

Automatica2025: RoX ecosystem is live

christoph.schlueter-langdon@telekom.de (business lead of Telekom dataspace unit & Catena-X Product Manager);
chris.langdon@cgu.edu (Director & Research Associate Professor, Drucker Customer Lab, CGU, [link](#))

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RoX is live! From 0 to 100 km/h in no time, in its very first year RoX went live with its first ecosystem application demos at Automatica 2025 in Munich. Figure 1 captures the **RoX showcase**, moving clockwise from the top left: its own booth, a high-powered panel, and our expert booth team supported by 24 partners. The RoX consortium is a **€52 million** initiative co-funded by the German Federal Ministry for Economic Affairs and Energy (BMWE), led by ABB and running for 30 months from September 2024 to February 2027. The project brings together over 20 leading partners. Figure 1 lower right reveals participants from **global players** like ABB to “**hidden champions**” like Schunk, from **robotics innovators** like Intrinsic to **Artificial Intelligence (AI) powerhouses** like German Research Center for Artificial Intelligence (DFKI) and German Aerospace Center (DLR) and **lead users** like Mercedes-Benz and Wuerth—to build a secure, open, and interoperable digital ecosystem for AI-based robotics.



Figure 1: Automatica 2025 with RoX booth, panel, team, and consortium partners

Automatica 2025

Automatica is the world's leading trade fair for intelligent automation and robotics, held biennially since 2004 in Munich and co-organized by Messe München and our consortium partner **VDMA** (Verband Deutscher Maschinen- und Anlagenbau, German Engineering Federation), one of Europe's largest industrial associations with over 3,600 member companies. As conceptual sponsor, VDMA shapes the fair's focus on robotics, machine vision, and automation. The 2025 edition drew about 50k visitors and 800 exhibitors from more than 40 countries (Messe München 2025), featuring highlights such as humanoid and medical robots, AI applications, and advances in machine vision and digital twins (Wiley Industry News 2025). RoX made its debut at Automatica with a notable presence, hosting a **panel** on opening day and a **booth** with **3 live app demos** and a first data **ecosystem dashboard** (see Figure 1, upper left).

The RoX panel

After the success of our panel at **Hannover Fair 2025** on the **Industrie 4.0 stage** with the German government, we hosted a follow-up session on "The Ecosystem Solution for Smart, Competitive Maintenance in AI-Based Robotics" (Hall B6, Booth 520). The panel brought together leading experts from R&D and product management, focusing on the first tangible RoX results with three app demos and the debut of an ecosystem dashboard. The session was organized and moderated by Prof. Dr. Chris Schlueter Langdon, Data Analytics Executive and Catena-X Product Manager at Deutsche Telekom, affiliated with the Drucker School of Management in Claremont/ Los Angeles, and lead of the RoX "Digital Robotics Ecosystem" module (work package WP #6). Figure 1, upper right, shows panel setup with moderator and panelists:

- Prof. Dr. Bernd Kuhlentötter, Advisor Strategic R&D and Product Management, ABB – our overall RoX consortial lead
- Dr. Rainer Bischoff, General Manager Germany and Head of Business Development Europe, Intrinsic — Lead of "Dev Environment Integration" module (WP #2)
- Dr. Michael Suppa, CEO and Co-Founder, Roboception
- Dr. Martin May, Director Technology and Innovation Management, Schunk
- Dr. Horst Heinol-Heikkinen, Member of the Executive Board, VDMA Fachverband Robotik + Automation; CEO, Asentics Group — for VDMA responsible as lead of "Standardization, Harmonization & Long-term perspective" module (WP #7)
- Prof. Dr. Frank Köster, Founding Director of the Institute for AI Safety and Security, German Aerospace Center (DLR); University of Oldenburg – lead of "KITs – Keep It Together adapters" (WP #4) and "Semantic Models" (WP #5)

The panel discussion emphasized:

- The need for accessible and **affordable solutions**, especially for SMEs, while showcasing RoX's ecosystem-driven approach to accelerating AI and robotics adoption.
- The importance of **radical collaboration**, even among competitors, to increase speed.
- The critical role of secure data exchange, strong **data governance**, and KITs as enablers of innovation, with broader ecosystem contributions delivering stronger end-to-end capabilities for end users.

