



Zero⁴

Unlocking Industrial Productivity

Konecranes Research & Innovation
March 2023



KONECRANES®

We are a technology company

Konecranes is a global industry-leading group of Lifting Businesses™.

Everything we do is targeted at one goal: improving the safety and productivity of our customers' operations.

Konecranes makes lifting and material flows more productive and sustainable. Uncompromised safety, high ethics and inclusiveness drive us. We work for a decarbonized and circular world for customers and society.



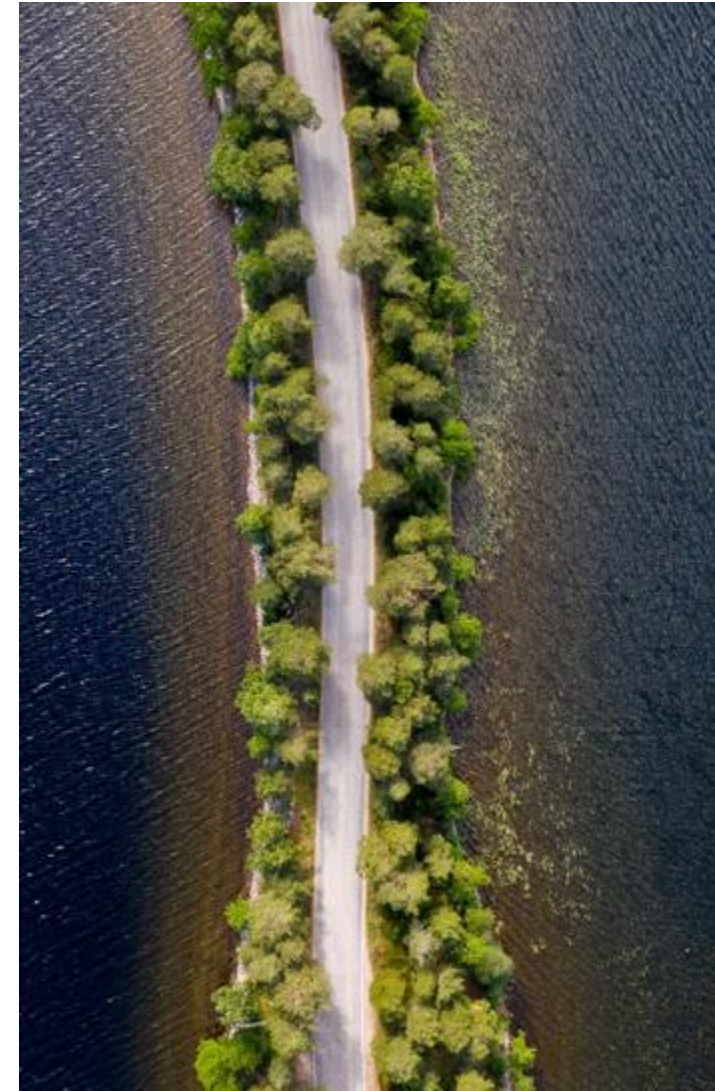
Unlocking Industrial productivity

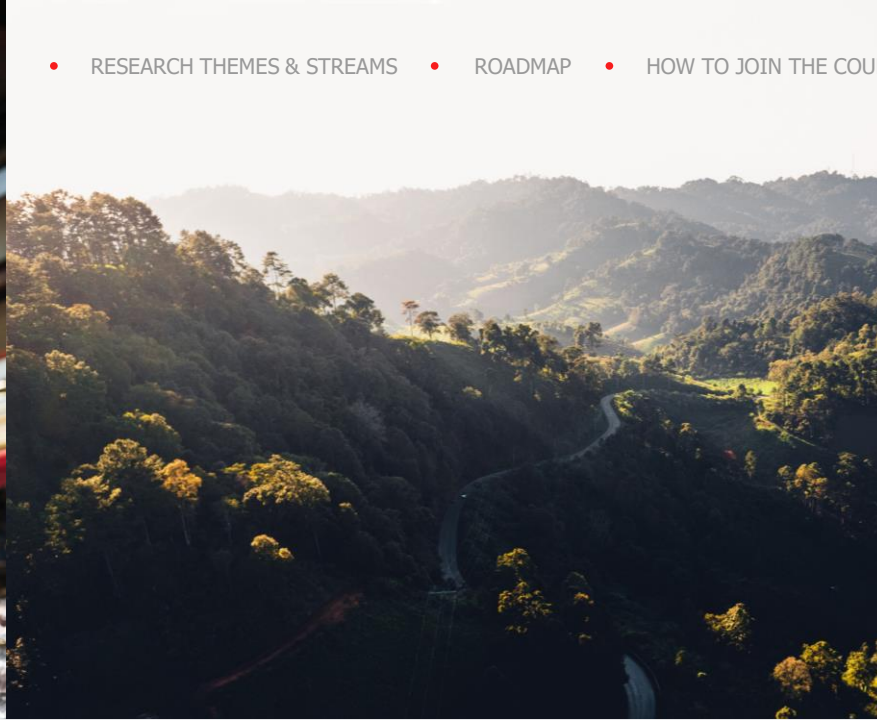
Zero4 is a Konecranes-led 70 M€ Research & Innovation programme. The programme is part of Business Finland's "Veturi" initiative where Finnish companies are invited to solve some of the society's most pressing challenges through research, development, and innovation in Finland.

