20 YEARS OF EMPOWERING EUROPEAN RAILWAYS.

EUROPEAN UNION AGENCY FOR RAILWAYS

2004
ERA is born!
A NEW BEGINNING FOR THE GOVERNANCE OF EUROPEAN RAILWAYS.

2005
Becoming fully operational

2006
1st recommendation **for a TSI issued** by the Agency

2007
3rd railway package is adopted in October 2007

2008
1st Safety Report is published

2009
1st Interoperability Report is published

2010
Common tools for the European railways leading **to enhanced coordination**

Common Safety Method for Risk Evaluation and Assessment

2011
2012
The Single European Railway Area (SERA) is established, a symbolic step forward towards the Europeanisation of railways

ERA fosters progress with interoperability and safety

2013
Stronger role in the monitoring of national safety authorities and notified bodies, in particular the national safety authorities and the notified bodies

2014
End of Mandate
Marcel Verslype

2015
Start of Mandate
Josef Doppelbauer

Malta
Helsinki
Berlin
Amsterdam
Brussels

SERA Conferences

Start of 4RP Taskforce

2016
4th Railway Package enters into force.
A new era with a fully-fledged package of tasks

2017
Common Safety Methods (CSM) become an essential tool for all rail actors at European level

Preparing Implementing Acts on Vehicle Authorisation and **Safety Certification**

2018
1st Biennial Report covering both **Safety and Interoperability is issued by ERA**

2019
16th of June
Vehicle authorisation (VA), Safety Certification (SSC), and **ERTMS Trackside approval**

- 1st VA signed
- 1st SSC signed

2020
Record cleaning of National Rules from over **14 000 to 955** between January 2016 and December 2020

1st BoA case

2021
European Year of Rail

The Agency has developed a **unique safety perception survey,** the European Rail Safety Climate Survey (ERA-SCS)

2022
ERA presents its **compelling vision for the target railway system**

2023
Major milestone achieved by ERA:

More than 70 000 rail vehicles authorised

New TSI Package comes into force

ERA signs 1st Authorisation for New Generation Sleeper Trains: a substantial step for reviving Night Trains in Europe

ERA signs the European Union Agencies Network's Diversity Charter

2024
ERA Training Catalogue building together the skills for rail professionals

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Transformation of the Railway System

- From analog to **digital systems** - physical vs. digital infrastructure; generalization of ICT; increased **connectivity**
- From proprietary HW/SW to **COTS/open SW**; appearance of **cloud-based systems**
- National systems vs. European integration (**cross-border risks**)
- Modal siloes vs. **multimodality** – intercommunication of threats
- Application of **Artificial Intelligence** (AI) techniques

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Challenges –
Capacity, Punctuality, and Reliability

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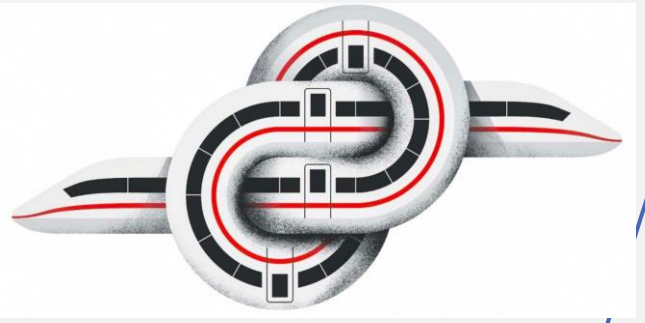
Delay Cascade Effect



Punctuality
(actual time of arrival – planned time of arrival)

Short delays (5 min)
Long delays (hours)
Cancellations

Incoming train late
- Delay in previous segment
- Train preparation
- Not enough trains available
  - Train maintenance

Path not available/blocked
- Wrong planning
- Other train delayed/in path
- Defect train blocking path
- People in track
- Construction works
- Animals/cars/ …
- Natural disaster

Timetable Planning

Traffic Management

Infrastructure tolerance/ spare capacity

Infrastructure problem
- Infrastructure not maintained – speed reduction
- Path not secured
  - Interlocking problem
  - Interlocking staff not available
- Signalling system problem
- Infrastructure defect
- Previous defect forcing slower speed

