requirements

- Valid certificate in the correct environment
- Request access to the Directory WS at [info@ehealth.fgov.be](mailto:info@ehealth.fgov.be)
- Retrieve UDDI registry on the portal of the eHealth platform<sup>2</sup>

#### 5.1.1 Use of the eHealth SSO solution

The complete overview of the profile and a systematic implementation to start protecting a new application with SSO @ eHealth platform is described in the eHealth platform STS cookbook (see 2.3).

This section specifies how to do the call to STS in order to have access to the WS. You must precise several attributes in the request. The attributes we need are the following (AttributeNamespace="urn:be:fgov:identification-namespace"):

- the CBE number as identifier of the organization (AttributeName: "urn:be:fgov:ehealth:1.0:certificateholder:enterprise:cbe-number")
- If your organization has an EHP number, the EHP number as identifier of the organization (AttributeName: "urn:be:fgov:ehealth:1.0:certificateholder:organization:ehp-number")
- If your organization has a NIHII number, the NIHII number as identifier (AttributeName: "urn:be:fgov:ehealth:1.0:certificateholder:hospital:nihi-number")

You also have to precise which information must be validated by the eHealth platform. To have access to the WS, the following data must at least be validated

(AttributeNamespace="urn:be:fgov:certifiednamespace:ehealth"):

- it is an organization with access to (AttributeName="urn:be:fgov:ehealth:1.0:organization:directory\_authorized:boolean").

#### 5.1.2 Security policies to apply

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

As web service 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 shall not be treated).
- The signature with the certificate of
  - the timestamp, (the one mentioned above)
  - the body (the message itself)
  - and the binary security token: an eHealth certificate or a SAML token issued by STS.

This allows eHealth to verify the integrity of the message and the identity of its author.

The STS cookbook, explaining how to implement this security policy, can be found on the eHealth portal.

<https://www.ehealth.fgov.be/ehealthplatform/nl/service-iam-identity-access-management> (Dutch)

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

#### 5.1.3 WS-I Basic Profile 1.1

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

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<sup>2</sup> <https://portal.api.ehealth.fgov.be/>



## 5.1.4 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](mailto:info@mycompany.be)

## 5.2 Web service

### 5.2.1 General information

The endpoints and interface definitions can be found in our UDDI: <https://portal.api.ehealth.fgov.be>

### 5.2.2 Method publishLinks

This method publishes a relationship (Link) between two actors. This method has three important concepts.

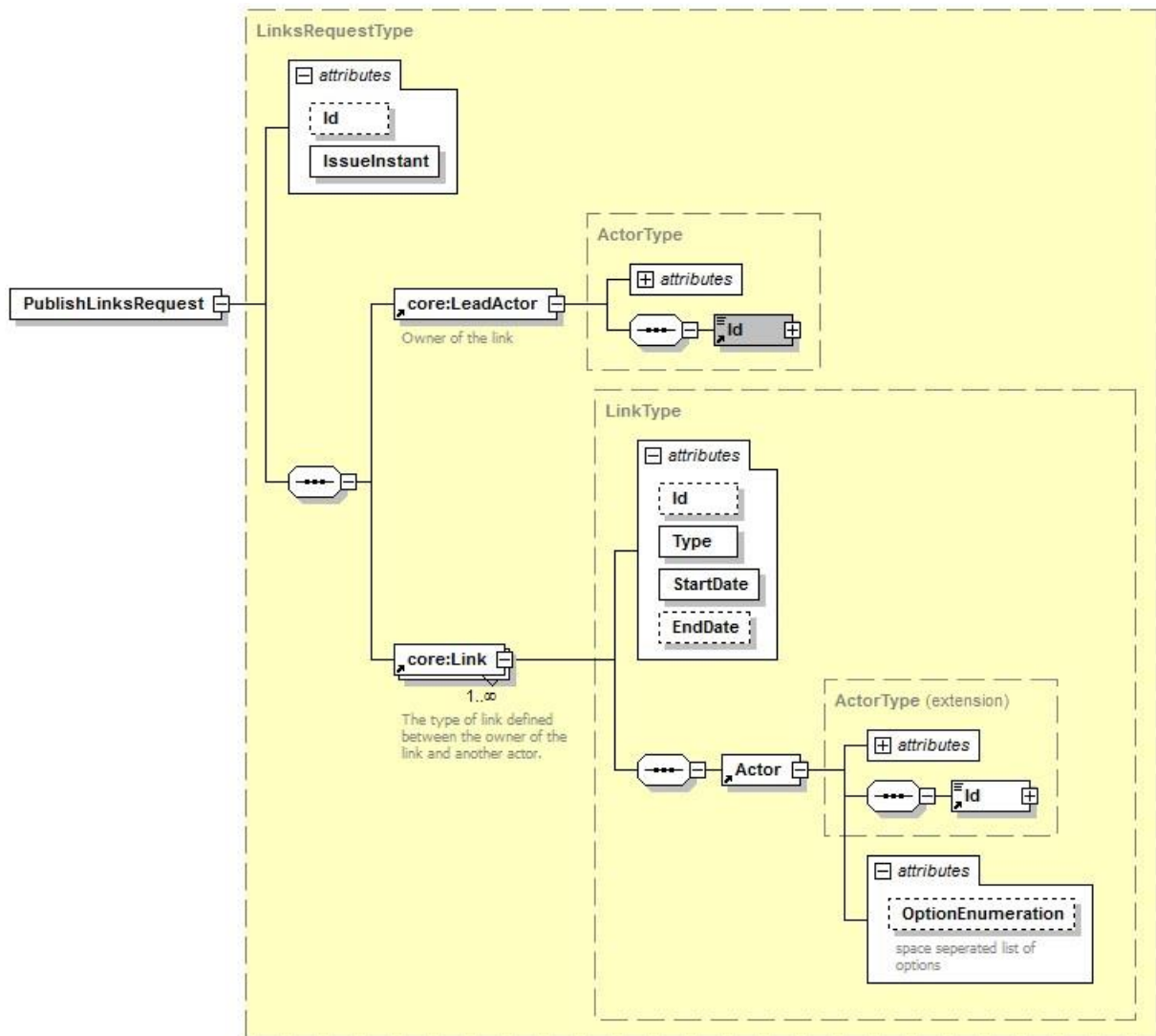
1. LeadActor: this actor owns the Link
2. Link: describes the relationship between the LeadActor and the Actor
3. Actor: this actor is part of a relationship between itself and the LeadActor.

To publish multiple relationships with the same lead actor, multiple Link elements can be added to the request. To maintain the proper performance, we restrict the request to a maximum of 1 Link element.

If a relationship between the Actor and another Actor should be published, a second request should be created adding the Actor of the first request as the LeadActor of the second request.



### 5.2.2.1 PublishLinksRequest

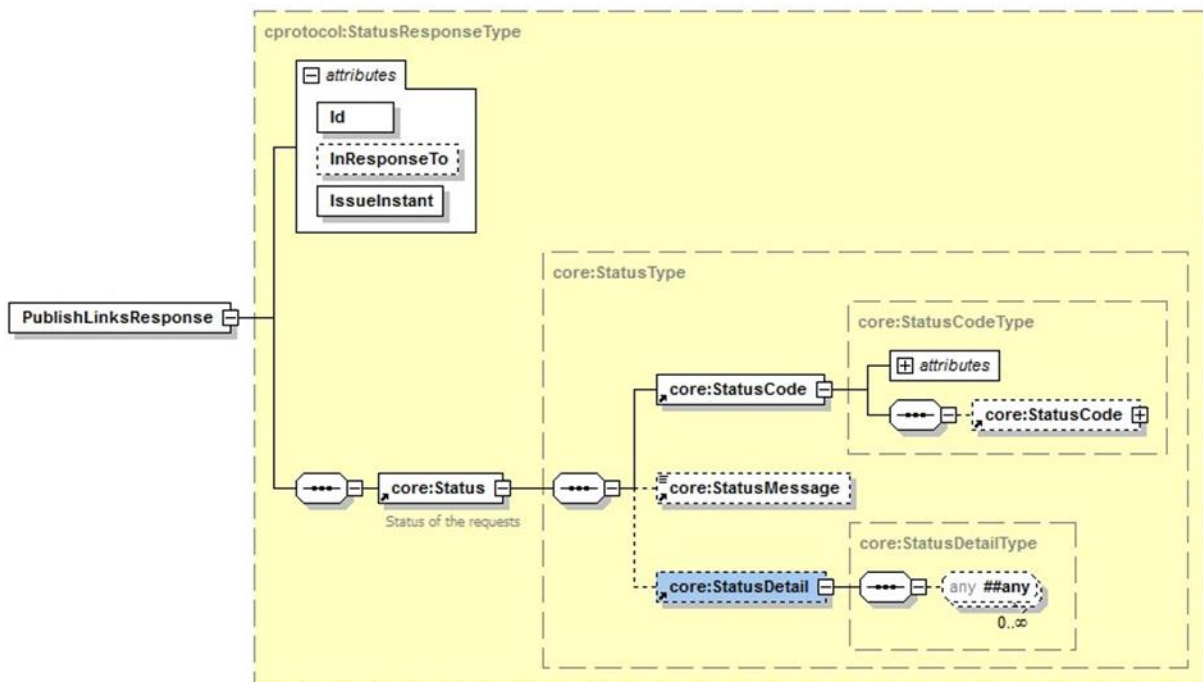


Field name	Description
Id	Identifier of the request within the caller system. Although this is an optional attribute in the schema, this service requires an Id. This Id is used in the reply communication.
IssueInstant	Date and time of the request.
LeadActor	This actor is the owner of the link with another actor. A LeadActor is usually the same as the principle of the request (certificate used for publishing). If not the same, the LeadActor should have at least have a relationship with the principle. Cfr. 5.2.6.1 ActorType
Link	A Link specifies a relationship between the LeadActor and the Actor defined inside the Link. Cfr. 5.2.6.2 LinkType

OptionEnumeration	This is a list of options on the Actor. Currently, only 'noRouting' and 'routing' is a recognised option. By default, routing information to an actor is disabled. With routing, a flag is set indicating a message should be sent to this Actor. For the MulteMediatt project, this means this actor will receive a message without diagnose
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### 5.2.2.2 PublishLinksResponse

The response will always contain an InResponseTo identifier, linking this response to a sent request.



