

Industry Challenges – Smart Green Island Makeathon 2026

24.02.2026 – 28.02.2026



**SMART
GREEN
ISLAND**

ITQ

competence in mechatronics
software and systems engineering

CirQmind Introduction – Main Challenges

CirQmind
Circular Economy through Circular Society

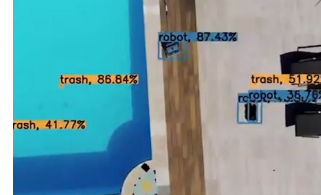


Concept of our new CirQmind Project

- Circular Economy requires Circular Society
 - A community committed to reusing
 - Thereby reducing the strain on the environment



“We need to merge Education & Technology”



Collect



Reuse

Sort

Rebuild

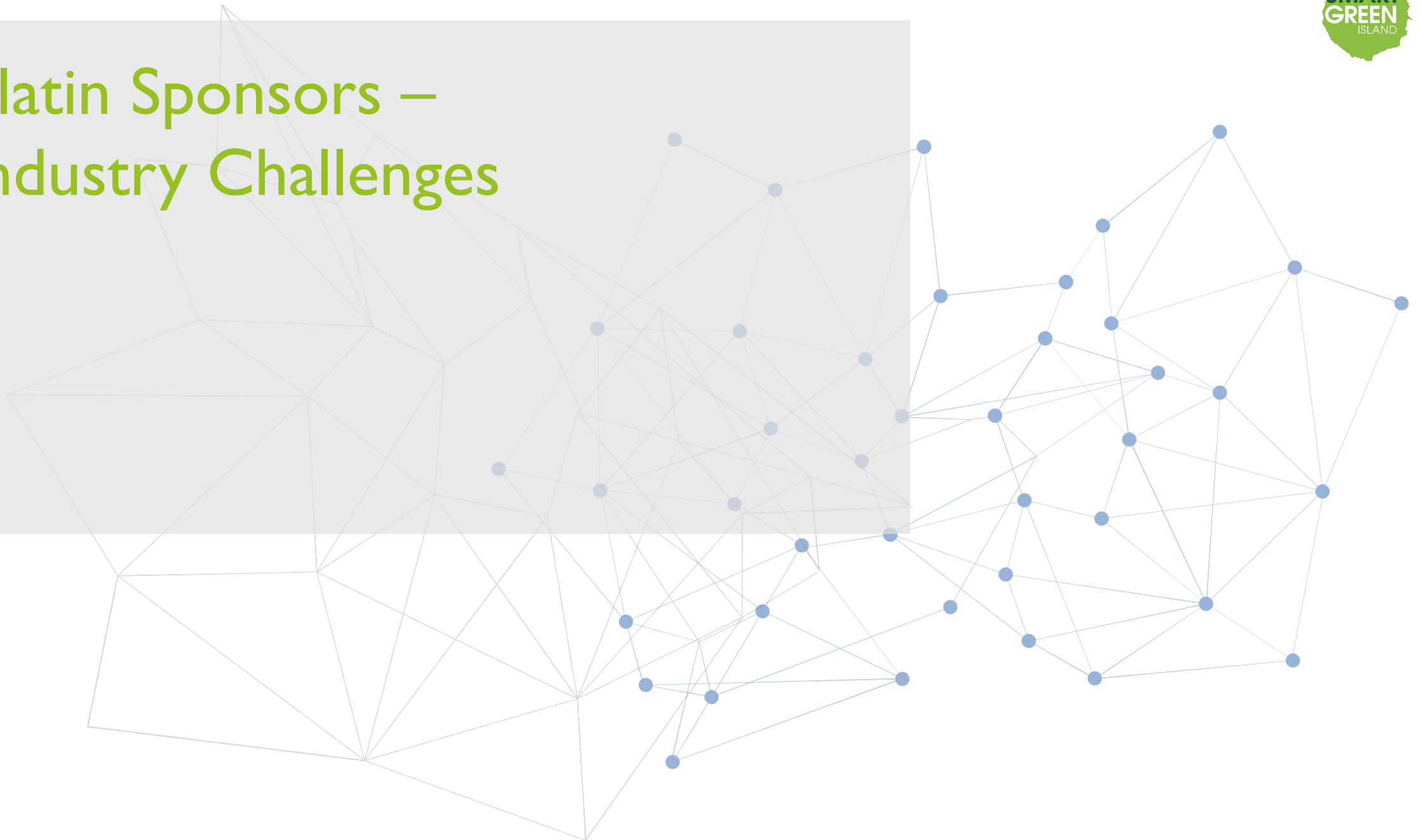


All Challenges relate to our CirQmind Project

- Various Sub-Challenges will be developed, all focusing on the main theme of CirQmind – Circular Economy through Circular Society
 - Use of Drones
