4th Workshop on Knowledge Graphs and Model-Driven Systems Engineering (KGMDSE, formerly KG4SDSE)

Robert Andrei Buchmann[1,*], Dimitris Karagiannis[2] and Dimitris Plexousakis[3]

[1]*Babeş-Bolyai University, Romania*
[2]*University of Vienna, Austria*
[3]*Institute of Computer Science, FORTH and University of Crete, Greece*

The *Workshop on Knowledge Graphs and Model-driven Systems Engineering (KGMDSE*) is a cross-over event that aims to bring together communities working on Knowledge Graphs and semantic technologies on one side, and modeling methods for Model-driven Engineering on the other side. The workshop held at ISWC 2026 is a continuation of a series of workshops initiated at the CAISE conference during 2023-2025, this time with a stronger emphasis on the cross-over aspect and the synergy potential between the two communities working with different perspectives on knowledge engineering. The workshop emphasizes the role of semantics in information systems engineering and the need to streamline semantics between traditionally divergent technology stacks or eco-systems – such as those involved in the Semantic Web vision and in diagrammatic modeling for Model-driven Engineering. In addition, Large Language Models open new possibilities for devising knowledge-based systems and novel knowledge streamlining pipelines in an age when natural language became machine-interpretable. Knowledge engineering is the discipline that is called to identify both commonalities and diverging aspects of different knowledge representation paradigms.

This year the workshop received 15 submissions in total, from authors representing 12 countries. Based on at least three constructive (single blind) evaluations per paper from members of the Program Committee, we accepted 5 full papers and 5 short papers, covering diverse research challenges:

- Tosi et al. propose a reversal of the traditional UML-based generation by translating OWL and SHACL models into UML/OCL;
- Chiș and Ghiran present a tool paper for RDF knowledge graph creation and editing governed by a domain-specific modeling language and method deployed on the ADOxx platform;
- Völz and Utz extend the Scene2Model design thinking toolkit with Knowledge Graph capabilities;
- D. Dolha reports on experimentation with querying RDFized BPMN models using Codex and GraphDB's MCP implementation;
- Seidpisheh and Berlik revisit the GraphRAG paradigm by proposing their own flavor employing an intermediate mapping and templating layer;
- Two short papers from industry representatives Ponnusamy and Strobel from Airbus Germany promote early ideas on AI assistance of signal searching and on the integration between Agentic AI and Model-based Systems Engineering;
- The short paper of Singh et al. also provides an industry perspective of employing Knowledge Graphs for coatings research;
- The short paper of Balzotti et al. envisions a pipeline to achieve streamlining between user intents and context graphs;

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*Corresponding author.
robert.buchmann@econ.ubbcluj.ro (R. A. Buchmann); dk@dke.univie.ac.at (D. Karagiannis); dp@ics.forth.gr (D. Plexousakis)
0000-0002-7385-1610 (R. A. Buchmann); 0000-0003-2162-9740 (D. Karagiannis); 0000-0002-0863-8266 (D. Plexousakis)
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- The short paper of Sasaki et al. advocates the integration of code quality frameworks with Knowledge Graphs.

The evaluation process took place during August 2026.

We are thankful to the submission authors who helped turn this workshop into a recurring event, and we are grateful to the ISWC chairs for hosting it in 2026. Just as importantly, this year's Program Committee was particularly prompt during the summer weeks in handling all reviewing tasks in an efficient and constructive manner.

We also express our gratitude for the dedicated efforts of our Web presence chair, Iulia Vaidian, who facilitated this event series from its inception in 2023. This workshop is supported by OMiLAB NPO, Germany, its community of practice [1] and by FORTH-CS, Greece.

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Robert Buchmann, Dimitris Karagiannis, Dimitris Plexousakis

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Robert Buchmann - Babeș-Bolyai University, Romania
Dimitris Karagiannis - University of Vienna, Austria
Dimitris Plexousakis - Institute of Computer Science, FORTH and University of Crete, Greece

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Workshop webpage and CFP:

https://www.omilab.org/activities/events/iswc2026_kgmdse/

[1] https://www.omilab.org/community/