SELF Booster – Eurostars project

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DigiFed "*showcase your innovation*"

1 December 2022

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About Zeleros

ZELEROS

Deep-tech company working towards the decarbonization of urban and intercity transport, with hyperloop as flagship mass impact development programme

High Performance | High Power Electromobility

Zeleros has acquired crucial technological capabilities to develop and supply advanced powertrain technologies in the field of electric aviation, maritime and road transport.

+55

High-performing team

2016

Founding year

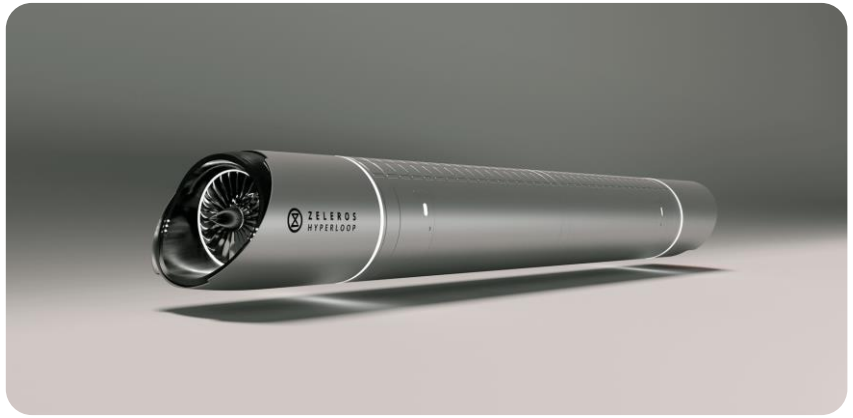
European Startup Prize for mobility

2022 Winner

Hyperloop

Development Programme

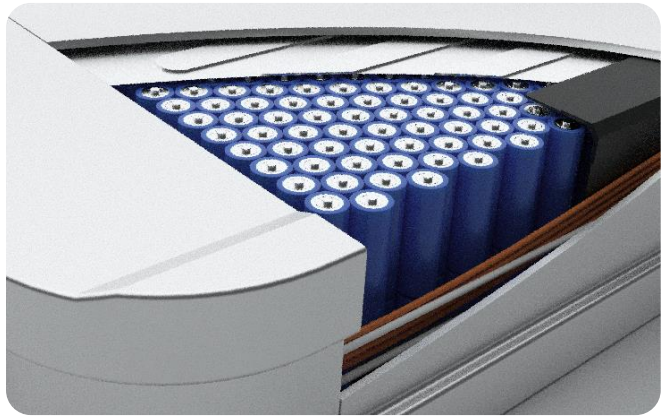
Moving people and cargo at ultra-high speeds and zero emissions



Battery Systems

High Performance Power

High-performing applications requiring high-energy density and customized battery packs



Flagship Project

Zeleros' revolutionary technology enables the deployment of scalable hyperloop routes with a dramatical operating cost-effectiveness, having the capacity to connect cities center to center and reshape mobility as we know today.

Product Engineering

Zeleros provides advanced engineering services and products to OEMs and integrators in need for battery systems, serving applications with demanding operating performance such as aviation, maritime, supercars or mining.

