

Join the challenge – and open up a new line of business.

TransformationsHub LEITUNGSSATZ

November 2026

ROBOTICS CHALLENGE 2027

Gefördert durch:

Bundesministerium für Wirtschaft und Energie

aufgrund eines Beschlusses des Deutschen Bundestages

The next frontier of automation is the wiring harness.
The wiring harness – the "nervous system" of every vehicle – is still largely made by hand. The Robotics Challenge is looking for solutions that change this.

AT A GLANCE

WHAT	Competition for automation solutions in wiring harness production – 4 tasks, free choice
WHO	Companies, start-ups and research institutions from robotics, automation, software and AI
WHEN	Registration by 15 Jan 2027 · Development 1 Feb – 15 May 2027 · Presentation June 2027
HOW	Free participation · Hardware is provided

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MORE THAN 80 % OF PROCESSES ARE STILL DONE MANUALLY

Testimonial on the Robotics Challenge 2026

“In automotive wiring harness production, more than 80 % of processes are still carried out manually – an area in which precision, efficiency and cost-effectiveness are becoming increasingly decisive. Automation concepts can make an important contribution here. The Robotics Challenge offers a suitable platform for developing such solutions close to real-world practice and taking them further.”

Norbert Zundl
Head of Wiring Harness Development & Technologies at Mercedes-Benz AG and Advisory Board member of the Transformation Hub Wiring Harness



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Robotics Challenge 2027: Focus & Objectives

A door wiring harness consists of many small, different components and limp, flexible wires. This is exactly what makes it so difficult to automate – which is why many work steps are still carried out by hand.

The Robotics Challenge 2027 is looking for technically feasible and economically viable solutions for four specific tasks from its production. Each team works on one or more tasks, depending on its expertise. Task 04 is also open to pure digitalization teams.

More information on the current challenge:
Robotics Challenge 2027

4 TASKS – ONE DOOR WIRING HARNESS

01 Load carrier pallets with connector housings
Pick more than 10 different connector housings directly from bins and place them precisely on carrier pallets.
→ Machine vision · Gripping technology · Pick-and-place

02 Remove wiring harnesses
Safely remove and handle flexible wiring harnesses without the wires getting tangled or damaged.
→ Handling of limp components · Gripper technology

03 Finish semi-finished wiring harnesses
Fix semi-finished wiring harnesses with individual wires of different lengths on a variable fixture and process them further.
→ Fixture design · Flexible assembly automation

04 Digitalize the process chain
Connect everything end to end – from the engineering model via the production order to manufacturing – and automatically generate the Digital Product Passport (DPP).
→ Software · Data integration · Asset Administration Shell (AAS)

CHALLENGE OVERVIEW

WHAT REALLY MATTERS

The Robotics Challenge builds on the results of the previous year: 2024 individual assembly steps, 2025 a partial wiring harness, 2026 an end-to-end process chain for a hybrid wiring harness module.
In 2027, alongside technical feasibility, the main focus is on **cost-effectiveness**: we are looking for solutions that pay off in series production – also compared with manual production at low-wage locations.

What you get

- a hardware package with the components for the task
- a detailed task description (DE/EN)
- digital product data in industry formats (KBL, VEC)
- support from ARENA2036, including an interim presentation and expert feedback

Previous challenges

Since 2024, teams from industry and research have been developing robotics solutions for wiring harness production – including Bosch Rexroth, Agile Robots, the iwb at TU Munich and FAPS.

Results: **Robotics Challenge 2024 | 2025 | 2026** (Links)



TARGET GROUPS

WHO CAN TAKE PART

We are looking for teams who want to test their technology on a real industrial challenge. Each team chooses one or more tasks, depending on its expertise.

Robotics & Automation
Gripper and robot manufacturers, providers of machine vision and handling systems, machinery and plant manufacturers

Software, AI & Digitalization
Providers of data platforms, engineering tools and AI solutions, as well as experts in the Asset Administration Shell (AAS) and the Digital Product Passport

Research & Start-ups
Universities, research institutes, university chairs and young companies with new approaches

Good to know:

- Participation is free of charge.
- There is no limit on team size.
- Cooperation with other companies, e.g. gripper manufacturers, is expressly welcome.


Agile Robots SE at the Robotics Challenge 2025







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DATES

Click on the highlighted areas of the graphic to go directly to registration.

