W3C LBD Community Group
Minutes - Call 03/05/2022

Attendees:

- Mathias Bonduel (KU Leuven and Neanex)
- Karl Hammar (JU)
- Per Karlberg (Idun)
- Erik Wallin (Idun)
- Joel Bender (Cornell)
- Pierre Bourreau (Nobatek)
- Kevin Luwemba Mugumya (Nottingham University Malaysia)

Date and time

- 03/05/2022, Tuesday, 15:00-16:30@UTC/ 17:00-18:30@CEST/ 08:00-09:30@PDT/ 10:00-11:30@CDT

Moderator

- Karl Hammar

Agenda

1. Introduction of new participants
2. Presentation ProptechOS
3. Discussion/Q&A

Minutes

1. **Introduction of new participants**
    a. No new participants
2. **Presentation ProptechOS**

- Introduction
    - Erik Wallin > representing the company Idun Real Estate Solutions and additionally one of the founders of the RealEstateCore ontology (REC)
- Live demo ProptechOS
    - Schneider now has REC API (conform with REC ontology and REC API spec). Ecostruxure Schneider API (uses BRICKS as basis, translating to REC before sending)
    - REC helps to quickly onboard a project/building
    - ID (GUID) - Littera (code/name on the plans) - room type (from controlled list) - parent/child components - local coordinates - alias (externalId as URI, and/or IFC

GUID and/or …) all show for the selected entities from a 3d-rendering fo the building.
- Receiving DWGs/IFC/… from client at onboarding -> Local coordinates are calculated from asserted drawing insertion point and the local deltas assigned to each room, equipment, sensor, etc.
- Collaborative Digital Twin => the idea is to connect different types of digital twin systems, to interlink them, using linked data principles
    - We don't really believe in master data principles, the data is distributed across different systems with strengths and weaknesses
- Editing of the digital twin can be done through the REC API (CRUD operations over concepts represented in the ontology). The main user-facing administrative interface displayed is a web app that uses this API itself.
- Sensor data from different systems > different ways to configure it, and bringing the data together helps
- MS have an endpoint where we can upload DWG and get a GeoJSON back
    - REC encoded GeoJSON
    - Legacy blueprints of buildings seem to be not in IFC; 5-10% in Revit/ArchiCAD native formats. Rest is in DWG
- The platform can provide a dashboard of sensors, giving at-a-glance views of the performance/functionality of the sensor net across the portfolio. It is not uncommon that up to 15% of sensors are offline at any given time, certainly in case of older BMS
    - During summer holidays lack of data might not be detected for a long time > issue for automatic analysis
    - Using machine learning to find out if a sensor is in error state, warm up, etc. > required as it's difficult to make certain rules
        - Warning
        - Error
        - Not started
        - Warmup
        - Not started
- The platform has a collections feature for arbitrary administrative groupings of sensors, systems, and other entities.
- Clients can use the REC API for onboarding > create, update, delete
    - They can also use tag list uploads, if using the API is beyond their technical competence or considered too costly for a one-shot insertion. Those tag lists are typically CSV or the like. Some semantic validation is carried out to ensure that the CSV is reasonable. In next versions of REC, tentative SHACL would be used directly.
- Certify > compliance reporting
    - Arc Dashboard = environmental certification
    - …
    - => sending data to certification system

        - Average cost per certification every 3 year is large => can be done here for $500. Also possible to do it before the recertification (e.g., new heat pump)
    - Navigate through sensor dashboards by location filters (building>storey>room)
    - Source information > if something does not fit in REC, it can be added as simple metadata
    - Actuations > actuation interface > if you have the credentials, you can change values (modify runtime aspects/parameters of onboarded systems within the building)
        - The actuations are typically paired with sensors that observe the effect of the actuation, which may take effect on a longer timescale than the actuation itself.

3. **Q&A - Open Discussion**

- [Karl] can researchers or small companies use it? [Erik] free full functionality for max 10 devices; small remuneration if you use it commercially. Welcome also for students
    - UI made for non-semantic/LD people. The applications are UIs
- [Pierre] developing a system to associate sensors with semantics in ontologies. Dev team is not keen on ontologies. What is the added value, compared to RDB ontologies? [Erik] figured out that developers don't want to use JSON-LD. About 30 partners/developers. Using REST and streaming APIs. Integrating becomes easier with REC. Application layer over the data
- [Pierre] what if the system talks other languages (BRICKS f.i.)? [Erik] always legacy data. Schneider EcoStruxure platform has addon with BRICK compliancy + MQTT broker that is REC compliant. Last building we did only 2h cleaning.
- [Pierre] different apps for building level. Also applications at portfolio level? [Erik] Utilize app is looking at all buildings. Certify also portfolio wide. Plethora of Power BI analytics that can be shown in the system of clients. Car charging example
- [Mathias] for the "onboarding" of building data in the application, an import with the REC API should happen? In case of DWGs, how do clients deliver the building breakdown structure? [Erik] The MS service for translating DWGs in GeoJSON. We can/plan to use rule based or AI-based methods to extract that information from the 2D plans. Assumption that tags of e.g., rooms, follows more or less stable conventions in a certain area
    - [Karl] MS service can also do more (visualizations, mapping..), but the service is a little costly for small scale/academic deployments
- [Mathias] can users bring datasets that use REC with extensions? What about datasets that don't use REC at all but another ontology? In my experience, the term "masterdata" relates to ontologies that are defined by an organization and reused in their projects/portfolio [Erik] "source object" provides room for extensions. Masterdata as used in the presentation relates to the idea of having one central system that collects all the data.

Next Call

- 17/05/2022, Tuesday, 15:00-16:30@UTC/ 17:00-18:30@CEST/ 08:00-09:30@PDT/ 10:00-11:30@CDT

We are interested in getting suggestions from the community about potential agenda items for the following calls. Please send your suggestions to public-lbd@w3.org, whether you have a short presentation to bootstrap the discussion, and an approximate duration you think the discussion will last.

Previous minutes

https://github.com/w3c-lbd-cg/lbd/tree/gh-pages/minutes