Financial Resources

Reserve trains

Rolling Stock problem
- Defect train
- Not enough capacity of train

Train Manufacturer

Reserve staff

Train staff not available
- Absentism
- Strike
- Staff held up by train delays

Culture of excellence

Drivers not obeying schedule

Redundancy

Communication System not working

Cyber attacks

Contingency (time/route)

A → B

Problems before/during trip

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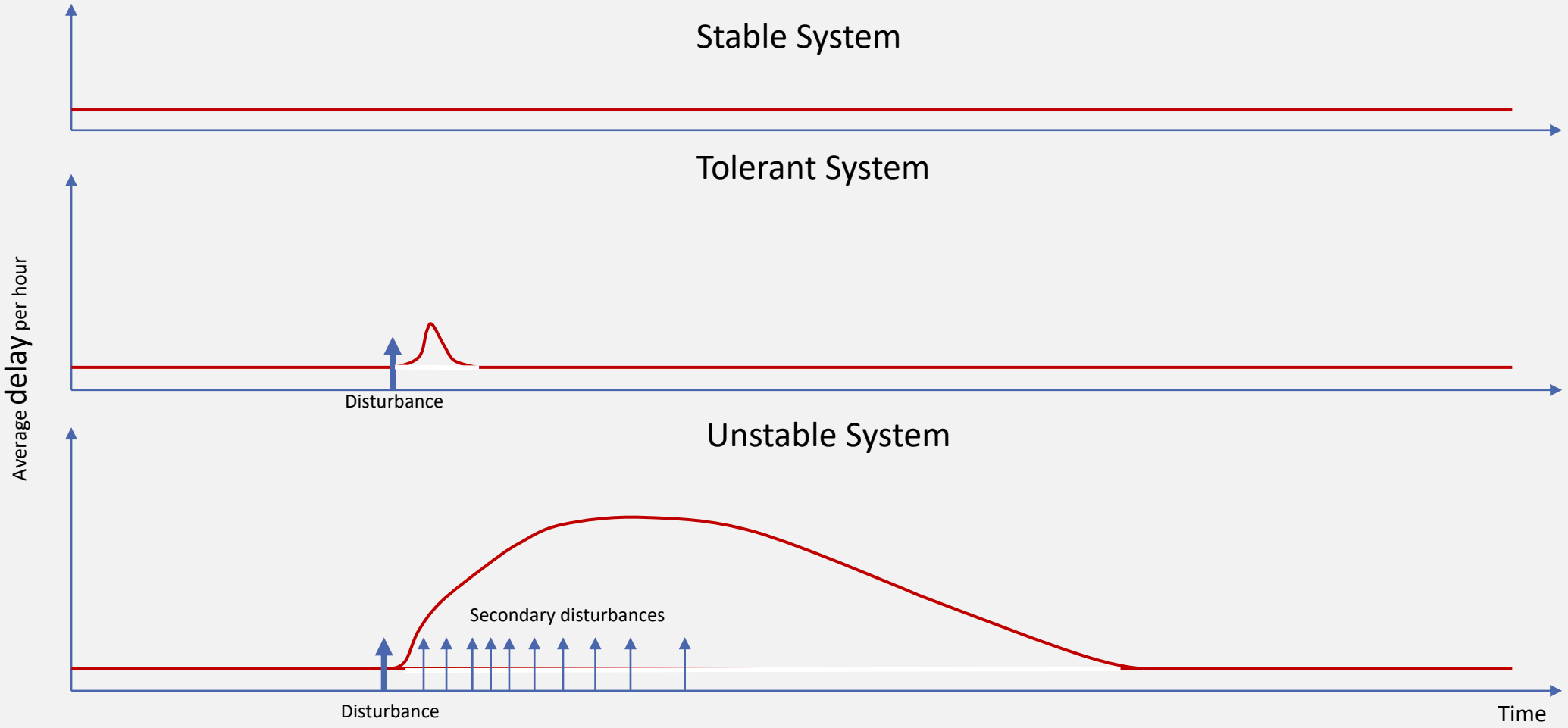
Stable Operation is Needed



