



Deutsche Handelskammer  
für Spanien  
Cámara de Comercio Alemana  
para España



19/05/2026

Event

## Jornada Hispano-Alemana sobre Fabricación Aditiva

Mataró (Barcelona) | 19/05/2026 | 09:00 - 14:00 h | La Cámara Alemana de Comercio organizará el próximo 19 de mayo de 2026 la Jornada Hispano-Alemana sobre Fabricación Aditiva, coorganizada junto con ThinkIn 3D de TecnoCampus. Esta iniciativa se enmarca en un proyecto encargado por el Ministerio Federal de Economía y Energía de Alemania (BMWE) i actuaciones de soporte a la industria de Diputació de Barcelona.



Freepik

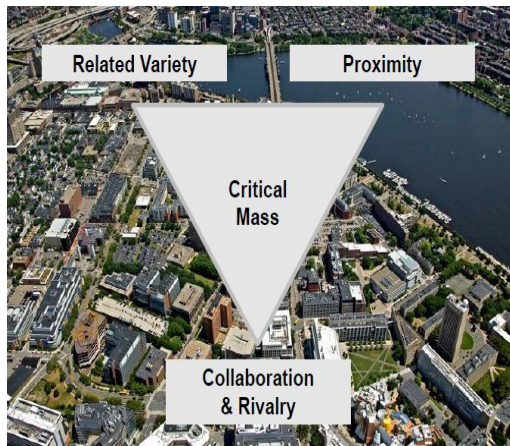
**in-move** by Railgrup  
Cluster de Movilidad y Logística Multimodal

**in-move** by Railgrup  
Cluster de Movilidad Sostenible y Logística Multimodal

Dr. Eng. Ignasi Gómez-Belinchón  
[gerencia@railgrup.net](mailto:gerencia@railgrup.net)  
Cluster Manager

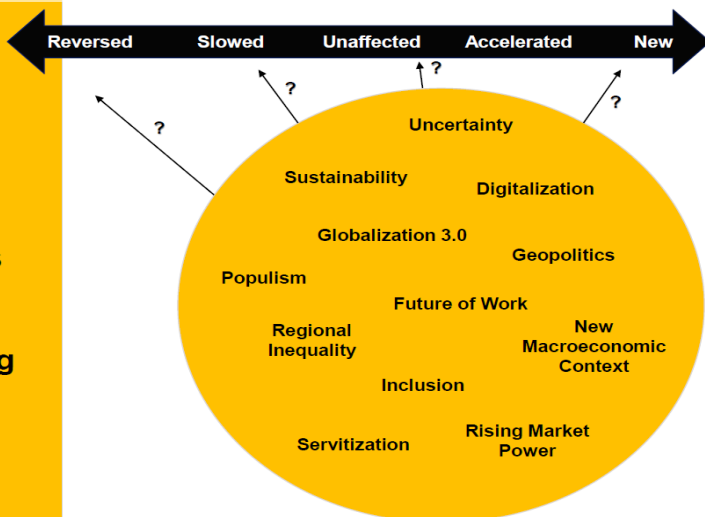
# Competitiveness Upgrading in Turbulent Times The Role of Clusters

Dr. Christian H. M. Ketels  
Harvard Business School  
Chair, TCI Advisory Board  
Catalan Cluster Managers  
Cambridge, MA  
17 May 2022



