

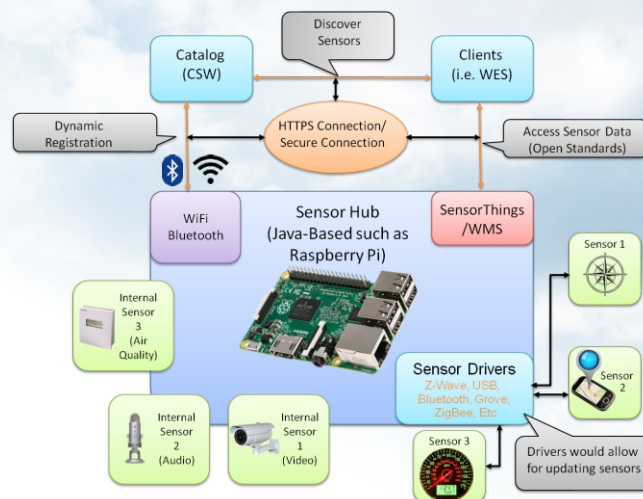
# SensorHub



## SensorHub

### An Innovative Solution to Web Enterprise Suite Internet of Things Platform

SensorHub is based upon an add-on to Web Enterprise Suite a geospatial software solution. This new subsystem was implemented using the new OGC SensorThings API candidate specification that is built upon existing OGC sensor specifications including the ISO/OGC Observation and Measurement data model and provides an open and unified way to interconnect the Internet of Things devices, data, and applications over networks like the Web.



## Light-Weight Software

### Solution that can be deployed on any device running Java whether in the field or a server room

Drivers that allow for communication with many different sensor systems already exist withing the software, including Grove, Z-Wave, and many others. Custom drivers can be uploaded using the interface, without requiring software updates to the SensorHub.

Real-time and historical data can be viewed directly from the interface in easy to understand widgets and charts (e.g., temperature gauge, speedometer, etc.). The SensorHub software also allows the user to task sensors (e.g., point the camera in a certain direct), create alerts (e.g., if heart rate drops below a certain threshold notify me) and create task chains (e.g., if a motion sensor detects motion, point the camera in a specific direction.)



# Converging IoT Sensors



## Military Context

### Take Advantage of Capabilities using Existing Infrastructures and Environments

Because of the flexible and open architecture provided by this solution, military users can take advantage of the capabilities using existing infrastructures and environments. The system can also be used as a data source for existing Situational Awareness tools that would greatly benefit generating Common Operational Pictures using IoT information and content as an additional source.

This novel approach has SensorHubs being a combination of software and hardware providing military personnel with access to proprietary sensors that would otherwise be difficult to access. This solution is ideally suited for the military context because it provides a complete method for commanding and controlling the complex sensor infrastructure currently used by the military while enabling the system to easily adopt technologies and techniques used in the ever expanding commercial and open source IoT today and in the future.

## Application to Smart Bases

### Integrating a Central Control System with Multiple Sensors and SensorHubs

A Smart Base using this solution would be able to monitor all sensors, collect sensor data for historical purposes, task sensors, and define and configure sensor alerts for action. The Smart Base would have sensor hubs configured logically and physically according to the operational environmental needs and requirements. (e.g., biometric, environmental and observational, including video). The Smart Base administrative personnel can easily install a SensorHub network using existing communications networks and these network communications can be extended using protocols such as Z-Wave and ZigBee.

## Data Analytics

### A Cloud Based Enabled IoT System to Collect, Validate, Store and Analyze Data

Our solution provides a dashboard and data analysis capability and open interfaces that provide users with the ability to connect other data analysis tools. Because this IoT system generates geospatially enabled sensor data, the data captured can be easily incorporated into situational awareness tools for the purpose of using sensor information (moving and insitu) in support of the Common Operational Pictures.

