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Harmonised Transport Infrastructure Monitoring in Europe for Optimal Maintenance and Safety

IM-SAFE (ref. 958171)

www.IM-safe-project.eu

https://www.linkedin.com/company/im-safe-project/

https://cordis.europa.eu/project/id/958171

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WELCOME

IM-SAFE Symposium introduction

A.J. Bigaj-van Vliet (H2020 CSA IM-SAFE project coordinator, TNO, the Netherlands)

Dr.ir. Agnieszka Bigaj-van Vliet

- IM-SAFE Project Coordinator
- TNO Department of Structural Reliability
- Senior Scientist Concrete Structures
- Presidium & Technical Council member of fib (International Federation for Structural Concrete)
- Deputy Convener of fib T10.1 Model Code 2020 for Concrete Structures
- Head of the National Delegation of NL to fib
- Member of ACI-318 (subcommittee L)

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WELCOME

IM-SAFE.EU

November 5th 2021
09:00-18:00
UTC+1

Surveying technologies, data-informed safety evaluation and risk management for bridges and tunnels

From the needs to the standardization

SYMPOSIUM SCHEDULE

Morning Session *Moderated by P. Darò (SACERTIS Ingegneria S.r.l., Italy)*

09:00-09:15 Welcome and IM-SAFE project progress

09:15-10:15 Surveying technologies
Contributors: A. Sánchez Rodríguez [4], M. Longo [3], J. Zach [5], M. Solla [4] and J. Martínez [4]

10:15-10:30 Coffee Break

10:30-11:30 Damage indicators and vulnerable elements
Contributors: B. Riveiro Rodríguez [4], A. Sánchez Rodríguez [4] and A. Strauss [2]

11:45-12:45 Performance indicators
Contributors: A. Strauss [2], K. Bergmeister [2] and L. Ptacek [2]

12:45-13:00 Conclusions and outlook

***Afternoon* Session** *Moderated by A.J. Bigaj-van Vliet (TNO, the Netherlands)*

14:00-14:15 Welcome and IM-SAFE project progress

14:15-15:30 Data-informed structural performance assessment
Contributors: P. Darò [3], G. Mancini [3], A. Strauss [2], D.L. Allaix [1], A.J. Bigaj-van Vliet [1]

15:30-16:00 Coffee Break

16:00-17:30 Risk assessment and risk-based framework for maintenance management
Contributors: H. van Meerveld [1], A.J. Bigaj-van Vliet [1], B. Cerar [1], A. Strauss [2]

17:30-18:00 Conclusions and outlook

Symposium Organizers:

[1] TNO, Delft, the Netherlands
[2] University of Natural Resources and Life Sciences, Vienna, Austria
[3] SACERTIS Ingegneria S.r.l., Turin, Italy
[4] University of Vigo, Vigo, Spain
[5] Mostostal, Warszawa, Poland

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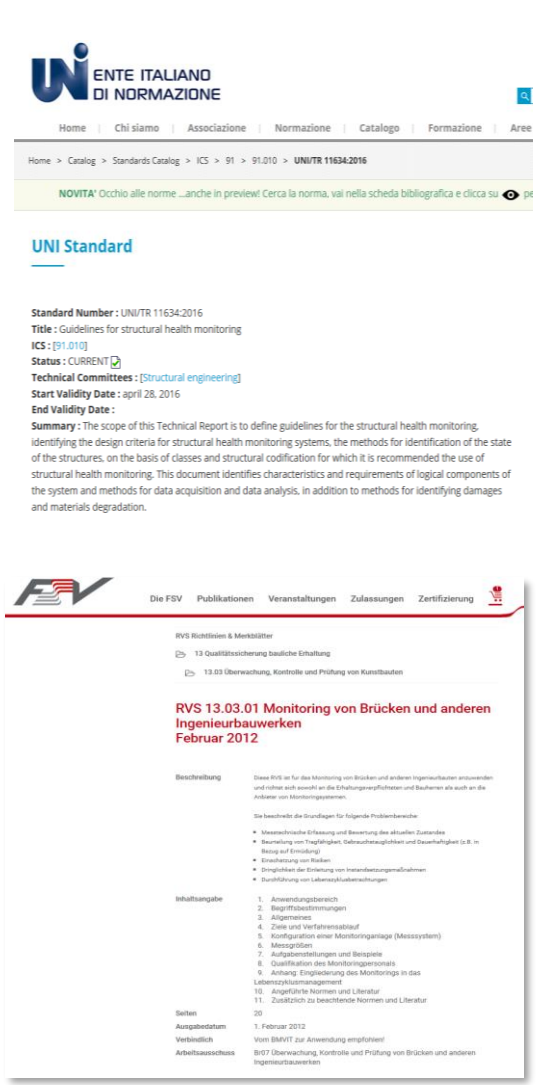
H2020 CSA IM-SAFE context

Safety risks have become critical in the recent years and manifested in major disasters caused a.o. by structural failures due to maintenance deficiencies.

