RoX - Digital Ecosystem for AI-based Robotics Starts Now

October 8, 2024: Kick-off for RoX, a pioneering joint project funded by Germany's Federal Ministry for Economic Affairs and Climate Action (BMWK). The aim of the project is to build a digital ecosystem that facilitates or even enables the use of innovative AI-based robotic solutions in various practical applications and industries. Manufacturing companies as well as the logistics and service sectors will benefit from the project results.

The use of AI-based robotic systems offers enormous potential for strengthening industries that rely on the high efficiency and flexibility of robotic systems. In the coming years, the market for robotics will be characterized by considerable growth. In order to fully exploit this potential, the RoX project will raise robotic systems to a new level of performance using advanced robotic components, artificial intelligence (AI) and a digital ecosystem. This shortens innovation cycles and significantly improves system integration and commissioning.

The high complexity of AI-based robotic systems cannot be covered or mastered by any single market player alone. This is why a consortium from industry and science is cooperating in RoX across company boundaries. The focus is on practical use cases that address the industry's current need and offer innovative, scalable solutions. Central areas of application include

- Loading and unloading processes along the entire logistics chain
- Picking processes in unstructured environments
- Multifunctional and location-flexible robotic systems in production environments
- AI-based commissioning of robot systems

In all of these areas, the feasibility and practicality of the developed solutions will be demonstrated and evaluated with regard to their potential for continuous further development and scalability.

In order to develop a scalable digital ecosystem for AI-based robotics, RoX focuses on the integration of practice-oriented solutions in development and application environments, the provision of quality-assured software modules and AI models as well as the design of semantic models and meta-data structures. Data security in the robotics ecosystem and networking with international initiatives will be integral components of this work.

The sustainable organizational structure ensures that the developed software modules, semantic models and the digital ecosystem will be available and developed further even beyond the end of the project. RoX will thus make an important contribution to the future of AI-based robotics and sustainably strengthen the innovative power of the participating industries.

About the RoX project
RoX is a BMWK-funded research project that started in September 2024 with a duration of 30 months. A consortium of leading industrial and scientific partners has set itself the goal of developing a digital ecosystem for AI-based robotics with scalable and innovative solutions designed for practical implementation.

Members of Consortium: ABB AG, Boehringer Ingelheim Pharma GmbH & Co. KG, Deutsches Zentrum für Luft und Raumfahrt e.V. (DLR), DFKI, Fiege Logistik Stiftung & Co. KG, Gluth Systemtechnik GmbH, RIF Institut für Forschung und Transfer e.V., Intrinsic Innovation GmbH, INVITE GmbH, Mercedes-Benz AG, Roboception GmbH, Robomotion GmbH, SCHUNK SE & Co. KG, SOTEC GmbH & Co. KG, T-Systems International GmbH, VDMA Robotics + Automation, Wacker Chemie AG, Adolf Würth GmbH & Co. KG, Yardstick Robotics GmbH, Fraunhofer-Institut für Produktionstechnik und Automatisierung IPA, Fraunhofer-Institut für Materialfluss und Logistik IML, Dürr Systems AG, Rheinmetall Waffe Munition GmbH, SAFELOG GmbH, Siemens AG

Consortium Lead: ABB (Speaker), Siemens, DLR, Fraunhofer IPA