Field name	Description
Id	Identifier of the response
InResponseTo	Identifier of the request
IssueInstant	Date and time of the response
Status	Status of the response. Cfr. 5.2.6.3 StatusType

### 5.2.2.3 Example #1

The Header element in the example below is left empty in order to keep the example easy to read. A real request should always include the proper security (cfr. 5.1.2 Security policies to apply).

An organization with CBE number 0409.440.562 (LeadActor) publishes a relationship with an organization 0893.707.025. The LeadActor has the quality 'ExternalPreventionService' and is the owner of the relationship between itself and the other organization. The principle of the request vouches that this LeadActor is a prevention service for the linked actor for a period of one year (from 1<sup>st</sup> January 2018 until the last day of

that year). The organization 0893.707.025 is an employer, which implies that only physical persons can be linked to it.

Request:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:urn="urn:be:fgov:health:directory:protocol:v1"
xmlns:urn1="urn:be:fgov:health:directory:core:v1">
  <soapenv:Header/>
  <soapenv:Body wsu:Id="id-21"
xmlns:wsu="http://docs.oasisopen.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
    <urn:PublishLinksRequest Id="_df644fe1-d093-4a90-bdcd-18c9409890cd"
IssueInstant="2017-07-24T13:55:54.375Z">
      <urn1:LeadActor Type="ExternalPreventionService">
        <urn1:Id Type="CBE">0123456789</urn1:Id>
      </urn1:LeadActor>
      <!--1 or more repetitions:-->
      <urn1:Link Id="ID_1" EndDate="2018-12-31" StartDate="2018-01-01"
Type="PreventionService">
        <urn1:Actor Type="Employer">
          <urn1:Id Type="CBE">1234567890</urn1:Id>
        </urn1:Actor>
      </urn1:Link>
    </urn:PublishLinksRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

Reply:

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns3:PublishLinksResponse Id="_771d6b92-6f94-42c3-9b67-24648e9c1d80"
InResponseTo="_df644fe1-d093-4a90-bdcd-18c9409890cd" IssueInstant="2017-
0724T13:55:59.590+02:00" xmlns:ns3="urn:be:fgov:health:directory:protocol:v1"
xmlns:ns2="urn:be:fgov:health:commons:core:v2">
      <ns2:Status>
        <ns2:StatusCode Value="urn:be:fgov:health:2.0:status:Success"/>
      </ns2:Status>
    </ns3:PublishLinksResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```



#### 5.2.2.4 Example #2

The Header element in the example below is left empty in order to keep the example easy to read. A real request should always include the proper Security (Cfr. 5.1.2 Security policies to apply).

Adding 1 employee to organization 0893.707.025 is done in a second request.

##### Request:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:urn="urn:be:fgov:health:directory:protocol:v1"
xmlns:urn1="urn:be:fgov:health:directory:core:v1">
  <soapenv:Header/>
  <soapenv:Body wsu:Id="id-21"
xmlns:wsu="http://docs.oasisopen.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
    <urn:PublishLinksRequest Id="_df644fe1-d093-4a90-bdcd-18c9409890cd"
IssueInstant="2017-07-24T13:55:54.375Z">
      <urn1:LeadActor Type="Employer">
        <urn1:Id Type="CBE">1234567890</urn1:Id>
      </urn1:LeadActor>
      <!--1 or more repetitions-->
      <urn1:Link Id="ID_1" StartDate="2010-01-01" Type="EmployerPrivateSector">
        <urn1:Actor Type="Employee">
          <urn1:Id Type="SSIN">01234567890</urn1:Id>
        </urn1:Actor>
      </urn1:Link>
    </urn:PublishLinksRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

