# Table of abbreviations and concepts

|  |  |
| --- | --- |
| PHRBox | Network/system of boxes and PHR systems/devices |
| Box | PHRBox system component that provides HL7 FHIR interface and provides:   * person data index module * organisation register module * master person index modul |
| PHR,  PHR system,  PHR device | PHRBox system component that communicates with the Box component through HL7 FHIR interface |
|  |  |
|  |  |

# Network components

## Setup

Each PHR is registered in the Organisation register using OrganisationRegister.registerOrganisation (see 4.2 Organisation register). The information is later used for performing FHIR request to correct PHR url.

**Example.**

PHR

’ORG1’

PHR

‘ORG3’

PHR

’ORG2’

PHR

‘ORG4’

BOX

‘BOX1’

BOX

‘BOX2’

BOX

‘BOX3’

HL7

HL7

HL7

HL7

HL7

HL7

In the example following setup is used to register network components:

OrganisationRegister.registerOrganisation("ORG1", "https://org.ech.phr/", "https://phr1\_url/")

OrganisationRegister.registerOrganisation("ORG2", "https://org.ech.phr/", "https://phr2\_url/")

OrganisationRegister.registerOrganisation("ORG3", "https://org.ech.phr/", "https://phr3\_url/")

OrganisationRegister.registerOrganisation("ORG4", "https://org.ech.phr/", "https://phr4\_url/")

# FHIR

## Register endpoint for managing Organization

**Example.**

{

"resourceType": "Endpoint",

"managingOrganization": {

"reference": "Organization/ORG1"

},

"address": "http://org1.org/fhir"

}

PHRBox system registers Organization „ORG1“ endpoint „http://org1.org/fhir“.

## Register patient data

**Example.**

Organization „ORG1“ registers patient data:

{

"resourceType": "Patient",

"identifier": [{

"use": "usual",

"system": "http://www.politsei.ee/",

"value": "37804230234"

}],

"managingOrganization": {

"reference": "Organization/ORG1"

}

}

PHRBox system registers Patient resource reference:

<http://www.politsei.ee/>; 37804230234 as unique resource references.

ORG1 as the managind organisation id

## Query patient data

**Example.**

PHR „4“ wants to search persons (37804230234) Observations with specific LOINC\_CODE and performs http get request:

<https://box3_url/fhir/Observation?patient.identifier.value=37804230234&patient.identifier.system=http://www.politsei.ee/&organisation.identifier.value=ORG1&code.code=3141-9&code.system=http://loinc.org>

Box does internal http queries and returns resources from original systems:

<https://phr1_url/Observation?patient.identifier.value=37804230234&patient.identifier.system=http://www.politsei.ee/&organisation.identifier.value=ORG1&code.code=3141-9&code.system=http://loinc.org>

<https://phr2_url/Observation?patient.identifier.value=37804230234&patient.identifier.system=http://www.politsei.ee/&organisation.identifier.value=ORG1&code.code=3141-9&code.system=http://loinc.org>

# PHRBox box

PHR BOX

HL7 FIHR Interface

PHR

Consent Register

Management UI

Hbase

Resource Register

Organisation Register

Master Person Index

## Resource Register

Used to register resource references.

### Interface

***Resource putResourceReference(String personId, String personIdOid, String organisationId, String organisationIdOid, String typeCode, String typeCodeOid, String resourceId, String resourceIdOid)***

Registers resource record with ’resourceId’, ’resourceIdOid’ and type ’typeCode’, ’typeCodeOid’, belonging to person ’personId’, ’personIdOid’ in organisation ’organisationId’, ’organisationIdOid’. Returns resource record.

***public List<Resource> getResourceReferences(String personId, String personIdOid, String organisationId, String organisationIdOid, String typeCode, String typeCodeOid)***

Finds reources belonging to person ’personId’, ’personIdOid’ in organisation ’organisationId’, ’organisationIdOid’ (and any connected person id record in Master Person index) with type ’typeCode’, ’typeCodeOid’.

