A preliminary component model for IoT

ABSTRACT

The enthusiasm of IT entrepreneurs in producing Internet of Things (IoT) systems is undeniable as currently, the number of connected devices is enormously increasing. Many research has been done to efficiently develop IoT systems. IoT systems are usually engineered from scratch. IoT component models have been introduced but lack of generic development framework or model that supports high reusability and loose coupling in dealing with the heterogeneous devices that can hinder its development. Thus, an IoT component model is proposed. Meta-modelling has been used to define the component model where the specific interaction and composition standard in a component are abstracted. IoT component model is intended to develop a prototype for IoT development. With this IoT prototype, IoT system developers will not need to develop everything from scratch every time, as generic components can be reused even when it is applied in different domains or during system enhancement is required. Smart home IoT system has been selected as a case study to evaluate our prototype tool. In this study, we provide an alternative way to develop IoT software in component-based software engineering method. A prototype has also been developed to assist reusability and reduce coupling between modules.