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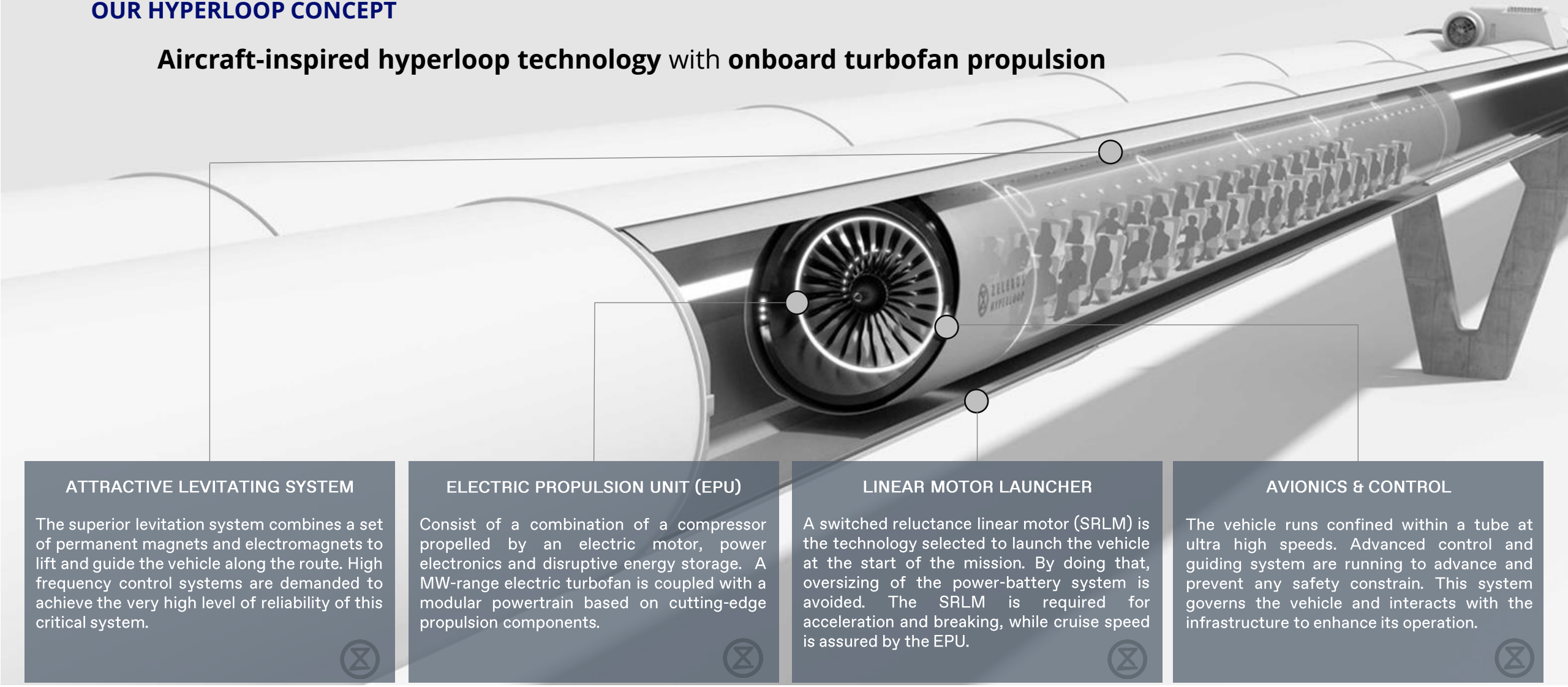
OUR HYPERLOOP CONCEPT

Aircraft-inspired hyperloop technology with **onboard turbofan propulsion**



ATTRACTIVE LEVITATING SYSTEM

The superior levitation system combines a set of permanent magnets and electromagnets to lift and guide the vehicle along the route. High frequency control systems are demanded to achieve the very high level of reliability of this critical system.

ELECTRIC PROPULSION UNIT (EPU)

Consist of a combination of a compressor propelled by an electric motor, power electronics and disruptive energy storage. A MW-range electric turbofan is coupled with a modular powertrain based on cutting-edge propulsion components.

LINEAR MOTOR LAUNCHER

A switched reluctance linear motor (SRLM) is the technology selected to launch the vehicle at the start of the mission. By doing that, oversizing of the power-battery system is avoided. The SRLM is required for acceleration and breaking, while cruise speed is assured by the EPU.

