P1752 Working Group Meeting

Sponsored by IEEE Engineering in Medicine & Biology (EMB) Standards Committee

- 5 June 2018
- Teleconference
Attendance

- This document shows attendance from previous calls [https://tinyurl.com/yc3oxg6q](https://tinyurl.com/yc3oxg6q) (link in the chat window of join.me). **If you attended the call, please verify that your name is listed**
  - If not, email simona@openmhealth.org
- **Put your name and affiliation in the chat window for attendance today.**
  - If your name is not listed, or if you are joining only via phone, please email simona@openmhealth.org with “P1752 WG call” as subject
- Attendance is important for determining voting rights, so please remember to “check in”
- Voting rights are granted according to the P&P after attending two consecutive calls and by explicit request to the Secretary
IEEE Patent Policy
Participants have a duty to inform the IEEE

- Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents.

- Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims.

Early identification of holders of potential Essential Patent Claims is encouraged.
Ways to inform IEEE

• Cause an LOA to be submitted to the IEEE-SA (patcom@ieee.org); or
• Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
• Speak up now and respond to this Call for Potentially Essential Patents

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair.
Other guidelines for IEEE WG meetings

• All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.
  • Don’t discuss the interpretation, validity, or essentiality of patents/patent claims.
  • Don’t discuss specific license rates, terms, or conditions.
    • Relative costs of different technical approaches that include relative costs of patent licensing terms may be discussed in standards development meetings.
    • Technical considerations remain the primary focus
  • Don’t discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.
  • Don’t discuss the status or substance of ongoing or threatened litigation.
  • Don’t be silent if inappropriate topics are discussed ... do formally object.

Patent-related information

The patent policy and the procedures used to execute that policy are documented in the:


Material about the patent policy is available at [http://standards.ieee.org/about/sasb/patcom/materials.html](http://standards.ieee.org/about/sasb/patcom/materials.html)

If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at patcom@ieee.org
Determination of Quorum

https://tinyurl.com/yc3oxg6q
Approval of Agenda

1. Attendance
2. Call for Patents
3. Approval of agenda and prior minutes (if quorum present)
4. Updates from subgroups
5. Discussion: Schema Modeling Approach (cont.), API (time permitting)
6. Other business
Approval of Prior Minutes
(May 22)
Update:
Sleep Schema Subgroup
Updates on all the task groups for stage 1 (ground work)

1. Get to know each other (via email, quick call)
2. Document Templates are in the collaborative spaces (iMeet and others);
   Thanks to Antoni, Josh and Ray
3. Desktop Researches: (findings captured in iMeet)
   ---Finding references
   ---Extract/capture the relevant information
4. Leads touch base
   ---challenges in some group
Execution according to the plan and action items

(1) All task groups are progressing

(2) Look forward to every team member’s contribution

(3) Review each task group’s work in the next subgroup meeting (June 12, 2018)

(4) Leads upcoming sync up (June 18, 2018) via email
Sleep Schema Subgroup Update (pg.3)

- Sleep Schema Meeting Slides/Minutes:  
  http://sites.ieee.org/sagroups-1752/sleep-subgroup-meeting-materials/
- Next Subgroup Meeting: June 12, 2018 8:30am to 9:30 am (Pacific)
- Reminder:
  If you would like to join our subgroup, please send email to  
  simona@openmhealth.org or  
  charlotte.chen@philips.com
Update:
Physical Activity and Mobility (PA&M) Schema Subgroup
Kickoff Meeting: Physical Activity Sub-group

1. Attendance (4 members)
2. Got to know each other
3. Reviewed scope and deliverables
4. Review general plan (timelines)
   • Will have to come to this again
5. Designed the first task
   • Identify fundamental blocks of measures (e.g. step count: think of this as a column in spreadsheet) across devices (e.g. specs: think of this as different products in rows).
6. Proposed approaches
   • Work in teams (all)
   • More members
7. Made decisions
   • The approach
   • Meeting frequency
Physical Activity Sub-group

- Next Subgroup Meeting: June 14, 2018 11:00am to 11:30 am (Eastern)
- If you would like to join our subgroup, please send email to simona@openmhealth.org or tug30821@temple.edu
Update:
Mental Health/Survey Schema
Subgroup
Discussion:
Schema Modeling Approach (cont.)
Should Open mHealth use generic schemas?

