11.3. EHR URIs

There are two broad categories of URIs that can be used with any resource: direct references, and queries. The first kind are usually generated by the system containing the referred-to item, and passed to other systems as definitive references, while the second are queries from the requesting system in the form of a URI. Currently only direct reference URIs are supported.

11.3.1. EHR Reference URIs

To create a reference to a node in an EHR in the form of a URI (uniform resource identifier), three elements are needed: the path within a top-level structure, a reference to a top-level structure within an EHR, a reference to an EHR, and an optional reference to an EHR system (i.e. repository). These can be combined to form a URI in an "ehr" scheme-space, obeying the following syntax:

ehr://system\_id/ehr\_locator/top\_level\_structure\_locator/path\_inside\_top\_level\_structure

In this way, any object in any openEHR EHR is addressable via a URI. Within ehr-space, URL-style references to particular servers, hosts etc are not used, due to not being reliable in the long term. Instead, logical identifiers for EHRs and/or subjects are used, ensuring that URIs remain correct for the lifetime of the resources to which they refer. The openEHR data type DV\_EHR\_URI is designed to carry URIs of this form, enabling URIs to be constructed for use within LINKs and elsewhere in the openEHR EHR.

An ehr: URI implies the availability of a name resolution mechanism in ehr-space, similar to the DNS, which provides such services for http-, ftp- and other well-known URI schemes. Until such services are established, ad hoc means of dealing with ehr: URIs are likely to be used, as well as more traditional http:// style references. The subsections below describe how URIs of both kinds can be constructed.

EHR Location

In ehr-space, a direct locator for an EHR is an EHR identifier as distinct from a subject or patient identifier or query. Normally the copy in the 'local system' is the one required, and a majority of the time, may be the only one in existence. In this case, the required EHR can be identified simply by an unqualified identifier, giving a URI of the form:

ehr:/1234567/

However, due to copying / synchronising of the EHR for one subject among multiple EHR systems, a given EHR identifier may exist at more than one location. It is not guaranteed that each such EHR is a completely identical copy of the others, since partial copying is allowed. Therefore, in an environment where EHR copies exist, and there is a need to identify exactly which EHR instance is required, a system identifier is also required, giving a URI of the form:

ehr://rmh.nhs.net/1234567/

Top-level Structure Locator

There are two logical ways to identify a top-level structure in an openEHR EHR. The first is via the identifier of the required top-level object (i.e. VERSIONED\_OBJECT.uid). When a URI uses the object identifier, the 'latest\_trunk\_version' is always assumed. This would lead to URIs like the following:

ehr:/1234567/compositions/87284370-2D4B-4e3d-A3F3-F303D2F4F34B

The second way to identify a top-level structure is by using an exact Version identifier, which takes the form object\_id::creating\_system\_id::version\_tree\_id. This leads to URIs like the following:

ehr:/1234567/compositions/87284370-2D4B-4e3d-A3F3-F303D2F4F34B::rmh.nhs.net::2

ehr:/1234567/compositions/87284370-2D4B-4e3d-A3F3-F303D2F4F34B::F7C5C7B7-75DB-4b39-9A1E-C0BA9BFDBDEC::2

The first URI identifies a top-level item whose version identifier is 87284370-2D4B-4e3d-A3F3-F303D2F4F34B::rmh.nhs.net::2, i.e. the second trunk version of the Versioned Object identified by the GUID, created at an EHR system identified by net.nhs.rmh. The second is the same, but another GUID is used to identify the creating system as well. Note that the mention of a system in the version identifier does not imply that the requested EHR is at that system, only that the top-level object being sought was created at that system.

Item URIs

With the addition of path expressions as described earlier, URIs can be constructed that refer to the finest grained items in the openEHR EHR, such as the following:

ehr:/1234567/compositions/87284370-2D4B-4e3d-A3F3-F303D2F4F34B/

 content[openEHR-EHR-SECTION.vital\_signs.v1]/

 items[openEHR-EHR-OBSERVATION.heart\_rate-pulse.v1]/data/

 events[at0006, 'any event']/data/items[at0004]

Relative URIs

URIs can also be constructed relative to the current EHR, in which case they do not mention the EHR id, as in the following example:

ehr:compositions/87284370-2D4B-4e3d-A3F3-F303D2F4F34B/

 content[openEHR-EHR-SECTION.vital\_signs.v1]/

 items[openEHR-EHR-OBSERVATION.blood\_pressure.v1]/

 data/events[at0006, 'any event']/data/items[at0004]