AVIONICS & CONTROL

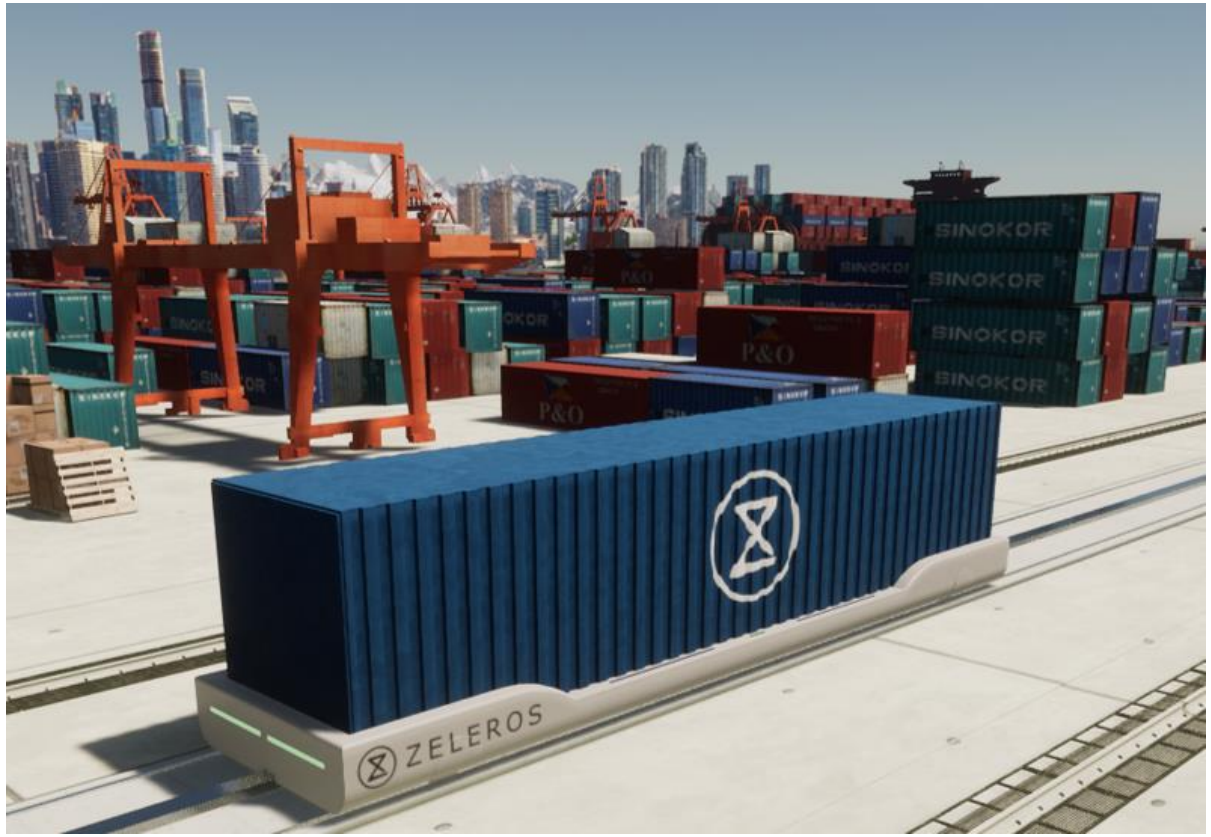
The vehicle runs confined within a tube at ultra high speeds. Advanced control and guiding system are running to advance and prevent any safety constrain. This system governs the vehicle and interacts with the infrastructure to enhance its operation.

Why Eurostars? Our SELF project

SELF: Sustainable Electric Freight forwarder

Zeleros' vision is to become a global leader in crafting the innovations that expand the limits of mobility, doing it faster and more efficiently than ever before. Zeleros will leverage the value of every hyperloop enabling technology to unlock the potential of alternative markets, specially those related to heavy logistic and **high-power electric vehicles**.

SUSTAINABLE ELECTRIC FREIGHT FORWARDER (SELF)



Zeleros' core technical competences and our hyperloop prototypes allow us to engineer side-products targeting alternative markets, bringing high added-value products which are closely aligned with existing client demands and generating revenue streams in the short to mid-term.

SELF is a full-electric, zero-emissions, autonomous container forwarder enabling port automation for seaports with container terminals. Unlike standard solutions such as polluting diesel trucks, or expensive alternatives due to OPEX (i.e., AGVs), SELF relieves port traffic congestion, expands the ports' terminal overall capacity, decarbonizes logistics while remains cost-effective as needs minimum energy consumption and maintenance, providing significant cost savings per container moved.

SELF Booster: our Eurostars project

Acronym: SELF-Booster
Project name: Innovative Electromagnetic Booster for Sustainable Electric Freight Forwarding
Project ID: E!114573

- Timing: 24 meses
- Total budget: 1M€
- Dates:
  - Start: 01/06/2021
  - End: 31/05/2023
- Participants:
  - ZELEROS GLOBAL SL
    - CIEMAT (subcontracting)
  - MAGNETO Sp. z o.o.
- TRL:
  - TRL4 (start) → TRL6 (end)

