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TRANSCEND: SECURING FREIGHT TRANSPORT NETWORKS IN EUROPE

LIST launches European project on freight transport resilience to prevent network disruptions

The Luxembourg Institute of Science and Technology (LIST) kicked off TRANSCEND, a European Commission-funded project, on 14 January 2025 in the presence of Stéphanie Obertin, Minister for Research and Higher Education, and Anne Calteux, Head of Representation, European Commission. The project focuses on enhancing the resilience of freight transport networks against both cyber and non-cyber threats.

Coordinated by LIST, the project gathers a consortium of key players in Europe and in Luxembourg, including Cargolux Airlines International SA, its new subsidy LuxCargo Handling SA, Haut-Commissariat à la Protection Nationale, Institut Luxembourgeois de Régulation, Luxembourg House of Cybersecurity, Netcompany-Intrasoft SA, and the University of Luxembourg.

Addressing critical vulnerabilities in transport networks

Transport networks are part of Europe's Critical Infrastructures (CIs), essential to maintaining the vital functions of the Single Market. These infrastructures, inherently complex and interconnected, are susceptible to large-scale disruptions that can have economic repercussions across the European Union (EU). In light of increasing cross-border interdependencies, a disruption in one Member State can easily cascade to others. With freight transport identified as a key sector, there is an urgent need to address vulnerabilities in the sector.

Although recognised as a critical sector, freight transport has been underrepresented in previous research projects, especially in the context of resilience against cyber and non-cyber events. Freight transport terminals, where goods are assembled and dispersed, are particularly vulnerable, and disruptions—such as those witnessed during the COVID-19 pandemic, the Suez Canal blockage, and cyber-attacks on oil ports—highlight the need for enhanced resilience measures.

Anne Calteux, Head of Representation at Representation of EU Commission to Luxembourg, stated:

"The European Commission is proud to support the TRANSCEND project, a key initiative to strengthen the resilience of Europe's freight transport networks to cyber and Non-Cyber Events. In an increasingly interconnected world, ensuring the security of critical infrastructures is essential to protect our supply chains and support the competitiveness of the European economy. Through Horizon Europe, the Commission is committed to fostering innovation and collaboration, bringing together public and private actors to tackle complex challenges and improve the security and sustainability of Europe's transport ecosystem."

TRANSCEND: Driving resilient freight futures

The TRANSCEND project aims to tackle vulnerabilities by providing freight transport operators with an integrated set of tools, guidelines, and technological solutions. Its mission is to enable operators to reduce risk and improve their ability to prevent, withstand, absorb, and recover from both physical and cyber disruptions. A key outcome of the project will be the development of a Control Tower, a digital platform with embedded business intelligence that offers continuous visibility of threats and risks. By breaking down organisational silos, this platform will empower stakeholders with real-time information to enhance decision-making and resilience.

The project will involve five critical infrastructure operators across Europe, who will pilot the solutions developed through TRANSCEND. These diverse real-world test cases will demonstrate the wide-reaching impact of the project across the freight transport sector.

Cindy Guerlain, Partnership Officer, Logistics & Supply Chain and Smart Building, at LIST, said:

"By focusing on freight transport, we are addressing a key sector that has been underrepresented in previous research. Our work will strengthen resilience not just in transport, but across the entire ecosystem of interconnected infrastructures. Through advanced tools like AI-driven predictive models, and real-world testing at major transport hubs, TRANSCEND is providing actionable solutions that can be adapted and scaled across Europe. These solutions will help operators prevent, manage, and recover from disruptions, whether they are physical, cyber, or hybrid threats."

A Collaborative Effort

The TRANSCEND project represents a truly collaborative effort, uniting Luxembourg's top research and cybersecurity institutions, government bodies, and key private sector partners with stakeholders from across Europe. By fostering a shared approach to tackling these critical issues, the project is poised to contribute significantly to securing Europe's freight transport networks and, by extension, the broader supply chain ecosystem.

As Europe continues to experience unprecedented levels of volatility, uncertainty, and complexity, TRANSCEND stands as a beacon of innovation, resilience, and collaboration, ensuring that critical infrastructure operators are better prepared for the challenges of tomorrow.

Stéphanie Obertin, Minister for Research and Higher Education, concluded:

"This project is designed not only to develop knowledge but also, and above all, to provide a targeted solution to a concrete problem. It is a perfect illustration of the government's strategy to make research a driver of economic diversification and innovation. By encouraging public-private partnerships, we are strengthening the link between research and the real needs of the economy and society."

About LIST

The Luxembourg Institute of Science and Technology (LIST) is a Research and Technology Organization (RTO) under the auspices of the Ministry of Higher Education and Research, and its mission is to develop competitive and market-oriented prototypes of products and services for public and private stakeholders.

With more than 710 employees, nearly 80% of whom are researchers or innovators from all over the world, LIST is active in the fields of information technology, materials, space resources and the environment, and works across the entire innovation chain, from basic and applied research to technology incubation and transfer.

By transforming scientific knowledge into intelligent technologies, data and tools, LIST:
- helps European citizens make informed choices
- helps public authorities make decisions
- encourages companies to develop

For more information about the Luxembourg Institute of Science and Technology, please visit: https://www.list.lu/

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