

# Automation Forum

**How can automation contribute to a livable and sustainable society in the future?**

**Tuesday 30<sup>th</sup> of June 2023**

Chairs: Birgit Vogel-Heuser, Angela Faragasso  
(Automation cluster chairs)



*Robotics & Automation Society*



# Automation Cluster TCs

- Performance Evaluation & Benchmarking of Robotic and Automation Systems
- Automation in Logistics
- Agricultural Robotics and Automation
- Smart Buildings
- Collaborative Automation for Flexible Manufacturing
- Digital Manufacturing and Human-Centered Automation
- Robotics and Automation in Nuclear Facilities
- Semiconductor Manufacturing Automation
- Sustainable Production Automation



# Vision of the future of our society in the 2035~2050 and the role automation should play

How can automation contribute to resource efficiency addressing the limited resources of our planet like water and food?

What research and innovation directions are required?

Thanks to advanced robotics systems, A.I., machine learning and virtual reality, today nearly everything can be automated, localized, virtualized, and simplified. But what is reasonable and beneficial?

Advanced engineered systems made significant improvements in safety, simplification of routine tasks and higher productivity level.

How can we evolve using the creativity and strength of both human and machines?

=> Brainstorming for a Roadmap for Automation to a livable and sustainable society in the future



# How can automation contribute to a livable and sustainable society in the future?

**8:30** Welcome and Introduction of topic and key questions by TC automation cluster Chairs (Birgit Vogel-Heuser, Angela Faragasso).

impulse statement by all speakers

**8:40 Ken Goldberg** UC Berkeley; *Digital Twins and Cloud-Based Automation*

**8:50 Minwei Zhang** (virtually), Huawei Technologies Duesseldorf GmbH, Düsseldorf, Germany. Automation from physical to virtual.

**9:00 Georg von Wichert** (virtually), Siemens Corporate Technology, Munich, Germany; *Is there a center of the universe? On the interplay of robotics and automation?*

**9:10 Paolo Dario**, Department of Excellence in Robotics and AI, Scuola Superiore Sant'Anna, BioRobotics Institute, Pisa, Italy. "How can automation contribute to a worth-living and sustainable society in the future?"

**9:20 Maria Pia Fanti**, Department of Electrical and Information Engineering, Polytechnic of Bari, Italy; *Artificial Intelligence for Autonomous Vehicles Control*

**9:30 Iain Darby Dounreay** (National Nuclear Laboratory) GB; *Progress on applications of robotics on nuclear and radiological sites*

**9:40 Fabiana Fournier** (virtually), IBM Research-Israel; Situation Aware eXplainability

**9:50 Nico Peper** from Schunck, Germany; *Clash of Cultures: closed versus open environments for robotics.*

**10:00- 10:30** discussion

**10:30 to 10:40** Wrap-up: Summary of results (about 10 minutes) (Birgit and Angela)



**Robotics & Automation Society**

# Potential Questions

- What are common problems (technological, non-technical, ...) encountered in the different domains?
- What are commonalities in applications and technological solutions of the different domains? *How can we find synergies?*
- What is the key technology bottle-neck in your application domain?
- What technology would you like to connect to and why? What functionality is required?
- What is the key systems challenge that your application area is confronted with?
- What is required of us, automation engineers, to contribute to a livable and sustainable society in the future?



# How can automation contribute to a livable and sustainable society in the future?

**8:30** Welcome and Introduction of topic and key questions by TC automation cluster Chairs (Birgit Vogel-Heuser, Angela Faragasso).

impulse statement by all speakers

**8:40 Ken Goldberg** UC Berkeley; *Digital Twins and Cloud-Based Automation*

**8:50 Minwei Zhang** (virtually), Huawei Technologies Duesseldorf GmbH, Düsseldorf, Germany. Automation from physical to virtual.

**9:00 Georg von Wichert** (virtually), Siemens Corporate Technology, Munich, Germany; *Is there a center of the universe? On the interplay of robotics and automation?*

**9:10 Paolo Dario**, Department of Excellence in Robotics and AI, Scuola Superiore Sant'Anna, BioRobotics Institute, Pisa, Italy. "How can automation contribute to a worth-living and sustainable society in the future?"

**9:20 Maria Pia Fanti**, Department of Electrical and Information Engineering, Polytechnic of Bari, Italy; *Artificial Intelligence for Autonomous Vehicles Control*

**9:30 Iain Darby Dounreay** (National Nuclear Laboratory) GB; *Progress on applications of robotics on nuclear and radiological sites*

**9:40 Fabiana Fournier** (virtually), IBM Research-Israel; Situation Aware eXplainability

**9:50 Nico Peper** from Schunck, Germany; *Clash of Cultures: closed versus open environments for robotics.*

**10:00- 10:30** discussion

**10:30 to 10:40** Wrap-up: Summary of results (about 10 minutes) (Birgit and Angela)



**Robotics & Automation Society**