D²XCEL

Market Opportunities
Short Descriptions

Cohort 1 (September 2024 – May 2025)

Logistics (Freight, Warehouse, Last Mile Delivery)

Group Manager: Miles Ahead

Digital and Deep Tech solutions to enable the required simplification and efficiency of logistics activities as a key component of global supply chains. LogTech comprises three main domains Freight tech, Warehouse Tech, and Last Mile Delivery to improve competitiveness of Logistics operations. Freight Tech includes Maritime, Waterways, Air and Rail freight, Trucking Logistics, Middle Mile, Fleet Management and Routing & Loading Optimization tools. Warehouse Tech includes warehouse automation, warehouse fulfillment and sustainable packing automation, Last mile delivery includes: Delivery Services, Ultrafast Delivery, Drones, evTOL and reverse logistics.

Sustainable Freight Transportation

Group Manager: Tech Tour

Innovative solutions to enable the necessary transition to sustainable freight transportation. This includes hydrogen and battery-electric trucks, trains, ships and planes, hydrogen transport, storage & fueling solutions, heavy-duty charging infrastructures, green ports & airports, port energy supply and port vehicles, smart multi-modal optimization to reduce GHG emissions and autonomous & guided vehicles.

Note: innovative battery solutions are mainly covered by cohort 2 in Sustainable Mobility.

Large-scale Stationary Energy Storage

Group Manager: Bryck

Large-scale stationary energy storage solutions for addressing the challenge of intermittent renewable energy sources and especially with seasonal supply & demand fluctuations. Heat, electricity, and other energies are covered. Targeted solutions include geothermal storage, flow batteries, gravitational & pumped hydro, and hydrogen, as well as software & AI systems for energy management, grid stabilization and demand-response.

Sustainable and Circular Construction

Group Manager: Aalto University

Innovative materials, processes, and tools to make our built world more sustainable. Included are new construction, (energetic) renovation, re-purposing, and demolition, especially aimed at increasing

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circularity of buildings and infrastructures. Focus topics include reduced-CO2, renewable, re-cyclable, healthy, preferably locally sourced construction materials and modules which decrease environmental impact and raw material dependencies, material & waste reduction during construction, pre-fab / off-site construction, robotics & 3D printing, green building designs, building & material EPDs, passports and digital twins (BIM), tools for circular design, renovation, reporting and management.

AI Powered Digital Services for Sustainable and Smart Cities

Group Manger: Athens University of Economics and Business

As urbanization accelerates globally, cities face increasingly complex challenges related to sustainability, efficiency, and liveability. AI-powered digital services may offer innovative solutions to address these pressing urban issues by leveraging advanced algorithms and data analytics to optimize resource management, enhance infrastructure, and improve citizen services. From smart energy systems and intelligent transportation networks to waste management and environmental monitoring, the potential applications of AI in urban settings are diverse and far-reaching. By capitalizing on this market opportunity, entrepreneurial teams can grasp the chance to not only drive business growth but also contribute to the creation of smarter, more sustainable cities for the future.

Cohort 2 (March 2025 – November 2025)

Supply Chain Management & Trade Finance

Group manager: Unimos Alliance

Digital and Deep Tech solutions to enable next generation of SCM in a new normal where speed, visibility, predictability, exception handling, very high level of trade finance digitalization and risk management are key requirements for the competitiveness of the European and global supply chains. SCM includes Asset Tracking & Management, Enterprise Resource Planning, and Inventory Management, Nextgen Transport Management System, Digital Product passport and Traceability System, Procurement and Sourcing, Electronic Bill of Lading and other Digital Trade Documentation, Working Capital Optimization, Supply Chain Finance solutions and Risk Management

Sustainable Mobility

Group manager: ZAZ Ventures

Innovative solutions to increase the adoption of electric passenger vehicles (cars, buses, trams) and sustainable public transport. Focus topics include battery technologies optimizing cost, performance, safety or critical material use, battery traceability & recycling, battery management systems, photo-voltaic solutions, charging infrastructure (incl. inductive, fast and slow charging), energy-saving drivetrains and vehicle designs.

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Renewable Energy Production

Group Manager: Tech Tour

Innovative solutions to generate and manage renewable energy, both heat and electricity, in order to increase the sustainability and sovereignty of Europe´s energy supply. Focus topics include geothermal heat & power, energy-efficient hydrogen production (including from waste), biomass-based energy, hydro and tidal power and solutions to decrease dependency on non-European supply of materials and technologies for solar and wind energy. Also in focus are relevant smart & AI-based solutions for energy & grid management, sector coupling and demand-response systems.

Circular Models for Cities & Regions

Group Manager: Bryck

A circular economy is critical to creating livable cities of the future by addressing climate change, pollution, and resource depletion. It promotes the sustainable use of resources, ensures efficient recycling and reduces waste. This approach reduces greenhouse gas emissions and minimizes environmental impact. It also enhances economic resilience and adaptability by promoting green jobs and green industries. Through the integration of sustainable practices into urban development, a circular economy paves the way for cities that are both resilient and environmentally responsible.

In order to reduce consumption and waste, the adoption of sustainable service and product usage models, such as the sharing economy and product-as-a-service initiatives, is essential. Furthermore, innovations in smart waste management and recycling technologies are needed to optimize resource recovery and minimize waste in urban environments.

AI Powered Utility Management for Sustainable and Smart Cities

Group Manager: Aalto University

Application of AI helps utility management of smart cities to optimize operations for dramatically improved efficiency, promoting sustainability and reducing environmental impact. AI-powered predictive maintenance allows utilities to proactively schedule repairs to minimize downtime, as well as to prevent shortages, improving overall quality of service and reliability. By analysing large amounts of data in real-time, AI algorithms can for example optimize energy generation, distribution, and consumption, reducing wastage and ensuring efficient operations. For water management, AI can optimize water distribution systems, detect leaks, and allocate resources effectively. In waste management, AI-powered analytics can optimize waste collection routes, predict waste generation patterns, and enhance recycling efforts. Application of AI in utility management requires a wide range of enabling technologies such IoT interfaces to existing infrastructure and data platforms to integrate the collection of data from different sources and leverage synergies across utilities within the application context.

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