 - Use of Robots
 - Use of autonomous Vehicles such as small Trucks
 - etc.
- The main Objective is to present the respective Prototypes at upcoming Events
 - Interpack 2026 in Düsseldorf
 - automatica 2027 in Munich
 - etc.



Platin Sponsors – Industry Challenges



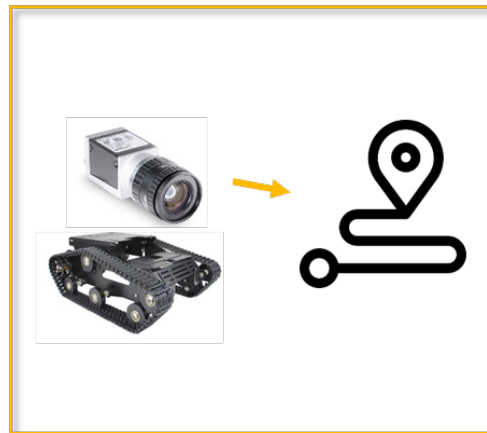
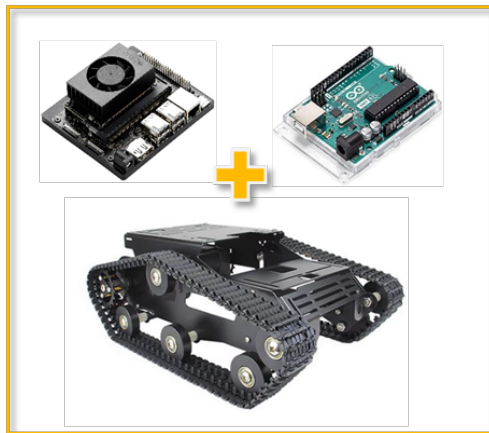
MVTec Industry Challenge

Smart Automation – Automated Waste Detection Solutions

- *Develop automated waste detection and collection solutions using mobile platforms, cameras, and deep learning to improve efficiency*
- *Apply expertise in software, hardware, and electronics for robot control, navigation, image recognition, and waste collection*



Lukas Ranftl & Philipp Junge
 Research Engineer & Application Engineer
MVTec Software GmbH



