

## ACCELERATION EVENT

# ARTIFICIAL INTELLIGENCE MADE EASY FOR THE RAILWAY AND MOBILITY VALUE CHAIN

AI-ENABLED RAILWAY AND MOBILITY APPLICATIONS  
TO BOOST EUROPEAN INDUSTRIAL VALUE CHAINS

USE-CASES AND TOOLS FOR PRODUCTS, SERVICES, OPERATIONS, BUSINESS MODELS

Firenze, Tuscany, Italy | Nana Bianca, Piazza di Cestello 10 | 7-8 June 2023

The event aims **to address one of the most disruptive advanced technologies** for the Railway and Mobility Value Chain - and beyond: Artificial Intelligence (AI), in fact, represents a very important driver for innovation and performance, yet it still needs to be understood in its actual potentialities and broad applications throughout the entire Value Chain, with special attention to SMEs.

The **full understanding of the technology** and the **identification of use-cases where it can deploy its benefits for each organization** become, therefore, fundamental, given the attention the European Commission poses to it, from the “European AI Strategy” to make the EU the place where AI excellence thrives from the lab to the market, to the establishment of the European Digital Innovation Hubs (EDIHs) required to cover AI as a must.

The event is therefore conceived as ‘acceleration event’ to understand the technology, characteristics and its potential applications. For this reason, the aim is to **introduce and understand the technology and its typologies, its benefits and business potential** for the railway and mobility value chain. Presentations on **current, inspirational, use-cases** together with brainstorming, pitches, group work and networking will help the participants identify **new use-cases** suitable to help companies and value chains increase safety, performances, sustainability, quality etc. of industrial processes, products and services.

Last but not the least, the event will include the “**skills**” aspects, as pre-condition to enable the companies in the value chain - with special attention to SMEs – to make the most of the opportunities untapped by the AI, as well as the available **AI tools** and the available **funds**.

Ultimately, the event will help the participants – with specific attention to companies – understand *why* to invest, *where* to invest, *what* skills are necessary, *what* tools and funds are available.

The event is organised by DITECFER within the EU “STARS” project it coordinates, within ERCI-European Railway Clusters Initiative, in view of the launch of “AI MAGISTER” EDIH-European Digital Innovation Hub participated by DITECFER, and in collaboration with the EDIH Tuscany X.0 and EEN.

**Target-participants** include:

- Rail Supply Industries, with special attention to SMEs’ empowerment
- Railway and Mobility Clusters
- Railway-LRT-Metro Operators and Infrastructure Managers
- Universities, Technology Centres, Incubators, Accelerators.

**Registrations by 4<sup>th</sup> June at this link: [AI in Firenze 2023](#)**

**DAY #1 – 7 JUNE 2023 – 10.00-18.00**

**INTRODUCTORY PART | PLENARY SESSION  
ARTIFICIAL INTELLIGENCE – SETTING THE SCENE  
10.00-12.30**

**Welcome greetings and Intro to the event goal and methodology and the EU projects involved |  
*Veronica Elena Bocci, DITECFER***

**Keynote speech #1: AI in Railway and Mobility: Why we should all care about it. First inspirations  
from leading industrial players | *Luigi Rucher, Thales GTS -Ground Transportation Systems GBU***

**Following Round-Table:**

**Topics:** *The fundamentals of AI: What AI (neural vs. stochastic vs. ...), Ubiquitous AI, X-AI / Explainable AI, Development of AI tools, ChatGPT, Ethics*

**Speakers:** *Prof. Silvano Zipoli Caiani, University of Florence; Prof. Aldo Franco Dragoni, Marche Polytechnic University; Luigi Fratelli, Hitachi Rail; Francesco Franchini, EnginSoft; Prof. Matteo Galletti, University of Florence*

**Moderator:** *Alessandro Monti, Foundation for Research and Innovation University of Florence*

**Keynote speech #2: AI for Europe's Railway system in 2030 – Towards Common European Data  
Spaces | *Léa Paties, Europe's Rail Joint Undertaking***