## CLUSTERS OBJECTIVE: IDENTIFY and WORKOUT SCENARIOS of IMPROVEMENT of COMPETITIVENESS for the SECTOR

### The Global Economic Context is Changing



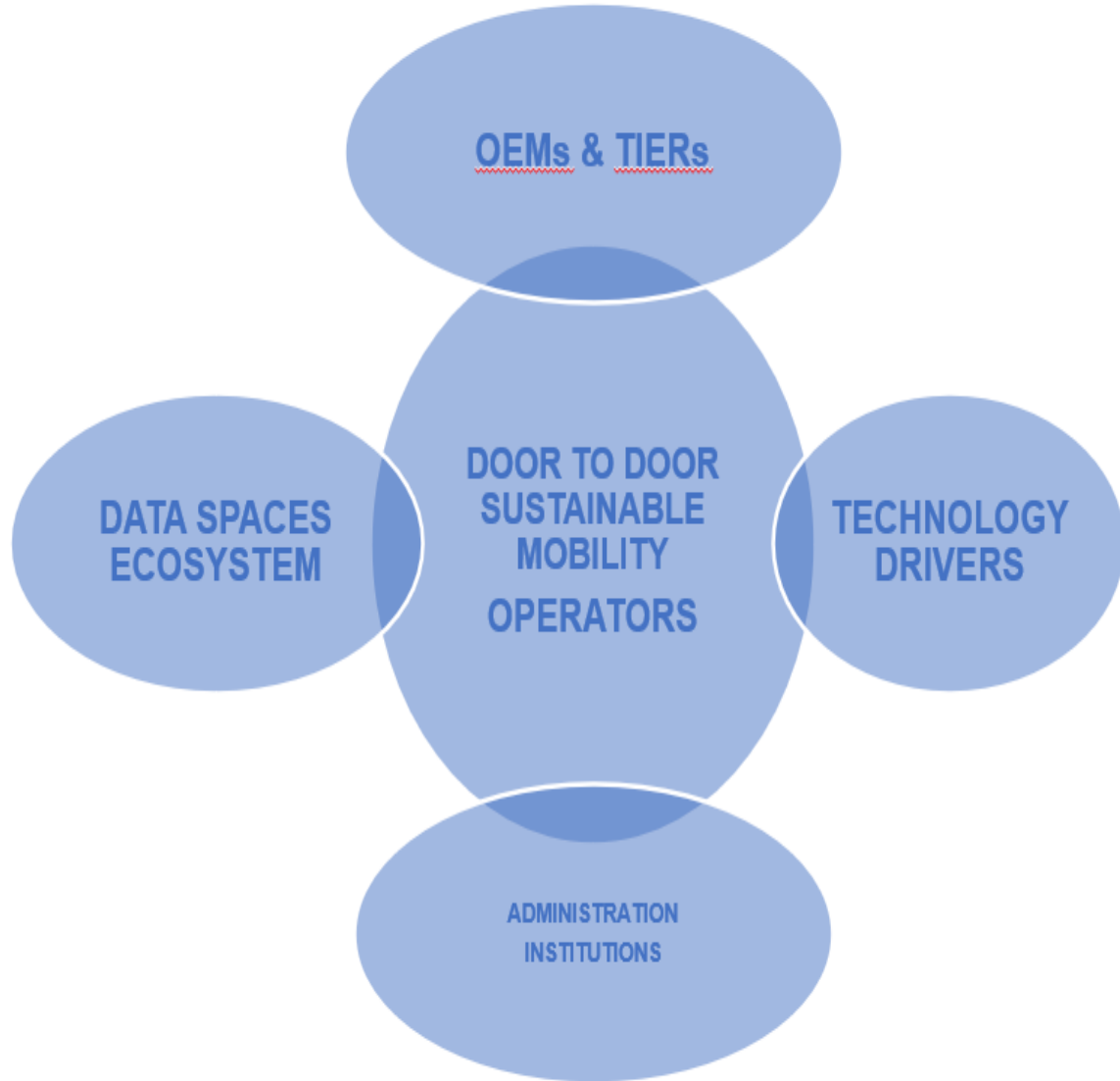
How can clusters and cluster organizations help in responding to the on-going changes?

How can cluster efforts be more impactful?

What should cluster efforts do?  
Why are they needed?

# VALUE CHAIN and CENTER of GRAVITY

NEW URBANISM-LIVABLE MOBILITY-  
CROSSFERTILIZATION



INFRASTRUCTURE DRIVEN PROJECTS

### ORGANIZACIONES ASOCIADAS



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### ORGANIZACIONES ASOCIADAS



## JUNTA DIRECTIVA

La Junta Directiva es elegida por los asociados y planifica las acciones y proyectos que impulsa la organización con el apoyo de los grupos de trabajo y el equipo de gestión.



- Antoni Pérez:** Tesorero - INFRAESTRUCTURES.CAT
- Jordi Coves:** Secretario general - IDOM INGENIERIA Y CONSULTORIA
- Sergio Boya:** Vocal - ALSTOM
- Oscar Julià:** Vocal - SENER
- Montse Palasi:** Vocal - INDRA
- Lluís Alegre:** Vocal - ATM
- Humberto López:** Vocal - TRAMVIA METROPOLITÀ
- Oscar Playà:** Vocal - TMB
- Eric Font:** Vocal - META ENGINEERING

- Alex Santos:** Vocal - CAPGEMINI ENGINEERING
- Ignacio Elburgo:** Vocal - MASATS
- Jordi Salguero:** Vocal - WABTEC-FAIVELEY
- Albert Tortajada:** Vocal - FCC
- Juan Antonio Delgado:** Vocal - STADLER
- Susana Prado:** Vocal - INETUM
- Ana Hombrados:** Vocal - 3M
- Josu Esnaola:** Vocal - CAF
- Valentí Fontseré:** Vocal - COMSA

\* Representates operatives de la Junta Directiva a fecha 1/7/2025

### IN-MOVE MEMORIA DE ACTIVIDADES 24/25

### ERC10+ STRONG EUROPEAN NETWORK GOVERNANCE & STRUCTURES AS THE EUROPEAN RAILWAY CLUSTER NETWORK.



### in-move by Railgrip

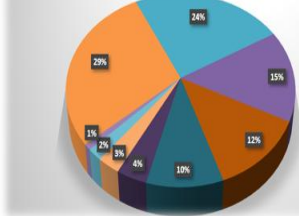
ERC1 is the leading meta-cluster of the railway industry in Europe uniting 17 innovation clusters from 16 European countries (Austria, Belgium, Bosnia and Herzegovina, Croatia, France, Germany, Italy, Montenegro, North Macedonia, Poland, Serbia, Slovenia, Spain, Sweden, Türkiye, United Kingdom).