##### Reply:

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns3:PublishLinksResponse Id="_771d6b92-6f94-42c3-9b67-24648e9c1d80"
InResponseTo="_df644fe1-d093-4a90-bdcd-18c9409890cd" IssueInstant="2017-
0724T13:55:59.590+02:00" xmlns:ns3="urn:be:fgov:health:directory:protocol:v1"
xmlns:ns2="urn:be:fgov:health:commons:core:v2">
      <ns2:Status>
        <ns2:StatusCode Value="urn:be:fgov:health:2.0:status:Success"/>
      </ns2:Status>
    </ns3:PublishLinksResponse>
  </SOAP-ENV:Body> </SOAP-ENV:Envelope>
```

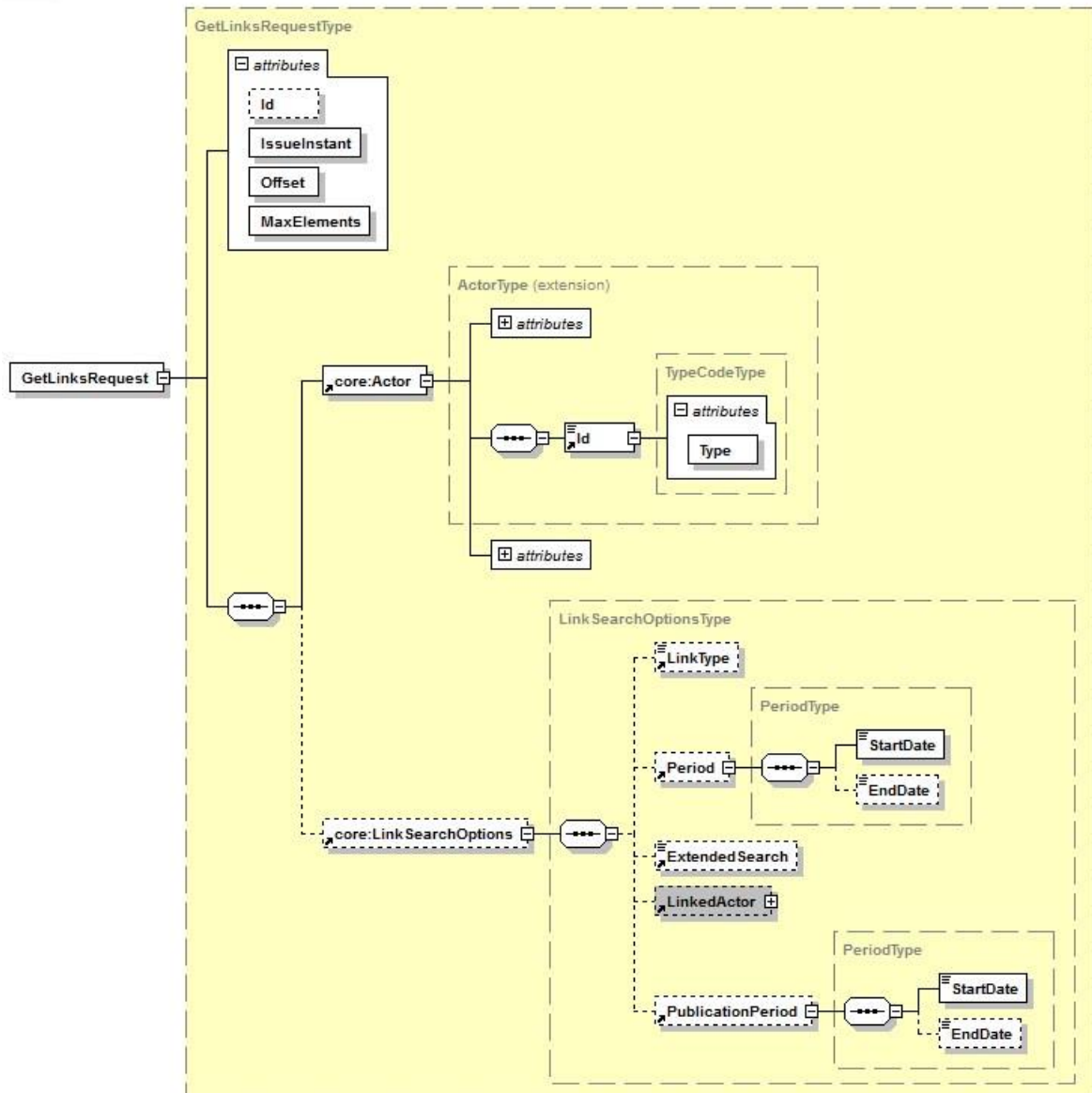


### 5.2.3 Method getLinks

This method allows a user consulting the relationship(s)/link(s) that he published in order to verify that all its publications were correctly processed and inserted in the Directory DB.

For security reasons, a user can not consult relationships published by another user.

#### 5.2.3.1 GetLinksRequest

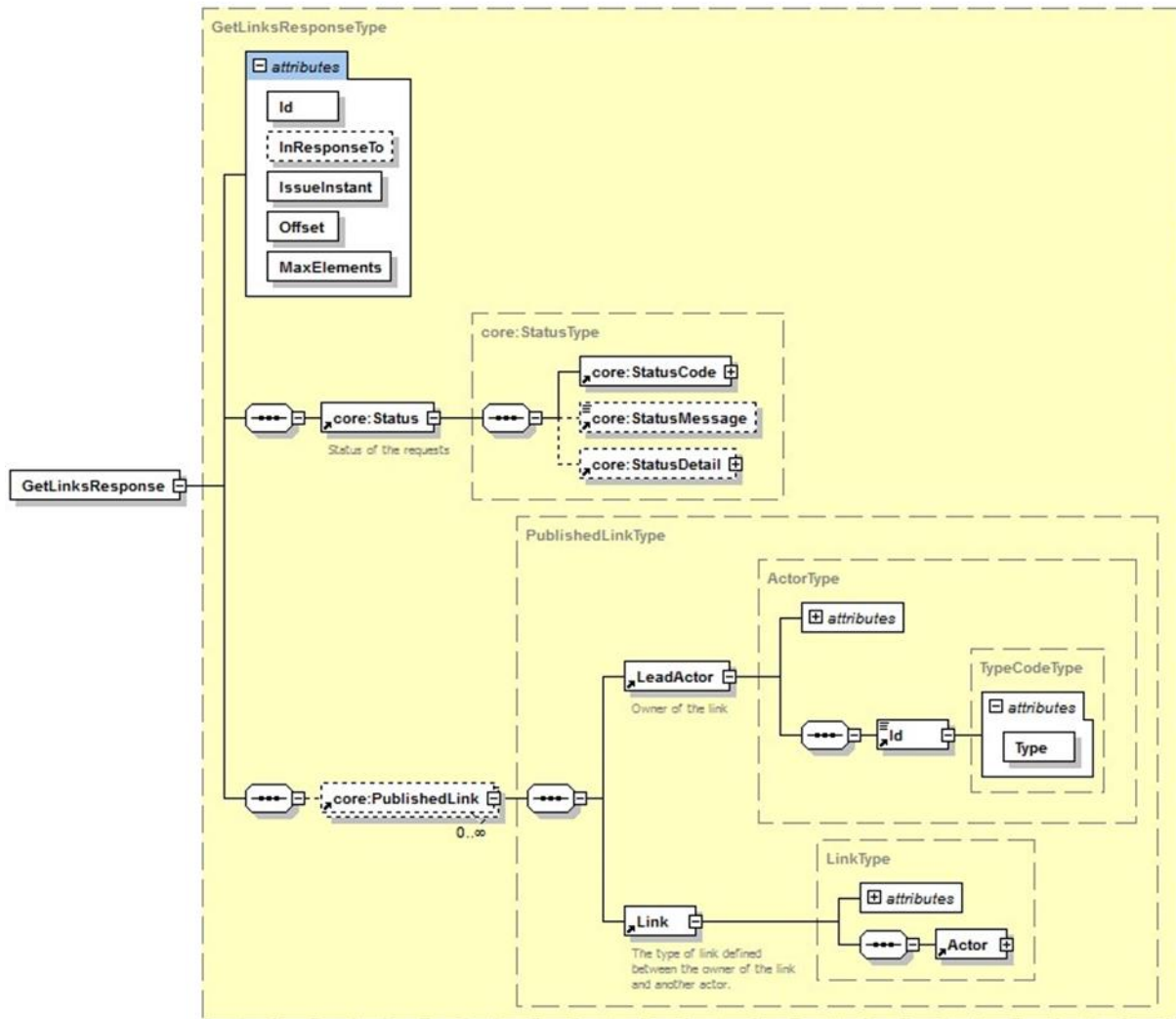


Field name	Description
Id	Identifier of the request within the caller system. Although this is an optional attribute in the schema, this service requires an Id. This Id is used in the reply communication. (Max 30 characters)
IssueInstant	Date and time of the request

Offset	Starts at 1. It defines the first element of your range
MaxElements	<p>MaxElements starts at 1. It is the maximum number of PublishedLink that you will receive in your paginated response. If you receive less PublishedLink than this value, this means that no more PublishedLink can be found in the next range.</p> <p>Range examples with different Offset and MaxElement values:</p> <ul style="list-style-type: none"> <li>- Offset = 1, MaxElements = 100: you will receive the elements in this range [1,100]. Corresponds to the first 100 elements.</li> <li>- Offset = 100, MaxElements = 10 : you will find the elements in this range [100, 109]</li> <li>- Offset=6, MaxElements=6 : you will receive the elements in this range [6, 11]</li> <li>- Offset=1, MaxElements=2 : you will receive the elements in this range [1,2]</li> </ul>
Actor	<p>The actor for which you want to search the relationship(s) published. He can be a LeadActor or an actor linked to a LeadActor</p> <p>Cfr. 5.2.6.1 ActorType</p>
LinkSearchOptions	<p>Some options which allow refining/filter the consultation</p> <p>Cfr. 5.2.6.4 LinkSearchOptionsType</p>

### 5.2.3.2 *GetLinksResponse*

The response will always contain an InResponseTo identifier, linking this response to a sent request.



Field name	Description
Id	Identifier of the response
InResponseTo	Identifier of the request
IssueInstant	Date and time of the response
Status	Status of the response. Cfr. 5.2.6.3 StatusType
PublishedLink	The list of links retrieved in function of the inputs inserted in the request. If there is no PublishedLink in the response, this means that no relation was found. Cfr. 5.2.6.5 PublishedLinkType

### 5.2.3.3 Example #1

The Header element in the example below is left empty in order to keep the example easy to read. A real request should always include the proper Security (Cfr. 5.1.2 Security policies to apply).



Perform a consultation of all the first 100 relationships of employer 1234567890. However, no result was found.

Request:

```
<soapenv:Body wsu:Id="id-182"
xmlns:wsu="http://docs.oasisopen.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <urn:GetLinksRequest Id="_481a45e4-a21c-4a02-b7d8-55cda44387b8"
IssueInstant="2017-08-01T11:31:56.327Z" MaxElements="100" Offset="1">
    <urn1:Actor Type="Employer">
      <urn1:Id Type="CBE">1234567890</urn1:Id>
    </urn1:Actor>
  </urn:GetLinksRequest>
</soapenv:Body>
```

Reply:

```
<SOAP-ENV:Body>
  <ns4:GetLinksResponse Id="_b6bf0245-ea90-44dd-bdfa-f2cd1155e493"
InResponseTo="_481a45e4-a21c-4a02-b7d8-55cda44387b8" IssueInstant="2017-08-01T13:32:00.648+02:00" MaxElements="0" Offset="0"
xmlns:ns4="urn:be:fgov:ehealth:directory:protocol:v1"
xmlns:ns2="urn:be:fgov:ehealth:commons:core:v2"
xmlns:ns3="urn:be:fgov:ehealth:directory:core:v1">
    <ns2:Status>
      <ns2:StatusCode Value="urn:be:fgov:ehealth:2.0:status:Success"/>
    </ns2:Status>
  </ns4:GetLinksResponse>
</SOAP-ENV:Body>
```

### 5.2.3.4 Example #2

The Header element in the example below is left empty in order to keep the example easy to read. A real request should always include the proper Security (Cfr. 5.1.2 Security policies to apply).

Perform a consultation of the relationships between the medical officer 01234567890 and the employer 2345678901 with some specific criteria:

- Only the relations with type "MedicalOfficer" must be returned
- Only the relations which are active on 01/08/2017 must be returned
- "Extended" relations can also be returned

Only the relations published between 07/01/2017 and 07/07/2017 must be returned.

Request:

```
<soapenv:Body wsu:Id="id-185"
xmlns:wsu="http://docs.oasisopen.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">
  <urn:GetLinksRequest Id="_afd67cf5-8b5b-45d5-bdce-a7c5fcc42080"
IssueInstant="2017-08-01T11:52:10.336Z" MaxElements="100" Offset="1">
    <urn1:Actor Type="MedicalOfficer">
```



```

        <urn1:Id Type="SSIN">01234567890</urn1:Id>
    </urn1:Actor>
    <urn1:LinkSearchOptions>
        <urn1:LinkType>MedicalOfficer</urn1:LinkType>
        <urn1:Period>
            <urn1:StartDate>2017-08-01</urn1:StartDate>
        <urn1:EndDate>2017-08-01</urn1:EndDate>        </urn1:Period>
        <urn1:ExtendedSearch>true</urn1:ExtendedSearch>
        <urn1:LinkedActor Type="Employer">
            <urn1:Id Type="EHP">2345678901</urn1:Id>
        </urn1:LinkedActor>
        <urn1:PublicationPeriod>
            <urn1:StartDate>2017-01-07</urn1:StartDate>
            <urn1:EndDate>2017-07-07</urn1:EndDate>
        </urn1:PublicationPeriod>
    </urn1:LinkSearchOptions>
</urn:GetLinksRequest>
</soapenv:Body>
</soapenv:Envelope>

```

**Reply:**