Ciemat
Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas

MAGNETO

eurostars™

EUREKA

European Commission

GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA E INNOVACIÓN

CDTI INNOVACIÓN

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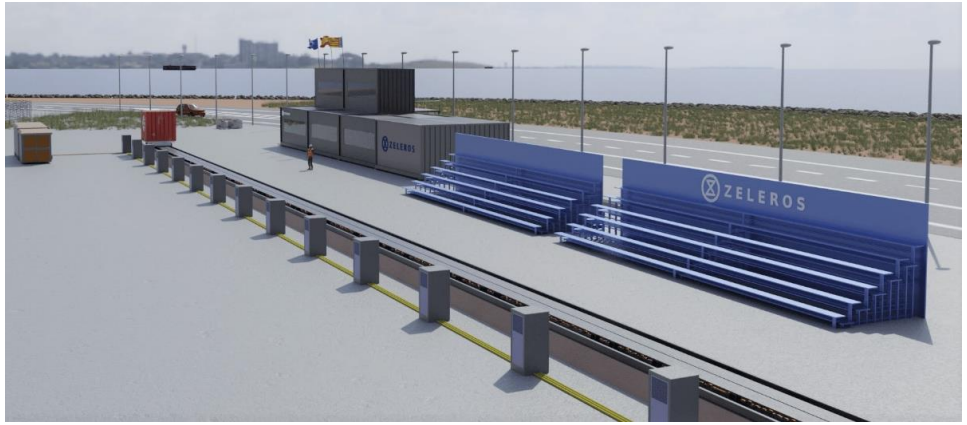
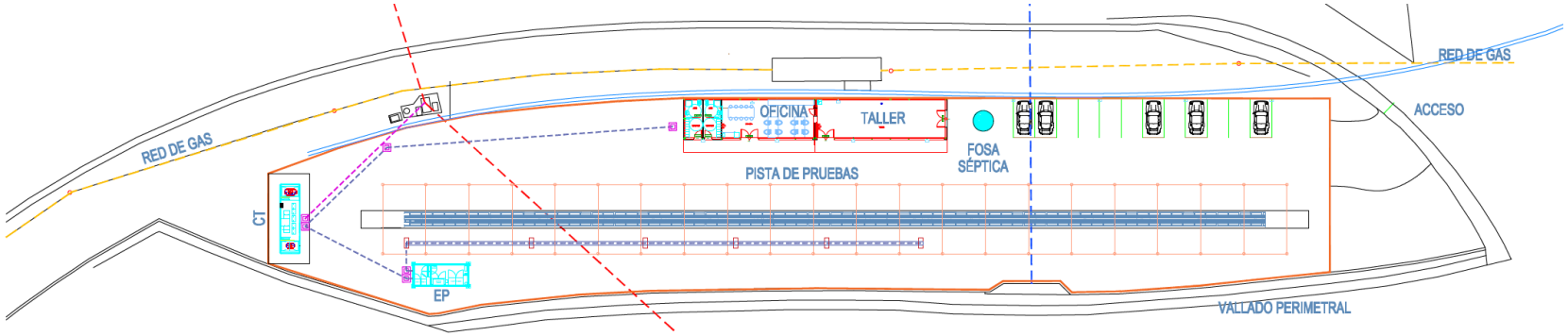
Zeleros to trial box movement system in port of Sagunto

July 6, 2022

Facebook | Twitter | Linkedin | Email

Port of Sagunto





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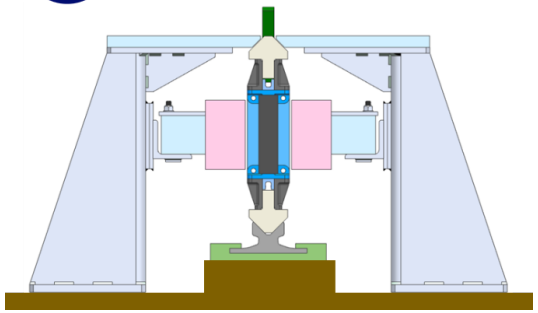