**Following Round-Table:**

**Topics:** *Focus on the 'source' of AI: Big data / Data sets, Fake injection, Data security privacy and anonymization, Anomaly detection, Frugal AI, What is done in Europe (Open Data consortia, Data strategies), What is done in Italy*

**Speakers:** *Luigi Rucher, Thales GTS; Andrea Carboni, ISTI-CNR; Laia Garriga Mas, EURECAT; Daniele Brevi, LINKS Foundation; Joseph Preece, University of Birmingham*

**Moderator:** *Veronica Elena Bocci, DITECFER*

*(at the end of each Round Table there will be time for Q&A)*

**AWARD CEREMONY  
OF THE STARS HACK&MATCH #3 "BLOCKCHAIN FOR RAILWAY PROCESSES, PRODUCTS AND SERVICES"  
12.30-13.00**

*Networking Lunch buffet at 13.00-14.30*

**THEMATIC SESSIONS  
14.30-18.00**

**AI and European Railway SMEs: state of the art and future plans | *Veronica Elena Bocci, DITECFER***

**Bringing AI close to home: short intro to the new EDIH-European Digital Innovation Hubs and the  
Digital Innovation Hubs | *Simone Caporale, AI MAGISTER; Lorna Vatta, Tuscany X.O; Silvia Ramondetta,  
DIH Toscana***

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**Presentations of use-cases developed in the sector**

*(at the end of each Thematic Session there will be time for Q&A)*

**KEY TOPIC 1: QUALITY OF DATA**

- Revolutionise Railway Networks transforming IoTs data into real-time AI validated information | *Moshe Gazit, Thinkz*

**KEY TOPIC 2: AUTONOMOUS MOBILITY**

- How AI+5G are impacting forthcoming Connected Cooperative Autonomous Mobility | *Silvio Abrate, Daniele Brevi, LINKS Foundation*
- HORA: HITACHI AI-enabled Assisted Driving System for Trams | *Giuseppe Graber, Hitachi Rail*
- Application of AI Tram Autonomy: results from PoCs in Florence | *Gianluca Mandò, Thales GTS-Ground Transportation Systems Italy*

**KEY TOPIC 3: RAILWAY DIAGNOSTICS AND MAINTENANCE**

- AID4Train: AI-based Diagnostics for Trains | *Gaetano D'Andria, Francesco Fasano, Hitachi Rail*
- Using AI and location intelligence to support maintenance processes | *Antonio Cerqua, Almwave*
- Predicting Railway Track Degradation with Machine Learning: A XGBoost Approach | *Joseph Preece, University of Birmingham*

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**DAY #2 - 8 JUNE 2023 – 10.00-18.00**

**OPENING: SUMMARY DAY 1 OF THE KEY POINTS DISCUSSED AND KEY LESSONS LEARNT SO FAR**

10.00-10.10

**THEMATIC SESSIONS**

10.10-15.30

**Keynote Speech #3: Applications, opportunities and recommendations for AI in railways |**

*Prof. Valeria Vittorini, University of Naples Federico II*

**Following Round-Table:**

**Topics: The future of Railway certification: possibilities and limits of AI**

**Speakers:** *Prof. Alessandro Fantechi, University of Florence; Francesco Franchini, EnginSoft; Ernest Glyndwr Lewis, Z Lab*

**Moderator:** *Guido Ancarani, DITECFER*

*(at the end of the Round Table there will be time for Q&A)*

**Presentations of use-cases developed in the sector**

*(at the end of each Thematic Session there will be time for Q&A)*

**KEY TOPIC 3: RAILWAY DIAGNOSTICS AND MAINTENANCE (continuation)**

- RailEyes: Digitalizing Railway Infrastructure Inspection & Track Maintenance | *Tolga Varol, DriveTrust*

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**KEY TOPIC 4: PROFITABILITY AND PERFORMANCE IN DESIGN AND MANUFACTURING**

- **Better Design, Production and Operational Management of Industrial Processes, Assets and Systems** | *Francesco Franchini, EnginSoft*
- **AI for Increased Process Efficiency – The case of Batteries Manufacturing + Automated Detection and Defect marking tool for Electric motors in Electric vehicles** | *Pasqualina Potena, RISE and RISE AI Team*

