



AUTOSUP

Newsletter #2

June 2025



Foundations for seamless freight automation: highlights from AUTOSUP's first year

As AUTOSUP completes its first year, we are proud to reflect on the solid foundation we have established for transforming the European freight logistics landscape. Our mission is to enable seamless, automation-driven multimodal supply chains, and we have made significant progress in this area.

KEY MILESTONES FROM YEAR ONE:

- **Strategic framework & vision alignment:** AUTOSUP has established a shared vision and identified the path toward transforming traditional supply chain nodes into seamlessly connected, autonomous logistics hubs. This vision is aligned with EU objectives for digitalisation, decarbonisation, and increased modal shift.
- **Classification of logistics automation technologies:** A comprehensive taxonomy of logistics automation technologies was delivered. This provides a solid foundation for assessing innovation readiness and selecting the right tools for automation in complex logistics environments.
- **Comprehensive requirements analysis:** Conducted through stakeholder workshops in Antwerp and Trieste and a series of targeted expert interviews, the project gathered and consolidated cross-cutting technical, operational, legal, and human-factor requirements. This structured analysis addressed key topics such as interoperability, cybersecurity, regulatory frameworks, and workforce transformation, and lays the foundation for the operational models, digital twin development, and strategic roadmap in upcoming work packages.
- **Living Hub Use Cases:** Six targeted use cases were launched at the Ports of Antwerp-Bruges and Trieste, addressing real-world bottlenecks.
- **Digital Twin & DSS Architecture:** Initial designs for our Decision Support System and Digital Twin were completed, including mock-ups and interdependency graphs to support simulation and strategic planning.
- **Cost-benefit analysis:** Early data was collected for Cost-Benefit Analysis (CBA) on the six use cases, assessing impacts on efficiency, cost, and environmental performance. The CBA methodology incorporates financial indicators such as Net Present Value (NPV) and Return on Investment (ROI), and will be fully integrated into the DSS in the coming months.
- **Stakeholder community:** The AUTOSUP Stakeholder Community is now live, bringing together industry leaders, policymakers, tech innovators, and academics to collaborate on shaping the future of logistics automation.
- **Policy dialogue:** Through webinars and collaborative forums, we initiated discussions on interoperability, cybersecurity, and trust in automation. These insights are feeding into a comprehensive EU-level policy package to support regulatory harmonisation and the adoption of automated logistics solutions.



Defining the requirements for seamless multimodal automation

As part of its mission to enable autonomous multimodal supply chains, the AUTOSUP project has reached a key milestone with the publication of Deliverable D1.2: “Seamless Multimodal Automatic Freight Transport Requirements.” Developed by ALICE (Alliance for Logistics Innovation through Collaboration in Europe), this document outlines the foundational requirements for deploying automation across logistics nodes and corridors in a harmonised and scalable way.

Building on the first deliverable on classification of automation technologies, D1.2 focuses on identifying the technical, operational, legal, and organisational conditions necessary to ensure that automation can be integrated seamlessly across different transport modes. The activity is the result of a structured stakeholder engagement process, including two workshops held in Antwerp and Trieste and a series of expert interviews. These activities allowed the project to gather real-world insights from logistics operators, technology providers, policymakers, and researchers.

Here are some key insights:

- **Interoperability is essential:** One of the main barriers to automation is the lack of common standards and interfaces between systems. Many logistics platforms, such as Terminal Operating Systems, Port Community Systems, and customs platforms, operate in silos. This leads to duplicated efforts, manual data entry, and inefficiencies. The deliverable calls for the creation of federated data platforms and shared communication protocols to enable smooth data exchange and system integration.
- **Security and legal frameworks must evolve:** As automation increases connectivity, it also introduces new vulnerabilities. Stakeholders highlighted the need for robust cybersecurity measures, including encryption, intrusion detection, and secure authentication. At the same time, legal uncertainties, such as liability in case of accidents involving autonomous vehicles, must be addressed through updated regulations and certification schemes for integrated systems.
- **People remain central:** Automation is not just a technological shift; it's a transformation of the workforce. The report emphasises the importance of upskilling and reskilling logistics personnel, particularly in IT, remote operations, and problem-solving. It also highlights the need for inclusive change management strategies to reduce resistance and ensure that workers understand the benefits of automation.
- **Economic and sustainability drivers:** While automation requires significant upfront investment, the long-term benefits include increased efficiency, reduced operational costs, and lower environmental impact. The deliverable recommends the development of scalable funding models, early adoption incentives, and shared risk-reward mechanisms to support implementation. Automation can also support the EU's climate goals by enabling modal shifts and optimising energy use.
- **Collaboration is key:** The success of automation depends on trust and cooperation among stakeholders. The report proposes governance frameworks, shared data spaces, and transparent communication strategies to foster collaboration across the supply chain. It also stresses the importance of aligning interests and creating win-win scenarios for all actors involved.