```

<ns4:GetLinksResponse Id="_bf8d56d8-51bf-4dbe-8543-1bf5f04d4510"
InResponseTo="_afd67cf5-8b5b-45d5-bdce-a7c5fcc42080" IssueInstant="2017-08-
01T11:52:10.336Z" MaxElements="0" Offset="0"
xmlns:ns4="urn:be:fgov:ehealth:directory:protocol:v1"
xmlns:ns2="urn:be:fgov:ehealth:commons:core:v2"
xmlns:ns3="urn:be:fgov:ehealth:directory:core:v1"
xmlns:SOAPENV="http://schemas.xmlsoap.org/soap/envelope/">
    <ns2:Status>
        <ns2:StatusCode Value="urn:be:fgov:ehealth:2.0:status:Success"/>
    </ns2:Status>
    <ns3:PublishedLink>
        <ns3:LeadActor Type="MedicalOfficer">
            <ns3:Id Type="SSIN">01234567890</ns3:Id>
        </ns3:LeadActor>
        <ns3:Link EndDate="2017-12-31+01:00" StartDate="2017-01-01+01:00"
Type="MedicalOfficer">
            <ns3:Actor Type="Employer">
                <ns3:Id Type="EHP">2345678901</ns3:Id>
            </ns3:Actor>
        </ns3:Link>
    </ns3:PublishedLink>
    <ns3:PublishedLink>
        <ns3:LeadActor Type="MedicalOfficer">

```



```

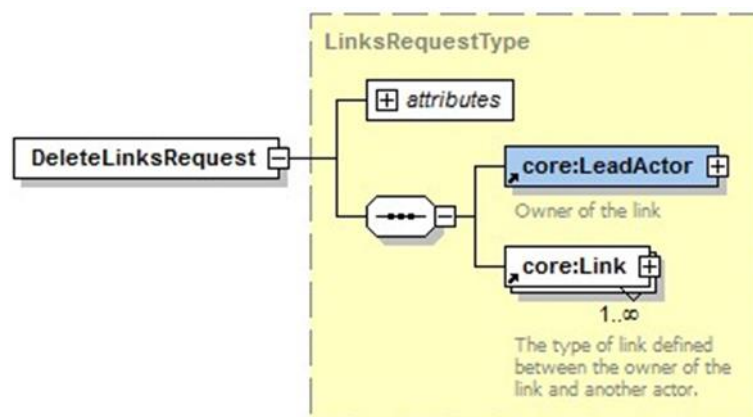
    <ns3:Id Type="SSIN">123456789012</ns3:Id>
  </ns3:LeadActor>
  <ns3:Link EndDate="2016-12-31+01:00" StartDate="2016-01-01+01:00"
Type="MedicalOfficer">
    <ns3:Actor Type="Employer">
      <ns3:Id Type="EHP">2345678901</ns3:Id>
    </ns3:Actor>
  </ns3:Link>
</ns3:PublishedLink>
</ns4:GetLinksResponse>

```

## 5.2.4 Method deleteLinks

This method permanently removes a relationship or link between two actors from the database. This method SHOULD never be used. It exists only for cases where the publisher made a mistake and wants to delete the publication it made. To disable a relationship, you SHOULD use the publishLinks method by adding an end date. To execute the delete statement, all parameters from the publications should match exactly. It is only possible to delete a Link when the Actor of the Link is not implied as LeadActor of another Link.

### 5.2.4.1 DeleteLinksRequest



### 5.2.4.2 DeleteLinksResponse

Cfr 5.2.2.2 PublishLinksResponse

### 5.2.4.3 Example #1

The Header element in the example below is left empty in order to keep the example easy to read. A real request should always include the proper Security (cfr. 5.1.2 Security policies to apply).

This example deletes Example #2 from Method publishLinks.

Request:

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:urn="urn:be:fgov:health:directory:protocol:v1"
xmlns:urn1="urn:be:fgov:health:directory:core:v1">
  <soapenv:Header/>

```

```

    <soapenv:Body wsu:Id="id-21"
xmlns:wsu="http://docs.oasisopen.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
    <urn:DeleteLinksRequest Id="_df644fe1-d093-4a90-bdcd-18c9409890cd"
IssueInstant="2017-07-24T13:55:54.375Z">
    <urn1:LeadActor Type="Employer">
    <urn1:Id Type="CBE">1234567890</urn1:Id>
    </urn1:LeadActor>
    <!--1 or more repetitions:-->
    <urn1:Link Id="ID_1" StartDate="2010-01-01" Type="EmployerPrivateSector">
    <urn1:Actor Type="Employee">
    <urn1:Id Type="SSIN">01234567890</urn1:Id>
    </urn1:Actor>
    </urn1:Link>
    <urn1:Link Id="ID_2" StartDate="1995-01-01" Type="EmployerPrivateSector">
    <urn1:Actor Type="Employee">
    <urn1:Id Type="SSIN">234567890123</urn1:Id>
    </urn1:Actor>
    </urn1:Link>
    </urn:DeleteLinksRequest>
    </soapenv:Body>
</soapenv:Envelope>