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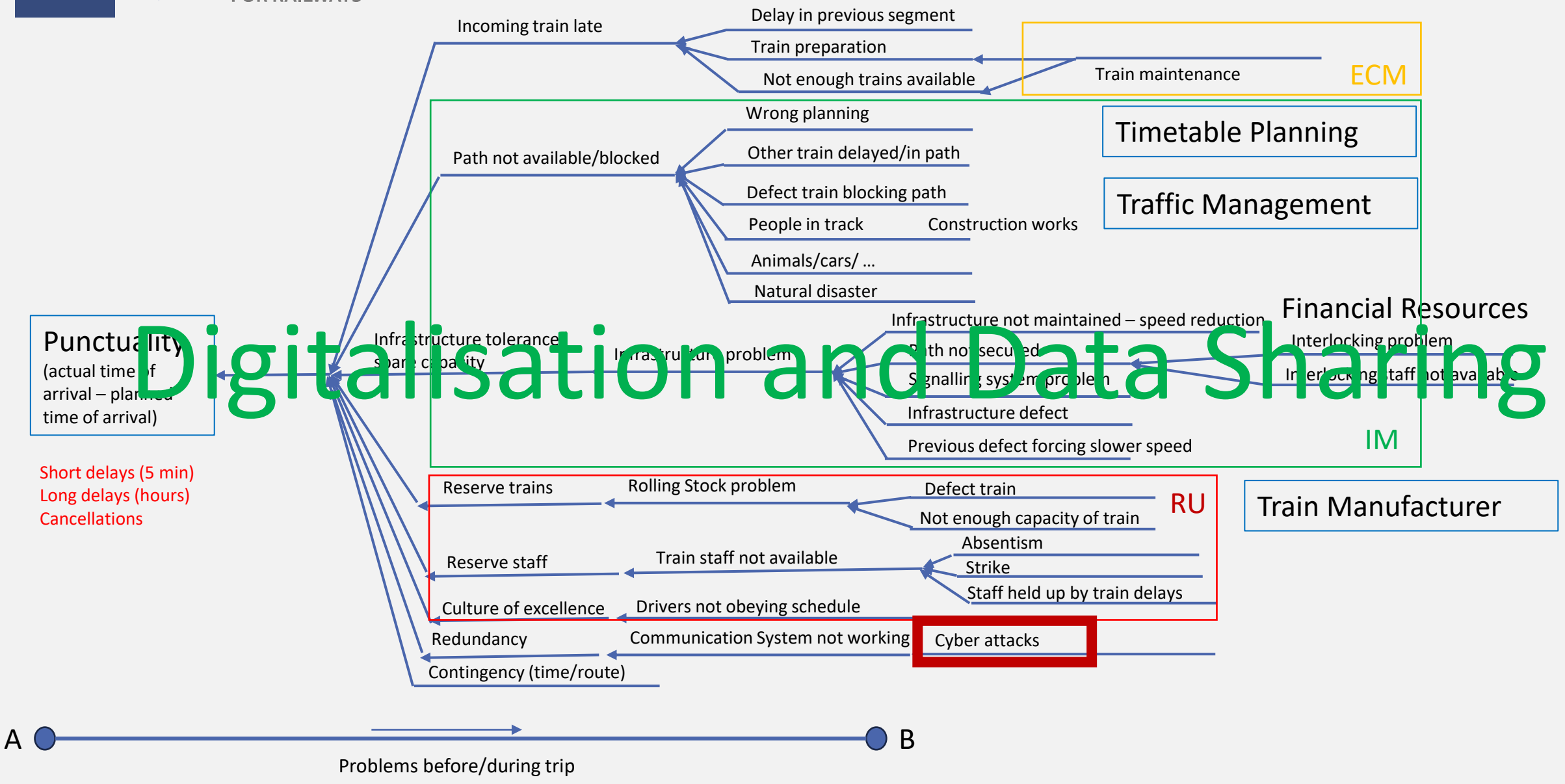
Rail Operation is a Complicated Process