These requirements will guide the next phases of the AUTOSUP project, including the design of Digital Twin models and Decision Support Systems (WP2), the validation of automation strategies in the Living Hub, and the development of operational models and roadmaps.

The full deliverable will be available on [the AUTOSUP website](#) soon.



Identifying strategic innovations and solutions: AUTOSUP use case scenarios

The AUTOSUP project aims to demonstrate the viability and benefits of automation-driven solutions in multimodal freight transport and supply chains in realtime-settings.

6 Use Cases were developed by selecting strategic innovations and automation technologies from the comprehensive classification (D1.1) capable of addressing the identified strategic objectives, setting priorities, requirements (D1.2), and critical issues that affect the adoption of automated operations in multimodal freight transport and logistics in the two Living Hubs: Ports of Trieste and Antwerp-Bruges. The Use Cases' processes in Trieste and Antwerp-Bruges were defined in two different scenarios: the AS-IS scenario representing the actual operational freight transport and logistics processes, and the TO-BE scenario representing expected automation-driven processes through automation adoption.

The deliverable D1.3: "Use Case Scenarios and KPIs", presents the validation methodology for automated solutions and innovations selection including smart KPIs, Use Cases scenarios definition for the two L-Hubs including strategic objectives, gaps and bottlenecks, AS-IS and TO-BE scenarios, the selected automation technologies and solutions, expected benefits, KPIs and Business Process Modelling Notation (BPMN) diagrams, enabling graphical representation of relevant business processes in multimodal freight transport and logistics operations supported by automations for each AUTOSUP Use Case.

Here are some key insights:

- The validation methodology for selecting innovations for automation-driven multimodal freight transport and logistics was defined to support the decision-making process for selecting automation technologies, enabling the overcoming of inefficiencies, bottlenecks, underutilised resources, and capacity constraints in multimodal freight hubs and corridors.
- KPIs for the selection and evaluation of the impacts of innovative technologies applied to specific multimodal freight transport and logistics operations (at node and corridor levels) were defined based on a comprehensive panel of measurable indicators covering different impact areas.
- Key components and assets, as well as strategic objectives and gaps, of Trieste and Antwerp-Bruges L-Hubs were defined, including an analysis of actual operational processes (AS-IS) and envisaged future automation-driven processes (TO-BE), based on selected automation technologies.
- 6 different Use Cases were developed by defining innovations and automation technologies capable of addressing the identified strategic objectives, requirements, and gaps for the adoption of automated operations in multimodal freight transport and logistics in the L-Hubs.
- AS-IS and TO-BE scenarios of the different Use Cases were modelled through BPMN diagrams, capturing and representing (business) processes so that they can be analysed, improved, and finally automated.

The full deliverable will be available on [the AUTOSUP website](#) soon.



Spotlight on innovation: AUTOSUP Use Cases

As AUTOSUP advances its mission to revolutionise multimodal freight logistics, six pioneering use cases (UC) are being tested across the Living Hubs of Trieste and Antwerp-Bruges. These UCs are not just technical pilots. They are designed to address real-world bottlenecks, improve efficiency, and accelerate the shift toward sustainable, automated supply chains.

TRIESTE LIVING HUB

UC1: Automated maintenance and management of intermodal rail wagons

- Gaps addressed: Maintenance is mileage-based, not condition-based, causing inefficiencies and unplanned downtime. Distant workshops lead to long, empty repositioning trips.
- Solution: IoT sensors and AI-enabled predictive maintenance, supported by local repair hubs in Trieste and Gorizia. A smart gate system gathers real-time wagon data to detect faults early and minimize service disruptions.