Optimal maintenance is only possible with the right policies and decisions enabled by **timely and accurate information from monitoring.**

Standardisation in monitoring is a key enabler for optimal maintenance strategies, strengthening or retrofitting measures to be applied **for ensuring the safety of the infrastructure.**



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H2020 CSA IM-SAFE aim

- **Support the European Commission and the European Committee for Standardization (CEN)** in preparing **new standards enabling monitoring for optimal maintenance and safety of transport infrastructure**
  - **deliver input for mandate for CEN** incl.:
    - **new standard on structural monitoring of transport infrastructures**
    - **further amendment to the existing EU standards** on safety assessment taking into account inspections, monitoring and testing
    - **new standard on maintenance of transport infrastructures**

- **Enable transition** from corrective maintenance **towards risk-based maintenance management** & **preventive maintenance strategies**
  - **standardize principles & requirements** for**:**
    - **structural monitoring**
    - **data-informed safety assessment** taking into account inspections, monitoring and testing
    - **risk-based maintenance management** and **condition-based maintenance strategies**

- **Achieve broad acceptance for new standardization**
- **Enable Community of Practice to contribute to standardization, roll-out, and implementation**

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H2020 CSA IM-SAFE results

- **Input for mandate for CEN** incl.:
  - **further amendment to the existing EU standards** on safety assessment taking into account inspections, monitoring and testing
  - **new standard on structural monitoring**
  - **new standard for condition-based and risk-based maintenance of transport infrastructures**

- **Background for provisions :**
  - review of national guidelines and standards in all EU and international research activities related to monitoring, data-informed safety assessment and condition- and risk-based maintenance
  - evaluation of the PEST barriers & state-of-practice in inspection, monitoring, testing, diagnostics, data-informed safety assessment, risk management and decision-making with regard to maintenance
  - evaluation of the needs of standardization for enabling digital solutions for monitoring and data analytics
  - technical background to the mandate