```

**Reply:**

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns3:DeleteLinksResponse Id="_771d6b92-6f94-42c3-9b67-24648e9c1d80"
InResponseTo="_df644fe1-d093-4a90-bdcd-18c9409890cd" IssueInstant="2017-
0724T13:55:59.590+02:00" xmlns:ns3="urn:be:fgov:health:directory:protocol:v1"
xmlns:ns2="urn:be:fgov:health:commons:core:v2">
    <ns2:Status>
    <ns2:StatusCode Value="urn:be:fgov:health:2.0:status:Success"/>
    </ns2:Status>
    </ns3:DeleteLinksResponse>
  </SOAP-ENV:Body> </SOAP-ENV:Envelope>

```

#### 5.2.4.4 Example #2

The Header element in the example below is left empty in order to keep the example easy to read. A real request should always include the proper Security (Cfr. 5.1.2 Security policies to apply).

This example deletes Example #1 from Method publishLinks.



**Request:**

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:urn="urn:be:fgov:health:directory:protocol:v1"
xmlns:urn1="urn:be:fgov:health:directory:core:v1">
  <soapenv:Header/>
  <soapenv:Body wsu:Id="id-21"
xmlns:wsu="http://docs.oasisopen.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd">
    <urn:DeleteLinksRequest Id="_df644fe1-d093-4a90-bdcd-18c9409890cd"
IssueInstant="2017-07-24T13:55:54.375Z">
      <urn1:LeadActor Type="ExternalPreventionService">
        <urn1:Id Type="CBE">0123456789</urn1:Id>
      </urn1:LeadActor>
      <!--1 or more repetitions:-->
      <urn1:Link Id="ID_1" EndDate="2018-12-31" StartDate="2018-01-01"
Type="PreventionService">
        <urn1:Actor Type="Employer">
          <urn1:Id Type="CBE">1234567890</urn1:Id>
        </urn1:Actor>
      </urn1:Link>
    </urn:DeleteLinksRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

**Reply:**

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns3:DeleteLinksResponse Id="_771d6b92-6f94-42c3-9b67-24648e9c1d80"
InResponseTo="_df644fe1-d093-4a90-bdcd-18c9409890cd" IssueInstant="2017-
0724T13:55:59.590+02:00" xmlns:ns3="urn:be:fgov:health:directory:protocol:v1"
xmlns:ns2="urn:be:fgov:health:commons:core:v2">
      <ns2:Status>
        <ns2:StatusCode Value="urn:be:fgov:health:2.0:status:Success"/>
      </ns2:Status>
    </ns3:DeleteLinksResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

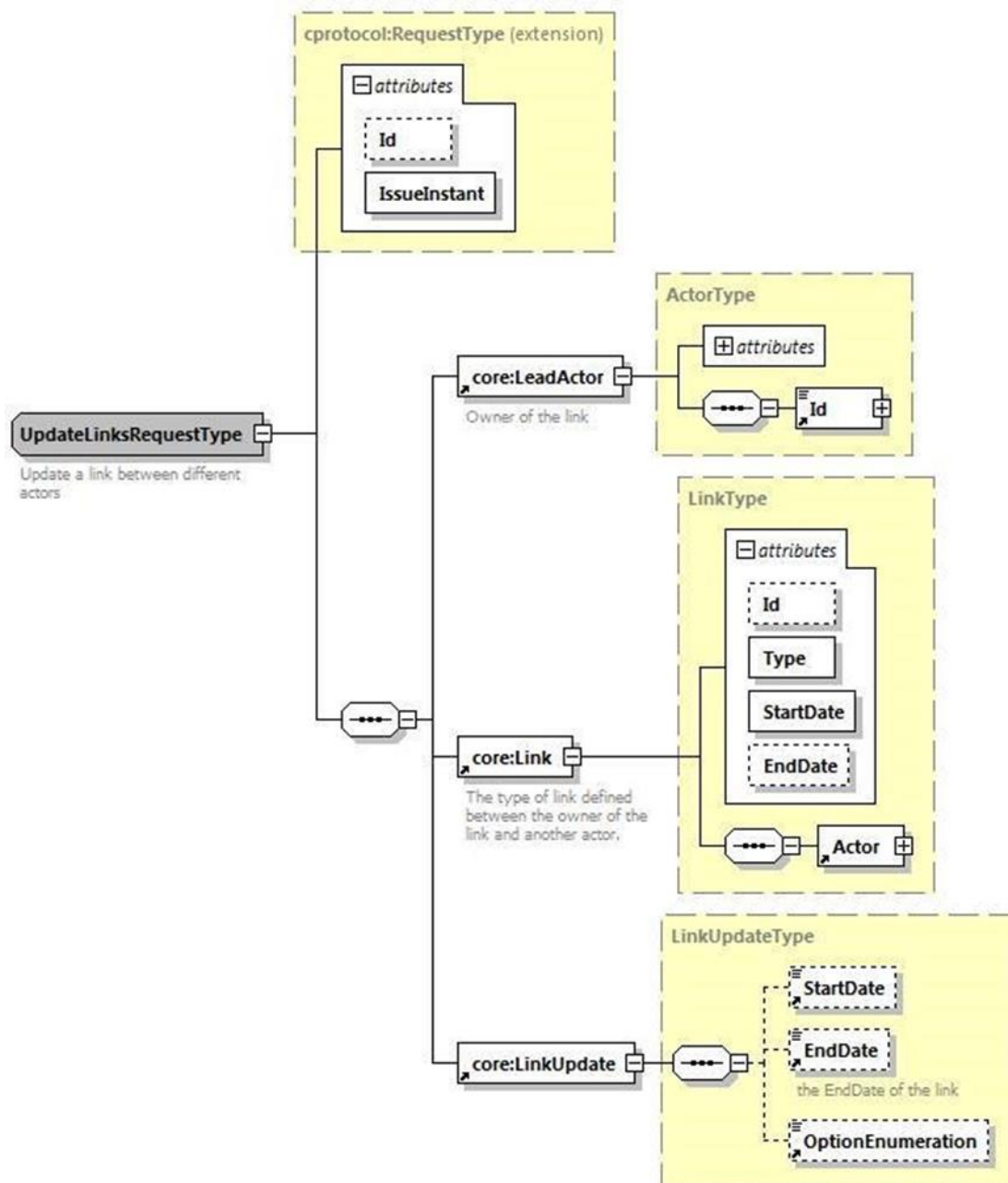


## 5.2.5 Method updateLinks

This method updates a relationship (Link) between 2 actors. There are 3 important concepts to this method.

1. LeadActor: the actor who wants to update the link (and it is the owner of the Link).
2. Link: describes the relationship between the LeadActor and the Actor that we want to update.
3. Actor: this actor is part of a relationship between himself and the LeadActor.
4. LinkUpdate: informations that we want to update (EndDate and/or Option)

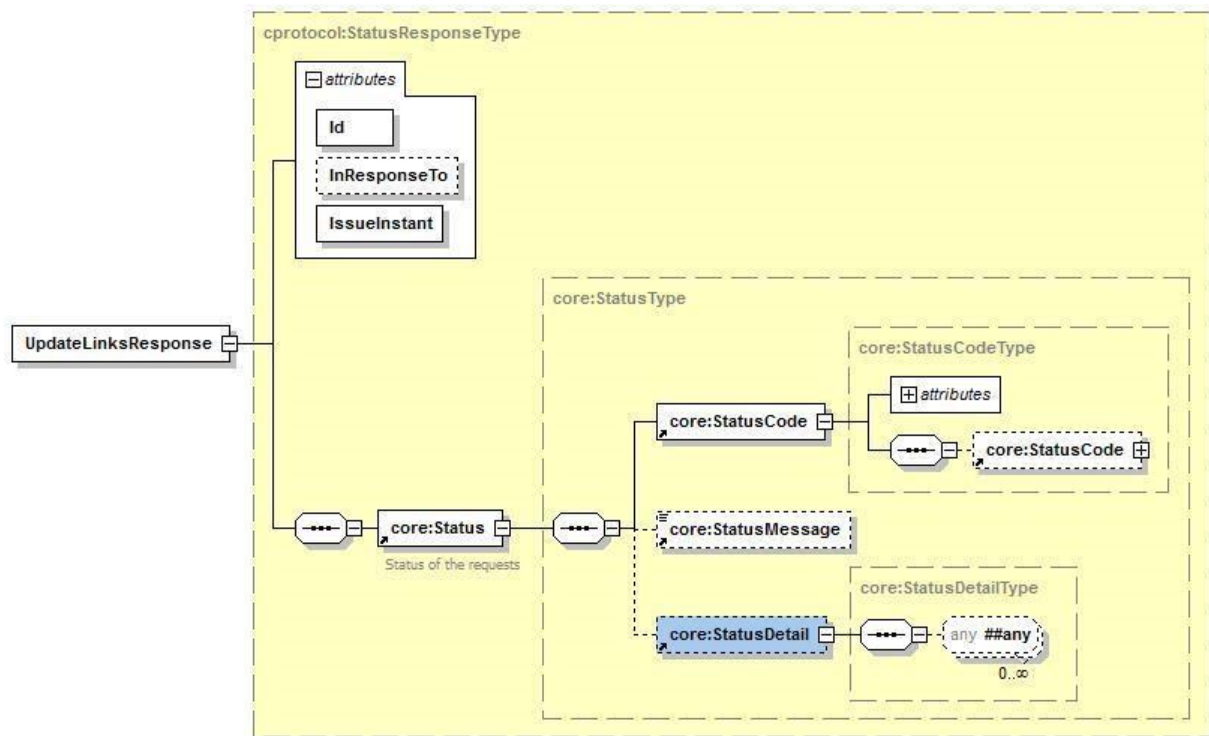
### 5.2.5.1 UpdateLinksRequest



Field name	Description
Id	Identifier of the request within the caller system. Although this is an optional attribute in the schema, this service requires an Id. This Id is used in the reply communication. Currently the Id can contain maximum 30 characters.
IssueInstant	Date and time of the request.
LeadActor	This actor is the owner of the link with another actor. A LeadActor is usually the same as the principle of the request (certificate used for publishing). The LeadActor for an update must be the same actor who published the link to update. Cfr. 5.2.6.1 ActorType
Link	A link specifies a relationship between the LeadActor and the Actor to update. Cfr. 5.2.6.2 LinkType
StartDate	StartDate is the start date of the link. Can be updated to a new StarDate. Cannot be null.
EndDate	EndDate is the end date of the link. Can be updated to a new EndDate or to null (by using <EndDate xsi:nil="true">).
OptionEnumeration	OptionEnumeration is a list of options (options that we want to update). Currently, only 'noRouting' and 'routing' is a recognised option. With routing, a flag is set indicating a message should be sent to this Actor. For the MultiMediatt project, this means this actor will receive a message without diagnose

### 5.2.5.2 UpdateLinksResponse

The response will always contain an InResponseTo identifier, linking this response to a sent request.



Field name	Description
Id	Identifier of the response
InResponseTo	Identifier of the request
IssueInstant	Date and time of the response
Status	Status of the response. Cfr. 5.2.6.3 StatusType

### 5.2.5.3 Example #1

The Header element in the example below is left empty in order to keep the example easy to read. A real request should always include the proper security (cfr. 5.1.2 Security policies to apply).

An organization with CBE number 0478.918.657 (LeadActor) updates a relationship. This relationship is defined by a Link element with an organization (5678901234). The update make an EndDate modification (12/31/2017) and a Option modification (noRouting).

#### Request:

```
<n2:UpdateLinksRequest xmlns:core="urn:be:fgov:health:directory:core:v1"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:n2="urn:be:fgov:health:directory:protocol:v1" Id="ID1" IssueInstant="2001-12-17T09:30:47Z"
xsi:schemaLocation="urn:be:fgov:health:directory:protocol:v1 health-directory-protocol-1_0.xsd">
  <core:LeadActor Type="ExternalPreventionService">
    <core:Id Type="CBE">4567890123</core:Id>
  </core:LeadActor>
  <core:Link Id="ID2" Type="String" StartDate="1957-08-13" EndDate="1957-08-13">
```





```

    <core:Actor Type="Employer">
      <core:Id Type="CBE">5678901234</core:Id>
    </core:Actor>
  </core:Link>
  <core:UpdateLinks>
    <core:EndDate>2017-31-12</core:Link>
    <core:OptionEnumeration>noRouting</core:OptionEnumeration>
  </core:UpdateLinks>
</n2:UpdateLinksRequest>

```

**Reply:**

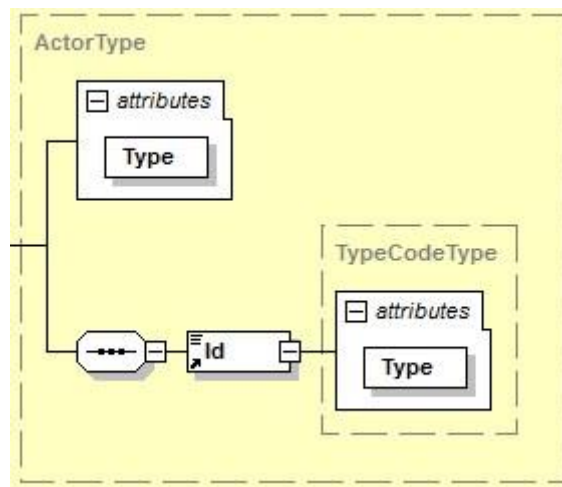
```

