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HMC Impulse "Use cases in HMC - from generation to reuse of data"

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We present three use cases which showcase methods of providing a detailed metadata description with the goal of increasing the reusability of data.
irst, Hub Energy presents a photovoltaic system which required ontology development and the implementation of data models based on standards like IEC 61850 [1] or SensorML [2] as well as on FAIR Digital Objects (FDO) [3]. The backend was realized using the Metastore [4] software from the Fair Data Commons while a FDO browser was implemented for visualization which offers a cascading search for metadata and application data.
In a second use case of Hub Energy, time series data of the energy consumption of the buildings on KIT's Campus North are described by automatically generated RO-Crates [5]. This allows energy researchers to use these time series data without any knowledge about the structure of the database and provides a case study on working with RO-Crate technology.

The third use case is provided by Hub Matter, in the research field of high energy physics, and shows the optimization of a typical data set for data publication. To increase FAIRness of the distributed file set, (meta)data is (i) enriched by metadata, (ii) converted to a machine- as well as human-readable format and (iii) linked to a central file to create scientific context. By abstracting from community-specific details these measures can serve as a general approach to make data publishable.
The variety of use cases presented provides a menu of technologies and approaches implemented in diverse contexts to enhance the reusability of data, along with general advice for anyone looking to do the same.

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