- Plan of **approach for the execution** of the mandate by CEN

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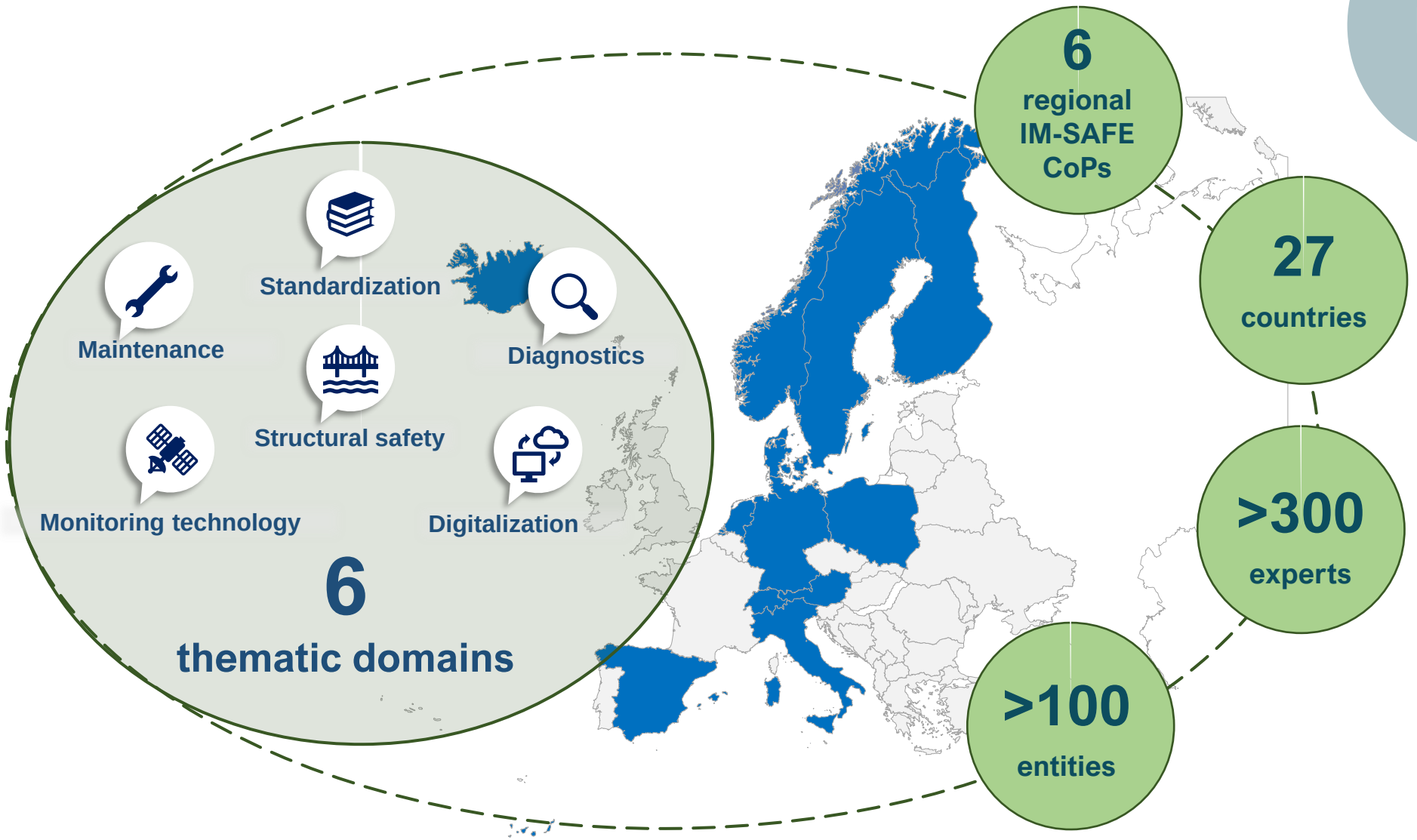
H2020 CSA IM-SAFE Community of Practice



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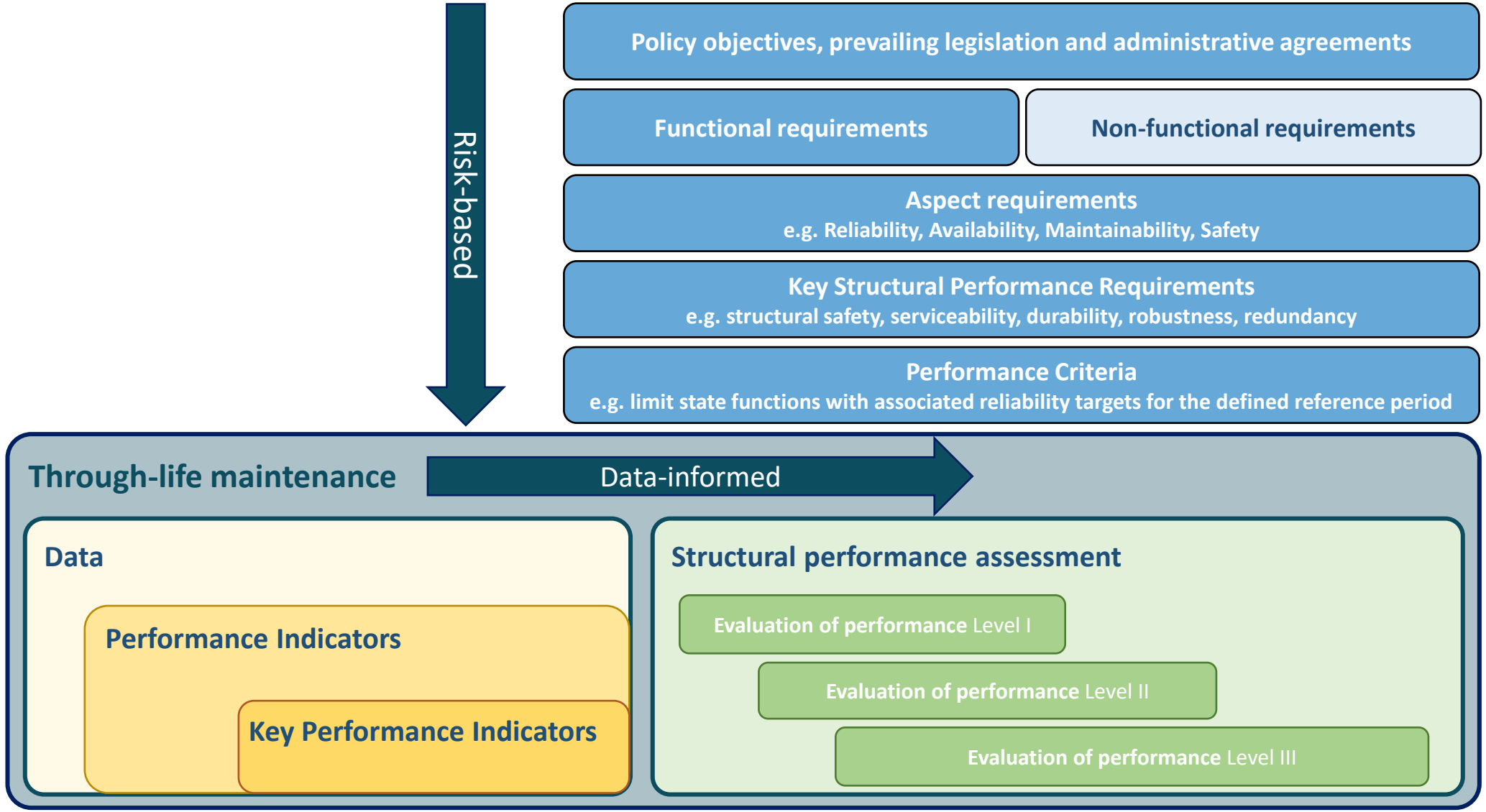
H2020 CSA IM-SAFE Symposium Scope