UC2: Automated management of multimodal slots and last-mile routes

- Gaps addressed: Manual coordination of first- and last-mile transport via phone/email is slow, error-prone, and lacks visibility. Disruptions are hard to manage.
- Solution: An integrated platform links Gruber Logistics' TMS with port and carrier systems. It automates planning, carrier selection, and disruption management using real-time data and AI.

UC3: Automated cross-border Roll-on/Roll-off (Ro-Ro) transshipment

- Gaps addressed: Gorizia terminal is road-dominated and underutilised for rail. Manual transshipment is slow and costly.
- Solution: Horizontal transshipment technologies and Digital Automated Coupling (DAC) allow faster, more flexible road-to-rail shifts with lower infrastructure needs, boosting capacity and reducing emissions.

ANTWERP-BRUGES LIVING HUB

UC1.1: Cargo Hubs and night-time freight operations

- Gaps addressed: Daytime congestion on Antwerp's ring road, underutilised night-time terminal capacity, and growing freight volumes strain infrastructure.
- Solution: Cargo hubs on key corridors within the port will allow containers to be stored or shifted to other modes. Autonomous vehicles will shuttle containers between hubs and terminals at night, reducing congestion and emissions.

UC2: Port-shipping collaboration towards increased modal shift

- Gaps addressed: Inaccurate ETAs and poor coordination cause delays and underused intermodal links.
- Solution: A digital twin and AI-driven ETA tool synchronize supply chain operations, allowing dynamic slot planning and reduced waiting times.

UC3.1: Automated Shunting between terminal operations

- Gaps addressed: Intra-terminal container movements rely on diesel trucks and manual labour, reducing flexibility and causing emissions.
- Solution: An autonomous electric vehicle (AEV) shuttle system will operate 24/7 on a closed circuit moving empty containers around the terminal, so that scarce truck drivers can be deployed for more complex tasks. The automation of this process benefits operational efficiency, safety and can serve as a lever in the greening of port logistics.

UC3.2: MagRail feasibility for last-mile rail automation

- Gaps addressed: Last-mile rail operations are hindered by non-electrified tracks, requiring inefficient locomotive changes.
- Solution: MagRail technology, an autonomous rail shunter powered by linear motors, will be investigated to automate last-mile rail movements, reduce emissions, and improve timing and flexibility.



Highlights from AUTOSUP policy webinars

Within AUTOSUP, the European Shippers' Council (ESC) and ALICE recently co-hosted two insightful webinars exploring the future of automation and multimodal freight transport.

The first session, held on the 28th of April, tackled how EU policy can foster collaboration and data sharing. Speakers emphasised the need for interoperability, legal clarity, and digital trust. Key highlights included the use of digital twins for logistics hubs, presented by ALICE, and the Port of Antwerp-Bruges' smart infrastructure strategy, combining sustainability with digital innovation. Contributions from Aalborg University, Einride, and DCSA stressed the importance of harmonised legal frameworks, phased automation, and open digital standards to unlock the full potential of data-driven logistics. [Read the detailed summary](#) to explore the main outcomes and policy implications.

The second webinar, on 12th of June, addressed the pressing topic of protecting critical port infrastructure. ENISA presented an alarming rise in cyber threats targeting the transport sector and outlined new obligations under the NIS2 Directive. The TRANSCEND and SARIL projects introduced advanced frameworks to enhance resilience, featuring real-time threat detection, simulated response tools, and cross-sectoral collaboration models. The Port of Antwerp-Bruges showcased cutting-edge security measures, including BVLOS drones, 5G networks, and sensor-equipped fiber infrastructure. [Download the summary](#) for a full overview of the discussions and conclusions.

Key take-away messages from the webinars included, but were not limited to, EU-wide legal and ethical frameworks, stronger data sovereignty protections, harmonised rules for electronic transport documents, and modernised liability regimes. A shift toward more holistic governance was advocated, as well as the urgent need for technically skilled staff to meet new EU legislative demands (NIS2, CRA, DORA). Ports were recognised as future multimodal nodes requiring high-capacity operations, full integration into logistics chains, and adoption of standardised digital information exchange frameworks such as those developed by the DTLF.