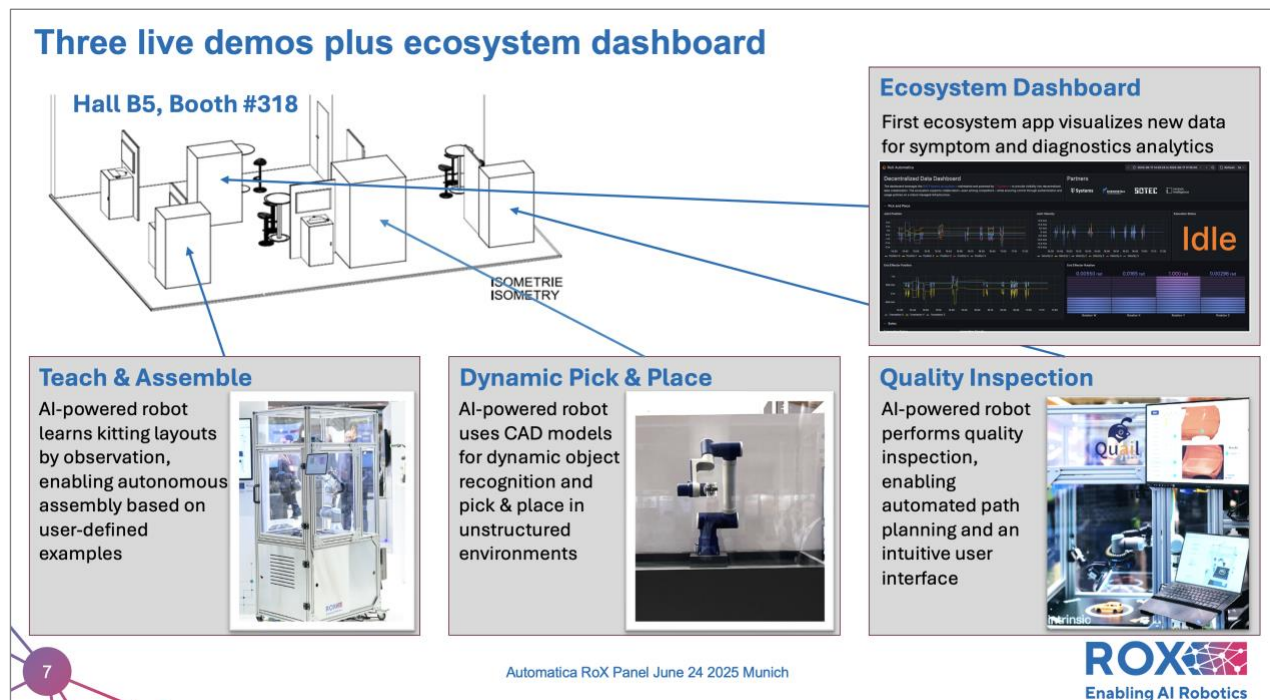


Figure 2: Three live app demos with robot exhibits and ecosystem dashboard

Three live appl demos with robot exhibits

RoX launched at Duerr with a first all consortium meeting, then quickly went on stage at Hannover Fair on the shared booth of Industrie 4.0 with a first standalone robot demo and an ecosystem scenarios linking with neighboring 8ra an edge continuum project. At Automatica 2025, RoX had its own stage and went live and loud. the RoX booth acted as an interactive showcase for the consortium’s ecosystem vision. Three working demos—“Teach & Assemble,” “Dynamic Pick & Place,” and “Quality Inspection”—illustrated how data-driven, AI-powered robotics can reduce complexity, streamline onboarding, and create business value in manufacturing and logistics. Figure 2 shows the booth layout and location of each app demo, together with a brief overview of the demos and related robot exhibits and displays.

