

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 4th 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 <i>Veronica Elena Bocci, DITECFER</i>
Keynote speech #1: AI in Railway and Mobility: Why we should all care about it. First inspirations from leading industrial players <i>Luigi Rucher, Thales GTS-Ground Transportation Systems GBU</i>
Following Round-Table: Topics: <i>The fundamentals of AI: What AI (neural vs. stochastics vs. ...), Ubiquitous AI, X-AI / Explainable AI, Development of AI tools, ChatGPT, Ethics</i> Speakers: <i>Prof. Aldo Franco Dragoni, Marche Polytechnic University; Luigi Fratelli, Hitachi Rail; Francesco Franchini, EnginSoft</i> Moderator: <i>Alessandro Monti, Foundation for Research and Innovation University of Florence</i>
Keynote speech #2: AI for Europe's Railway system in 2030 – Towards Common European Data Spaces <i>Europe's Rail Joint Undertaking (tbc)</i>
Following Round-Table: Topics: <i>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), What is done in Italy</i> Speakers: <i>Luigi Rucher, Thales GTS; Andrea Carboni, ISTI-CNR; Laia Garriga Mas, EURECAT</i> Moderator: <i>Veronica Elena Bocci, DITECFER</i>

**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 <i>Veronica Elena Bocci, DITECFER</i>
Bringing AI close to home: short intro to the new EDIH-European Digital Innovation Hubs and the Digital Innovation Hubs <i>Simone Caporale, AI MAGISTER; Lorna Vatta, Tuscany X.O; Silvia Ramondetta, DIH Toscana</i>
<i>Presentations of use-cases developed in the sector</i>
KEY TOPIC 1: QUALITY OF DATA - Revolutionise Railway Networks transforming IoTs data into real-time AI validated information <i>Moshe Gazit, Thinkz</i>

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KEY TOPIC 2: 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** | *Pasqualina Potena, RISE*

KEY TOPIC 3: RAILWAY DIAGNOSTICS AND MAINTENANCE

- **AID4Train: AI-based Diagnostics for Trains** | *Gaetano D'Andria, Francesco Fasano, Hitachi Rail*
- *title tbc* | *Antonio Cerqua, Almaxwave*

DAY #2 - 8 JUNE 2023 – 10.00-17.15

**OPENING: SUMMARY DAY 1 OF THE KEY POINTS DISCUSSED AND KEY LESSONS LEARNT SO FAR
10.00-10.10**

**SESSIONS AND WORKING GROUPS ON AI APPLICATIONS
10.10-13.30**

Keynote Speech #3: AI in Railway Transport: Taxonomy, Regulations and Applications | *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; Dario Genovese, Italcertifer; Francesco Franchini, EnginSoft*

Moderator: *Guido Ancarani, DITECFER*

Presentations of use-cases developed in the sector

KEY TOPIC 4: 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*

KEY TOPIC 5: RAILWAY SAFETY AND SECURITY

- *title tbc* | *MerMec*
- **Artificial Vision/Intelligence for Improved Safety and Security in Public Transit** | *Davide Moroni, Andrea Carboni, ISTI-CNR*
- **AI for Obstacle detection/recognition** | *Paolo Mattera, Knorr Bremse (tbc)*
- **Fire safety and security in Railway tunnels** | *Antonio Bongiovanni, Bosch, Stefano Casati, Geco*

KEY TOPIC 6: MULTIMODAL TRANSPORT, LAST-MILE LOGISTICS

- **Supply Chain Platform for Collaborative and Smart Logistics** | *Mattia Nanetti, WENDA*

Networking Lunch buffet at 13.30-14.30

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**PLENARY SESSION | IN SEARCH FOR NEW AI APPLICATIONS,
WHAT TOOLS, SKILLS, ORGANISATIONS AND FUNDS FOR AI
14.30-17.00**

Looking for new AI use-cases in the sector and the role of SMEs – Presentations and Working Groups 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* | *University of Bologna (tbc); 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
17.00-17.15**

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 7th June: “The Four Seasons, Air and Little Night Music” Concert: The Four Seasons, Air and Little Night Music - Florence Concerts***
- ***On 8th 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)
- 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)
- 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, Almawave (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)
- Garriga Mas Laia (Ms)**, Promoter of Technological Advancement in Artificial Intelligence and Digitalisation, EURECAT – Technological Centre of Catalunya (Spain)
- Gazit Moshe (Mr)**, Director of Business Development, Thinkz (Israel)
- Genovese Dario (Mr)**, Head of Innovative Projects Electrical Systems and Rail Cybersecurity, Italcertifier-Italian State Railways Group (Italy) - *tbc*
- Graber Giuseppe (Mr)**, R&D Project Manager, Hitachi Rail (Italy)
- Mattera Paolo (Mr)**, Head of Innovation, Knorr Bremse Rail Systems Italia (Italy) - *tbc*
- 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)
- Nanetti Mattia (Mr)**, Co-Founder, WENDA (Italy)
- Potena Pasqualina (Ms)**, Senior Researcher, RISE (Sweden)
- 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)
- 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 (Italy)

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