



**SOHOMA2024 – 14th International Workshop on  
Service-Oriented, Holonic and Multi-Agent Manufacturing Systems for  
Industry of the Future**

September 26 – 27, 2024 / Augsburg, Germany

# Program

# Program Overview

	September 26, 2024	September 27, 2024
08:00 08:30	<b>Registration</b> (Location: Networking Area)	<b>Registration</b> (Location: Networking Area)
08:30 09:00		
09:00 09:30	<b>Opening Ceromonie</b> (Location: SOHOMA-1)	<b>Technical Session D:                      Operation &amp; Performance</b> (Room: SOHOMA-1)
09:30 10:00	<b>Keynote: Dr. Detlev Richter, TÜV Süd</b> (Location: SOHOMA-1)	
10:00 10:30	<b>Networking &amp; Coffee Break</b> (Location: Networking Area)	<b>Technical Session E:                      Reconfigurable Systems</b> (Room: SOHOMA-2)
10:30 11:00		
11:00 11:30	<b>Technical Session A:                      Industrial Applications of Artificial Intelligence</b> (Room: SOHOMA-1)	<b>Networking &amp; Coffee Break</b> (Location: Networking Area)
11:30 12:00		
12:00 12:30		
12:30 13:00		
13:00 13:30	<b>Lunch</b> (Location: Caferia)	<b>Technical Session F:                      Agent Architecture</b> (Room: SOHOMA-1)
13:30 14:00		
14:00 14:30	<b>Technical Session B:                      Digital Twins &amp; Industrial Data Spaces 1</b> (Location: SOHOMA-1)	<b>Closing Ceromonie</b> (Location: SOHOMA-1)
14:30 15:00		
15:00 15:30		
15:30 16:00		
16:00 16:30	<b>Networking &amp; Coffee Break</b> (Location: Networking Area)	<b>Walking Lunch</b> (Location: Networking Area)
16:30 17:00		
17:00 17:30	<b>Technical Session C:                      Digital Twins &amp; Industrial Data Spaces 2</b> (Location: SOHOMA-1)	
17:30 18:00		
18:00 18:30	<b>Gala Dinner</b> (Location: Restaurant Berghof Bergstrasse 12, 86199 Augsburg)	
18:30 19:00		
19:00 19:30		
19:30 20:00		
20:00 20:30		
20:30 21:00		
21:00 21:30		
21:30 22:00		