Teach & Assemble

Business Impact: Cuts setup time and boosts flexibility by letting robots **autonomously learn** new assembly layouts, enabling rapid production changes and cost savings.

How: AI-driven robot vision and an intuitive interface allow robots to “see,” learn, and update workflows from user-provided examples without coding.

Dynamic Pick & Place

Business Impact: Provides **adaptive automation** by letting robots handle unknown objects, reducing downtime and improving throughput in logistics and manufacturing.

How: Real-time object recognition, intelligent planning, and motion control enable robots to pick and place items on the fly.

Quality Inspection

Business Impact: Improves quality control with **automated high-precision inspections**, reducing errors and freeing skilled staff for higher-value tasks.

How: Autonomous path planning and AI analysis let robots efficiently inspect complex products through an easy-to-use interface.

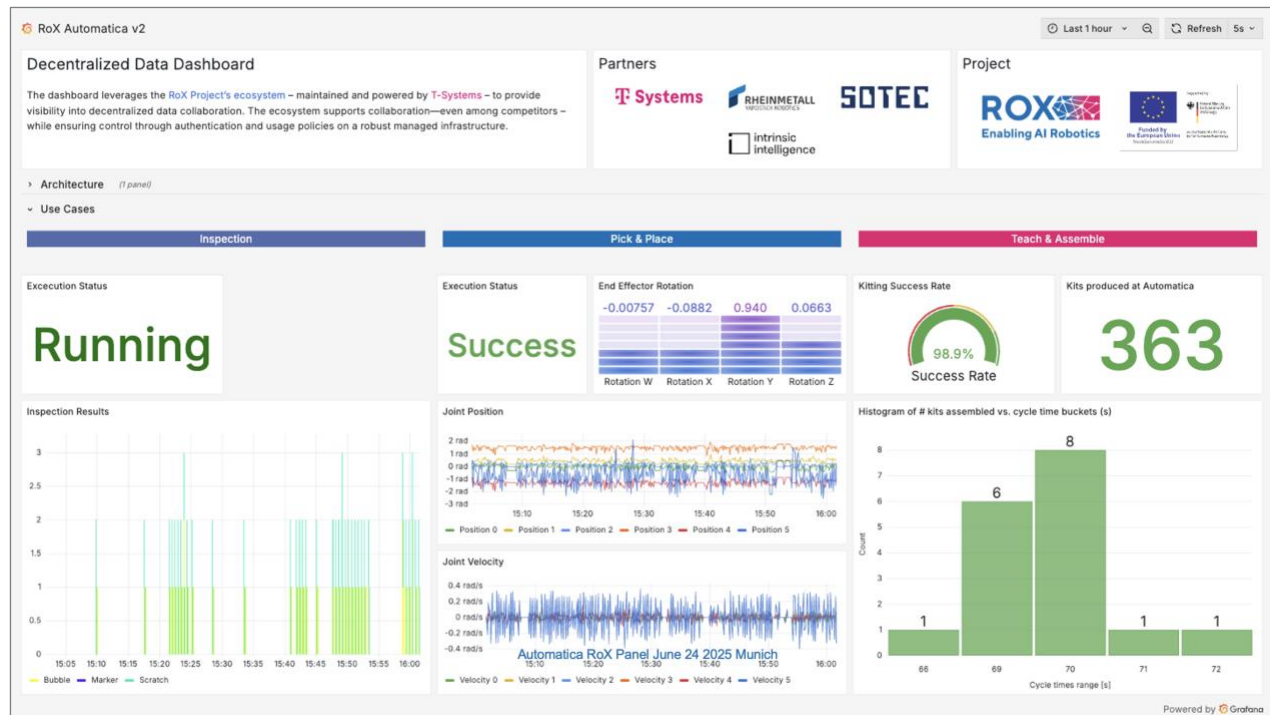


Figure 3: Dashboard as a first true data ecosystem app

A dashboard as a first true data ecosystem application

The RoX dashboard in Figure 3 offers a view into secure, cross-company data flows that power next-generation robotics and help businesses unlock more value from their own and their partners' data. It provides practical benefits such as **high-quality training data** for differentiated GenAI and AI applications, near real-time metrics and analytics to spot trends and optimize processes, and predictive maintenance that reduces downtime and improves asset use. These results are made possible by real-time visualization of data flows, deep analytics that reveal patterns and gaps, and new **data products** or "data sandwiches" that combine inputs from multiple sources under strong rules of data sovereignty and governance. Most importantly, the dashboard represents a new class of applications that could not exist without the **ecosystem's dataspace network layer**, which ensures that companies can share data securely while retaining full control of rights (see our CEO-2-pager for details: [Data 0 – README](#)). This layer not only enables demo applications such as the RoX dashboard but also opens the door to further innovations, illustrating how an ecosystem approach can generate new growth opportunities that individual firms could not achieve on their own.

KITs as critical data ecosystem enablers

Apple introduced "KITs" (Keep It Together) to ensure identity, content, and context remain consistent across devices and services. The first example was HomeKit, launched on iPhones and iPads on September 17, 2014 with iOS 8, enabling secure control and automation of smart home

