

# Sequoia HL7 FHIR® Adoption Updates

By Eric Heflin, CTO/CIO



# Agenda

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  - The Sequoia Project® is a registered trademark of The Sequoia Project



## Business Context

# Sequoia FHIR Industry Activities

- The Sequoia Project
  - Member of the Argonaut Project; focused on Provider Directory
  - Co-author of IHE Care Services Discovery directory profile
  - Member of Interoperability Standards Advisory ONC FACA
  - Member of ONC Healthcare Directory Technology and Use Cases Learning Communities
- eHealth Exchange
  - Coordinating Committee approved FHIR pilot, seeking Participants
  - Live with Pilot FHIR-based healthcare directory (as of Feb 7<sup>th</sup>), also seeking organizations to implement
- Carequality
  - Live with The Sequoia Project<sup>®</sup> Healthcare Directory

# Capabilities

- The Sequoia Project Healthcare Directory was developed
- With requirements gathered over many years
- In close collaboration with our initiatives (eHealth Exchange and Carequality)
- Designed to support OTHER initiatives such as secure email, HL7 v2 exchange, other SOAP/XML/IHE exchanges, and more

# Sequoia Implementation Overview/Use Cases

- Sequoia has deployed the Argonaut Provider Directory specification
- Sequoia Project advocated for key use cases:
  - Endpoint discovery
  - Relationships between orgs and orgs
  - Relationships between people and orgs
  - Attributes required by eHealth Exchange and Carequality were added as an extension (discussed next)
  - Efficient retrieval of full directory contents

# Roadmap

- The Sequoia Project Healthcare Directory is live as of Feb 7<sup>th</sup> (2017)
- Plan to remain stable for approx. 3 years while FHIR matures
- Will likely update at that time to adopt final FHIR standard



## Technical Drill-Down
































# The Sequoia Project® Healthcare Directory Implementation Guide

Updated 2017-02-19  
Version 1.0

# Standard FHIR® Directory Data (Org and Endpoint)

| Name   | Flags | Card. | Type                    |
|--|-------|-------|-------------------------|
|  Organization | I     |       | DomainResource          |
|  identifier   | Σ I   | 0..*  | Identifier              |
|  active       | ?! Σ  | 0..1  | boolean                 |
|  type         | Σ     | 0..*  | CodeableConcept         |
|  name         | Σ I   | 0..1  | string                  |
|  alias        |       | 0..*  | string                  |
|  telecom      | I     | 0..*  | ContactPoint            |
|  address      | I     | 0..*  | Address                 |
|  partOf     | Σ     | 0..1  | Reference(Organization) |
|  contact    |       | 0..*  | BackboneElement         |
|  purpose    |       | 0..1  | CodeableConcept         |
|  name       |       | 0..1  | HumanName               |
|  telecom    |       | 0..*  | ContactPoint            |
|  address    |       | 0..1  | Address                 |
|  endpoint   |       | 0..*  | Reference(Endpoint)     |

| Name   | Flags | Card. | Type                    |
|--|-------|-------|-------------------------|
|  Endpoint             |       |       | DomainResource          |
|  identifier           | Σ     | 0..*  | Identifier              |
|  status               | ?! Σ  | 1..1  | code                    |
|  connectionType       | Σ     | 1..1  | Coding                  |
|  name                 | Σ     | 0..1  | string                  |
|  managingOrganization | Σ     | 0..1  | Reference(Organization) |
|  contact              |       | 0..*  | ContactPoint            |
|  period               | Σ     | 0..1  | Period                  |
|  payloadType          | Σ     | 1..*  | CodeableConcept         |
|  payloadMimeType    | Σ     | 0..*  | code                    |
|  address            | Σ     | 1..1  | uri                     |
|  header             |       | 0..*  | string                  |

# Sequoia Extensions

- Purpose:
  - Implement additional fields to reduce connectivity costs and effort
  - Based on 10 years of production directory lessons learned
  - Included significant community guidance
- Version of the service
- Actor (initiator/responder)
- IHE ITI transactions
- Use cases supported
- Content details (generated/accepted)
- Purpose of use
- Role

## Example Directory Entry

```
<Organization>
  <!--The ID value is subject to change-->
  <id value="Organization-1"/>
  <meta>
    <versionId value="1"/>
    <lastUpdated value="2017-02-19T11:27:06-06:00"/>
  </meta>
  <!--This is the XCA/XCPD HomeCommunityID OID in URN format-->
  <identifier>
    <use value="official"/>
    <system value="http://www.hl7.org/oid"/>
    <value value="Org-Identifier"/>
  </identifier>
  <active value="Org-Status"/>
  <name value="Org-DisplayName"/>
  <alias value="Org-OtherNames"/>
  <!--The contact object is repeated for each person listed in
the directory-->
  <contact>
```