Digitalisation and Data Sharing

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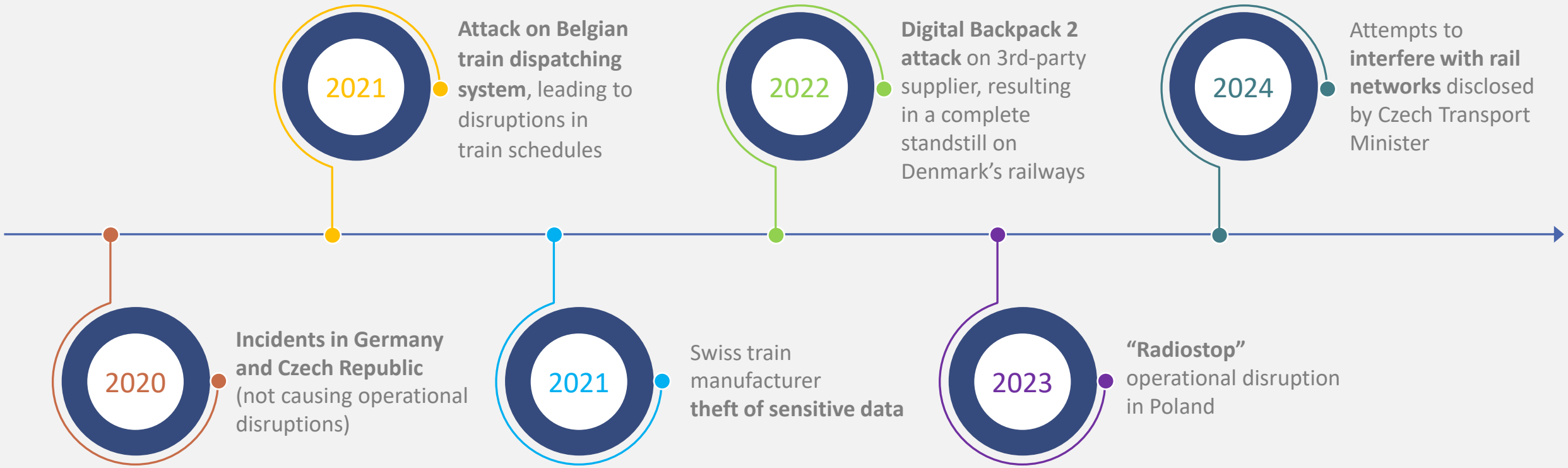
Attacks Demonstrate Vulnerability



DE: Cable cuts in October 2023
FR: Attacks on rail cables in July 2024
DB: IT problems block GSM-R – 07 September 2024

(Positive example: France during 2024 Olympics)

