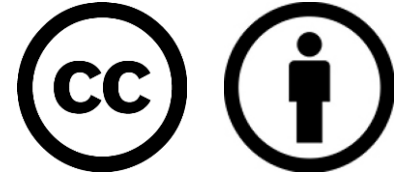




Alliance for  
Internet of Things  
Innovation



# Semantic Interoperability

IoT Week • 20<sup>th</sup> June 2019

Martin Bauer

NEC Laboratories Europe



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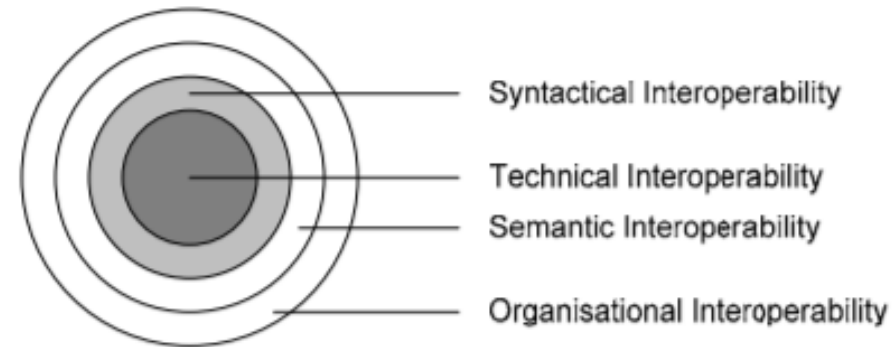
# Semantics is the study of meaning



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

Coming soon!

## Semantic IoT Solutions: A Developer Perspective

Target Group: Developers and  
Software Architects

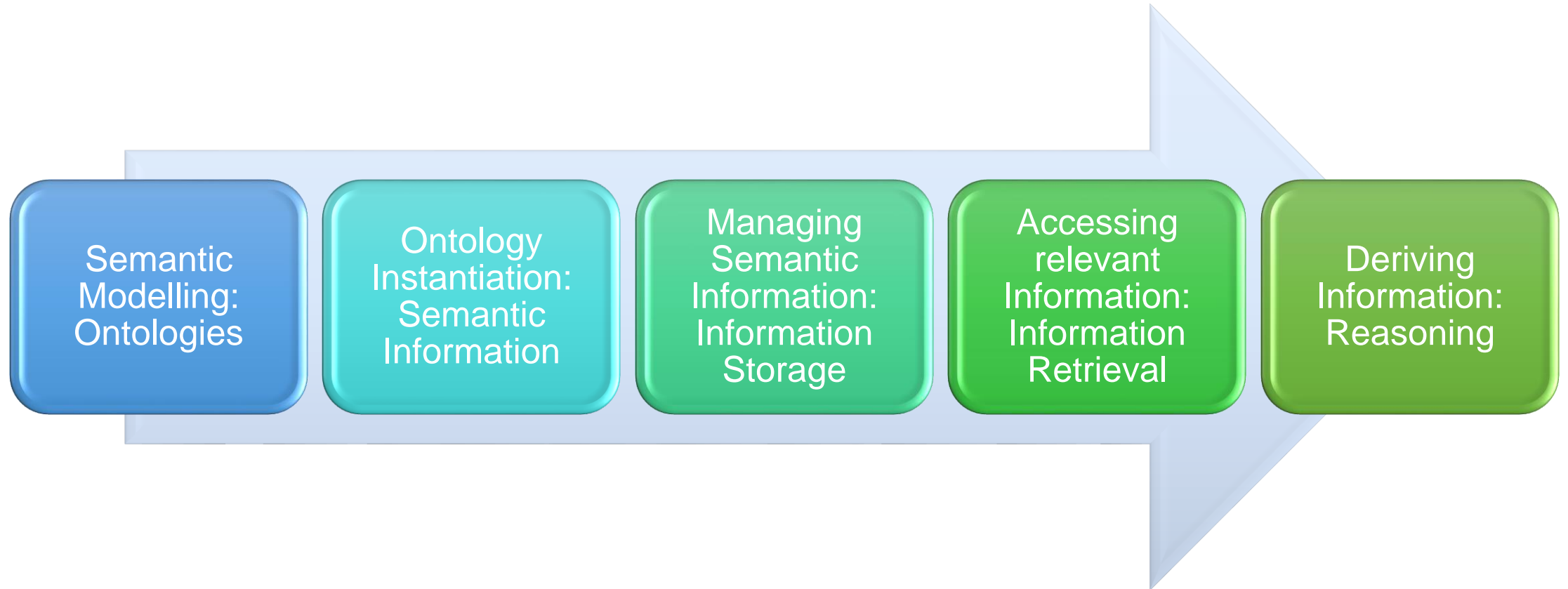
*“How to develop semantic systems  
and achieve semantic  
interoperability”*

## Towards Semantic Interoperability Standards based on Ontologies

Target Group: Semantic Experts,  
Standardization Engineers & SDOs

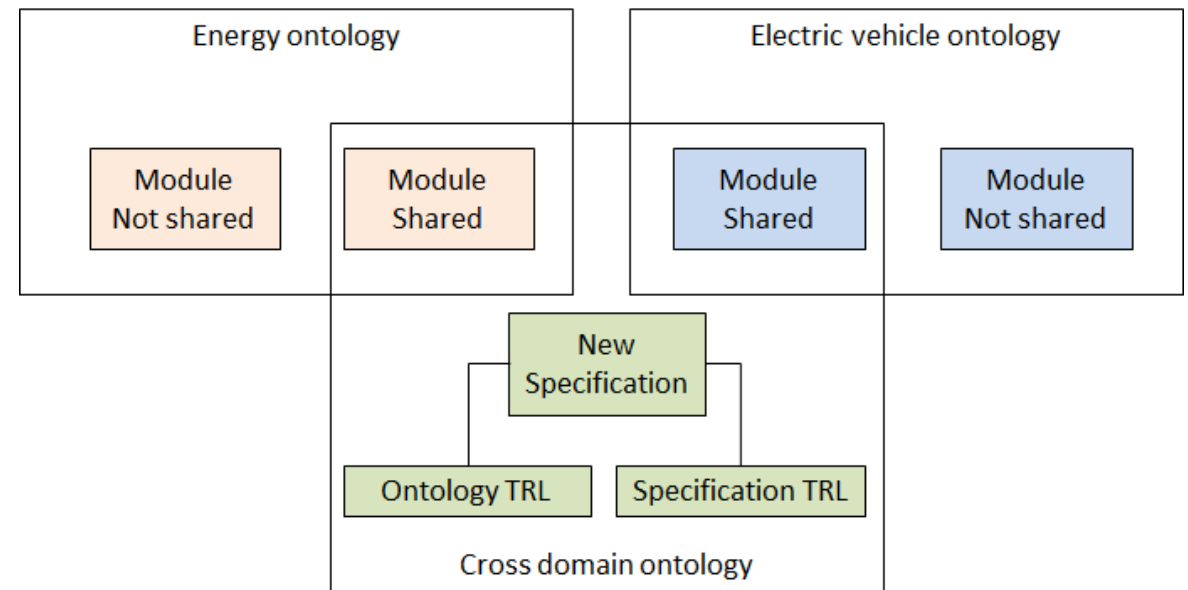
*“How to create standards for  
semantic interoperability”*

# Developers: Aspects and Activities when Developing Semantic Solutions



# 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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