Together, these webinars highlighted a clear message: Europe's logistics hubs must evolve through collaboration, innovation, and robust regulation. AUTOSUP will continue to align key stakeholder perspectives and shape future-proof EU policy recommendations in this respect.



News and events

FIRST AUTOSUP PROJECT VIDEO RELEASED

In April 2025, the first project video was released. The video is produced by Inlecom Innovation, our project coordinator. You can view the video [here](#) on our website.



AUTOSUP AT THE “SHAPING THE FUTURE OF LOGISTICS: BRINGING THE PHYSICAL INTERNET TO LIFE” CLOSING EVENT OF THE PILL AND SYTADEL PROJECTS



On the 18th of February, logistics experts gathered at Procter & Gamble in Brussels for the closing event of the PILL and SYTADEL projects, funded by VLAIO – Flanders Innovation & Entrepreneurship. These 2 groundbreaking Flemish research and innovation projects have laid the foundation for an interconnected and efficient logistics ecosystem through innovative data-sharing ecosystems, advanced technologies, and collaborative frameworks.

This event, co-organized by imec and VIL Flanders Innovation Cluster for Logistics, in collaboration with Vrije Universiteit Brussel, University of Antwerp and Vlerick Business School and supported by ALICE, showcased the realisation of a connected, synchromodal logistics network and blueprint for the Physical internet that might contribute to a radically more resilient and efficient supply chain.

VIL was honoured to share AUTOSUP’s vision through a live elevator pitch and engaging conversations, where we explored new pathways for automation and innovation, enabling the shift of supply chain nodes to hubs in a Physical Internet logistics network.

AUTOSUP AT THE VDI AUTONOMOUS TRUCK CONFERENCE



On the 12th of March, our partner PAVE Europe showcased AUTOSUP at the 8th International VDI Wissensforum Conference on Autonomous Trucks in Düsseldorf.

PAVE Europe launched a new publication, “[The Case for Autonomous Vehicles in Goods Transportation and Logistics](#)”, an exploration of how autonomous technologies will transform goods transportation and logistics.

AUTOSUP was presented as a key initiative supporting the transition to seamless multimodal automatic freight transport, alongside the MODI Project, which focuses on accelerating CCAM adoption in logistics.



AUTOSUP AT THE ALICE BROKERAGE EVENT 2025

On April 2, Giuseppe Luppino and Tomasz Dowgielewicz were representing AUTOSUP at the ALICE Brokerage Event 2025 in Brussels!

A great event to meet and connect with other EU projects, innovators, cities, and industry leaders to co-create solutions for smarter, greener freight transport.



AUTOSUP AT THE IEEE - ETEMS 2025 EVENT



VIL Flanders Innovation Cluster for Logistics delivered a keynote on the 28th of May at the IEEE – ETEMS 2025 Summit at KU Leuven on:

*"The future of collaboration in logistics:
Leveraging technology for efficient and
sustainable supply chains"*

In the presentation, key insights on how emerging technologies, from data spaces and digital twins to AI and automation, are enabling the logistics sector to transition toward more integrated, efficient, and sustainable supply chains. The presentation also highlighted the importance of AUTOSUP in driving the transformation of supply chain nodes, such as ports and logistics hubs, into fully integrated Physical Internet hubs, enabling seamless, sustainable, and data-driven multimodal transport.

AUTOSUP SHOWCASES INNOVATION AT TRANSPORT LOGISTICS 2025

At this year's Transport Logistics 2025 in Munich, AUTOSUP was present in the ALICE Innovation Village, where more than 60 groundbreaking logistics innovations from over 20 European research projects were on display.

Visitors to the ALICE booth were invited to explore some of the most promising AUTOSUP use cases, each illustrating the project's mission to accelerate the transition toward automated and data-driven multimodal logistics:



- **Decision Support System for Predictive Maintenance:** Improving rail freight efficiency through data-driven maintenance strategies for rail wagons.
- **Digital Twin-Based Planning for Corridor Automation:** Simulating and optimizing multimodal freight flows using advanced digital twin technology.
- **Decision Support for Autonomous Vehicles and Rail Wagons in Ports:** Enhancing automation and coordination within port environments to support future autonomous logistics hubs.

These demonstrations underline AUTOSUP's role in shaping the future of seamless, resilient, and intelligent freight transport across Europe.