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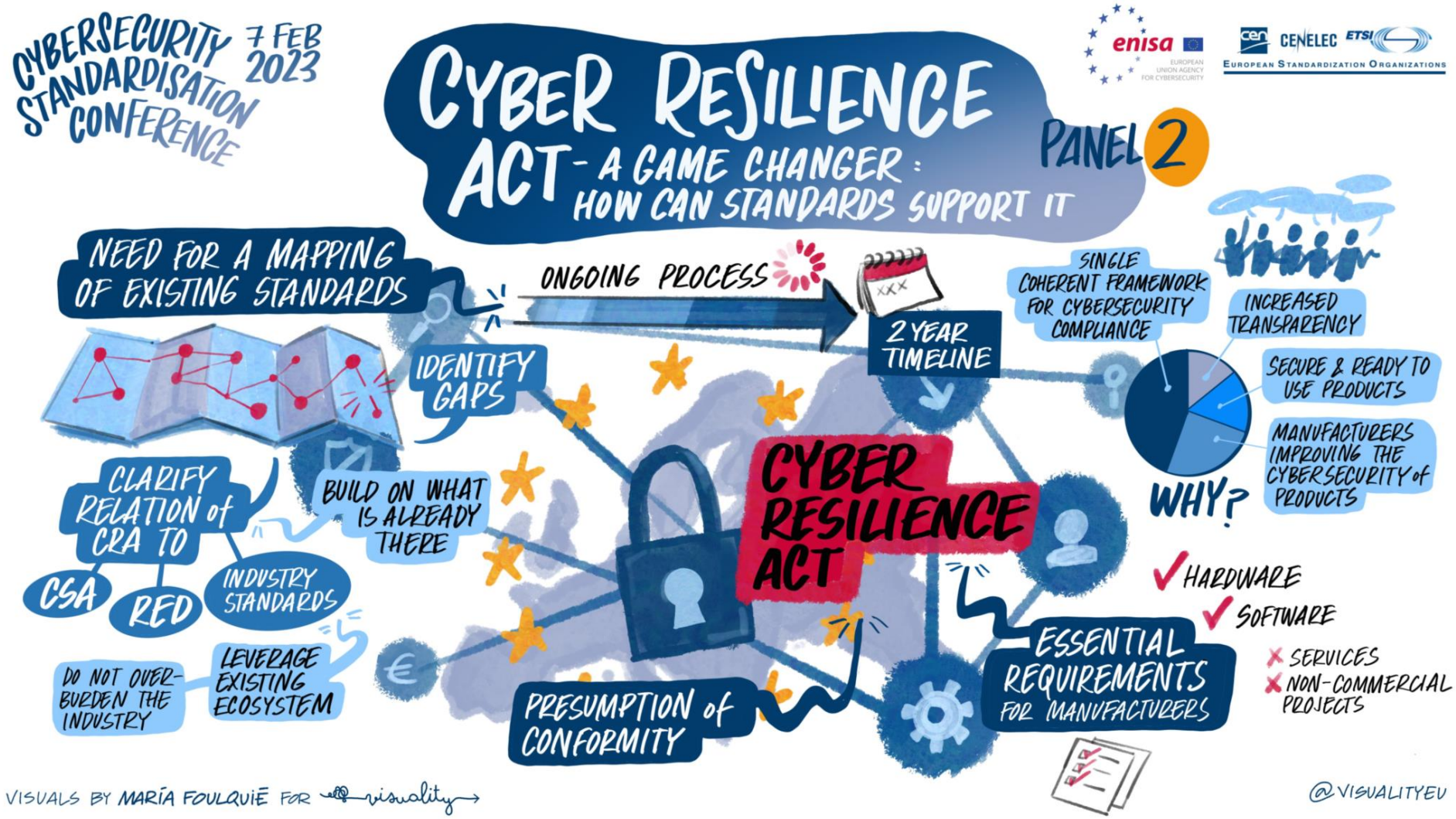
Cybersecurity @ERA

Regulation considerations

- Monitor relevant activities related to **cybersecurity in the railway context**
- Cover safety requirements of the rail system, e.g. the assessment of **safety consequences originated by security threats**
- Reflect the above in **Technical Specifications for Interoperability** and **Common Safety Methods**

Cooperation building

- Close relationship with **ENISA** and **European Commission**
- Cross-fertilisation with **EASA** and **EMSA** to develop a transport cybersecurity policy
- Dialogue with **National Cybersecurity Agencies** (e.g. ANSSI, BSI)
- Support **sector-led Information Sharing initiatives**


