Questions and answers
READI Demo #6 12.6.2020

The following are questions posted by the audience, and answers given by the project team during the READI TIRC demo #6

Q 1. **Are there any fuzzy logic RDF reasoning application?**

No fuzzy logic -- it's basically OWL 2 RL + SWRL rules + several extensions (e.g., negation as failure).

Q 2. **Did you consider using QUDT? This would help harmonization to non IEC standard.**

There are several ontologies for units of measure, and QUDT is well known among them. However, there are drawbacks in how OWL 2 is used there. This is under consideration.

Q 3. **Do you have a class mapping for CFIHOS instrumentation classes to IEC 61987 classes?**

No, we have not done this job yet, we hope we can agree how we should align among several standards first.

Q 4. **Do the alternate standards define temperature, or voltage, or current differently? I'm not following the temperature example.**

For the basic quantities and units of measure, they will in general agree. For attributes specific to various kinds of equipment and systems, there is great diversity. It's mainly the latter that can benefit from SKOS mappings recording how they are related.

Q 5. **How is "should", "can", "may" as is often used in the standards handled in the Aibel tool?**

There are no such modalities in the MMD ontology itself; this is handled by software. Of course, with the ontology, correct implementation is much easier than without it. In READI, there is a full method for this particular issue, with reasoning support. We may review the "three-layer architecture" of vocabulary, requirements (with "can", "should", etc.), and asset model in a later demo to make this clearer.

Q 6. **How does this compare to OSDU used by the sub-surface Discipline?**

The scope for the READI project is facility/topside only, not subsurface. We don't have a co-operation with OSDU.

Q 7.   **Have you considered using SHACL for validation?**

Indeed, this is a natural component in an implemented system. Ontology reasoning in the narrow sense will only tell you "no" -- integrity checks as implemented with SHACL can help significantly for securing data is complete.

Q 8.   **Can you please indicate the percentage you had in overlapping and conflicting standards?**

We don't have exact figures of how much overlap there are between all the standards. But we know for a fact that this is a topic that needs to be solved and that it will take thousands of hours for fix it, both between organizations and between engineers.