AUTOSUP TAKES CENTER STAGE AT CSCMP VERONA: DRIVING SUPPLY CHAIN AUTOMATION

The Council of Supply Chain Management Professionals (CSCMP) event in Verona provided an exceptional platform for AUTOSUP and its strategic partners to engage with industry leaders on the future of supply chain automation. With the Port of Antwerp-Bruges and Adriafer participating as key partners, the event showcased how collaborative innovation is accelerating the transition toward autonomous logistics networks.



Partners Port of Antwerp-Bruges and Adriafer join forces to showcase the future of autonomous logistics.

The panel discussion highlighted that today's supply chain challenges, including environmental pressures and cybersecurity threats, are creating an urgent need for intelligent automation solutions. It also offered a valuable opportunity to demonstrate how the AUTOSUP project addresses these converging challenges through advanced automation technologies. The strong engagement and interest during the panel confirmed that the industry is ready for the next generation of supply chain automation.

AUTOSUP WILL BE PRESENT AT THE PORT OF THE FUTURE - AUTONOMOUS SUMMIT AT THE PORT OF ANTWERP-BRUGES IN ANTWERP



Autonomous technology is reshaping mobility, and Port of Antwerp-Bruges offers a prime testing ground for these innovations, featuring over 15 interactive live tech demonstrations, expert analysis, and cross-sector collaboration.

This summit highlights how ports can serve as open innovation platform for cutting-edge autonomous solutions – from drones and autonomous shipping to innovative rail solutions, self-driving vehicles and sensor-based systems.

The summit is closely aligned with AUTOSUP's objectives to advance multimodal freight transport during the transition toward fully autonomous supply chains. AUTOSUP is honoured to serve as a premium partner for this event and is providing comprehensive support in collaboration with several project partners.

Discover the complete lineup and secure your spot before the 8th of September with the following link: [Port of the Future - Autonomous Summit - Visitors - Port of Antwerp-Bruges](#).

AUTOSUP WILL BE EXHIBITING AT THE EUROPEAN TRANSPORT CONFERENCE (ETC) 2025 IN ANTWERP

We are excited to announce that AUTOSUP will be exhibiting at the European Transport Conference (ETC) 2025 in Antwerp!

Join us from September 17 to 19, at the University of Antwerp - Faculty of Business and Economics, to explore how AUTOSUP is paving the way for the future of logistics.



AUTOSUPs stakeholder forum

Stakeholders are central to the AUTOSUP project. We depend on a diverse group of partners, industry experts, technology providers, policymakers, and researchers to shape the project's outcomes and promote innovation in logistics automation. As a stakeholder, your role is vital in identifying key requirements, pointing out gaps, and influencing the future development of autonomous logistics solutions.

STAKEHOLDER ACTIVITIES

AUTOSUP is committed to engaging stakeholders through a series of interactive activities, such as:

- Workshops and strategic consultations: Engage in interactive discussions with industry experts to enhance insights on automation technologies and address any identified gaps.
- Surveys and interviews: Participate in surveys and interviews to share your expertise, capturing diverse perspectives that ensure a thorough analysis of the requirements and challenges in automated cargo transport.
- Living lab demonstrations: Join us at key hubs such as the Port of Antwerp-Bruges and the Port of Trieste to observe and provide feedback on innovative solutions being tested in real-world environments.
- Technical working groups: Collaborate to establish technical standards, operational guidelines, and regulatory recommendations to shape the future of multimodal freight transport.

WHAT'S IN IT FOR STAKEHOLDERS?

By joining the AUTOSUP stakeholder community, you will:

- Shape the future of logistics: Influence the development of next-generation autonomous solutions that will set new benchmarks for the industry.
- Gain early access to innovations: Be the first to explore and test cutting-edge technologies that boost efficiency, sustainability, and competitiveness.
- Network with industry leaders: Connect with key players in logistics, technology, and policy to exchange knowledge, build partnerships, and explore new business opportunities.

INTERESTED TO JOIN?

<https://www.autosup-project.eu/stakeholder-community/>



Project details

Call: HORIZON-CL5-2023-D6-01-07

Start date: 01/06/2024

End date: 31/05/2027

GA no.: 101147468

Funding: 3.999.812,50€

Partners: 16 (+1 AE)

Project Coordinator: Inlecom

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