February 28th, 2025

SMARTHANDLE: AIMEN introduces Novel Perception and Control Technologies in online workshop

On February 5, 2025, AIMEN Technology Centre hosted a dynamic and educational online workshop titled *"Introduction to Novel Technologies of Perception and Control for Proficient Handling"*, as part of the Horizon Europe-funded SMARTHANDLE project. The session attracted a diverse audience of researchers, engineers, students, and general stakeholders eager to explore the technological frontiers of smart manufacturing.

Demystifying Perception and Control Technologies

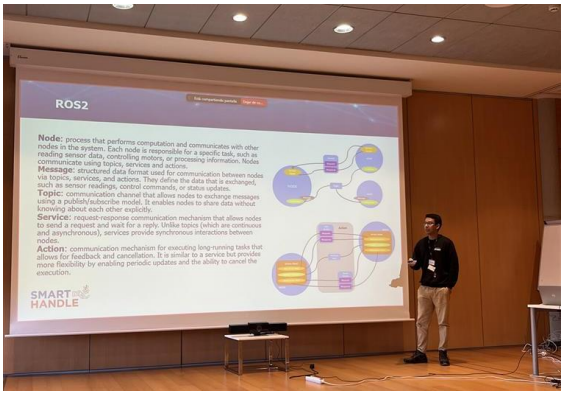
The workshop offered an accessible introduction to key technologies driving innovation in the SMARTHANDLE project. Divided into three focused sessions, participants gained valuable insights into:

- **Human Perception Technologies**, featuring tools such as **ROS2**, **AI**, **Object Detection**, **SSM**, and **Stereo Vision**, with applications ranging from situational awareness to adaptive robotic response.
- **Visual Control in Lens Handling**, where technologies like **Optical Character Recognition (OCR)**, object detection, and

transformer-based models are being leveraged for high-precision manipulation in delicate processes.

- **Fiber Optic Sensing**, highlighting **Fabry-Perot**, **Fiber Bragg Grating**, and embedded interferometry as key elements enabling real-time feedback and fine control in automated systems.

Each segment was tied directly to SMARTHANDLE's real-world use cases, demonstrating how these technologies are being applied in domains such as contact lens handling, battery disassembly, and metal profile packaging.



Funded by the European Union

Follow us :

www.smarthandle-project.eu

info@smarthandle-project.eu

Engaging the Audience

Led by presenters **Arantxa Rentería**, **Ruben Ruiz**, **Isidro Fernández**, **Alejandro Grajeda**, and **Damián Pintos**, the workshop balanced technical depth with accessibility. The final segment featured a lively **interactive Q&A session**, fostering discussion and clarifying implementation pathways for the technologies showcased.

For those who missed it, the full recording of the workshop is available online:
SMARTHANDLE's workshop by AIMEN: Introduction to novel Technologies of perception

About SMARTHANDLE

SMARTHANDLE is a Horizon Europe Research and Innovation Action aimed at developing advanced robotic handling systems tailored for varied and challenging manufacturing settings. The project's technologies are being validated through three key industrial applications: precise handling of contact lenses (MENICON), packaging of aluminium profiles (ALUMIL), and disassembly of batteries (ABEE).

Follow the SMARTHANDLE's website to learn more**:** **https://smarthandle-project.eu**