**Mission**  
We connect the ideas and interests of over 2.000 small and medium-sized businesses in the Railway industry as well as of large companies and research organisations based in our territorial ecosystems in Europe. ERC1 is their voice and lobby at European level. We help our member companies to grow – through improved access to European partners and customers, accelerated technology transfer and joint marketing in- and outside of the EU.

- Members of the Board
- EU wide Cooperation
- Business Development
- Projects
- EU Commission Lobby



### Rol Principal en la Cadena de Valor

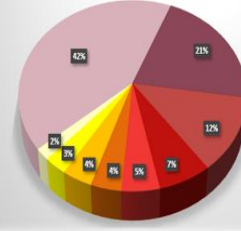


Rol Principal Cadena Valor del Cluster	Totales
Fabricante	29 %
Proveedor de tecnología	24 %
Operador / Usuario final	15 %
Prescriptor / Ingeniería	12 %
Integrador	10 %
Centro de conocimiento	4 %
Difusor / Conector	3 %
Regulador / Facilitador público	2 %
Financiar / Facilitador	1 %

### Clasificación interna de la cadena de valor SOCIOS 2026

InMove by Railgrip. (2026). Informe de clasificación interna socios en base a la generación del impacto estratégico.

### Rol Estratégico



ROL ESTRATEGICO	Totales
Proveedor tecnológico	42 %
Integrador / Engineering partner	21 %
Operador / Usuario final	12 %
Anchor industrial / Tractora	7 %
Facilitador transversal	5 %
Gestor de infraestructuras Knowledge e Innovación	4 %
Scale-up / Innovador emergente	3 %
Administración pública / Policy maker	2 %

InMove by Railgrip. (2026). Informe de clasificación interna socios según cual es su función en el ecosistema (influencia, generación de valor y relevancia estratégica).

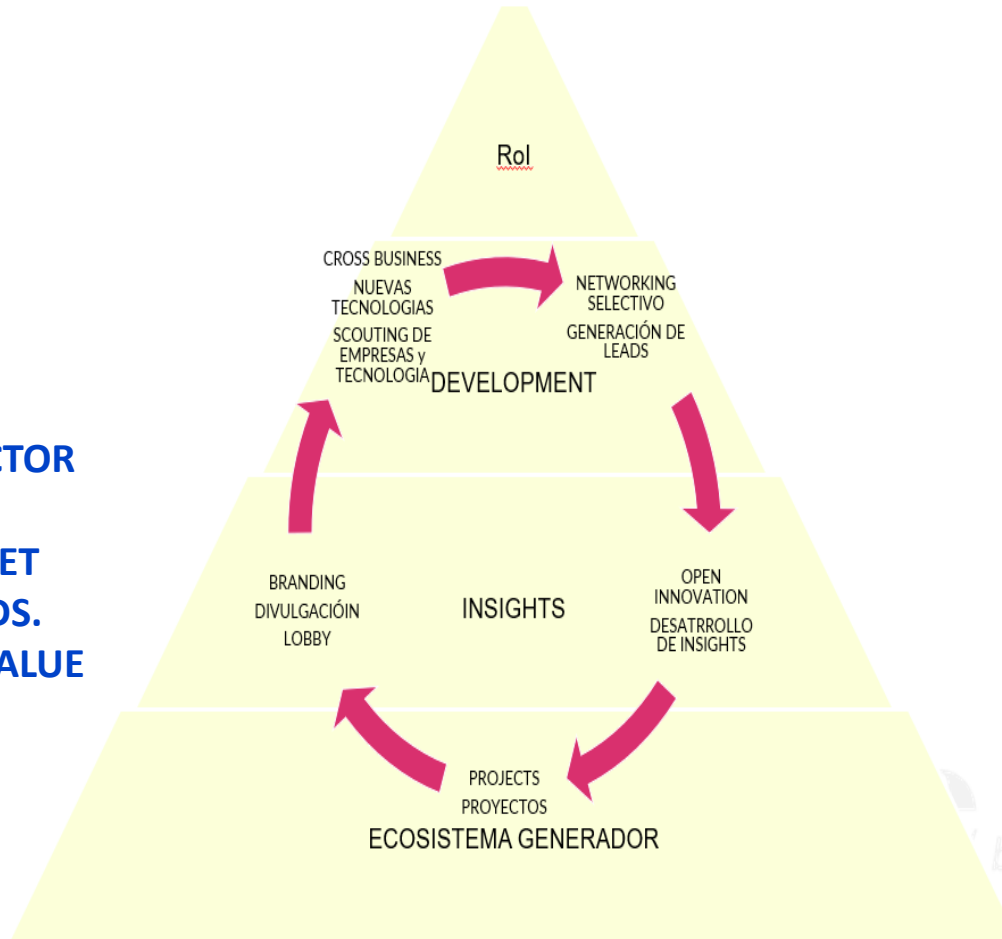




**KNOWLEDGE: WE MONITOR THE SECTOR GLOBALLY AND ANTICIPATE MARKET TRENDS AND NEEDS. WE OFFER HIGH-VALUE BUSINESS INTELLIGENCE**