Purpose of the programme is to **boost the industrial productivity** and **competitiveness of Finnish companies** and **decrease absolute greenhouse gas emissions** and **energy waste**.

Zero4 focuses on working towards the vision of a unified material flow platform that is developed together with ecosystem partners, universities, research institutes and customers.

The programme mission will be reached by zeroing down four key deficiencies from material flows:





Tackling some of the biggest industry challenges to make a lasting impact

SOCIETAL IMPACTS

- Redefining the role of human in the future factory
- Setting up lighthouse and model factories in Finland
- Increasing industrial productivity in Finland
- Creating hundreds of new jobs in the next five years in Finland

ENVIRONMENTAL IMPACTS

- Reducing greenhouse gas emissions in own operations and in value chains
- Increasing the carbon handprint of Konecranes, ecosystem and companies deploying the solutions
- Increasing energy efficiency
- Reducing the use of harmful substances

ECONOMICAL IMPACTS

- Increasing Finnish R&D investments by hundreds of millions of euros
- Commercializing new solutions and technology
- Enhancing international competitiveness of Finnish companies
- Increasing export of material flow solutions significantly

Future solutions are developed through 7 interlocking streams

We invite stakeholders to join our journey in building and commercializing future material flow solutions

Themes

ZERO INFORMATION BARRIERS	ZERO GHG EMISSIONS	ZERO WASTED ENERGY	ZERO SAFETY INCIDENTS
Create a common material flow platform and optimize material and information flows	Decarbonize material flow equipment and activities	Design material flow equipment and operations to consume less energy and to regenerate what is spent	Make material flows and related activities safer for humans and remove any disruptions from operations

Examples of research topics

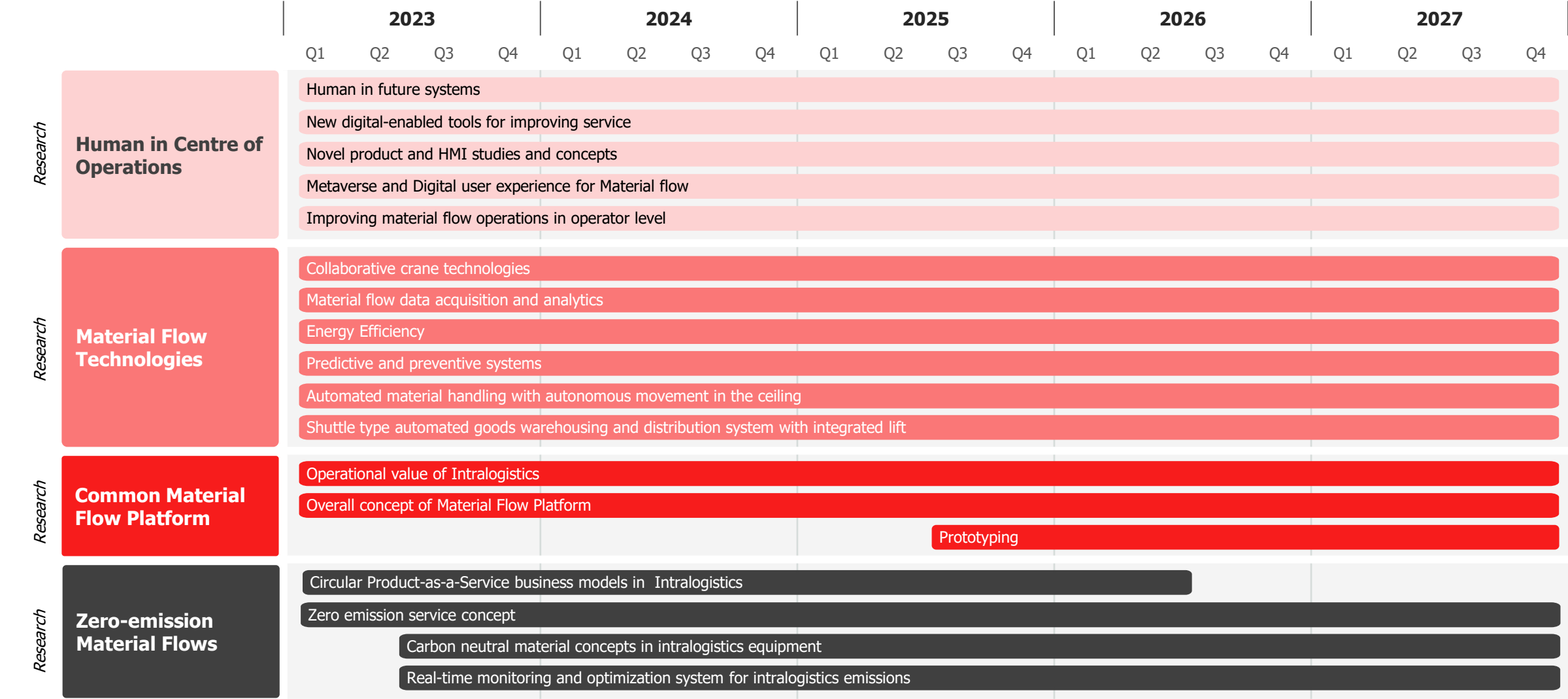
In Zero4, we will study, for example, the following questions and many more:

- How can material be identified and tracked with multiple sensors forming a smart space?
- How can simulations, enhanced with real-time data, be used to optimize material flow of a complete factory?
- What is the most suitable system concept for emission monitoring, avoidance, and allocation in intralogistics?
- How equipment ownership effects product lifecycle and selected circularity strategies?

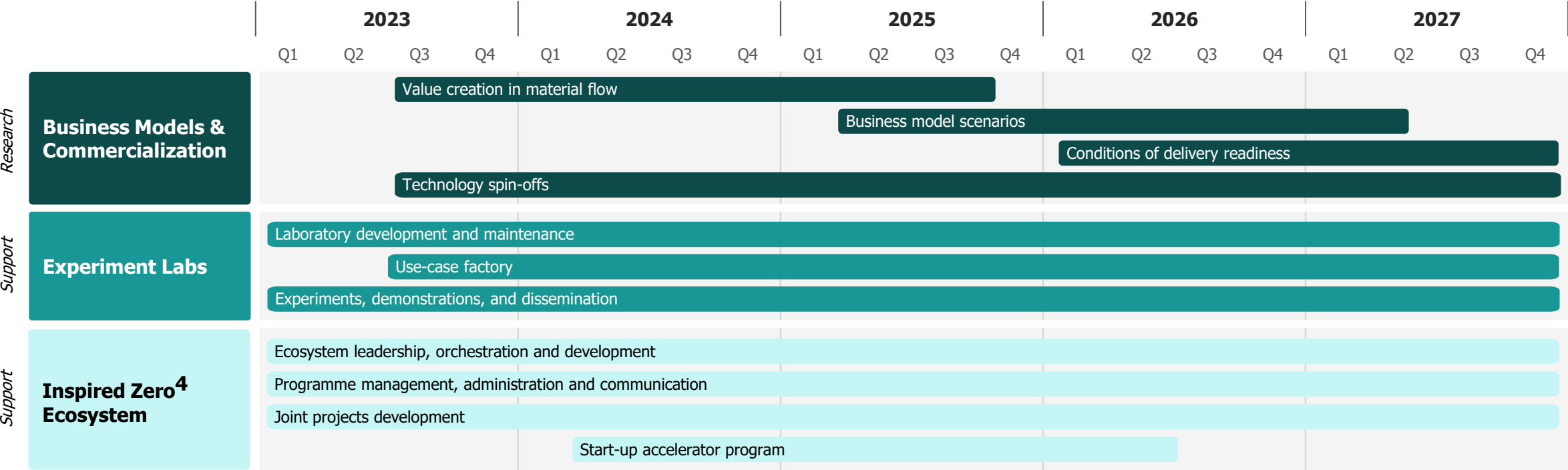
Programme research and support streams



Path to the Zero⁴ future



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Unlocking Industrial productivity

Are you an innovative start-up, company, research institute or university? Are you up for a challenge?

Konecranes is building a **co-innovative ecosystem of Finnish and international partners** to fulfil the set mission and commercialize co-innovative solutions.



We are looking for both **solvers**, companies that provide technical solutions to improve material flow productivity, and **implementers**, companies that pilot the resulting solutions in their own plants and ports, **to join the ecosystem.**

We invite you to join our journey in building and commercializing future material flow solutions. Let's initiate discussions and join our forces.

Contact us..

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..or leave your contact information using the QR code. We will contact you soonest.





Find out more on konecranes.com/zero4

Further information for ecosystem partners:

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