# Detailed Technical Program – Day 1

08:20 08:30	<b>Registration</b> (Location: Networking Area)
08:30 08:40	
08:40 08:50	
08:50 09:00	
09:00 09:10	<b>Opening Ceromonie</b> (Location: SOHOMA-1)
09:10 09:20	
09:20 09:30	
09:30 09:40	
09:40 09:50	<b>Keynote: Dr. Detlev Richter, TÜV Süd</b> (Location: SOHOMA-1)  Digital transformation of manufacturing requires trustworthiness along the lifecycle: Are intelligent digital twins and distributed agents enough to achieve holistic understanding of assets, context and environment within dynamic system of systems?
09:50 10:00	
10:00 10:10	
10:10 10:20	
10:20 10:30	
10:30 10:40	
10:40 10:50	<b>Networking &amp; Coffee Break</b> (Location: Networking Area)
10:50 11:00	
<b>TS A Technical Session A: Industrial Applications of Artificial Intelligence (Room: SOHOMA-1)</b>	
11:00 11:10	566983 - Agent Transparency as a mechanism of Trust Improvement between Humans and Industry 4.0 Systems
11:10 11:20	<i>Loïck Simon, Philippe Rauffet, Clément Guérin</i>
11:20 11:30	568649 - Towards Conversational Requirements Engineering: Detecting Defects in Requirements Using Large Language Models
11:30 11:40	<i>Jakob Guttinger, Jan-Niclas Fenger, Thomas Kirchmeier, Legat Christoph</i>
11:40 11:50	566003 - Ethical issues in the use of Generative Artificial Intelligence in performance management: Industrial case studies
11:50 12:00	<i>Damien Trentesaux, Lamia Berrah, Frédéric Guerre-chaley</i>
12:00 12:10	563703 - Leveraging Agent-Based Reasoning for Natural Task Delegation on the Shop Floor
12:10 12:20	<i>Moritz Schmidt, Claudia Meitinger</i>
12:20 12:30	569666 - Status and Future Prospects of the Standardization Framework Industry 4.0: A European Perspective
12:30 12:40	<i>Olga Meyer, Marvin Boell, Christoph Legat</i>
12:40 12:50	Spot Light Session Panel
12:50 13:00	<i>all presenters of the session "Industrial Applications of Artificial Intelligence"</i>
13:00 13:10	<b>Lunch</b> (Location: Cafeteria)
13:10 13:20	
13:20 13:30	
13:30 13:40	
13:40 13:50	
13:50 14:00	
<b>TS B Technical Session B: Digital Twins &amp; Industrial Data Spaces 1 (Location: SOHOMA-1)</b>	
14:00 14:10	567033 - Model-based Energy Consumption Analysis in Digital Twin for Energy-Aware Industrial Robots
14:10 14:20	<i>Ionut Lentoiu, Silviu Raileanu, Theodor Borangiu</i>
14:20 14:30	566312 - Ethical Implications of Digital Twins in Ophthalmology
14:30 14:40	<i>Iliuță Miruna-Elena, Damien Trentesaux, Mihnea Alexandru Moisesescu, Traian-Costin Mitulescu</i>
14:40 14:50	567407 - Knowledge Graph As Digital Twins Enhancer For Real Case Data-Driven Smart Building
14:50 15:00	<i>Sebastien Gerin, Laurent Joblot, Nisrine Makhoul, Frédéric Merienne</i>
15:00 15:10	563715 - A Systematic Literature Review on Simulation Models for Healthcare
15:10 15:20	<i>Sofia Abadia, William Derigent, Virginie Goepp</i>
15:20 15:30	568508 - AI-Powered Digital Twins for Public Transportation: A Multi-Agent Model for Transmilenio in Bogota
15:30 15:40	<i>Monica-Juliana Perez, Tarik Chargui, Damien Trentesaux</i>
15:40 15:50	560610 - Concept proposal and evaluation: Patient and resource virtualization through emergency department simulation
15:50 16:00	<i>Michael Schlecht, Vincent Cheutet, Jessica Florencia, Thierry Moyaux, Lorraine Trilling, Guillaume Bouleux</i>
16:00 16:10	<b>Networking &amp; Coffee Break</b> (Location: Networking Area)
16:10 16:20	
16:20 16:30	
<b>TS C Technical Session C: Digital Twins &amp; Industrial Data Spaces 2 (Location: SOHOMA-1)</b>	
16:30 16:40	569678 - Industrial Data Space Research - An Overview
16:40 16:50	<i>Mathias Vorbröcker, Oliver Antons, Julia Arlinghaus</i>
16:50 17:00	563769 - A Concept for a Data Operating Platform for a Process Technology Research Environment as Step Towards a Universal
17:00 17:10	<i>Platform Philipp von Rußdorf, Thorsten Schöler, Ralf Goller</i>
17:10 17:20	569654 - Relationship of Digital Product Passport and Digital Twin in Industry 4.0 Context
17:20 17:30	<i>Victoria Melo, Fernando De la Prieta, Paulo Leitão</i>
17:30 17:40	560271 - Integration of the Asset Administration Shell in Engineering Data Management Systems
17:40 17:50	<i>Thomas Dickopf, Sven Forte, Markus Weber</i>
17:50 18:00	563686 - Review of methods for synchronizing a digital twin in an industrial context
18:00 18:10	<i>Sylvain Bernateau, William Derigent, Pascale Marangé, Alexis Aubry, Amariyls Ben Attar</i>
18:10 18:20	Spot Light Session Panel
18:20 18:30	<i>all presenters of session "Digital Twins &amp; Industrial Data Spaces"</i>