**INNOVATION: WE FACILITATE ACCESS TO INNOVATION SUPPORT PROGRAMS AND CONNECT YOU WITH THE MOST DISRUPTIVE PROPOSALS FROM UNIVERSITIES AND TECHNOLOGY CENTERS. WE BRING INNOVATION TO BUSINESSES IN A TANGIBLE AND AFFORDABLE WAY**



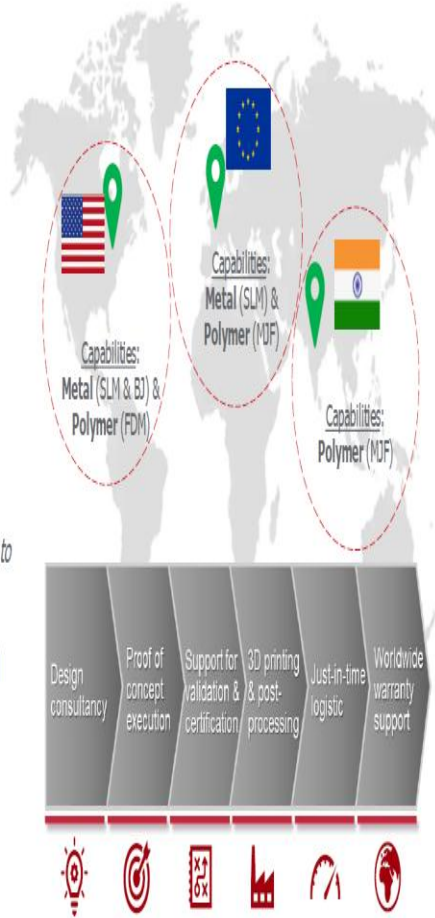
**NETWORK TO PROMOTE AND ACCELERATE ALL TYPES OF PROJECTS THAT ALLOW COMPANIES TO ACHIEVE GOALS THAT WOULD BE UNATTAINABLE INDIVIDUALLY. WE FOSTER ONGOING NETWORKING**



# Wabtec AM solutions

Rail industry key player

- Additive Manufacturing **long-time experience** started in rail freight industry
- **Strong rail engineering capabilities**
- **3 productions hubs** in North America, Europe & India
- Offering the **full value chain** (from design consultancy to manufacturing & delivery)
- **Worldwide warranty support with 1,000+ field services technicians**
- Digital support solution for fast analysis of parts printability & cost efficiency



Video

Wabtec City (media section)



