# Session 1.4

##### Session 1.4 (SEMANTiCS)

#### Time: Wednesday, September 18, 2024 - 10:40 to 12:00

#### Chair: TBA

## **Talks**

### From UML to OWL: Enterprise Architect as an ontology editor

| Wouter BeekTriply | Linda van den Brink | Elena Slavco |
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### Managing mapping complexity with Mapping Workbench [SP]

| Eugeniu CostetchiMeaningfy |
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### Leveraging Knowledge Graphs and Machine Learning for Automated CO2 Footprint Calculation of Buildings

| Lokesh Sharma | Martin Voigt |
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### Ontology based Event Knowledge Graph enrichment using case based reasoning

Purpose: The first objective of this research is to represent an event with 5W1H characteristics (who, what, where, when, why, and how) through ontologies. The second objective is to propose an approach for enriching an event knowledge graph (EKG) based on this ontology using EvCBR, a outperforming case-based reasoning algorithm found in the literature. Furthermore, we have studied the impact of each W (Who, Where, and When) on the performance of EvCBR on the Wikipedia Causal Event dataset.

Methodology: We proposed the XPEventCore ontology to represent 5W1H characteristics of events by integrating multiple event ontologies (SEM and FARO) and introduced new object properties for representing Cause and Method to answer “Why” and “How” questions. We adopted this XPEventCore ontology for a specific use case (the MR4AP Wikipedia dataset), and populated our EKG. Furthermore, we adapted EvCBR, a case-based reasoning approach, to enrich this EKG.

Findings: XPEventCore ontology provides a structured and adaptable foundation for capturing the essential facets of an event. It can be adapted to any domain (like MR4AP Wikipedia dataset) and populated to generate EKGs. Then, we applied the EvCBR, and subsequent analysis revealed that reasoning had a significant impact. Notably, the EvCBR outperformed both the with and without reasoning approaches on the dataset.

| Rajesh Piryani | Nathalie Aussenac-Gilles | Nathalie Hernandez |
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| Cédric Lopez | Camille Pradel |  |

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