CYBERSECURITY STANDARDISATION CONFERENCE
7 FEB 2023
CYBER RESILIENCE ACT - A GAME CHANGER : HOW CAN STANDARDS SUPPORT IT
PANEL 2
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EUROPEAN UNION AGENCY FOR CYBERSECURITY
CEN CENELEC ETSI
EUROPEAN STANDARDIZATION ORGANIZATIONS
NEED FOR A MAPPING OF EXISTING STANDARDS
ONGOING PROCESS
2 YEAR TIMELINE
IDENTIFY GAPS
CLARIFY RELATION of CRA TO
CSA
RED
INDUSTRY STANDARDS
BUILD ON WHAT IS ALREADY THERE
DO NOT OVER-BURDEN THE INDUSTRY
LEVERAGE EXISTING ECOSYSTEM
CYBER RESILIENCE ACT
PRESUMPTION of CONFORMITY
ESSENTIAL REQUIREMENTS FOR MANUFACTURERS
SINGLE COHERENT FRAMEWORK FOR CYBERSECURITY COMPLIANCE
INCREASED TRANSPARENCY
SECURE & READY TO USE PRODUCTS
MANUFACTURERS IMPROVING THE CYBERSECURITY of PRODUCTS
WHY?
HARDWARE
SOFTWARE
SERVICES
NON-COMMERCIAL PROJECTS
VISUALS BY MARÍA FOULQUIÉ FOR visuality
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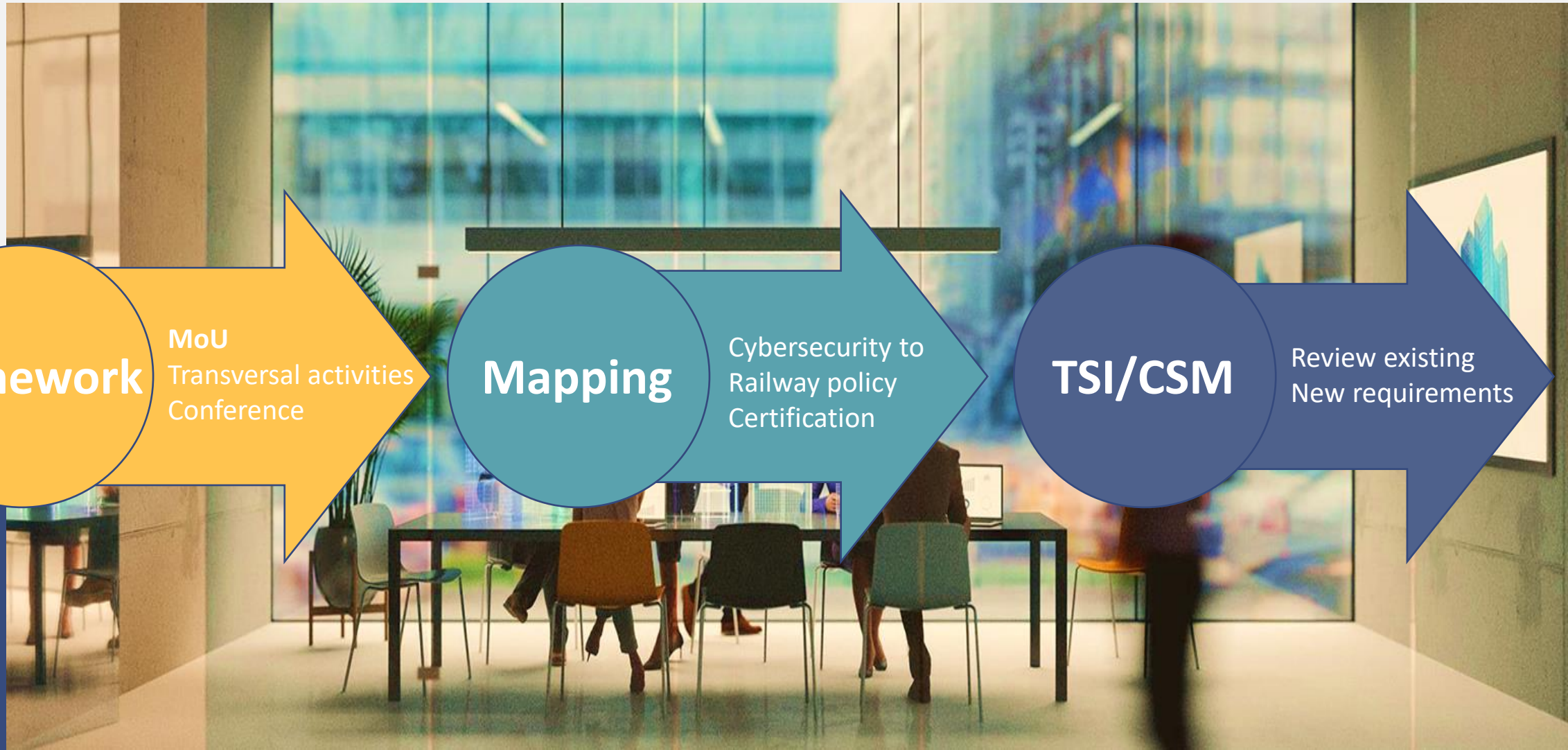
ERA-ENISA collaboration



