INTRODUCTION

More than ten energy disaggregation datasets have been released over the last few years. These are a great step forward. But they each use a different file format and different metadata schemas. At best, the lack of a standard metadata schema makes it unnecessarily time-consuming to write software to process multiple datasets and, at worse, means that crucial information is simply absent from some datasets.

We propose a metadata schema called ‘NILM Metadata’ for representing appliances, meters, buildings, datasets, prior knowledge about appliances and appliance models. The schema is relational and provides a simple but powerful inheritance mechanism.

NILM Metadata is described in a recent paper [1] and is available online as an open-source project [2]. It has been used to describe the UK-DALE dataset [3].

THE NILM METADATA SCHEMA

There are two sides to the NILM Metadata project:

1) Schema defining metadata describing a dataset
(Represented by the left side of the UML diagram)
The schema describes, amongst other things:
- electricity meters (e.g. wiring hierarchy of meters and a controlled vocabulary for measurement names)
- appliances (e.g. a controlled vocabulary for appliance names and each appliance can contain any number of components)
- buildings and datasets

2) A database and inheritance mechanism for common information about appliances.
(Represented by the right side of the UML diagram)
- Categories for each appliance type
- Prior knowledge about the distribution of variables such as ‘on power’, ‘usage (hours per day)’, ‘appliance correlations’
- valid additional properties for each appliance
- The common info about appliances uses a simple but powerful inheritance mechanism to allow appliances to inherit from a other appliances

REFERENCES