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MORNING SESSION

Moderated by P. Darò (SACERTIS Ingegneria S.r.l., Turin, Italy)

Surveying technologies

Contributors:

A. Sánchez Rodríguez[1], M. Longo[2], S. Negri[2], J. Zach[3], P. Sanecka[3], M. Solla[1] and J. Martínez [1]

Damage indicators & vulnerable elements

Contributors:

B. Riveiro Rodríguez [1], A. Sánchez Rodríguez [1] and A. Strauss [4]

Performance indicators for bridges and tunnels

Contributors:

A. Strauss [4], K. Bergmeister [4] and L. Ptacek [4]

[1] University of Vigo, Vigo, Spain
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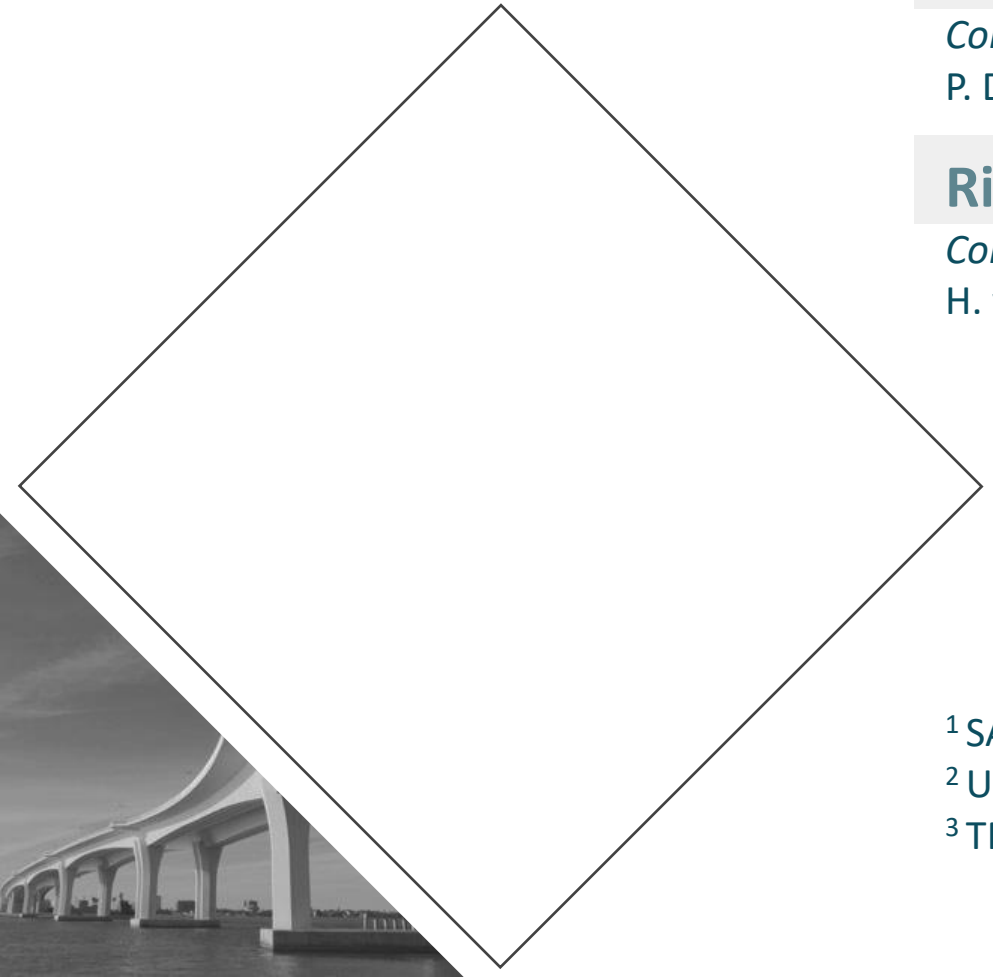

