IEEE STANDARDS ASSOCIATION

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P1752 Metadata Subgroup Group Meeting

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

- 9 July 2019
- Teleconference

Members/Attendance

- Subgroup chair: Ida Sim, Open mHealth / UCSF
- Subgroup secretary: Anand Nandugudi, U Memphis

- Call out your name in the following order if you're here (so we can get familiar with your voice)
  - Pradeep Balachandran
  - Jakob Bardram
  - Daniela Brunner
  - Simona Carini
  - Paul Harris
  - Shivayogi Hiremath
  - Sean McConnell
  - Leonard Njeru Njiru
  - Henry Ogoe
  - Paul Petronelli
  - Udi Rubin
  - Anna T

Action Items
From Last Meeting

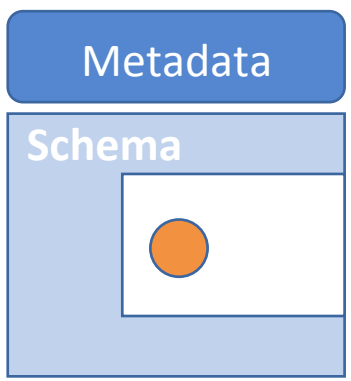
Action Items from June 26

- Paul Petronelli: App version vs OS Platform (refer slide 14 in the slide deck used for this meeting)
- Anna T: Work on a simple example, for e.g. Physical activity
- Anand: Work on a complex example, Stress calculation from PPG Sensor

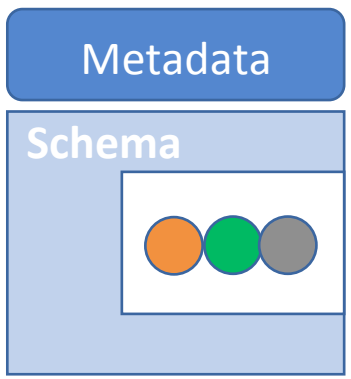
Datapoint vs. Datastream

Datapoint versus Data Stream

- Definition of datapoint?
- Acquisition provenance often applies to a data *stream* not a data *point* (e.g., sampling rate)
- Schema can be used for instances of arrays of observations (ie a stream) not only a single datapoint
- But metadata must be identical for every data point in the data stream.



Datapoint



Datastream

Sequence number?

Metadata Landscape

Metadata Landscape

Software Datasheet

Data Data sheet

Data stream(s)

Firmware/ algorithm/model

{
Header/min metadata
}
{
Body: datapoint
}

Cloud: Runtime acquisition and privacy metadata

For research studies

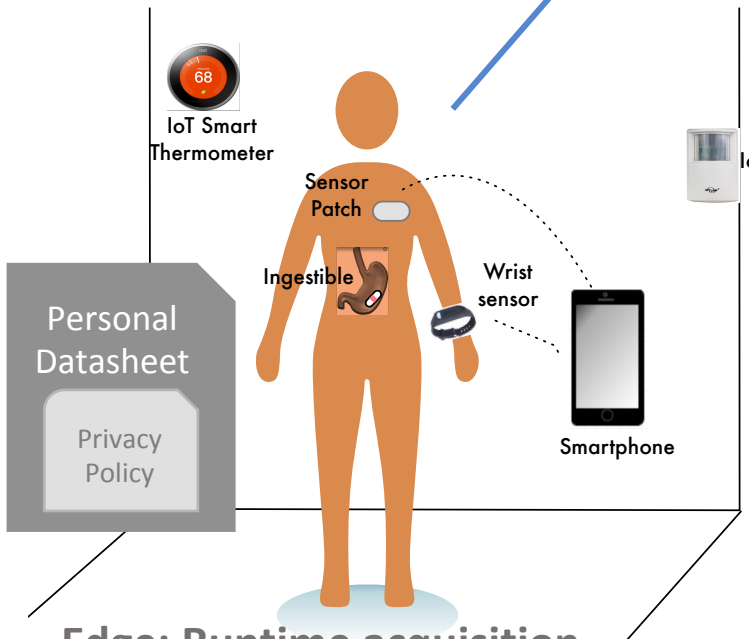
Study ID

Study Protocol

Data Sharing Policy

Open mHealth

data and metadata standards



Personal Datasheet

Privacy Policy

Hardware Datasheet

UDI

Edge: Runtime acquisition and privacy metadata

EHR

Solutions Datasheet

Privacy Policy

Minimum Metadata

Metadata in the context of Datapacket and Schema -- Pradeep

- From a data communication perspective, we know that each datapoint is represented in terms of a 'data packet' at the physical layer. We also understand that in a typical 'datapacket payload' format, certain amount of bytes are preallocated or reserved separatley for 'headers', 'data', 'metadata', and for other classes of information.
- So from a bottom-up perspective, does this upper-bound restrictions of meta data size at the physical layer have any implications at the Schema-level for metadata size. In short, **does 'datapacket-metadata' rules place constraints on 'Schema-metadata' definitions?**

Datapoint: What Do We Need to Know?

Metadata Category	Needs	Property (bold = required)
Datapoint	Which datapoint is this?	**datapointID**
	What does this value represent?	**schema ID and schema metadata**
	When was this datapoint created?	**creation_date_time**
	When is the effective time of this data?	[in the datapoint itself]

Source: What Do We Need to Kr

we care little about this and don't store this information (sometime in the body, if relevant to know how the data was collected from a specific device, e.g. an ECG). -- Jakob

Metadata Category	Needs	Properties (bold = required)
Source (*from what* did the datapoint come?)		
	What firmware/algorithm?	**Firmware name, firmware version**, Software Datasheet
	What device/app?	**name, manufacturer/publisher, model,** , Solutions Datasheet
	What OS platform?	**OS version** (e.g., iOS, Android)**,** Hardware Datasheet
	Which individual device/app?	ID, ID Type (e.g., UDI)
	Which person?	**User ID,** confidence, Personal Datasheet

Uploader? person authenticated to Oauth -- Jakob

Acquisition: What Do We Need to Know?

Metadata Category	Needs	Properties (bold = required)
Acquisition (*how* was the datapoint acquired?)		
	When was this datapoint created at the source?	**source_creation_datetime** date-time schema represents a point in time (ISO8601). Timezone is UTC unless otherwise specified
	Was the datapoint sensed or self-reported?	**modality**
	How often was data sampled and was the sampling regular?	**sampling rate** and **regular or not** (Boolean) / *sequence number*
	Type of filtering, if used	e.g., values averaged

Action Items

Future Meetings

Upcoming Meetings

- Metadata WG
  - August 27th: 9 AM Pacific

Adjournment