## Customer benefits



### Solving urgency

Parts failures, accidents, vandalism



### Preventing obsolescence

Train availability, extension of train life cycle



### Optimizing stock & procurement cost

Order just what you need, stocks and scrap reduction



### Local Production

Transport cost & time, carbon footprint



### Reduction of Weight

Energy efficiency, ergonomy



### Functions Agregation

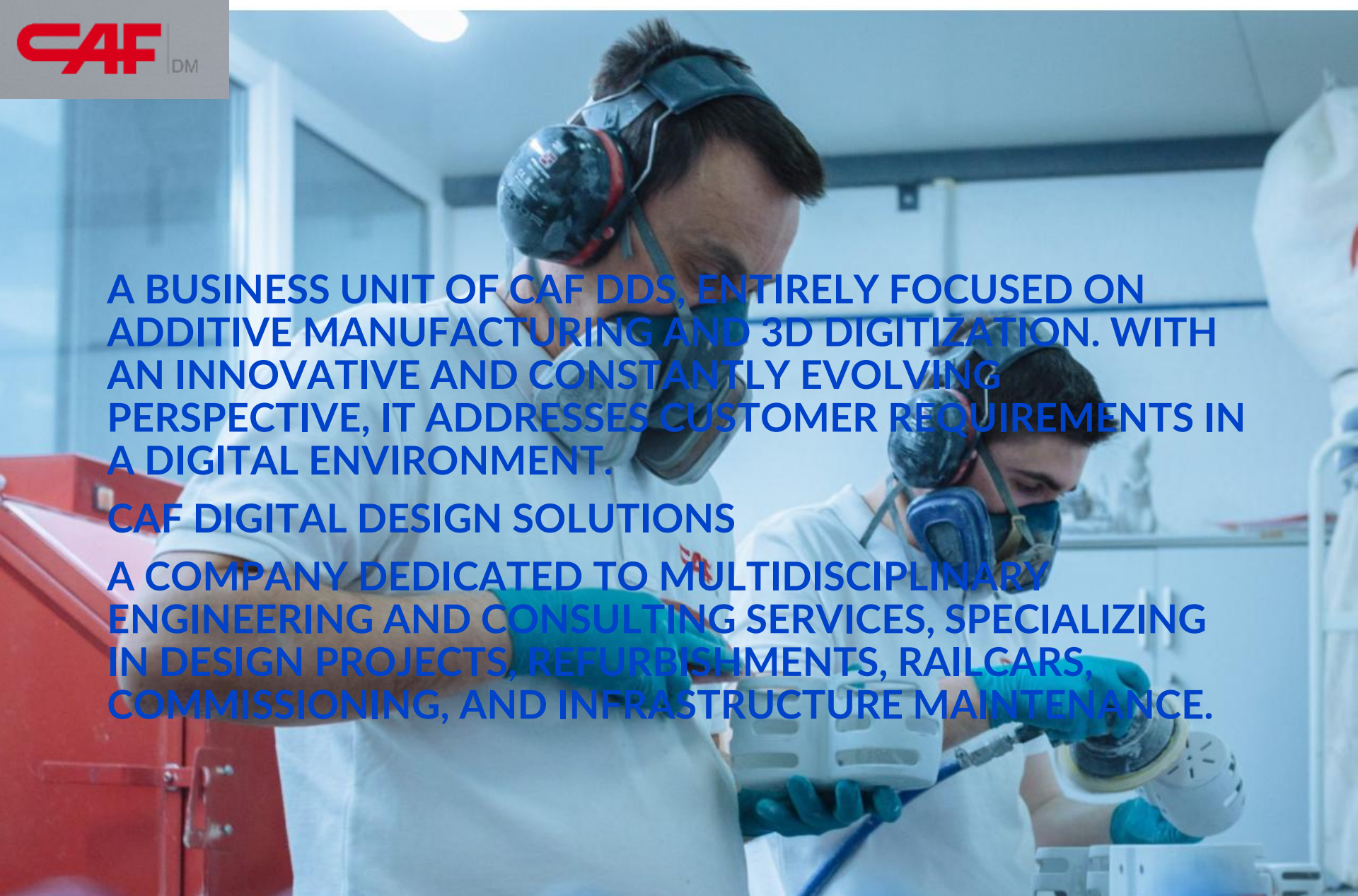
Supply chain optimization



### Part Performance

Maintenance steps optimization, noise, leakage reduction





A BUSINESS UNIT OF CAF DDS, ENTIRELY FOCUSED ON ADDITIVE MANUFACTURING AND 3D DIGITIZATION. WITH AN INNOVATIVE AND CONSTANTLY EVOLVING PERSPECTIVE, IT ADDRESSES CUSTOMER REQUIREMENTS IN A DIGITAL ENVIRONMENT.

CAF DIGITAL DESIGN SOLUTIONS

A COMPANY DEDICATED TO MULTIDISCIPLINARY ENGINEERING AND CONSULTING SERVICES, SPECIALIZING IN DESIGN PROJECTS, REFURBISHMENTS, RAILCARS, COMMISSIONING, AND INFRASTRUCTURE MAINTENANCE.



IAM3DHUB

3D INCUBATOR/



Technological  
Research Center

Additive Manufacturing &  
3D Printing Reference  
Center

International Advanced  
Manufacturing

3D HUB

Boosting AM & 3DP  
Technologies adoption

Specialized European  
Incubator

for start-ups &  
entrepreneurs developing  
3D Printed applications

## RAILWAY SECTOR TO REDUCE PRODUCTION COSTS

LOWER VEHICLE WEIGHT

SPEED UP DESIGN VALIDATION.

IMPLEMENT ADVANCED METAL AND POLYMER PRINTING INTO THEIR WORKFLOWS.

KEY RAILWAY APPLICATIONS AND COLLABORATIONS:

LARGE-SCALE MOCK-UPS

3D PRINT FULL-SCALE COMPONENTS FOR RAILWAY CARRIAGE MOCK-UPS

REDUCING LEAD TIMES AND PROTOTYPING COSTS.

RAILWAY SEATING COMPONENTS

SELECTIVE LASER MELTING (SLM) TO PRODUCE METAL PARTS

TOOLING & STRUCTURES:

DEVELOPING HIGH-EFFICIENCY TOOLING

STRUCTURES FOR TRAINS BY COMBINING

LIGHTWEIGHT POLYMERIC AND ALUMINUM

MATERIALS WITH ADVANCED 3D PRINTING

TECHNIQUES.