***void void deleteResourceReference(String personId, String personIdOid, String typeCode, String typeCodeOid)***

TODO

### Database

|  |  |  |
| --- | --- | --- |
| Table phr:resource | | |
| Row id | Person’s fully qualified internal Phr id in format:  OID/Person/ID | Example:  https://org.ech.phr/internal/Patient/ PRSN\_HASH\_1 |
| Column  ref  qualifier | Fully qualified type code in format:  OID/Type/ID | Example:  https://org.ech.phr/Type/Patient |
| Value | Resource record | Example:  {  "type" : {  "typeCode" : "Patient",  "typeCodeOid" : "https://org.ech.phr/"  },  "resourceId" : "37966661234",  "resourceIdOid" : "http://www.politsei.ee/"  } |

**Example.**

Table phr:resource:

|  |  |  |
| --- | --- | --- |
| Key | | Value |
| Row id | Column ref qualifier |
| https://org.ech.phr/internal/Patient/ PRSN\_HASH\_1 | https://org.ech.phr/Type/Patient | {  "type" : {  "typeCode" : "Patient",  "typeCodeOid" : "https://org.ech.phr/"  },  "resourceId" : "37966661234",  "resourceIdOid" : "http://www.politsei.ee/"  } |
| https://org.ech.phr/internal/Patient/ PRSN\_HASH\_2 | https://org.ech.phr/Type/Patient | {  "type" : {  "typeCode" : "Patient",  "typeCodeOid" : "https://org.ech.phr/"  },  "resourceId" : "3800002222",  "resourceIdOid" : "http://www.politsei.ee/"  } |

## Organisation register

Used to register organisation data.

### Interface

***Organisation registerOrganisation(String organisationId, String organisationIdOid, String url)***

Registers Organisation with ’organisationId’, ’organisationIdOid’ and ’url’. Generates internal organisation hash id used to reference the organisation in other tabels. Returns organisation record.

***Organisation getOrganisationById(String organisationId, String organisationIdOid)***

Finds and returns Organisation record by organisation id and oid.

### Database

|  |  |  |
| --- | --- | --- |
| Table phr:organisation | | |
| Row id | Organisation’s fully qualified id in format:  OID/Organisation/ID | Example:  https://org.ech.phr/Organisation/ORG1 |
| Column  id  qualifier | - | - |
| Value | Organisation record | Example:  {  "id" : "ORG1",  "idOid" : "https://org.ech.phr/",  "phrId" : "ORG1\_HASH\_ID",  "phrIdOid" : "https://org.ech.phr/internal/",  "url" : "’https://phr1\_url/"  } |

**Example.**

Table phr:organisation:

|  |  |  |
| --- | --- | --- |
| Key | | Value |
| Row id | Column id qualifier |
| https://org.ech.phr/Organisation/ORG1 |  | {  "id" : "ORG1",  "idOid" : "https://org.ech.phr/",  "phrId" : "ORG1\_HASH\_ID",  "phrIdOid" : "https://org.ech.phr/internal/",  "url" : "’https://phr1\_url/"  } |
| https://org.ech.phr/internal/Organisation/ ORG1\_HASH\_ID |  | {  "id" : "ORG1",  "idOid" : "https://org.ech.phr/",  "phrId" : "ORG1\_HASH\_ID",  "phrIdOid" : "https://org.ech.phr/internal/",  "url" : "’https://phr1\_url/"  } |
| https://org.ech.phr/Organisation/ORG2 |  | {  "id" : "ORG2",  "idOid" : "https://org.ech.phr/",  "phrId" : "ORG2\_HASH\_ID",  "phrIdOid" : "https://org.ech.phr/internal/",  "url" : "’https://phr1\_url/"  } |
| https://org.ech.phr/internal/Organisation/ ORG2\_HASH\_ID |  | {  "id" : "ORG2",  "idOid" : "https://org.ech.phr/",  "phrId" : "ORG2\_HASH\_ID",  "phrIdOid" : "https://org.ech.phr/internal/",  "url" : "’https://phr1\_url/"  } |
| https://org.ech.phr/Organisation/ORG3 |  | {  "id" : "ORG3",  "idOid" : "https://org.ech.phr/",  "phrId" : "ORG3\_HASH\_ID",  "phrIdOid" : "https://org.ech.phr/internal/",  "url" : "’https://phr1\_url/"  } |
| https://org.ech.phr/internal/Organisation/ ORG3\_HASH\_ID |  | {  "id" : "ORG3",  "idOid" : "https://org.ech.phr/",  "phrId" : "ORG3\_HASH\_ID",  "phrIdOid" : "https://org.ech.phr/internal/",  "url" : "’https://phr1\_url/"  } |
| https://org.ech.phr/Organisation/ORG4 |  | {  "id" : "ORG4",  "idOid" : "https://org.ech.phr/",  "phrId" : "ORG4\_HASH\_ID",  "phrIdOid" : "https://org.ech.phr/internal/",  "url" : "’https://phr1\_url/"  } |
| https://org.ech.phr/internal/Organisation/ ORG4\_HASH\_ID |  | {  "id" : "ORG4",  "idOid" : "https://org.ech.phr/",  "phrId" : "ORG4\_HASH\_ID",  "phrIdOid" : "https://org.ech.phr/internal/",  "url" : "’https://phr1\_url/"  } |

## Master person index

Used to register person id’s in different systems.

