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SmartM2M; Model for oneM2M Performance Evaluation

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Executive summary

The present document proposes a Meta-Model (MM), i.e., a general-purpose modelling of oneM2M applications, written using an UML-like general purpose language that is intended to provide a general pattern for representing IoT applications, using all the entities defined in the oneM2M standard, and offering a pragmatic tool for rapidly prototyping the most important characteristic we want to highlight and measure.

The MM will be instantiated to real examples to express some (but not all) application requirements (e.g., response time, level of scalability, hardware requirement) and resource representation (e.g., smart campus, traffic light system). The MM is composed of three subsets, each one representing a part of operational IoT systems and expressing an abstraction with four layers: the Application Scenario layer, the oneM2M resource layer, the oneM2M service platform layer and the infrastructure layer. Such onion-like view proves useful in the work to conceive, model, inject and decompose into the oneM2M standard almost any IoT application in full detail and make it ready to be explored from the performance evaluation standpoint. Those layers are expressed in three model views called, respectively: 1- oneM2M Application Scenario Descriptor (OASD), 2- oneM2M CSE Performance Descriptor (OCPD), and 3- oneM2M Solution Deployment Descriptor (OSDD).

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