



Harvesting and harnessing information from sensor data sources to generate new, refined information sources

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Fraunhofer has realized a special SOS in its environmental sensor testbed called a Fusion SOS, that is able to aggregate or fuse sensor data from several SOS. The Fusion SOS queries the semantic catalogue for available SOS of the required type and then conducts a selected procedure to produce a spatial or spatial-temporal interpolation. The interpolation result is a so-called coverage, a function defined on a space-time grid of sampling points. The procedure takes the inaccuracy of the input sensor data into account and can optionally eliminate outliers. The spatial-temporal uncertainty of the fusion result is specified using uncertML, an XML schema developed by the INTAMAP project to describe the statistics of uncertain data. The configuration and execution of fusion algorithms (e.g. for model based spatial fusion) is done using the OGC SWE Sensor Planning Service. The fusion procedure is described, just as for the underlying sensors, with the OGC sensor model language SensorML. In this way, the fusion procedure can be treated as a sensor, but with the important characteristic that its result is a coverage. The fusion result is a new, refined collection of observations on a grid with associated uncertainty data.