# EUROPEAN CONSORTIUM TO PROMOTE NEW ADDITIVE MANUFACTURING PROCESSES OF OPTIMIZED HIGH-PERFORMANCE STEELS

<https://eurecat.org/es/european-consortium-to-promote-new-additive-manufacturing-processes-of-optimized-high-performance-steels/>

Additive Manufacturing (AM), and 3D Printing in particular, offer attractive possibilities for design optimization and production of limited series of components. These aspects fit perfectly some industrial and economical sectors: a clear match is that of hot forming tools. Tooling for hot stamping, die casting, plastic injection moulding benefit enormously from free-form refrigeration channels, that cannot currently be obtained by conventional (subtractive) manufacturing.

However, **3D printing is hampered by a limited selection of available materials**. In the case of tool steels, and hot work tool steels in particular, the choice comes down to expensive superalloys or special high-alloy steels, such as Maraging grades. Moreover, even though they command a price premium, these materials are inferior to conventional tool steels in terms of durability and properties.

The main objective of **NewAIMS** is to **research, study and demonstrate strategies to obtain cost-effective high-performance steel in AM processes**, through concepts of modified AM with integrated heat treatments.

In addition to generating fundamental knowledge, NewAIMS will propose **two high-performing steel grades** and a demonstration of **printing solutions based on Powder bed Fusion (PBF)**; while linking processes and microstructures to their final performance.

NewAIMS will demonstrate these solutions in a **use case based in tool steels**, an essential family of steels used in virtually all manufacturing processes, and where the characteristics of AM offer immediate advantages and transversal implementation.

## Key Data

- › **Start-end date:** 1 September 2023 – 28 February 2027
- › **Duration:** 42 months
- › **Funder under:** Research Fund for Coal and Steel (RFCS) programme of the European Union
- › **Overall budget:** 2,626,966.90€
- › **Reference number:** 101112371
- › **Principal Investigator:** Eduard Garcia Llamas

# Renfe and Aitiip begins to manufacture spare parts for its train fleet by 3D printing

📅 23 January 2024

Renfe incorporates in its industrial area an **advanced integral service of additive manufacturing (3D printing)**, to supply railroad components, thus meeting the needs of manufacturing parts for Renfe's train fleet, either new production or spare parts for those elements that have become obsolete or need to be replaced because of damage. Throughout the entire production process, Renfe relies on the technological capabilities of Aitiip, a national and European reference center in additive manufacturing.





**ALSTOM IS IMPLEMENTING ADDITIVE MANUFACTURING (3D PRINTING) TO REDUCE COSTS, OPTIMIZE DESIGN, AND STREAMLINE THE PRODUCTION OF SPARE PARTS IN THE RAIL SECTOR. THE COMPANY HAS TRANSFORMED ITS TRADITIONAL SUPPLY CHAIN USING 3D PRINTING TECHNOLOGIES IN METAL AND HIGH-PERFORMANCE POLYMERS. THE COMPANY'S MOST NOTABLE INITIATIVES INCLUDE: DIGITAL WAREHOUSES: THROUGH PLATFORMS LIKE REPLIQUE, ALSTOM IS DRIVING ON-DEMAND PRINTING OF PARTS, ENABLING THE DIGITIZATION OF SPARE PARTS INVENTORY TO MITIGATE LONG-TERM AVAILABILITY ISSUES. DED MANUFACTURING: THEY UTILIZE DIRECT ENERGY DEPOSITION (DED) TECHNOLOGIES SUCH AS WIRE ARC, WHICH IS A GREAT MANUFACTURING ALTERNATIVE FOR CRITICAL RAIL COMPONENTS COMPARED TO CONVENTIONAL METHODS. STATIONONE PLATFORM: THE COMPANY OFFERS AND MARKETS ITS 3D-PRINTED COMPONENTS THROUGH THIS DIGITAL PLATFORM.**

## APRENDIZAJES

- Proyecto con cantidad mínima de 400 piezas
- Pocas zonas "específicas"
- Metal y plásticos técnicos (R1, R7) ningún caso viable
- Aceleración en fase de fabricación
- Dificultad adopción fases iniciales, costes no 3DP no competitivos

## QUE NOS FALTA

- Resinas DLP R22 HL2
- WAAM aluminio (interno), fabricación híbrida
- Polvo SLS R22 HL2 (solución HP?)
- Polvo SLS R1 competitiva
- R1 HL2 de grandes dimensiones (pellets)
- TPU o flexible R22 HL2 (Negro) FDM o Polvo
- ABIERTOS A PROYECTOS EUROPEOS COMO DEMOSTRADOR O USUARIO FINAL

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• ALSTOM • 28



- PRODUCE TRAIN SPARE PARTS, ADDRESS OBSOLESCENCE ISSUES, AND ACCELERATE FLEET MAINTENANCE.

