



## **Born semantic: linking data from sensors to users and balancing hardware limitations with data standards**

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New users for the growing volume of ocean data for purposes such as ‘big data’ data products and operational data assimilation/ingestion require data to be readily ingestible. This can be achieved via the application of World Wide Web Consortium (W3C) Linked Data and Open Geospatial Consortium (OGC) Sensor Web Enablement (SWE) standards to data management.

As part of several Horizons 2020 European projects (SenseOCEAN, ODIP, AtlantOS) the British Oceanographic Data Centre (BODC) are working on combining existing data centre architecture and SWE software such as Sensor Observation Services with a Linked Data front end. The standards to enable data delivery are proven and well documented<sup>1,2</sup>

There are practical difficulties when SWE standards are applied to real time data because of internal hardware bandwidth restrictions and a requirement to constrain data transmission costs. A pragmatic approach is proposed where sensor metadata and data output in OGC standards are implemented “shore-side” with sensors and instruments transmitting unique resolvable web linkages to persistent OGC SensorML records published at the BODC.

References:

1. World Wide Web Consortium. (2013). Linked Data. Available: <http://www.w3.org/standards/semanticweb/data>. Last accessed 8th October 2014.
2. Open Geospatial Consortium. (2014). Sensor Web Enablement (SWE). Available: <http://www.opengeospatial.org/ogc/markets-technologies/swe>. Last accessed 8th October 2014.