AFTERNOON SESSION

Moderated by A.J. Bigaj-van Vliet (TNO, the Netherlands)

Data-informed structural performance assessment

Contributors:

P. Darò [1], G. Mancini [1], A. Strauss [2], D.L. Allaix [3], A.J. Bigaj-van Vliet [3]

Risk assessment and risk-based framework

Contributors:

H. van Meerveld [3], B. Cerar [3], A.J. Bigaj-van Vliet [3], A. Strauss [2], L. Ptacek [2]

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[3] TNO, Delft, the Netherlands

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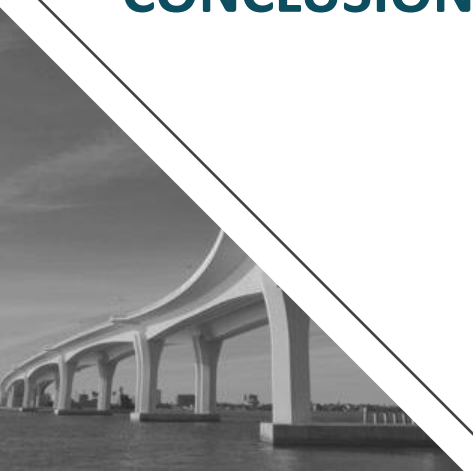
CONCLUSIONS & OUTLOOK



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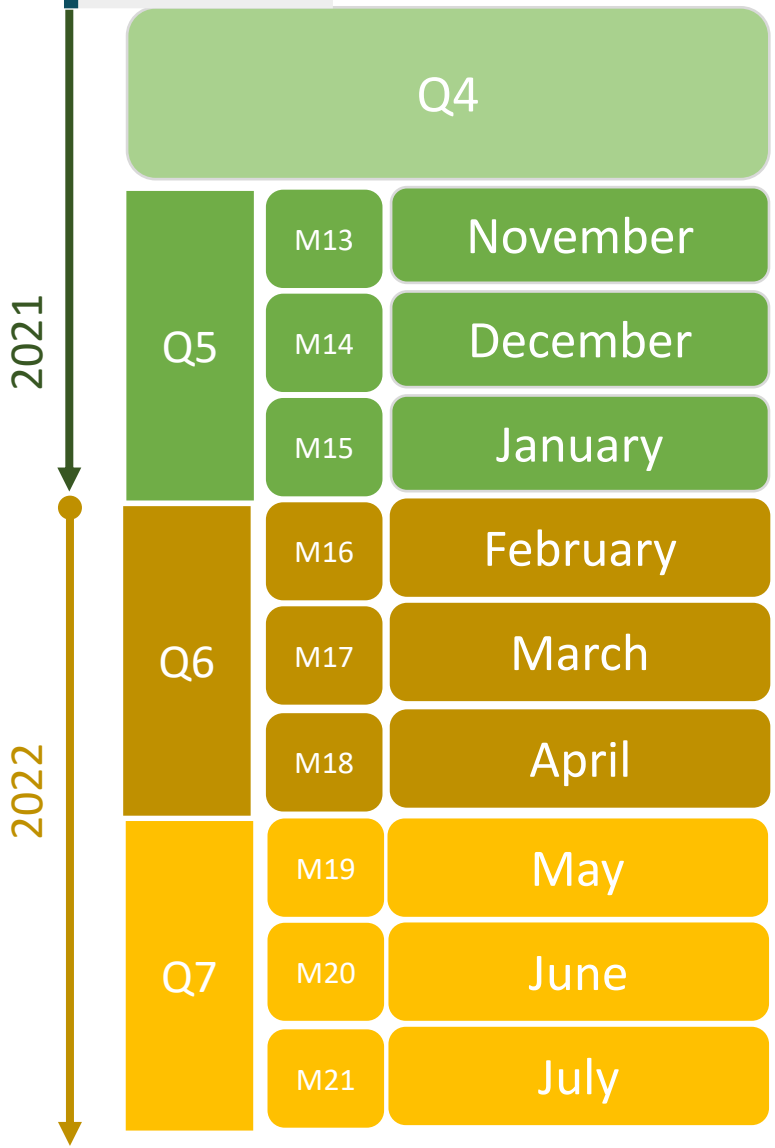
TIMELINE OF IM-SAFE ACTIVITIES