MVTec Industry Challenge



Smart Automation – Automated Waste Detection Solutions



**INDUSTRY
CHALLENGE**

Gold Sponsors – Industry Challenges



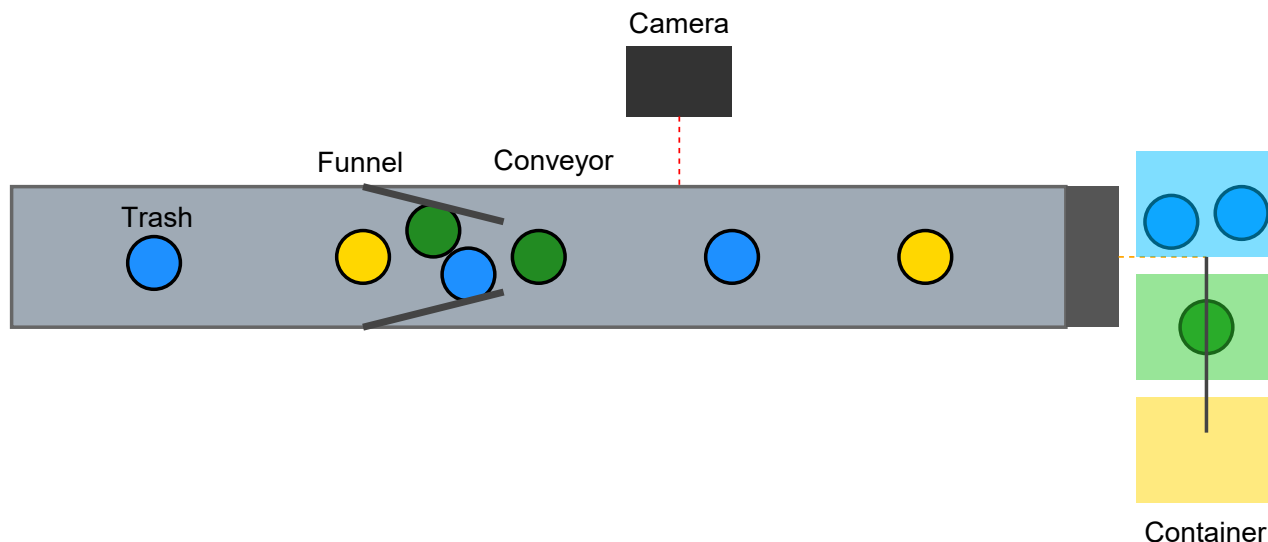
Beckhoff Industry Challenge

Circular Economy – Waste Watchers

- *Design and build a fully automated waste sorting prototype using a conveyor with camera and sensor technology to identify plastic, paper, metal, and glass*
- *A Beckhoff PLC precisely controls flaps or actuators to sort items into the correct bins with high accuracy and efficiency*



Michael Greiner
 Applikationssoftware
Beckhoff Automation GmbH & Co. KG

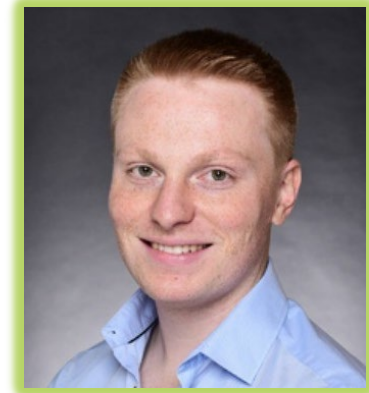


BECKHOFF

MEILLER-Kipper Industry Challenge

Smart Green Mobility – Autonomous Container Handling

- *Develop a 1:14 scale model of a dump truck that autonomously drives to a container, picks it up, and places it at a defined location*
- *Utilize PLC control and a 3D camera system for precise navigation, object detection, and automated waste handling*



Andreas Dötsch
Industrial Engineer
**F. X. MEILLER Fahrzeug- und
Maschinenfabrik GmbH & Co KG**



Lorenz Industry Challenge

Circular Economy – Smart Circular Transport Box for Water Meters

- *Develop a 3D-printable, reusable transport box system from recycled plastic for circular water meter logistics*
- *Add smart condition detection and real-time tracking to improve sustainability and logistics efficiency*



Sarah Gaus
Leader of Organization,
Processes and Structures
Lorenz GmbH & Co. KG



Local University Challenges



Local Challenges



Circular Economy

- *Smart Bin – Internet-enabled Trash Can*
 - *BBS Jever, BBS Schiffdorf, IES El Rincón, Technical College Reykjavík*
- *Waste Collection Education Kit – Develop an AI-powered Waste Sorting Game*
 - *BBS KPO Passau*



Smart Building

- *School-Monitoring using Home Assistant – Creating a Platform for Monitoring and Controlling School Buildings*
 - *BBS Jever, BBS Schiffdorf, IES El Rincón, Technical College Reykjavík*
- *Water Waste Monitor – Networked Water saving System recording Water Flow*
 - *BBS Jever, BBS Schiffdorf, IES El Rincón, Technical College Reykjavík*





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