

FM4017 Project

Title: Evaluating the RDS standard for data structures in the hydropower industry

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External partner: Skagerak Kraft AS

Task background:

The Reference Designation System – Hydro Power (RDS-PS) standard, part 10 of IEC/ISO 81346, is expected to launch in 2021. This standard is to be implemented in the industry. There are currently several different structures used to describe hydropower plants, for different use cases. For example, a structure might be used primarily for maintenance history, SCADA, or schematics. This creates a barrier to combine data from different systems, not only within a company but also between different companies. Implementing the new RDS standard, which aims to replace the existing structures, will facilitate new ways to leverage the existing data.

Task description:

- Make an overview of existing data structures like NEK322, PROSAM and EBL that are used to describe power plants and identify to which degree they comply between the plants. The focus should be PROSAM and EBL.
- Include a description of the RDS-PS standard and relate the description to the overview of existing data structures.
- Compare the existing data structures and create an overview of existing components that can be useful for the RDS-PS standard.
- Analyse and design a software application in Python that, to the largest extent feasible, can automate the creation of the new RDS structure. Among the different aspects available in RDS, will the functional aspect be prioritized.
- Identify the usefulness of implementing the new structure. This will be explored by using the structure to implement new features in the Operation Portal (Service developed by the external partner).
- Prepare the RDS structure to be used as a filtering option in the Operation Portal.
- Make a test plan for testing the filtering feature.

Student category: IIA industry master students employed at Skagerak Kraft AS

The task is suitable for students not present at the campus (e.g. online students): No

Practical arrangements:

Project group led by the student with participants from the external partner. The participants contribute with domain specific knowledge in power plant structure, RDS and existing data systems.

Signatures:

Supervisor (date and signature):

Students (write clearly in all capitalized letters + date and signature):