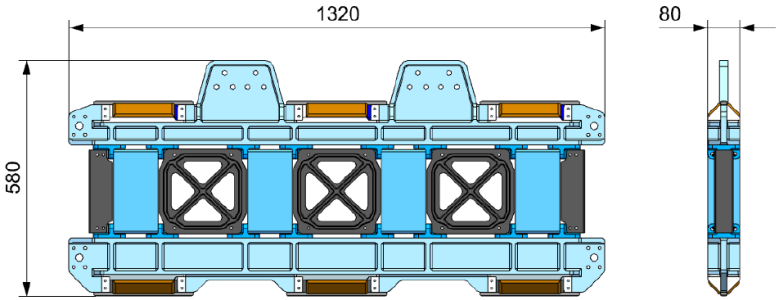

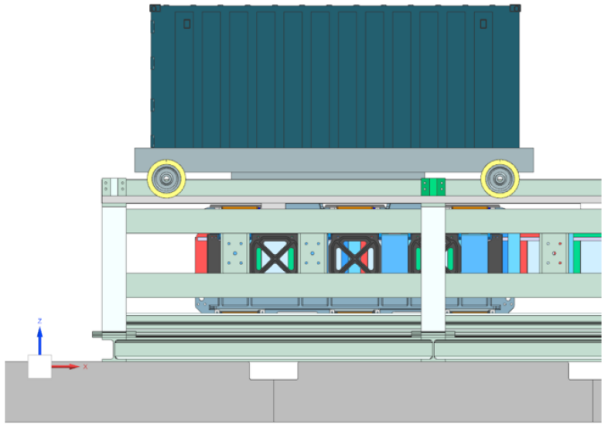

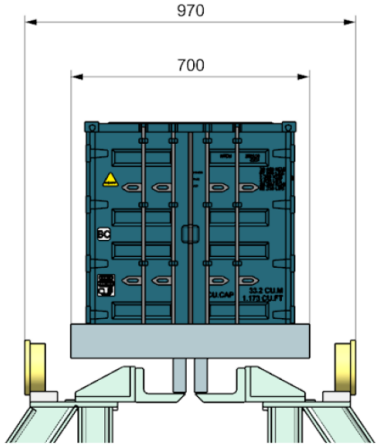

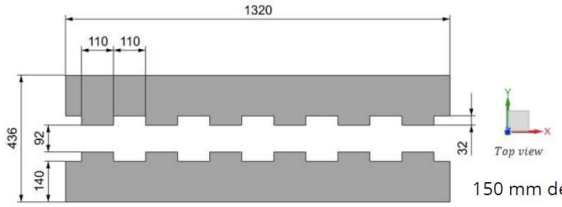

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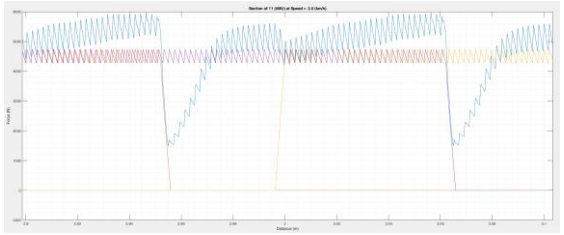

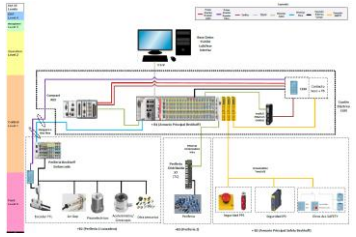

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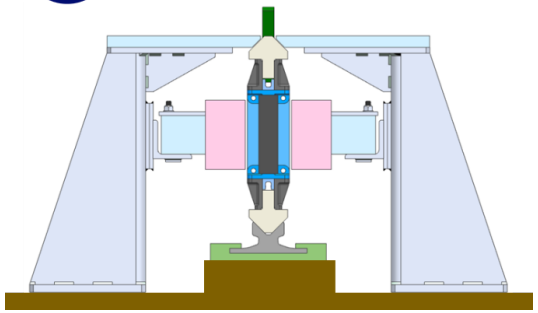