Definition of the **scope of the mandate**

1st review of the **draft input for the mandate** by **Standardisation Advisory Group**

Discussion of **first draft input for the mandate** with **EC and CEN**

First draft of **technical background material**

2nd review of the **draft input for mandate** by **Standardisation Advisory Group**

Complete draft input for the mandate

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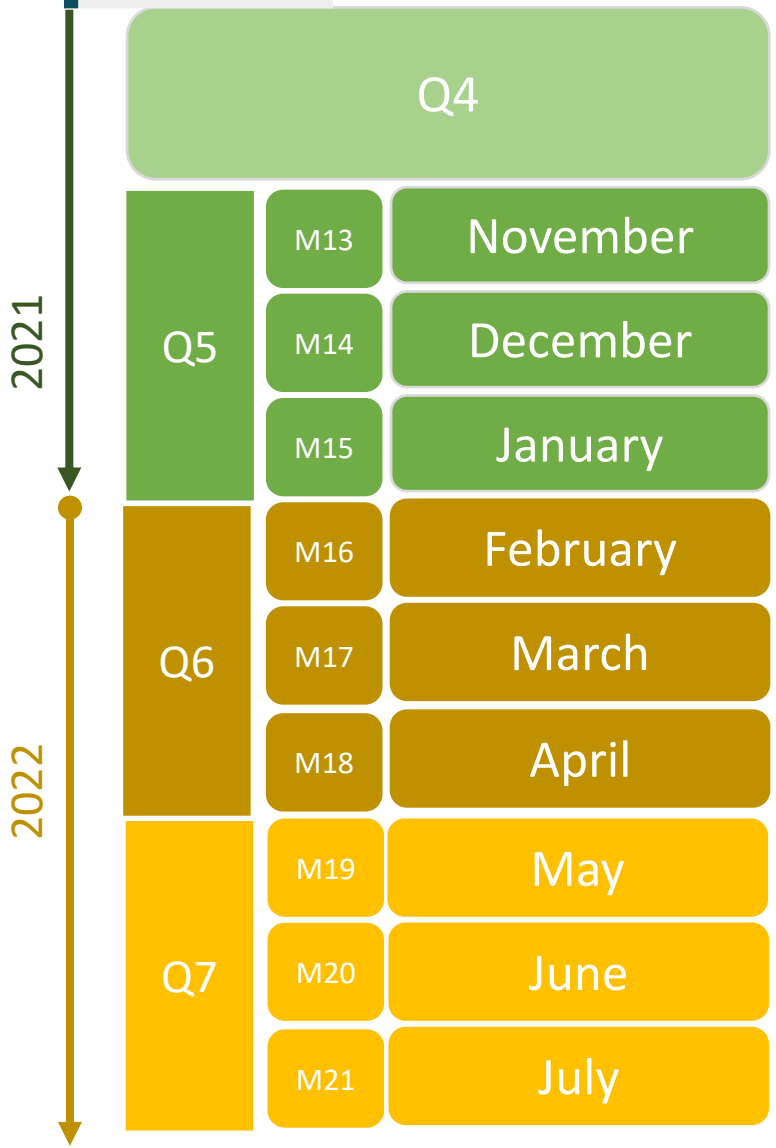
TIMELINE OF IM-SAFE ACTIVITIES

IM-SAFE D1.1 **Actual & future context** of transport infrastructure monitoring & maintenance

IM-SAFE D1.2 Online **catalogue of best practices** in monitoring of transport infrastructure https://imsafe.wikixl.nl/index.php/Case_studies_overview

IM-SAFE D1.3 Recommendations to remove the **PEST barriers**



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Thank you all for attending, questions, input, etc.

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