**KEY TOPIC 5: RAILWAY SAFETY AND SECURITY**

- *title upcoming* | *Niccolò Chierroni, MerMec Engineering*
- **Artificial Vision/Intelligence for Improved Safety and Security in Public Transit** | *Davide Moroni, Andrea Carboni, ISTI-CNR*
- **Fire safety and security in Railway Tunnels** | *Antonio Bongiovanni, Bosch; Stefano Casati, Geco*
- **Computer Vision for Safety at Level Crossings** | *Simone Gianfranceschi, Vincenzo Esposito, Intecs Solutions*

**KEY TOPIC 6: MULTIMODAL TRANSPORT, LAST-MILE LOGISTICS**

- **Supply Chain Platform for Collaborative and Smart Logistics** | *Cansu Ayyün, WENDA*
- **GREEN-LOG – Cooperative and Interconnected Green delivery solutions** | *Laia Garriga Mas, EURECAT*

*Networking Lunch buffet at 13.30-14.30*

**PLENARY SESSION | IN SEARCH FOR NEW AI APPLICATIONS,  
WHAT TOOLS, SKILLS, ORGANISATIONS AND FUNDS FOR AI  
15.30-17.45**

**Looking for new AI use-cases in the sector and the role of SMEs – Animation Session also in view of the running STARS Hack&Match event #4 “Digital Twin and Artificial Intelligence for Railway Processes, Products and Services”** | *Animators: Silvio Abrate, Guido Ancarani, Veronica Elena Bocci, Francesco Franchini*

**Available public and private AI tools and funds for the industries and how to use them: Focus on AI-on demand platform, Bonsapps, Futurepedia, AiWave, EDIH, other funds** | *Roberta Calegari, University of Bologna; Antonio Cerqua, Almawave; Lorna Vatta, Eleni Chioutakou, EDIH Tuscany X.0; Simone Caporale, AI MAGISTER; Valeria Vangelista, EEN Eurosportello Confesercenti*

**Skills and organisations for AI: Key lessons for industries, with special attention to SMEs** | *Lorna Vatta, Eleni Chioutakou, EDIH Tuscany X.0; one Large Company & one SME testimonial having started to use AI and upskilled/reskilled employees: Vincenzo Esposito, Intecs Solutions; Marco Cappellini, Centrica*

**WRAP-UP OF LESSONS LEARNT AND CONCLUSIONS  
17.45-18.00**

**Suggested evening activities for the participants:**

- **All evenings: 1h Arno Cruise (at 18.30, 19.30, 21.30):** Arno Boat Firenze - Crociera sul fiume Arno
- **All evenings: 2h Aperitivo Tasting Tour (at 18.00):** Florence Aperitivo Tasting Tour
- **On 7<sup>th</sup> June: “The Four Seasons, Air and Little Night Music” Concert:** The Four Seasons, Air and Little Night Music
- **On 8<sup>th</sup> June: Night visit at Palazzo Strozzi art exhibitions:** Palazzo Strozzi Art Exhibitions

