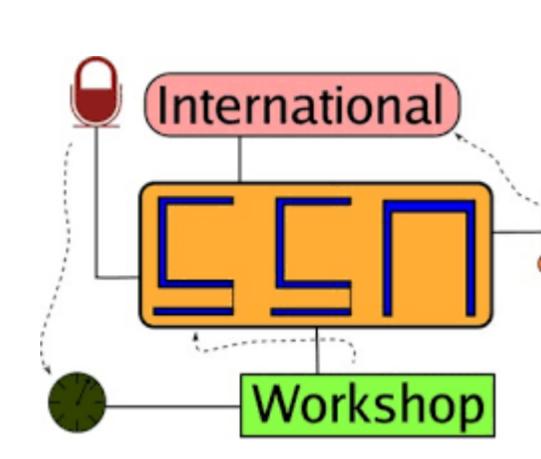




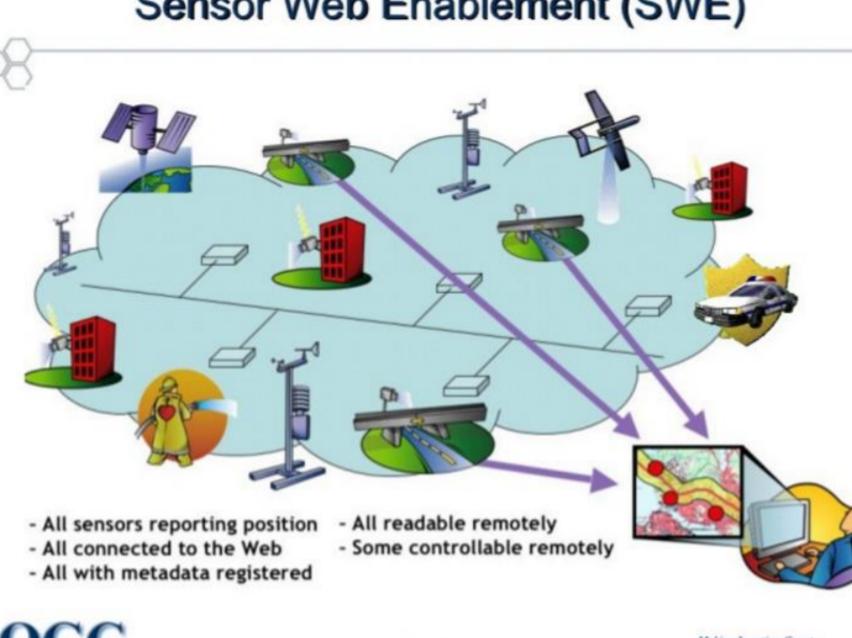
Institut Mines-Télécom

Internet of Things (IoT), Smart Cities and Energy: Standardization Survey

World Wide Web Consortium (W3C)



Sensor Web Enablement (SWE)



OGC

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► W3C Spatial Data on the Web Working Group:

- The goal is to combine geospatial information with other data on the Web
- The goal is to design the Semantic Sensor Network (SSN) ontology V2 to describe sensors and the observations they make.
- Merged with OGC SWE (Open Geospatial Consortium Semantic Web Enablement)
- SEAS ontologies based on SSN ontology (EMSE involved in this standard)

► W3C Web of Things (WoT):

- Goal: Reducing the cost of development and integration of IoT platforms and application domains.
- Talk: Domain knowledge Interoperability to build the Semantic Web of Things at W3C WoT Workshop in 2014

► W3C Linked Building Data Community Group:

- The goal is to design the Building Information Modelling (BIM) based on Web of Data technologies – SEAS ontologies presented
- The goal is to define existing and future use cases and requirements for linked data based applications across the life cycle of buildings

► W3C TPAC 2016 – W3C Technical Plenary Meeting

ETSI Machine-to-Machine (M2M) and OneM2M



► ETSI M2M

- End-to-End data workflow
- Talk: An ontology to semantically annotate M2M data at ETSI M2M Workshop 2013

► ETSI SmartM2M

► DG CONNECT supports the SEAS project to be standardized within ETSI

► OneM2M Management, Abstraction and Semantics (MAS) Working Group 5

- Talk: A unified language to describe M2M/IoT data - Common terms to describe sensor measurements to ease the automatic interpretation by all M2M/IoT devices at OneM2M in 2015
- Talk: Semantic Web best practices and guidelines for domain knowledge interoperability to build the Semantic Web of Things at OneM2M in 2014

Semantic Interoperability White Paper:

- Working group to merge several standardizations (e.g., W3C WoT, oneM2M, IEEE P2413 and AIOTI)
- White Paper V2 aims to provide guidance and tools for dummies (EMSE involved)
- White Paper V1: "Semantic Interoperability for the Web of Things" [Murdock et al. August 2016] which takes our research work and vision as a baseline regarding semantic interoperability and the data workflow to process M2M data.
- Parallel work with Paul Murdock (Landys+Gyr) who is leading this white paper since the company is involved in the smart energy domain (EMSE involved)

Others (AIOTI, IERC):

- AIOTI: European Alliance for IoT Innovation
 - WG3 "IoT Standardization" (Telecom SudParis involved)
- IERC European Research Cluster on the Internet of Things AC04 - IoT Hyper-connected Society
 - Book: IoT Semantic Interoperability: Research Challenges, Best Practices, Recommendations and Next Steps, March 2015