<n2:UpdateLinksResponse xmlns:ns2="urn:be:fgov:health:commons:core:v2"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:n2="urn:be:fgov:health:directory:protocol:v1" Id="ID1" InResponseTo="ID_123"
IssueInstant="200112-17T09:30:47Z" xsi:schemaLocation="urn:be:fgov:health:directory:protocol:v1
health-directoryprotocol-1_0.xsd">
  <ns2:Status>
    <ns2:StatusCode Value="urn:oasis:names:tc:SAML:2.0:status:Success"/>
  </ns2:Status>
</n2:UpdateLinksResponse>

```

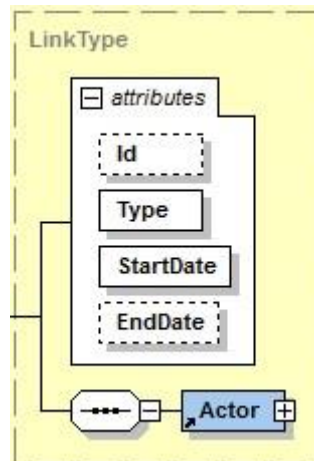
## 5.2.6 Used types

### 5.2.6.1 ActorType



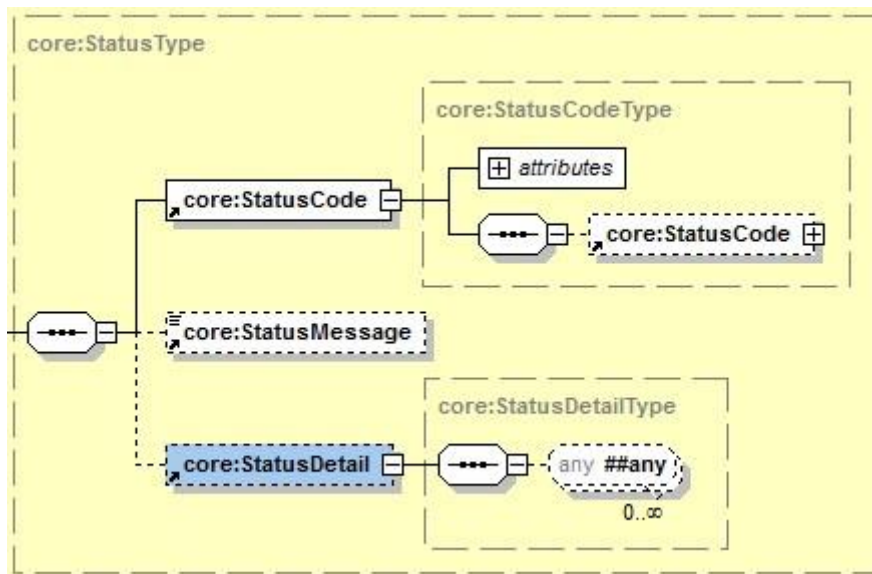
Field name	Descriptions
Type	This defines the type of actor. See all different types in annex.
Id	The unique identifier of an actor. This can be the identifier for a CBE, EHP, SSIN or NIHII. E.g. 80011224515 as the identifier for a person.
Type	This attributes specifies the type of Id such as 'CBE', 'EHP', 'SSIN' or 'NIHII'.

### 5.2.6.2 LinkType



Field name	Descriptions
Id	This Id uniquely identifies the Link. Its sole purpose is to detail on what Link an error was caused.
Type	Each Link has a certain Type. See all different types in annex.
StartDate	A relationship between 2 actors always has a starting date. The relationship between 2 actors is only valid starting from this date.
EndDate	A relationship between 2 actors can have an end date. The relationship is invalid the day after the end date. When no end date is specified, the relationship is always valid starting from the start date. An invalid Link, will exist as invalid for 1 month. After 1 month, the link is logically deleted. 5 months later, the link is physically deleted from the authentic source.
Actor	The actor in a relationship with the LeadActor. Cfr. 5.2.6.1 ActorType

### 5.2.6.3 StatusType



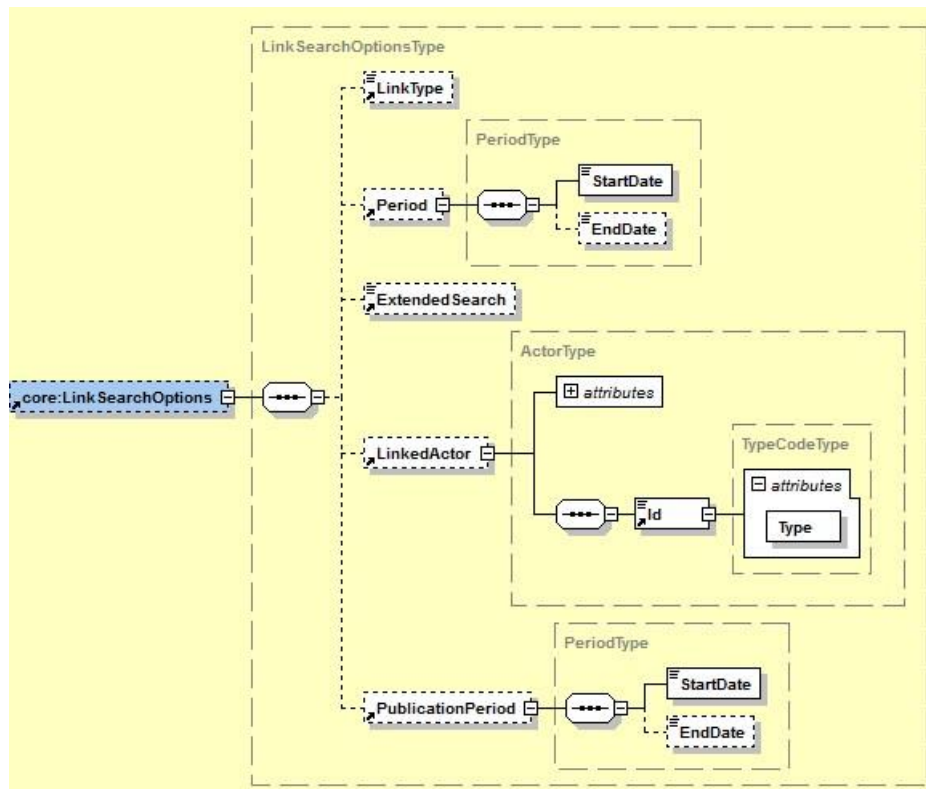
The eHealth platform SOA service response contains a Status element, which is used to indicate the status of the completion of the request. The status is represented by a StatusCode and optionally the message describing the status. An additional detail provides extra information on the encountered business errors returned by the target service.

- A statusCode (level 1) *urn:be:fgov:ehhealth:2.0:status:Requester* indicates the problem originates from the requestor. It can therefore be resolved by the requestor.
- A statusCode (level 1) *urn:be:fgov:ehhealth:2.0:status:Responder* indicates the problem originates from the eHealth platform web service. This might be due to a temporary unavailability.
- A statusCode (level 2) *urn:be:fgov:ehhealth:2.0:status:MissingInput* indicates that some mandatory information is missing in the request.
- A statusCode (level 2) *urn:be:fgov:ehhealth:2.0:status:RequestDenied* indicates something went wrong and the request was not processed. The StatusMessage might give more information on why the request was not processed.
- A statusCode (level 2) *urn:be:fgov:ehhealth:2.0:status:Indeterminate* indicates an unknown error.

A statusCode (level 2) *urn:be:fgov:ehhealth:2.0:status:InvalidInput* indicates that some value in the request was not correct. The statusMessage might give more information.

Field name	Descriptions
StatusCode	A StatusCode is recursive and can therefore contain an embedded StatusCode to define a sublevel statusCode. These codes can be used for automatic response handling. See table further for a list of possible values.
StatusMessage	An optional message, describing the error. This message should never be used to automate the handling of a response and should therefore only be used as extra information next to the StatusCode.
StatusDetail	The StatusDetail is defined as a free type, available for service to put any element in it to give extra information on the encountered business errors returned by the target service. In the context of this web service, it is not used.

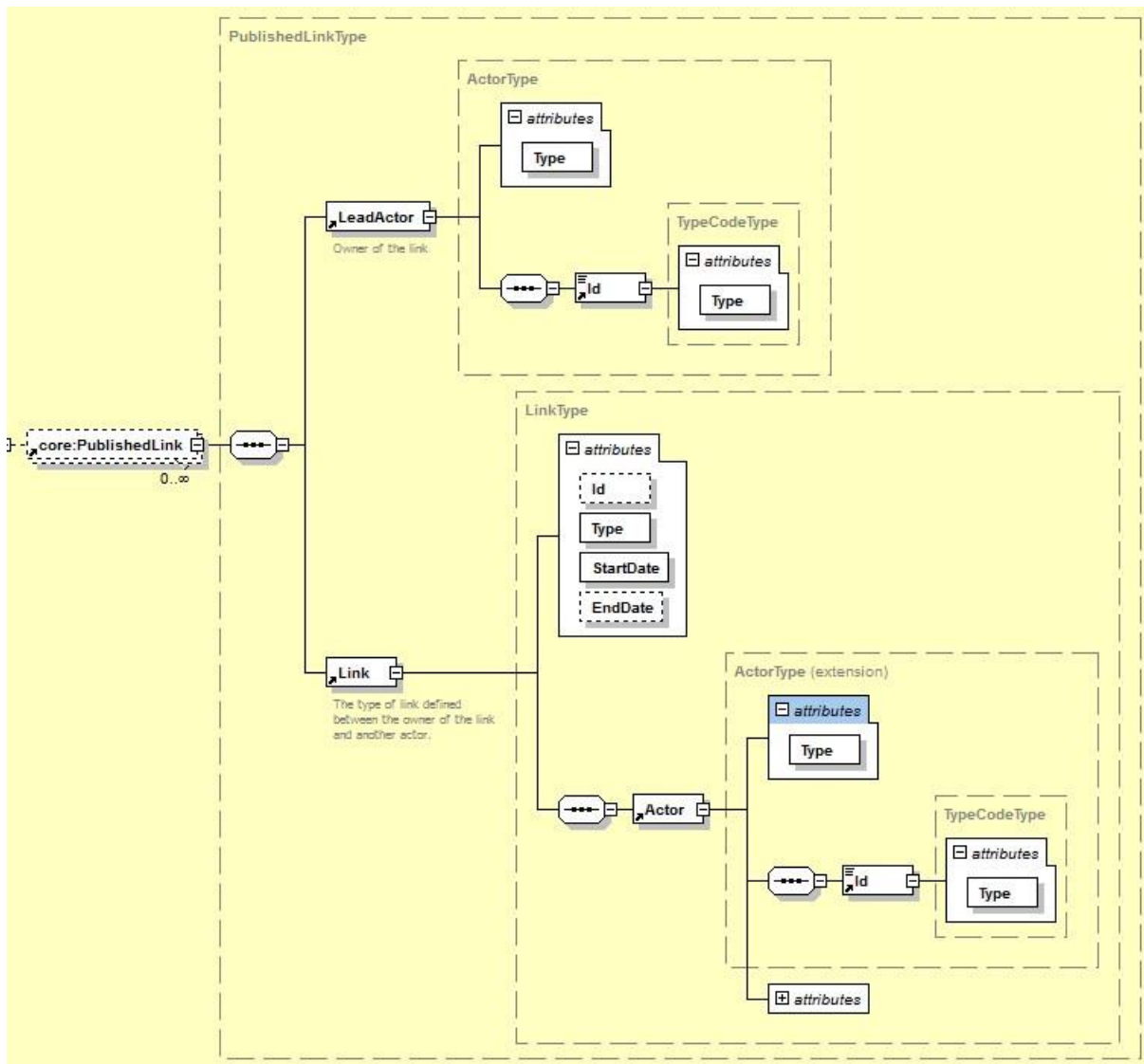
### 5.2.6.4 LinkSearchOptions



Field name	Descriptions
LinkType	Each Link has a certain Type. See all different types in annex. Only the relation(s) with the type specified in this field will be returned in the response.
Period	<p>StartDate: A relationship between 2 actors always has a starting date. The relationship between 2 actors is only valid starting from this date.</p> <p>EndDate: A relationship between 2 actors can have an end date. The relationship is invalid the day after the end date. When no end date is specified, the relationship is always valid starting from the start date.</p> <p>Only the relation(s) which is (are) valid during the period specified in the request will be returned in the response:</p> <ul style="list-style-type: none"> <li>• The period StartDate specified in your request must be <math>\geq</math> than the real start date of the relation.</li> <li>• The period EndDate specified in your request must be <math>\leq</math> than the real end date of the relation.</li> </ul>

ExtendedSearch	<p>This field is a Boolean so the possible values are “true” or “false”.</p> <ul style="list-style-type: none"> <li>• If the value “false” is selected, it means you want to receive only the “direct” relationships/links of the actor mentioned in the first part of your request</li> <li>• If the value “true” is selected, it means you want to receive the “direct” relationships/links of the actor mentioned in the first part of your request and the relationships/links of the actor(s) linked to the actor mentioned in the first part of your request.</li> </ul> <p>For example: actor A is linked to actor B and actor B is linked to actor C</p> <ul style="list-style-type: none"> <li>• If you launch a GetLinks request for actor A with ExtendedSearch=false, one link will be returned in response: “actor A – actor B”.</li> <li>• If you launch a GetLinks request for actor A with ExtendedSearch=true, two links will be returned in response: “actor A – actor B” and “actor B – actor C”.</li> </ul>
LinkedActor	<p>If you want to consult relationships between two specific actors, this field allows you to specify the actor linked to the actor mentioned in the first part of the request.</p> <p>Cfr. 5.2.6.1 ActorType</p>
PublicationPeriod	<p>This field allows you to retrieve only some links published in a specific period</p> <ul style="list-style-type: none"> <li>• If you specify only a StartDate, it means that you want to retrieve links that were published exactly at this date.</li> <li>• If you specify a StartDate and an EndDate, it means that you want to retrieve links, which were published between this StartDate and this EndDate.</li> </ul>

### 5.2.6.5 PublishedLink



Field name	Description
LeadActor	This actor is the owner of the link with another actor. Cfr. 5.2.6.1 ActorType