### Interface

***Person findPerson(String id, String idOid, String organisationId, String organisationIdOid)***

Returns person record corresponding to ’id’, ’oid’, ’organisationId’ and ’organisationIdOid’.

***Person findOrInsertPerson (String id, String idOid, String organisationId, String organisationIdOid)***

Returns person record corresponding to ’id’, ’oid’, ’organisationId’ and ’organisationIdOid’. Creates new record if not found.

### Database

|  |  |  |
| --- | --- | --- |
| Table phr:person | | |
| Row id | Person’s fully qualified id in format:  OID/Person/ID | Example:  http://www.politsei.ee/Patient/37966661234 |
| Column  pid  qualifier | Organisation’s fully qualified internal phr id in format:  OID/Organisation/ID | Example:  https://org.ech.phr/internal/Organisation/ORG1\_HASH\_ID |
| Value | Person record | Example:  {  "personId" : "37966661234",  "personIdOid" : "http://www.politsei.ee/",  "phrId" : "PRSN\_HASH\_1",  "phrIdOid" : "https://org.ech.phr/internal/",  "masterId": "PRSN\_MSTR\_HASH\_1",  "masterIdOid" : "https://org.ech.phr/master/"  } |

**Example:**

Table phr:person - two personIds have been linked through the same master:

|  |  |  |
| --- | --- | --- |
| Key | | Value |
| Row id | Column pid qualifier |
| http://www.politsei.ee/Patient/37966661234 | https://org.ech.phr/internal/Organisation/ORG1\_HASH\_ID | {  "personId" : "37966661234",  "personIdOid" : "http://www.politsei.ee/",  "phrId" : "PRSN\_HASH\_1",  "phrIdOid" : "https://org.ech.phr/internal/",  "masterId": "PRSN\_MSTR\_HASH\_1",  "masterIdOid" : "https://org.ech.phr/master/"  } |
| https://org.ech.phr/internal/Patient/ PRSN\_HASH\_1 | https://org.ech.phr/internal/Organisation/ORG1\_HASH\_ID | {  "personId" : "37966661234",  "personIdOid" : "http://www.politsei.ee/",  "phrId" : "PRSN\_HASH\_1",  "phrIdOid" : "https://org.ech.phr/internal/",  "masterId": "PRSN\_MSTR\_HASH\_1",  "masterIdOid" : "https://org.ech.phr/master/"  } |
| https://org.ech.phr/ master /Patient/ PRSN\_MSTR\_HASH\_1 | https://org.ech.phr/internal/Organisation/ORG1\_HASH\_ID | {  "personId" : "37966661234",  "personIdOid" : "http://www.politsei.ee/",  "phrId" : "PRSN\_HASH\_1",  "phrIdOid" : "https://org.ech.phr/internal/",  "masterId": "PRSN\_MSTR\_HASH\_1",  "masterIdOid" : "https://org.ech.phr/master/"  } |
| http://www.politsei.ee/Patient/3800002222 | https://org.ech.phr/internal/Organisation/ORG2\_HASH\_ID | {  "personId" : "3800002222",  "personIdOid" : "http://www.politsei.ee/",  "phrId" : "PRSN\_HASH\_2",  "phrIdOid" : "https://org.ech.phr/internal/",  "masterId": "PRSN\_MSTR\_HASH\_1",  "masterIdOid" : "https://org.ech.phr/master/"  } |
| https://org.ech.phr/internal/Patient/ PRSN\_HASH\_2 | https://org.ech.phr/internal/Organisation/ORG2\_HASH\_ID | {  "personId" : "3800002222",  "personIdOid" : "http://www.politsei.ee/",  "phrId" : "PRSN\_HASH\_2",  "phrIdOid" : "https://org.ech.phr/internal/",  "masterId": "PRSN\_MSTR\_HASH\_1",  "masterIdOid" : "https://org.ech.phr/master/"  } |
| https://org.ech.phr/ master /Patient/ PRSN\_MSTR\_HASH\_1 | https://org.ech.phr/internal/Organisation/ORG2\_HASH\_ID | {  "personId" : "3800002222",  "personIdOid" : "http://www.politsei.ee/",  "phrId" : "PRSN\_HASH\_2",  "phrIdOid" : "https://org.ech.phr/internal/",  "masterId": "PRSN\_MSTR\_HASH\_1",  "masterIdOid" : "https://org.ech.phr/master/"  } |