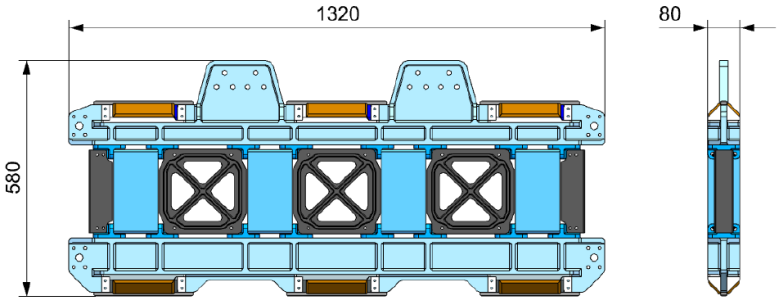

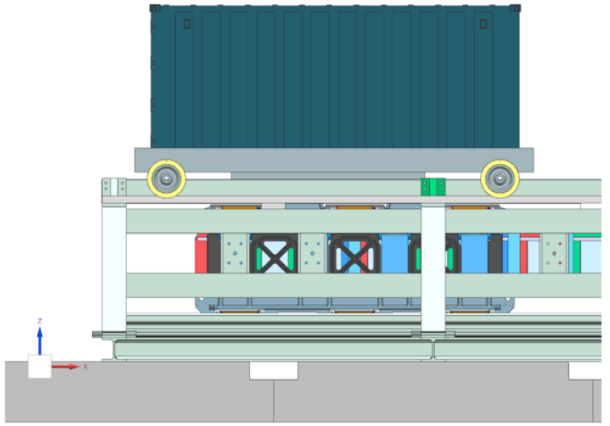

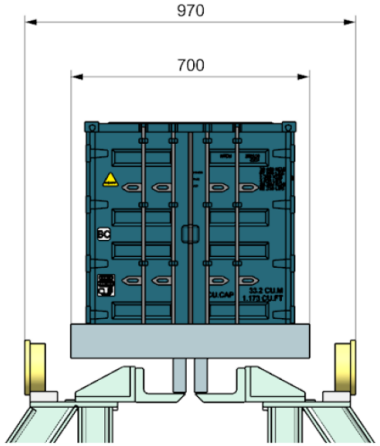

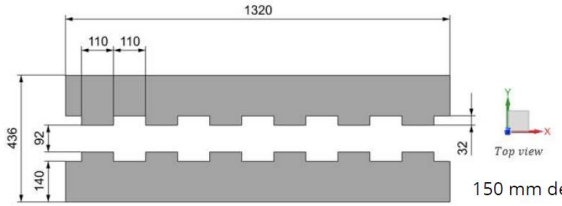

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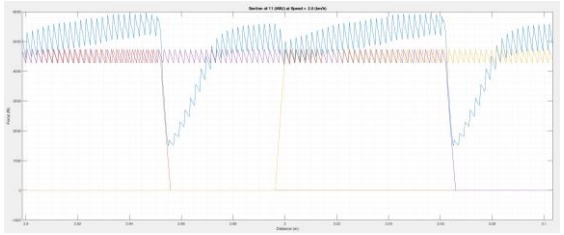
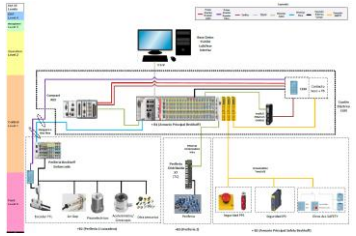
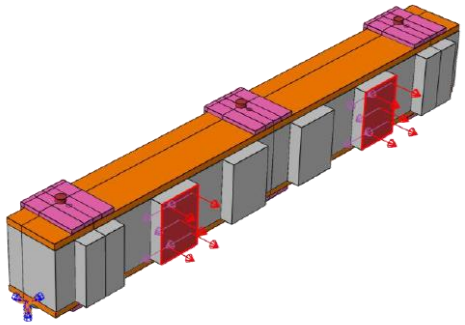
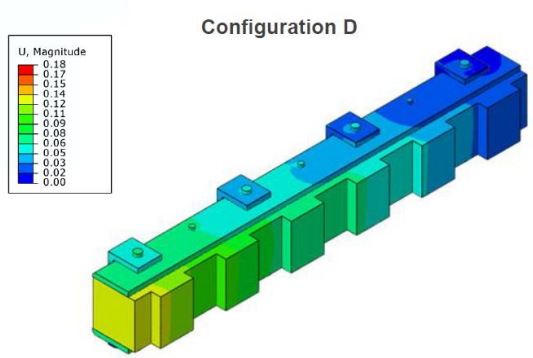
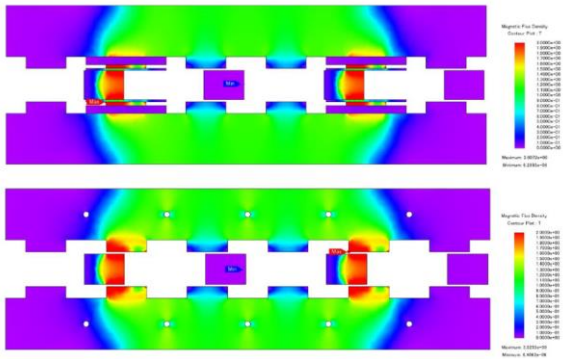




MAGNETO







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Benefits and next steps

Key benefits & outcomes of the project

Key benefits:

- **Speeding-up TRL**: from research to technology development, piloting & market approach
- **International scope**: cooperation with relevant partners at EU level, cross-border/international dimension
- **Agile and executive program**: small consortium, product-oriented, market-focused, specific for SMEs

Outcomes:

- **A new side-product** for the company
- **A demo/validation pilot site** (still at TRL-6, but this is a huge step for us)
- **A business plan**: market approach, stakeholders engagement, preliminary networking

Thank you!

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Beyond the limits of mobility

Marcos Sacristán

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