## Detailed Technical Program – Day 2

		<b>September 27, 2024</b>	
08:00	08:10	<b>Registration</b> (Location: Networking Area)	
08:10	08:20		
08:20	08:30		
<b>TS D</b>		<b>Technical Session D: Operation &amp; Performance</b>	<b>Technical Session E: Reconfigurable Systems</b>
<b>TS E</b>		<i>(Room: SOHOMA-1)</i>	<i>(Room: SOHOMA-2)</i>
08:30	08:40	563906 - A Meta-Model Based Methodology for Building Performance Dashboards in Manufacturing <i>Pascal Andre, Ivana Rasovska, Virginie Goepp</i>	563542 - Advanced Digital Solutions for Reconfigurable Production Systems: A Multi-Scale, Multi-Level Decision Support Framework <i>Nathalie Klement, Marie-Pierre Pacaux, Clément Guérin, Esma Yahia, Jose-Fernando Jimenez, Aline Cauvin</i>
08:40	08:50		
08:50	09:00	561223 - A method to analyze disassembly processes to meet sustainable goals <i>Elimy Ojeda, Maxence Denu, Pierre David</i>	563571 - Manufacturing Systems for Individualized Products Enabled by Machine Learning, Machine Vision and Flexible Product Transport <i>Christoph Wree, Rando Raßmann</i>
09:00	09:10		
09:10	09:20	563736 - Improving Reactive Maintenance through Root Cause Analysis and Operator-Aided Decision Making <i>Andreas Kottre, Thorsten Schöler, Christoph Legat</i>	563696 -Reconfigurable Conveyor Transfer System using IEC-61499 Function Blocks <i>Leonardo Mendonça, Frederico Fagundes, Gustavo Funchal, Paulo Leitão</i>
09:20	09:30		
09:30	09:40	568496 - Real-Time Rule-based Monitoring Tool to Achieve Zero Defect Manufacturing <i>Julio Costa, Alexandre O. Júnior, José Barbosa, Paulo Leitão, Gleifer Alves, Andre P. Borges, Gisela Garcia, Rui Pires</i>	563666 - Enhancing Expressiveness in Automation Control Programming: Addressing Current Gaps and Future Needs <i>Olivier Cardin</i>
09:40	09:50		
09:50	10:00	563932 - The impact of new technologies on employee autonomy in decision-making: a systematic literature review* <i>Alexandre Goujon, Frédéric Rosin, Florian Magnani, Samir Lamouri, Robert Pellerin</i>	563910 - A Literature Review and Taxonomy Proposal of Industrial Symbiosis Practices <i>Soukaina Benchari, Cecilia Daquin, Emmanuelle Grislin-le strugeon, Yves Sallez</i>
10:00	10:10		
10:10	10:20	Spot Light Session Panel <i>all presenters of this session</i>	Spot Light Session Panel <i>all presenters of this session</i>
10:20	10:30		
10:30	10:40	<b>Networking &amp; Coffee Break</b>	
10:40	10:50	<i>(Location: Networking Area)</i>	
10:50	11:00		
<b>TS F</b>		<b>Technical Session F: Agent Architecture (Room: SOHOMA-1)</b>	
11:00	11:10	568287 - Towards a Digital Twin architecture based on MAPE-K framework and Holonic Paradigm: Application to an Emergency Department and Smart Manufacturing cases studies <i>Abir Ismaili-Alaoui, Emmanuel Zimmermann, Yinling Liu, Guillaume Demesure, Hind Bril El Haouzi</i>	
11:10	11:20		
11:20	11:30	563902 - Models and methods of multi-agent planning for managing mobile resources* <i>Anastasiya Galitskaya, Vladimir Galuzin, Petr Skobelev</i>	
11:30	11:40		
11:40	11:50	563170 - Systematic Development of an Agent-based Approach for Mobile Multi-robot Order Picking <i>Felix Gehlhoff, Vaidotas Lesciauskas</i>	
11:50	12:00		
12:00	12:10	563637 - A Holonic Architecture for a Human Cyber-Physical System to Improve Worker Safety in Underground Mines <i>Sa'eed Fataar, Karel Kruger, Anton Basson</i>	
12:10	12:20		
12:20	12:30	563640 - ARTI-Based Holonic Architecture for an Operation Support System for a Fruit Treatment Facility <i>Divan Smit, Karel Kruger, Anton Basson</i>	
12:30	12:40		
12:40	12:50	568995 - IMIC: Intelligent Manufacturing International Contest - towards the gradual design of a new benchmark <i>Nathalie Klement, Hichem Haddou Benderbal, William Derigent, Olivier Cardin</i>	
12:50	13:00		
13:00	13:10	<b>Closing Ceronomie</b>	
13:10	13:20	<i>(Location: SOHOMA-1)</i>	
13:20	13:30		
13:30	13:40	<b>Walking Lunch</b>	
13:40	13:50	<i>(Location: Networking Area)</i>	
13:50	14:00		