## Example Directory Entry (Cont.)

```
<partOf>  
  <Reference>  
    <!--Home Community ID of parent org, if any-->  
    <identifier>  
      <use value="official"/>  
      <type value="HCID"/>  
      <system value="http://www.hl7.org/oid"/>  
      <value value="1.2.3.4.1"/>  
    </identifier>  
  </Reference>  
</partOf>
```

## Example Directory Entry (Cont.)

```
<Endpoint>
  <!--Home Community ID-->
  <identifier>
    <use value="official"/>
    <type value="HCID"/>
    <system value="http://www.hl7.org/oid"/>
    <value value="Endpoint01-HomeCommunityID"/>
  </identifier>
  <!--Assigning Authority ID-->
  <identifier>
    <use value="official"/>
    <type type="AAID"/>
    <system value="http://www.hl7.org/oid"/>
    <value value="Endpoint01-AssigningAuthorityID"/>
  </identifier>
  <connectionType>
    <system value="http://hl7.org/fhir/subscription-channel-type"/>
    <code value="IHE-XCA"/>
  </connectionType>
  <name value="Endpoint01-DisplayName"/>
  <managingOrganization/>
  <address value="Endpoint01-URL"/>
  <payloadMimeType value="text/xml"/>
  <payloadType>
```

## Example Directory Entry (Cont.)

```
<payloadType>
  <coding>
    <system value="urn:oid:1.3.6.1.4.1.19376.1.2.3"/>
    <code value="Endpoint01-ContentTypesSupported"/>
  </coding>
</payloadType>
<extension url="https://sequoiaproject.org/StructureDefinition/Endpoint/main/1.3.6.1.4.1.19376.1.2.3" base="http://hl7.org/fhir/StructureDefinition/Endpoint" type="Extension">
  <extension url="Transaction">
    <valueString value="Endpoint01-SupportedTransactions"/>
  </extension>
  <!--Is this gateway an initiator or responder actor-->
  <extension url="Actor">
    <valueCodeableConcept>
      <coding>
        <system value="https://sequoiaproject.org/StructureDefinition/Endpoint/main/1.3.6.1.4.1.19376.1.2.3" base="http://hl7.org/fhir/StructureDefinition/Endpoint" type="Extension" />
        <value value="Responding Gateway"/>
      </coding>
    </valueCodeableConcept>
  </extension>
</extension>
```

## Example Directory Entry (Cont.)

```
<extension url="Version">
  <valueCodeableConcept>
    <coding>
      <system value="https://sequoiaproject.org/StructureDefinition/Endpoint/Version/1.0.0"/>
      <value value="2.0"/>
    </coding>
  </valueCodeableConcept>
</extension>
<!--Initiative specific list of use cases supported-->
<extension url="UseCases">
  <valueCodeableConcept>
    <coding>
      <system value="https://sequoiaproject.org/StructureDefinition/Endpoint/UseCases/1.0.0"/>
      <value value="Endpoint01-UseCasesSupported"/>
    </coding>
  </valueCodeableConcept>
</extension>
```



## Example Directory Entry (Cont.)

```
<!--PurposesOfUse Value Set for SAML header and/or access control-->
<extension url="PurposesOfUse">
  <valueCodeableConcept>
    <coding>
      <system value="https://sequoiaproject.org/StructureDefinition/Endpoint/PurposesOfUse/1.0.0"/>
      <value value="Endpoint01-PurposeOfUseAllowed"/>
    </coding>
  </valueCodeableConcept>
</extension>
<!--Roles Value Set for SAML header and/or access control-->
<extension url="Roles">
  <valueCodeableConcept>
    <coding>
      <system value="https://sequoiaproject.org/StructureDefinition/Endpoint/Roles/1.0.0"/>
      <value value="Endpoint01-RolesAllowed"/>
    </coding>
  </valueCodeableConcept>
</extension>
```



## Discussion

## For More Information

- [www.sequoiaproject.org](http://www.sequoiaproject.org)
- Argonauts
  - [http://argonautwiki.hl7.org/index.php?title=Main\\_Page](http://argonautwiki.hl7.org/index.php?title=Main_Page)
- HL7 FHIR®
  - <http://wiki.hl7.org/index.php?title=FHIR>