Call for Challenges – The Industry Edition

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ABSTRACT

This call invites descriptions for a new MULTI Industry Challenge. The Industry Challenge aims to foster communication and collaboration between industry and academia, particularly the multi-level modeling community, with the potential to identify new applications of multi-level modeling. The call for challenges invites modeling practitioners from industry and/or academia to submit a problem they believe can be better addressed by multi-level modeling rather than traditional modeling approaches such as those inspired by the UML.

1 INTRODUCTION

In recent years, the MULTI community has made remarkable progress. Researchers in this field have pioneered novel techniques and theoretical frameworks, significantly advancing our understanding of the strengths and weaknesses of the different approaches to multi-level modeling. To showcase and compare the different approaches to multi-level modeling, the MULTI challenge format was initiated in 2017 [1]. Since then, multiple challenges have been published: The Process Challenge in 2019 [2], the Collaborative Challenge in 2021 [4] and the Warehouse Challenge in 2023 [3]. These have led to many publications contributing solutions to the challenges.

However, despite these achievements, a gap remains between the advancements of multi-level modeling and its application in, and validation through, real-world scenarios. To address this, we invite submissions for a new challenge description that explores and demonstrates the tangible impact of research in multi-level modeling, especially through collaborations with industry or applications to real-world problems. We welcome contributions that address industry-relevant issues or use datasets, case studies, or collaborations that highlight the practical utility of multi-level modeling. This offers an exciting opportunity for industry stakeholders to gain valuable, innovative perspectives on their challenges while helping shape the future direction of this field. One selected challenge will be published to invite contributions for the MULTI 2025 workshop.

This call aims to broaden the community's impact, fostering stronger ties with industry and encouraging a dynamic exchange of knowledge that benefits both academic and applied perspectives.

2 MANDATORY DESCRIPTION ASPECTS

The challenge proposal should discuss at least the following points:

- concise outline of the problem domain
  - context and background
  - current limitations (why is it a problem?)
- short statement of industry relevance

3 OPTIONAL DESCRIPTION ASPECTS

In addition to the mandatory description, the following points are optional:

- preliminary list of modeling requirements
- preliminary list of solution submission requirements
- outline of performance metrics to compare a multi-level solution to the solution in place
- outline and status of a related research project
- confidentiality requirements
- description of available data

4 DEADLINE

The deadline for submissions is 31st January 2025, AoE (Anywhere on Earth). Please submit a challenge description via email to any of the authors of this call. Should you have any questions or need clarification, feel free to reach out.

We are looking forward to your submissions!

REFERENCES

[1] 2017. MULTI 2017: The Bicycle Challenge. https://www.wi-inf.uni-duisburg-essen.de/MULTI2017/#challenge

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[3] Thomas Kühne and Manfred A. Jeusfeld. 2023. The MULTI Warehouse Challenge. In *2023 ACM/IEEE International Conference on Model Driven Engineering Languages and Systems Companion (MODELS-C)*. 699–702. https://doi.org/10.1109/MODELS-C59198.2023.00111

[4] Gergely Mezei, Thomas Kühne, Victorio Carvalho, and Bernd Neumayr. 2021. The MULTI Collaborative Comparison Challenge. MULTI 2021 Call for Papers. https://jku-win-dke.github.io/MULTI2022/MULTI2021_Challenge.pdf https://jku-win-dke.github.io/MULTI2022/MULTI2021_Challenge.pdf.