• Arguments for:
  • More efficient to represent only one (or very few) schema(s) and use codes to distinguish the semantics of the data
  • Developer community only needs to learn the (few) base/generic schema(s)
    • Base/generic schemas can inherit attributes
    • Avoids proliferation of schemas: easier to find, manage, version control
  • Both 11073 20601 and HL7 FHIR use generic schemas
Illustrative Contrast

Open mHealth

"properties": {
  "systolic_blood_pressure": {
    "$ref": "#/definitions/systolic_blood_pressure"
  },
  "diastolic_blood_pressure": {
    "$ref": "#/definitions/diastolic_blood_pressure"
  },
  "effective_time_frame": {
    "$ref": "#/definitions/time_frame"
  },
  "body_posture": {
    "$ref": "#/definitions/body_posture"
  },
  "descriptive_statistic": {
    "$ref": "#/definitions/descriptive_statistic"
  },
  "allOf": [
    {
      "$ref": "#/definitions/unit_value"
    },
    {
      "properties": {
        "unit": {
          "enum": ["mmHg"]
        }
      }
    }
  ]
}

HL7 FHIR Profiles (e.g., Vital Signs: Blood Pressure)

10.1.19.74.2 Complete Summary of the Mandatory Requirements

1. One code in Observation.code which must have
   - a fixed Observation.code.coding.system = "http://loinc.org"
   - a fixed Observation.code.coding.code = 85354-9
   - Other additional codes are allowed - e.g. more specific LOINC Codes, SNOMED CT

2. One Observation.component.code which must have
   - a fixed Observation.component.code.coding.system = "http://loinc.org"
   - a fixed Observation.component.code.coding.code = 8480-6
   - Other additional codes are allowed - e.g. more specific LOINC Codes, SNOMED CT

3. One Observation.component.code which must have
   - a fixed Observation.component.code.coding.system = "http://loinc.org"
   - a fixed Observation.component.code.coding.code = 8462-4
   - Other additional codes are allowed - e.g. more specific LOINC Codes, SNOMED CT

4. fixed Observation.component.valueQuantity.code = "mmHg"
Illustrative Contrast

Open mHealth

Profiles (e.g., Vital Signs: Blood Pressure)

```
{
  "systolic_blood_pressure": {
    "value": 160,
    "unit": "mmHg"
  },
  "diastolic_blood_pressure": {
    "value": 60,
    "unit": "mmHg"
  },
  "effective_time_frame": {
    "time_interval": {
      "start_date_time": "2013-02-05T07:25:00Z",
      "end_date_time": "2013-06-05T07:25:00Z"
    }
  },
  "body_posture": "sitting",
  "descriptive_statistic": "maximum"
}
```

Maximum sitting BP of 160/60 mmHg between Feb 5 and June 5, 2013
**Summary of May 22 call**

- **Generic schemas do not make the complexity problem go away**
  - Complexity includes data element specific context and constraints (e.g., fasting state for blood glucose, one SBP and one DBP)
  - 11073 approach: generic schemas + code + referencing other schemas does not provide sufficient control or specification to handle complexity in a standardized way
  - HL7 FHIR approach: generic schemas + profiles pushes the complexity to proliferation of profiles

- **No strong argument either for or against use of generic schemas with regards to proliferation of schemas. Other decision factors include:**
  - Ease of use: OmH schemas are self-contained and easy to understand (we hear...)
  - Flexibility, ease of iteration: mHealth is rapidly evolving, and iteration (e.g., by subgroups) may be easier without having to coordinate on a common generic schema
  - Standards adoption: need a process to vet preferred schemas/profiles, regardless
Proposal for Discussion

• Open mHealth continues developing schemas using our current approach
  • Templates for quantitative schemas, no base/generic schema as a first class object
  • Preserves ease of use, supports wider contribution, iteration, and usage, including by those not in the health IT field