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INFO-SESSION 1: 06. NOVEMBER 2026

The event provides an overview of the objectives, process and framework conditions and helps companies plan their participation and resources effectively.
(Slides online)

INFO-SESSION 2: 27. NOVEMBER 2026

Detailed presentation of the tasks, technical requirements and evaluation criteria.

REGISTRATION DEADLINE: 15 JANUARY 2027

Participation must be registered by this date. Open to registered teams and other interested companies.

HARDWARE SHIPPING: JANUARY 2027

Provision of the components so that the teams can start implementing their automation solutions.

DEVELOPMENT PHASE: 1 FEBRUARY – 15 MAY 2027

Development of the automation solutions. Support and accompanying materials are available throughout.

JURY EVALUATION: MAY – JUNE 2027

Jury evaluation of the submitted solutions and selection of the winning teams for the Wiring Harness Innovation Forum.

RESULTS PRESENTATION: JUNE 2027 (TBC)

Results presentation at the Wiring Harness Innovation Forum at ARENA2036, Stuttgart.

YOUR BENEFITS

- **A stage in front of industry decision-makers**: present at the Wiring Harness Innovation Forum to around 250 experts from OEMs, Tier 1 suppliers, wiring harness and component manufacturers.
- **Access to a growth market:** wiring harness production is still barely automated. Showing a solution here positions you early.
- **Practical task with real components:** developed together with experts from industry.
- **Direct feedback from the expert jury:** from specialists in the automotive and supplier industry.
- **Know-how in digitalization:** you work with industry standards such as KBL, VEC, the Asset Administration Shell and the Digital Product Passport.
- **Visibility beyond the challenge:** through articles in trade media, on the Wiring Harness Hub website, in the newsletter and on LinkedIn.



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IN FRONT OF INDUSTRY DECISION-MAKERS

Results presentation at the Wiring Harness Innovation Forum at ARENA2036 in front of more than 250 industry experts. Impressions from 2024–2026.

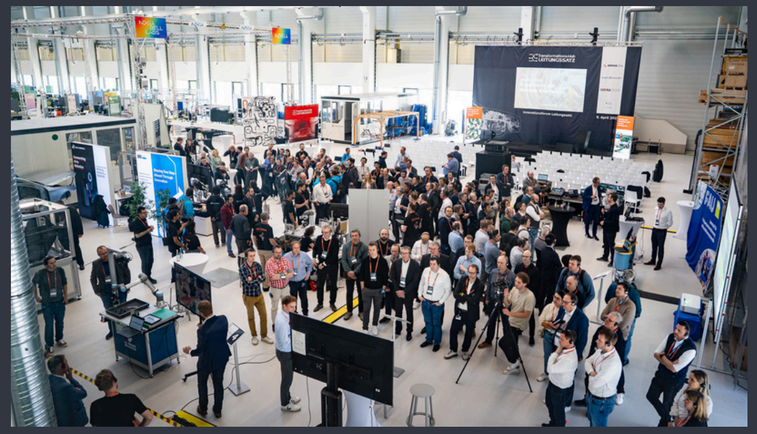


FAPS 2025






Agile Robots SE 2025




iwb TUM 2026

„I am thrilled by the scientists and robotics experts who solved the task excellently with their know-how. The Robotics Challenge shows how important it is to motivate companies and institutes to jointly develop new processes and products for automated wiring harness production.“

— **Stefan Glaser, Director Product Management New Technologies & Standardization Automotive, TE Connectivity**


Bosch Rexroth 2026

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REGISTRATION ROBOTICS CHALLENGE 2027

READY FOR THE CHALLENGE? | ONLINE INFO SESSIONS:

Two digital information events provide insight into the challenge and an opportunity to clarify questions about participation and the tasks.

- 06.11.2026 – OVERVIEW & PARTICIPATION
- 27.11.2026 – TASKS & EVALUATION CRITERIA

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SIGN UP NOW

Further information is available at
www.leitungssatz-hub.de/robotik-challenge

Your contacts for the Robotics Challenge:

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TRANSFORMATION HUB WIRING HARNESS

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Your point of contact for innovation and transformation in the wiring harness industry!

Get in touch with us if you …

- want to stay informed about all events and activities of the Wiring Harness Hub.
- want to keep up to date with the latest results and developments.
- would like to present your technology in the context of wiring harness production.
- would like to bring the results of your research project into the wiring harness community.
- can contribute transferable solution approaches from other industries.

Follow us and become part of the Wiring Harness Hub community!

Visit our website
www.leitungssatz-hub.de
or follow us on LinkedIn.
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