Link	A Link specifies a relationship between the LeadActor and the Actor defined inside the Link. Cfr. 5.2.6.2 LinkType

## 6. Risks and security

### 6.1 Risks and Safety

A publisher is supposed to publish only correct data into the directory. On the eHealth platform portal, you can find a more detailed document with terms and conditions.

All actions performed on this web service are logged for auditing **purpose**.

### 6.2 Security

#### 6.2.1 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 on the WS, the partner can obtain support from the contact centre (see Chap 3)

**If the eHealth platform should find 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 made available 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.**

#### 6.2.2 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 allows the eHealth platform to verify the integrity of the message and the identity of its author.
- No encryption on the message.

#### 6.2.3 The use of username, password and token

The username, password, and token are strictly personal.

Every user takes care of his username, password and token, and he is forced to confidentiality of it. It is prohibited to transfer them to partners and clients. Until inactivation, every user is responsible for every use, including the 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 platform service, please contact [info@ehealth.fgov.be](mailto: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 information needed to integrate is published on the portal of the eHealth platform.

Upon request and depending on the case, the eHealth platform provides you with a **test case** 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 to access the acceptance environment of the eHealth platform. From this moment, you start the integration and acceptance tests. The eHealth platform suggests testing during minimum one month.

After successful acceptance tests, the partner sends his test and performance results 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 on, the eHealth platform prepares the connection to the production environment and provides the partner with the necessary information. During the release day, the partner provides the eHealth platform with feedback on the test and performance tests.

For further information and instructions, please contact: [integration-support@ehealth.fgov.be](mailto: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 will 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

The eHealth platform recommends performing tests for all of the following cases:

- Adding relationships with client organizations
- Adding relationships with employees of a client organization
- Correct retrieval of published information
- Correct deleting of published information
- Deactivating a relationship by setting an end date on an already published relationship and retrieving it  
In addition, the organization should also run negative test cases:
- Verify automatic handling of the response message by testing each error possible
- Adding a fake SSIN
- Adding a fake CBE





## 8. Error and failure messages

There are three different possible types of response:

- If there are no technical or business error, a business response is returned.
- If a business error occurred, it is contained in a business response.
- In the case of a technical error, a SOAP fault exception is returned

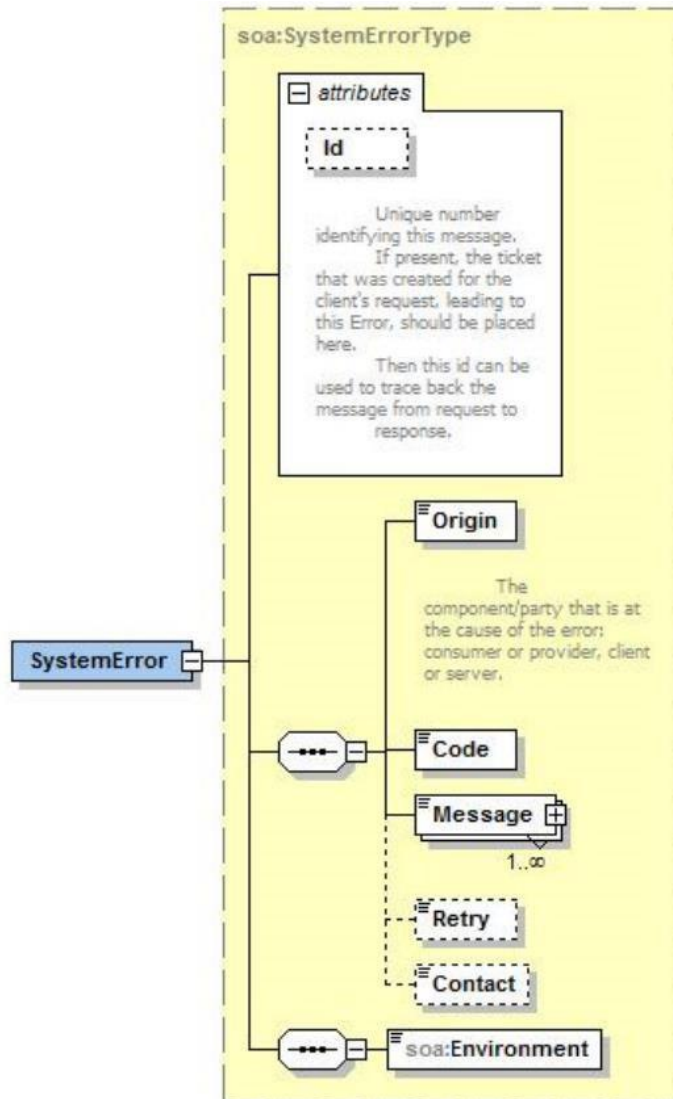
### 8.1 Business errors

StatusCode	Message	Solution
urn:be:fgov:health:2.0:status:Requester (level 1) urn:be:fgov:health:2.0:status:MissingInput (level 2)	Missing Id attribute in the request.	The Id field that is optional according to the schema, is in fact mandatory for this web service. It is <b>mandatory</b> .
urn:be:fgov:health:2.0:status:Responder (level 1) urn:be:fgov:health:2.0:status:RequestDenied (level 2)	Identification failed.	A problem with the principle of the request. Verify the STS token.
	Wrong Type or Actor Type missing in <i>Link id</i>	Either a type attribute is missing on the Actor element or the type attribute contains an invalid type value. The <i>Link id</i> indicates on the erroneous Actor by referencing his Id attribute. For a problem in the LeadActor, the <i>Link id</i> = LeadActor. See 9 to correct.
	Actor type missing	The type attribute is missing on the actor element.
	Id in <i>Link id</i> could not be validated.	The Id value is not valid. Please verify and correct this Id.
	<i>Link id</i> defined an invalid Type combination. Please consult the cookbook for more information.	Not each type of actor can have any type of relationship with any type of actor. See 9 for valid combinations.
	No more than 100 Link elements allowed per request.	Per request, maximum of 100 Link elements is allowed per request. Make sure you do not exceed this number.

urn:be:fgov:ehealth:2.0:status:Requester (level 1) urn:be:fgov:ehealth:2.0:status:InvalidInput (level 2)	Wrong Actor Type in <i>Link id</i>	Invalid type was used for the Actor type attribute. See 9 to correct.
	CBE number is not valid in <i>Link id</i>	Invalid CBE number. Verify you use a correct CBE number
	SSIN or SSINbis number is not valid in <i>Link id</i>	Invalid SSIN number. Verify you use a correct SSIN number.
	NIHII number is not valid in <i>Link id</i>	Invalid NIHII number. Verify you use a correct NIHII number.
	Wrong Id type in the request.	Invalid value in the Id type attribute. See 5.2.6.1
	EndDate cannot be before StartDate in <i>Link id</i>	An end date cannot be before a start date. Change the end or start date
urn:be:fgov:ehealth:2.0:status:Responder (level 1) urn:be:fgov:ehealth:2.0:status:Indeterminate (level 2)	Try again. If the problem persists, contact our support lines.	An unknown exception happened. Try again later, and if the problem persists, contact our support line.

## 8.2 Technical errors

Technical errors are errors inherent to the internal working of a web service. 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.



The SystemError element contains a unique Id attribute for tracing. The Origin is set to Server or Provider. Retry is set to true if the user can try again immediately without interventions.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
    <soapenv:Fault>
      <faultcode>soapenv:Server</faultcode>
      <faultstring>SOA-02002</faultstring>
      <detail>
        <soa:SystemError Id="9E0-0000P1-00-C" xmlns:soa="urn:be:fgov:ehhealth:errors:soa:v1">
          <Origin>Server</Origin>
          <Code>SOA-02002</Code>
          <Message xml:lang="en">Service is temporarily not available. Please contact service
          desk.</Message>
          <Retry>true</Retry>
          <soa:Environment>Test</soa:Environment>
        </soa:SystemError>
      </detail>
    </S:Fault>
  </soapenv:Body>
</soapenv:Envelope>
```

