**Terminology Track**

**Pre Connectathon sessions**

- There are 4 sessions conducted for FHIR Terminology track during Pre Connectathon period. It is must for participants to go over them before main event on 10th Dec. 2021
- These sessions are hosted on HL7 India private YouTube channel.
- Here is the link for YouTube channel: https://youtube.com/playlist?list=PLUNmNX5YSZXGznOWAU9ezxj3NBb1Jldz8

**Objective**

**Objective** of Terminology track in the Indian FHIR Connectathon: This track is primarily to work on incorporation of Healthcare IT (HIT) Standards and Terminologies such as Snomed, LOINC, ICD 10 etc into the FHIR resources and FHIR artifacts/bundles required towards enabling semantic interoperability.

**Scope:**

As a first step we focus on **LOINC** Terminologies for Laboratory & Radiology Domain

**Intended Audience**

- Lab Information management Systems (LIMS) Vendors/Providers
- Solution Architect
- Product Owner
- Developers
- Clinicians
- Laboratory Service Providers
- NRCeS representatives
- ABDM representatives

**Goals**

- Approach towards enabling Data sharing [orders & reports] in a standardized manner leveraging India Specific LOINC codes from curated LOINC India Database as FHIR Terminology.
- Evaluating the need for a terminology Service across ABDM ecosystem
- Improvements to ABDM Profiles for DiagnosticReport (lab & Imaging), ServiceRequest resource, ValueSet & Structure Definitions expansion & validation.

**How:**

via few simple laboratory and radiology Scheduled Workflow.

**Track Sessions Summary**

- **Track Orientation 1:** Overview : 27th Nov Saturday
- **Track Orientation 2:** 1st Dec Wednesday
  - FHIR terminology, resources, use-cases & Terminology Service
- **Track Orientation 3:** 4th Dec
  - Loinc as a Standard, ABDM Fhir bundles and profiles related to lab orders and results.
- **Track Orientation 4:** 8th Dec
Track Orientation & Prerequisites

This year we are planning on concentrating on the diagnostic tests and results simulation, with the teams sending out standards compliant Fhir Service Requests to labs and in turn labs sending back standards compliant Fhir Diagnostic Reports, using the curated Loinc India Database as the reference database for results code incorporation. This will be simulated in two possible scenarios

1. Where both the applications sending the Service Request (e.g.-EHR,EMR,HIMS) and the application sending back the Diagnostic Report (e.g.- LIS) will have relevant HIT standards and terminologies incorporated in them.

2. Where both the applications sending the Service Request (e.g.-EHR,EMR,HIMS) and the application sending back the Diagnostic Report (e.g.- LIS) will not have the relevant HIT standards incorporated in them and so will have to leverage FHIR Terminology Services to input the relevant standards /terminologies into the FHIR artifacts.

We expect and hope to achieve:

1. Simulating and testing the information flow and workflow of clinics sending out lab service requests to external laboratories via FHIR Service Requests and subsequently the laboratories sending back the corresponding FHIR Diagnostic Report to the correct clinic and requesting clinician as a result to the associated lab order in the appropriate encounter of the concerned patient.

2. Leveraging Terminology Services to exchange Laboratory Service Requests & Diagnostic Reports to determine it’s practicality in bringing about semantic Interoperability in an Indian Lab Ecosystems context.

Type

- Test  FHIR-associated specifications
Submitting Work Group/Project/Accelerator/Affiliate/Implementer Group

The LOINC India Working Group (LIWG)

Prerequisites

Postman installed in your box: https://www.getpostman.com/

FHIR Website: https://hl7.org/fhir/R4/

ABDM FHIR R4 Profiles: https://www.nrces.in/ndhm/fhir/r4/index.html

Open EMR: <details to be shared>


Track Leads

Dr. Pramod D. Jacob - ceo@dhindia.org

Revathy Sreenath - revathy.duddisreenath@philips.com

Guest Speakers

Guest National Expert – Mr K. Anandampillai, Advisor Technology ABDM, National Health Authority

Guest National Expert - Dr Karanvir Singh, CMIO, Apollo Health

Guest international expert: Dr Rob Hausam, FHIR International- Co-Chair of the HL7 Vocabulary and the Orders and Observations (OO) Work Groups