- REVERSE ENGINEERING PILOTS

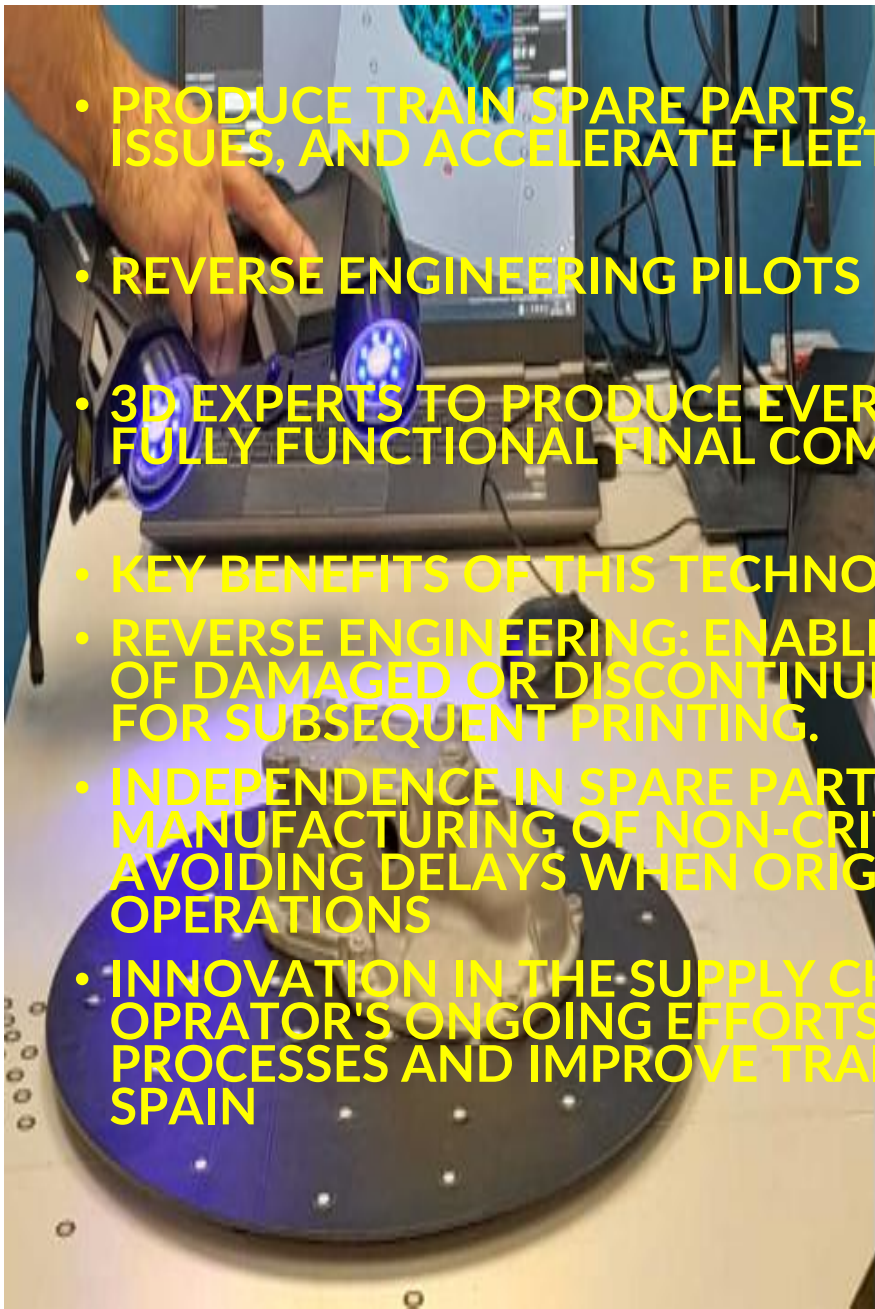
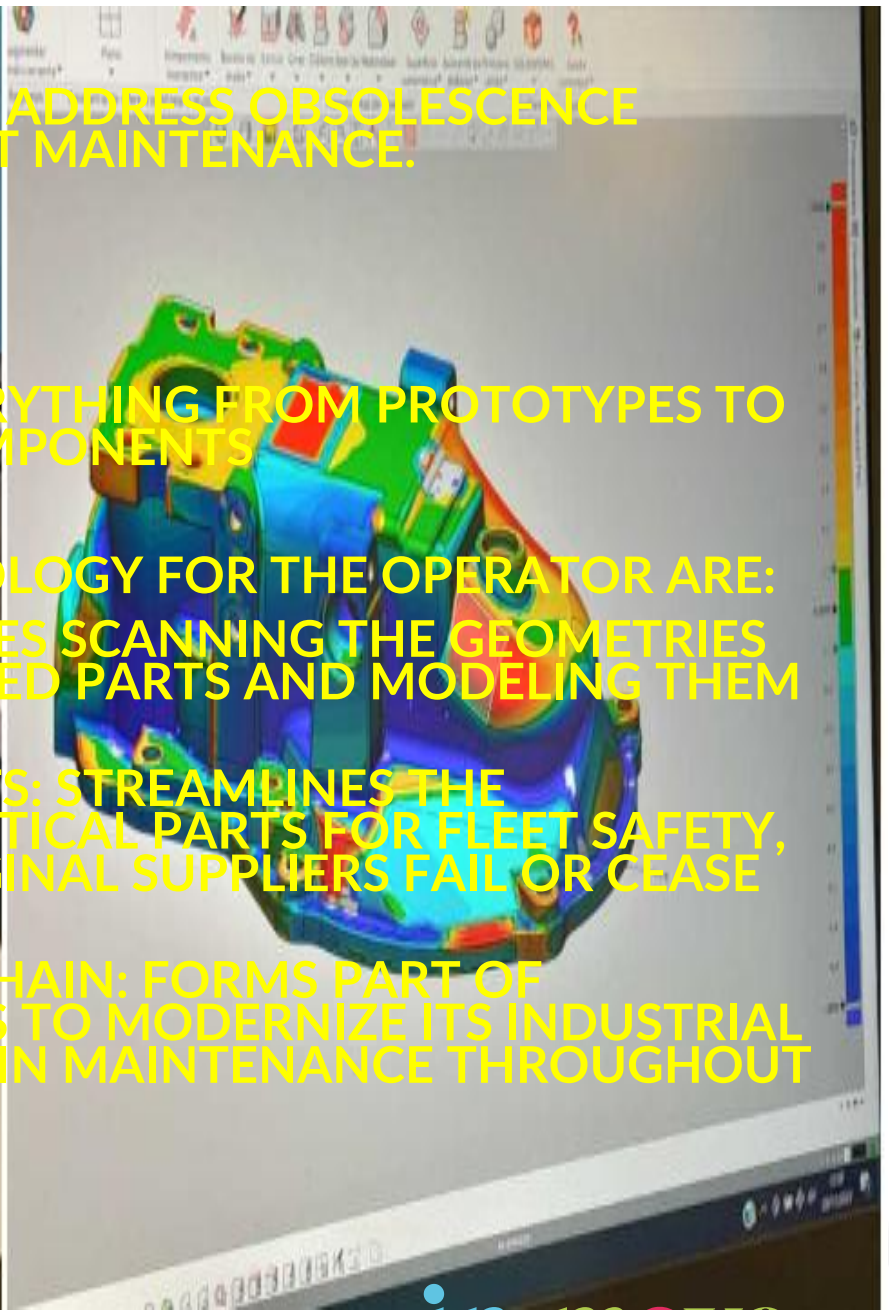
- 3D EXPERTS TO PRODUCE EVERYTHING FROM PROTOTYPES TO FULLY FUNCTIONAL FINAL COMPONENTS