ERA-ENISA COLLABORATION

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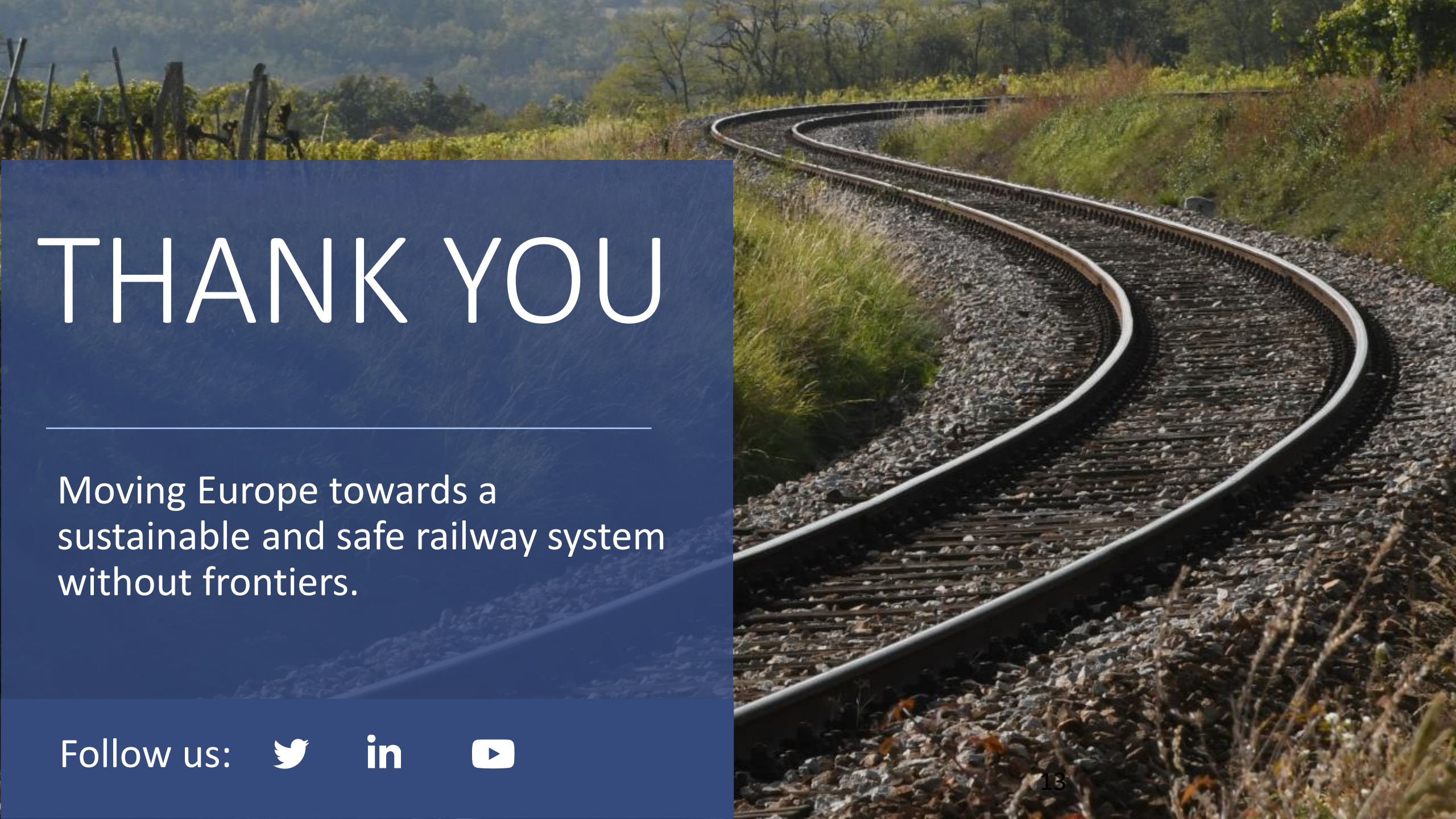
MFA for Access to ERA Resources

following Cybersecurity regulation (EU, Euratom) 2023/2841

- Redefines the cybersecurity landscape for institutions, bodies, offices, and agencies of the European Union (Union entities).
- It represents a proactive stand against the evolving spectrum of cyber threats that challenge the integrity, confidentiality, and availability of information systems of Union entities.

Article 6(8) requires the appointment of the **Local Cyber Security Officer** (LCSO). ERA has implemented this provision with:

- **Luca TRINCA** as Local Cyber Security Officer (LCSO)
- **Kleon KLEANTHOUS** as alternate Local Cyber Security Officer (LCSO) - Point of Contact (PoC)



THANK YOU

Moving Europe towards a sustainable and safe railway system without frontiers.

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