Track Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Agenda</th>
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<tr>
<td>December 10, 2021</td>
<td>3.00 pm - 4.30 pm</td>
<td>Inauguration (Common for all Tracks)</td>
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<td>4.30 pm – 5.00 pm</td>
<td>Break</td>
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<td>5.00 pm - 7.00 pm</td>
<td><strong>Introduction: Session by Dr Rob Hausam</strong></td>
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<td>Semantic Interoperability &amp; FHIR</td>
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<td>Importance of HIT and Terminology standards in interoperability</td>
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<td>Overview on LOINC India Curated database and activities being done.</td>
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<td>7.00 pm - 8.00 pm</td>
<td>----- Common Event -----</td>
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<td>9.00 am - 10.00 am</td>
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<td>10.00 am - 10.15 am</td>
<td>Break</td>
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<td>10.15 am - 01.00 PM</td>
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<td>01:00 PM – 2:00 pm</td>
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| 2:00 pm – 4:00 pm | Hands-On-Session: Service Request FHIR Resource & ABDM Profile deep dive.  
|               | EMR usage & LOINC Codes mapping                                     |
|               | Placing orders (Lab/radiology) in EMR & retrieving ServiceRequest FHIR resource for the order placed. |
| 4:00 pm - 4:15 pm | ----- Break -----                                                    |
| 4.15 pm - 6.00 pm | Hands-On-Session: DiagnosticReport & DiagnosticReportImaging, observations FHIR Resource as part of ABDM – Deep Dive |
|               | Creation of DiagnosticReport for lab / radiology                    |
|               | Sending the same to EMR and viewable from EMR.                      |
| 6.00 pm - 6.15 pm | ----- Break -----                                                    |
| 6.15 pm - 7.00 pm | FHIR Terminology Service walkthrough & Demo                         |

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### Related Tracks

Terminology Track cuts across multiple tracks like:

- **ABDM Implementation Track**
- **Structured Data Capture Track**
- **FHIR Server Implementation Track**

### Track Information
FHIR Version

- Current build
- FHIR R4

Specification(s) this track uses

- FHIR Implementation Guide for NDHM
- HL7 Terminology

Artifacts of focus

- Service Request
- Diagnostic Report
- Observation

Clinical input requested (if any)

We will have participants in the track who have significant clinical experience. Additionally, we will be having international guest experts and national experts in FHIR Terminology and LOINC observing and supporting the Track.

Patient input requested (if any)

Orders for laboratory tests and imaging diagnostic tests

System Roles

**X HIMS/EMR/EHR**: An X information system acting as an ordering system. Typically, it is a EMR/EHR/HIMS. This will be an HIU for reports consumption and an HIP for retrieving the order information by LIMS Systems.

**LIMS**: Lab information management system. This system will be an HIP for providing reports and an HIU to receive orders

**End-user**: Care Providers / Patient themselves accessing reports via certain approved application

**Systems.**

LOINC India Database – Terminology Service – Actor: CodeSet master

X Information Systems (XIMS) – Providers consumers

Scenarios

**Purpose**:

Outpatient Laboratory orders generation and transmission to an external lab from a clinic and the corresponding result report being sent back to the correct clinic and requesting clinician as the result report to the associated lab order, in the appropriate encounter of the concerned patient’s record.

**Description**:

In cases where, a Third-party external Laboratory exists outside the clinic premises providing laboratory services, samples are collected from the clinic are sent for testing to these labs. These labs in turn carry out the lab test/s and produce the results reports for the same which has to be submitted to the requesting clinician and patient.

Hence this is a classic case where interoperability can play a key role in order transmission to the selected lab, which in turn will send back the result report back, all done digitally.

**Benefits**:

- Enabling Digital data exchange from crude point-to-point system integrations to more standardized & networked, hence improving their outreach.
- Digital access to accurate result reports and trends
- Less manual or report interpretation errors hence reducing costs and saving critical time.

**Process flow**:

- Physician requests laboratory tests through electronic ordering via standard codes defined for Laboratory orders in the Indian Care context.
- Sample collection done in the clinic that generates the orders.
- Laboratory front desk staff receives the order and fill any missing details – Laboratory Information Management Systems acting as Order Filler System
- Sample is brought into the laboratory for analysis.
- Results are reported in the Laboratory Information System (LIMS)
• Results transmitted back digitally in a standardized format to the requesting clinician and clinic, against the correct order in the relevant encounter of the concerned patient's record
• Reports made available to Patient digitally.

Security and Privacy Considerations

A key information flow aspect that will be carefully followed through will be the accuracy and effectiveness of the corresponding result reports being digitally sent back to the correct clinic and requesting clinician as a result to the associated lab order in the appropriate encounter of the concerned patient.

Test Information

Test Postman Collections.zip

Ontoserver.postman_collection.zip