devices from a unified app (Apple, 2014). In RoX, KITs enable **fast, vendor-neutral onboarding and integration**, supporting the ecosystem's goal of secure data sharing and rapid innovation. The RoX KITs concept builds on Catena-X, where KITs are certified open-source components designed to ensure interoperable applications and secure data exchange across automotive supply chains. As of 2025, 21 Catena-X KITs cover domains such as supply chain and quality management (Catena-X 2025). Each KIT typically includes (a) semantic models for data integration and understanding, (b) calculation logic and schemas, (c) API implementations for interoperability, and (d) access and usage policies to maintain data sovereignty (Catena-X 2023; <https://eclipse-tractusx.github.io/Kit-Deepdive>). For Automatica and to enable its first live application demos the RoX team developed these first three RoX KIT prototypes as foundational enablers, marking the initial iteration of refinement:

Asset Explore – Seamless digital onboarding

Business Impact: Accelerates deployment and validation through Collaborative Engineering by making it easy to integrate hardware and software components into robotic cells, supporting faster innovation and reducing engineering overhead.

How: Allows manufacturers to publish digital descriptions of their assets in a trusted data space, enabling solution developers to recognize, incorporate, and simulate these assets with minimal friction.

Data Exchange – Trusted insights

Business Impact: Expands the value creation potential of live production data, supporting new analytics, optimization, and maintenance services across the ecosystem.

How: Secure, sovereign access to robotics and production data within the data space enables scalable, real-time analytics and services—while maintaining strict control and compliance.

AI Exchange – Continuous AI model improvement

Business Impact: Fuels continuous improvement and competitive differentiation in AI-based robotics by enabling secure, collaborative training and re-training of AI vision models—benefitting end users, solution providers, and the entire ecosystem.

How: Securely exchanges technical data for synthetic AI training, for example by delivering ready-to-use and updatable AI vision models, and supports traceability from development through operation, while maintaining full data control.

From zero to ecosystem proof points in year one

The RoX showcase at Automatica 2025 demonstrated extraordinary progress in its very first year, with three live application demos and the debut of a first ecosystem app. Together with the dashboard and enabling KITs, RoX is accelerating the deployment of AI-based robotics while turning data into a true business asset, driving continuous improvement, reducing integration friction, and enabling scalable value creation across the robotics value chain. Two proof points stand out: first, an ecosystem setup can generate entirely new growth opportunities, such as the ecosystem dashboard; second, building on an existing dataspace network layer allowed the community to focus directly on application prototypes and achieve unprecedented speed of collaboration, even across competing partners. RoX is live and moving fast.

Important links

- Automatica 2025 panel, LinkedIn post: https://bit.ly/Automatica2025_RoX-Panel
- Hannover Fair 2025 panel, LinkedIn post: https://bit.ly/RoX_Panel_HM2025
- RoX 2024 launch with Minister and kick-off: https://bit.ly/RoX_Consortium-Duerr_2024

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