- KEY BENEFITS OF THIS TECHNOLOGY FOR THE OPERATOR ARE:

- REVERSE ENGINEERING: ENABLES SCANNING THE GEOMETRIES OF DAMAGED OR DISCONTINUED PARTS AND MODELING THEM FOR SUBSEQUENT PRINTING.

- INDEPENDENCE IN SPARE PARTS: STREAMLINES THE MANUFACTURING OF NON-CRITICAL PARTS FOR FLEET SAFETY, AVOIDING DELAYS WHEN ORIGINAL SUPPLIERS FAIL OR CEASE OPERATIONS

- INNOVATION IN THE SUPPLY CHAIN: FORMS PART OF OPERATOR'S ONGOING EFFORTS TO MODERNIZE ITS INDUSTRIAL PROCESSES AND IMPROVE TRAIN MAINTENANCE THROUGHOUT SPAIN



From new trains design...

**ADDITIVE MANUFACTURING TECHNOLOGIES, DESPITE THE HIGH MATERIAL UTILIZATION AND THE ABILITY TO RAPIDLY CONSTRUCT COMPLEX SHAPED STRUCTURES OF 3D PRINTING TECHNOLOGIES, THE APPLICATION OF ADDITIVE MANUFACTURING TECHNOLOGIES IN RAILWAY TRACK INFRASTRUCTURE IS STILL AT THE EXPLORATORY STAGE**

...to obsolescence  
management

Cluster de Movilidad Sostenible y Logística Multimodal

It's about **Communication** between people, the rest is **Technology**. Peter Ferdinand Drucker

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**Cluster it!**

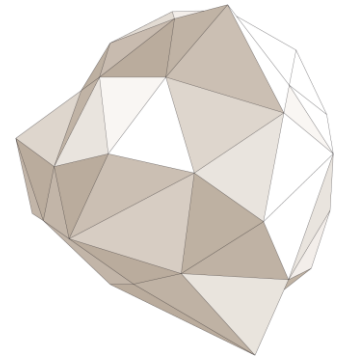
**in-move** *by Railgrup*

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**Thanks very much for your attention**

[gerencia@railgrup.net](mailto:gerencia@railgrup.net)

[www.railgrup.net](http://www.railgrup.net)



INNOVATION BROKERS

**in-move** *by Railgrup*

Cluster de Movilidad Sostenible y Logística Multimodal

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Cluster de Movilidad y Logística Multimodal