Semantic Interoperability

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Semantics is the study of meaning

“Explicit agreement on semantics is vital to the success of IoT → Semantic Interoperability"
Why is Semantic Interoperability important?

- The value of IoT grows with available information
- Today: heterogeneity, silos, tight coupling
- True IoT:
  - Sharing of information
  - Federation across silos
  - Dynamic use of sources

Agreement on meaning of information = Semantics → Basis for Semantic Interoperability
What are the barriers?

• Technology is available, some tools
• BUT: Limited to relatively small community
  Wrong perception: academic, for experts only, difficult

→ Spread the word
→ Make it easier for all stakeholders
→ Best practice
Joint Whitepapers

Semantic IoT Solutions: A Developer Perspective
Target Group: Developers and Software Architects
“How to develop semantic systems and achieve semantic interoperability”

Towards Semantic Interoperability Standards based on Ontologies
Target Group: Semantic Experts, Standardization Engineers & SDOs
“How to create standards for semantic interoperability”
Developers: Aspects and Activities when Developing Semantic Solutions

Semantic Modelling: Ontologies
Ontology Instantiation: Semantic Information
Managing Semantic Information: Information Storage
Accessing relevant Information: Information Retrieval
Deriving Information: Reasoning
Standards: Best Practice

• Co-creation and separation of concerns (SoC)
  • Parties with different expertise and viewpoints
  • SoC is design principle: each element separate concern

• Defining knowledge perimeter

• Modularization design principle

• Evaluating usefulness
  • Technology readiness level (TRL)

• Deployment concerns
  • Support for profiles and discovery
  • Version management
Joint Whitepapers on Semantic Interoperability

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