• The mFHIR Implementation Guide (under development) will guide mappings of Open mHealth schemas to FHIR Observation resources
  • for each Open mHealth schema, there will be corresponding FHIR Observation Profile (aka mFHIR Profile)

• Future work in P1752 WG will include defining a process of community governance over preferred/official Open mHealth schemas and mFHIR profiles
Discussion:
API
Open mHealth approach to data sharing

- first create a common language
  - schemas to structure data
  - an API to exchange it

- then provide free and open-source tools to
  - validate data
  - pull in data from large and popular device manufacturers
  - store data and share it with securely with others
  - move data in and out of EHRs
  - process and visualize data
“An API to Exchange It”

• Open mHealth API spec is rudimentary. It needs further development for filtering, etc etc.

• HL7 FHIR API is the emerging favored API for health data exchange

• **Should Open mHealth adopt the FHIR API instead of further developing the OmH API?**

**PROS**

● Leverages existing work, HL7 will maintain it

● Reduces complexity for solution implementers

● Facilitates wider adoption of Open mHealth in the health care IT ecosystem

● Open mHealth value is in the schemas, not the API

**CONS**

● FHIR API is tuned for enterprise-centered health care data exchange
## Differences in Open mHealth and FHIR

<table>
<thead>
<tr>
<th></th>
<th>Open mHealth</th>
<th>FHIR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target User</strong></td>
<td>Patients, clinicians</td>
<td>Clinicians, administrators</td>
</tr>
<tr>
<td><strong>Perspective</strong></td>
<td>Personal – life-based</td>
<td>Enterprise</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>24/7 everywhere</td>
<td>Episodic care encounters</td>
</tr>
<tr>
<td><strong>Data features</strong></td>
<td>Highly variable, noisy, often poorly validated, evolving</td>
<td>Stable set, well understood</td>
</tr>
<tr>
<td><strong>Data Control</strong></td>
<td>Many different companies in consumer space</td>
<td>Dominant EHR companies, and by health orgs</td>
</tr>
<tr>
<td><strong>Data Exchange</strong></td>
<td>Atomic, for real-time analytics</td>
<td>Batch, for care coordination</td>
</tr>
<tr>
<td><strong>Tech Constraints</strong></td>
<td>Power and data usage</td>
<td>Fewer</td>
</tr>
</tbody>
</table>

different perspectives, usage, and considerations
An API to Exchange It

- Open mHealth API spec is rudimentary. It needs further development for filtering, etc etc.
- HL7 FHIR API is the emerging favored API for health data exchange
- **Should Open mHealth adopt the FHIR API instead of further developing the OmH API?**

<table>
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<th>PROS</th>
<th>CONS</th>
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<tr>
<td>● Leverages existing work</td>
<td>● FHIR API is tuned for enterprise-centered health care data exchange</td>
</tr>
<tr>
<td>● Reduces complexity for solution</td>
<td>● FHIR API is for exchanging FHIR resources</td>
</tr>
<tr>
<td>implementers</td>
<td>● Must instantiate OmH schemas as mFHIR Profile-based resources, or</td>
</tr>
<tr>
<td>● Facilitates wider adoption of Open</td>
<td>● Exchange native OmH JSON schemas as binary</td>
</tr>
<tr>
<td>mHealth in the health care IT ecosystem</td>
<td>● There may be OmH features that can’t (yet) be handled by the FHIR API</td>
</tr>
</tbody>
</table>
Proposal for Discussion

- Open mHealth should stop support of and further development of the Open mHealth API spec
- Open mHealth should use HL7’s FHIR API spec instead
Future Work
Summary of Action Items
Future Meetings
Upcoming Meetings

• Main WG (please note )
  • June 26: 8 AM Pacific
    • Subgroup updates
    • Schema approach (cont)
    • Time permitting: API approach, intro to provenance
  • July 17: 8 AM Pacific
  • August 21: 8 AM Pacific

• Sleep subgroup
  • June 12, 2018 8:30am to 9:30 am (Pacific)

• PA&M subgroup
  • June 14, 2018 11 to 11:30 am (Eastern)
Adjournment