

A Proposal to Create Linked Sensor Data with JSON-LD

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Abstract

Traditionally, data published on the Web are available in HTML tables or CSV files, sacrificing much of its structure and semantics. As a result, Linked Data was proposed to publish and connect structured data on the Web. Linked Data enable individual entities which have self-described feature in a particular format to be connected to related entities. Therefore, Linked Data applications are able to be connected within in global space and different domains without bounding. The practices of Linked Data has led to the extension of the Web with a global data space connecting data from diverse domains such as people, companies, books, scientific publications, music, genes, proteins, scientific data, location data, place names, point of interest, etc. Following the trend of publishing data on the Web as Linked Data, a number of researchers are working on the best practices of publishing sensor data as Linked Sensor Data [1, 2, 3]. The existing works use the XML serialization format of RDF and RDF/XML while it has been around for over a decade, there is very little uptake.

In this paper, we are going to present a RESTful framework that publishes sensor data as Linked Sensor Data. We use the OGC Sensor Web for Internet of Things API as the fundamental framework, and extend it with the W3C JSON-Linked Data. We will demonstrate that the proposed framework is machine-readable, structured, lightweight, efficient to transmit over the network, with smaller memory footprint, and most importantly compatible to the Web principles. In this talk, we will also perform a live demonstration of the prototype system.

References

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