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## THE SPEAKERS

**Abrate Silvio (Mr)**, Head of Industry 4.0, LINKS Foundation (Italy)  
**Ancarani Guido (Mr)**, Business Development DITECFER (Italy), Director Operations ERCI-European Railway Clusters Initiative (Belgium)  
**Aygün Cansu (Ms)**, Marketing Manager, WENDA (Italy)  
**Bocci Veronica Elena (Ms)**, Coordinator DITECFER, Coordinator of the STARS project (Italy), Vice President ERCI-European Railway Clusters Initiative (Belgium)  
**Bongiovanni Antonio (Mr)**, Building Technologies, Sales Channel Management, Bosch Security Systems (Italy)  
**Brevi Daniele (Mr)**, Head of Broadband Wireless Access (BWA) Lab, LINKS Foundation (Italy)  
**Calegari Roberta (Ms)**, Research Assistant, Alma AI - Alma Mater Research Institute for Human-Centered Artificial Intelligence, University of Bologna (Italy)  
**Caporale Simone (Mr)**, Coordinator EDIH AI MAGISTER (Italy)  
**Cappellini Marco (Mr)**, CEO and Co-Founder Centrica (Italy)  
**Carboni Andrea (Mr)**, Researcher Signals and Images (SI), ISTI-CNR (Italy)  
**Casati Stefano (Mr)**, Sales Engineer, Geco (Italy)  
**Cerqua Antonio (Mr)**, Head of Technology Consulting, Almaxwave (Italy)  
**Chierroni Niccolò (Mr)**, CEO, MerMec Engineering (Italy)  
**Chioutakou Eleni (Ms)**, EDIH-European Digital Innovation Hub Tuscany X.0 (Italy)  
**D'Andria Gaetano (Mr)**, R&D Project Manager, Hitachi Rail (Italy)  
**Dragoni Aldo Franco (Mr)**, Associate Professor of Artificial Intelligence, Marche Polytechnic University (Italy)  
**Esposito Vincenzo (Mr)**, Head of Railway Division, Intecs Solutions (Italy)  
**Fantechi Alessandro (Mr)**, Full Professor in Information Science and President of the School of Engineering of the University of Florence, Research Associate at ISTI CNR-National Research Council of Italy in the Formal Methods & Tools Group (Italy)  
**Fasano Francesco (Mr)**, AI Engineer, Hitachi Rail (Italy)  
**Franchini Francesco (Mr)**, Manager BU SPDM & Multidisciplinary Optimization, EnginSoft (Italy)  
**Fratelli Luigi (Mr)**, Head of Global Vehicles R&D, Hitachi Rail (Italy-Global)  
**Galletti Matteo (Mr)**, Professor of Moral Philosophy, University of Florence (Italy)  
**Garriga Mas Laia (Ms)**, Technology Transfer Manager on Applied Artificial Intelligence, EURECAT – Technological Centre of Catalunya (Spain)  
**Gazit Moshe (Mr)**, Director of Business Development, Thinkz (Israel)  
**Gianfranceschi Simone (Mr)**, Chief Technology Officer, Intecs Solutions (Italy)  
**Graber Giuseppe (Mr)**, R&D Project Manager, Hitachi Rail (Italy)  
**Lewis Ernest Glyndwr (Mr)**, Technical Director Z Lab (Italy)  
**Mandò Gianluca (Mr)**, Head of Research, Technology and Innovation, Thales GTS (Italy)  
**Matskanis Nikolaos (Mr)**, Senior Project Manager, CETIC (Belgium)  
**Monti Alessandro (Mr)**, General Manager, Foundation for Research and Innovation of the University of Florence (Italy)  
**Moroni Davide (Mr)**, First Researcher Signals and Images (SI), ISTI-CNR (Italy)  
**Nihoul Bérangère (Ms)**, Research Engineer, CETIC (Belgium)

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**Paties Léa (Ms)**, Senior Programme Manager, Europe's Rail Joint Undertaking (Belgium)

**Potena Pasqualina (Ms)**, Senior Researcher, RISE (Sweden)

**Preece Joseph (Mr)**, Research Fellow in Railway Data Analysis, Electronic, Electrical and Systems Engineering, University of Birmingham (United Kingdom)

**Ramondetta Silvia (Ms)**, Coordinator, DIH-Digital Innovation Hub Toscana (Italy)

**Rucher Luigi (Mr)**, International Innovation Director, Thales GTS-Ground Transport Systems GBU (Italy-Global), Chairman DITECFER Technological Committee (Italy)

**Vangelista Valeria (Ms)**, EU Funding Advisor and Project Manager, EEN Eurosportello Confesercenti (Italy)

**Varol Tolga (Mr)**, Managing Director, DriveTrust (France)

**Vatta Lorna (Ms)**, Technical Coordinator, EDIH-European Digital Innovation Hub Tuscany X.0 (Italy)

**Vittorini Valeria (Ms)**, Professor of Information Processing Systems, University of Naples Federico II (Italy)

**Zipoli Caiani Silvano (Mr)**, Professor of Theoretical Philosophy, University of Florence (Italy)

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