The SOAP Fault element has the following sub elements:

Element name	Description	Required
faultcode	A code for identifying the fault	Yes
faultstring	A human readable explanation of the fault	Yes
Faultactor	Information about who caused the fault to happen (the origin)	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 faultcode values are defined in an extensible manner that allows for new SOAP fault code values to be defined while maintaining backwards compatibility with existing fault code values.

Element name	Description
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	This is the default error sent to the user in case further details are unknown.
SOA-01001	Consumer	Service call not authenticated	From the security information provided <ul style="list-style-type: none"> <li>• or the user could not be identified</li> <li>• or the credentials provided are not correct</li> </ul>
SOA-01002	Consumer	Service call not authorized	The user 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"> <li>• Retries will not work</li> <li>• Service desk may help with root cause analysis</li> </ul>

SOA-02002	Provider	Service temporarily not available. Please try later	An unexpected error has occurred <ul style="list-style-type: none"> <li>Retries should work</li> <li>If the problem persists service desk may help</li> </ul>
SOA-03001	Consumer	Malformed message	This is default error for content related errors in case no more details are known.
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"> <li>Extended checks on the element format failed</li> <li>Cross-checks between fields failed</li> </ul>

## 9. Types

This chapter describes the different types used for Actor or Link and the possible combinations to use when publishing.

### 9.1 Type codes

Code	Type	Description
MedicalServiceIncapacityWork	ACTOR	Service managing absenteeism certificates for clients
Employee	ACTOR	An employee (generic)
EmployeeS	ACTOR	An statutory employee
Employer	ACTOR	An employer (generic)
CBE	ID	Number assigned to an organization by the Crossroads Bank for Enterprises
SSIN	ID	Social Security Identification Number of a physical person
NIHII	ID	National Institution for Health and Invalidity Identification number for an organization or physical person
EHP	ID	eHealth Platform identification number for an organization
MedicalServiceIncapacityWork	LINK	Managing absenteeism certificates for employers
MedicalServiceIncapacityWork_illness	LINK	Managing absenteeism certificates for employers, but only for normal sickness, related to pregnancy or private
MedicalServiceIncapacityWork_occupationaldisease	LINK	Managing absenteeism certificates for employers, but only for type 'occupationaldisease'
MedicalServiceIncapacityWork_workaccident	LINK	Managing absenteeism certificates for employers, but only for type 'work accident' or 'accident on the way to work'
Employer	LINK	Organization employing person (generic)

## 9.2 Id type per actor

```

<urn:PublishLinksRequest Id="_df644fe1-d093-4a90-bdcd-18c9409890cd"
IssueInstant="2017-07-24T13:55:54.375Z">
  <urn1:LeadActor Type="ExternalPreventionService">
    <urn1:Id Type="CBE">0123456789</urn1:Id>
  </urn1:LeadActor>
  <!--1 or more repetitions:-->
  <urn1:Link Id="ID_1" EndDate="2018-12-31" StartDate="2018-01-01"
Type="PreventionService">
    <urn1:Actor Type="Employer">
      <urn1:Id Type="CBE">1234567890</urn1:Id>
    </urn1:Actor>
  </urn1:Link>
</urn:PublishLinksRequest>

```

Actor type	Id type
MedicalServiceIncapacityWork	CBE
Employer	CBE
Employee	SSIN

## 9.3 Link type per LeadActor type

```

<urn:PublishLinksRequest Id="_df644fe1-d093-4a90-bdcd-18c9409890cd"
IssueInstant="2017-07-24T13:55:54.375Z">
  <urn1:LeadActor Type="ExternalPreventionService">
    <urn1:Id Type="CBE">0123456789</urn1:Id>
  </urn1:LeadActor>
  <!--1 or more repetitions:-->
  <urn1:Link Id="ID_1" EndDate="2018-12-31" StartDate="2018-01-01"
Type="PreventionService">
    <urn1:Actor Type="Employer">
      <urn1:Id Type="CBE">1234567890</urn1:Id>
    </urn1:Actor>
  </urn1:Link>
</urn:PublishLinksRequest>

```

Actor type	Link type
MedicalServiceIncapacityWork	MedicalServiceIncapacityWork

MedicalServiceIncapacityWork	MedicalServiceIncapacityWork_sickness, _workaccident, _occupationaldisease
Employer	Employer

## 9.4 Actor type per Link type

```

<urn:PublishLinksRequest Id="_df644fe1-d093-4a90-bdcd-18c9409890cd"
IssueInstant="2017-07-24T13:55:54.375Z">
  <urn1:LeadActor Type="ExternalPreventionService">
    <urn1:Id Type="CBE">0123456789</urn1:Id>
  </urn1:LeadActor>
  <!--1 or more repetitions!-->
  <urn1:Link Id="ID_1" EndDate="2018-12-31" StartDate="2018-01-01"
Type="PreventionService">
    <urn1:Actor Type="Employer">
      <urn1:Id Type="CBE">1234567890</urn1:Id>
    </urn1:Actor>
  </urn1:Link>
</urn:PublishLinksRequest>

```

Link type	Actor type
Employer	Employee
Employer	EmployeeS
MedcialServiceIncapacityWork_illness, _workaccident, _occupationaldisease	Employer
MedicalServiceIncapacityWork	Employer