CoP Forum meeting

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IM-SAFE.EU

www.IM-safe-project.eu
https://www.linkedin.com/company/im-safe-project/
https://cordis.europa.eu/project/id/958171

IM-SAFE (ref. 958171)

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Agenda

- Log on
- Welcome
- Introduction IM-SAFE, Q&A
- Stakeholder engagement and role Pan-EU CoP Forum, Q&A
- Timeline of interaction with CoP, Q&A
- Short term activities, Q&A
- Summary and outlook

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H2020 CSA IM-SAFE

(Grant agreement ID: 958171 – Coordination and Support Action)

Harmonised Transport Infrastructure Monitoring in Europe for Optimal Maintenance and Safety

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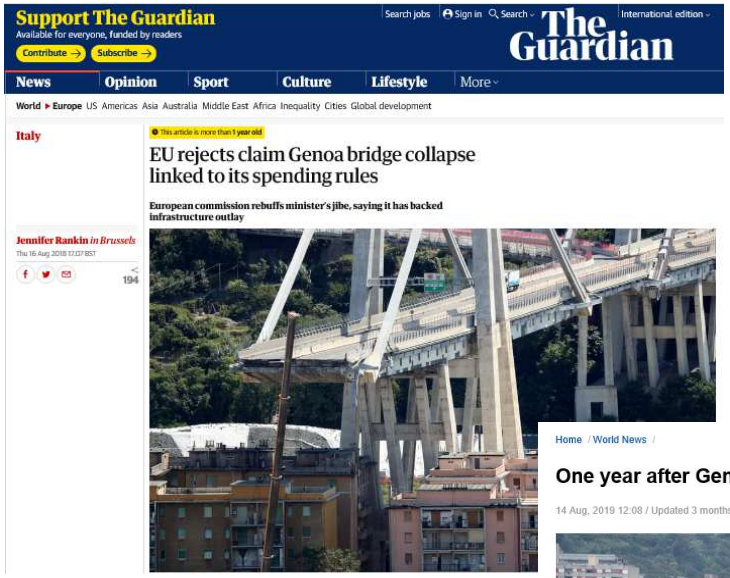
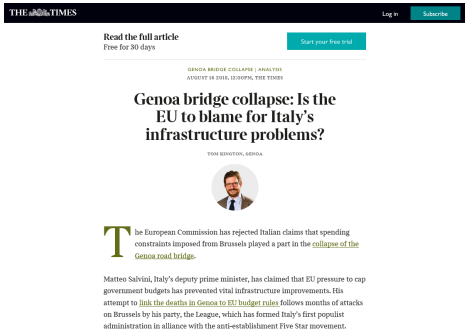
H2020 CSA IM-SAFE context

Transport infrastructure is facing **major challenges** due to ageing, rapid growth of traffic loads and natural and man-made resilience threats.

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





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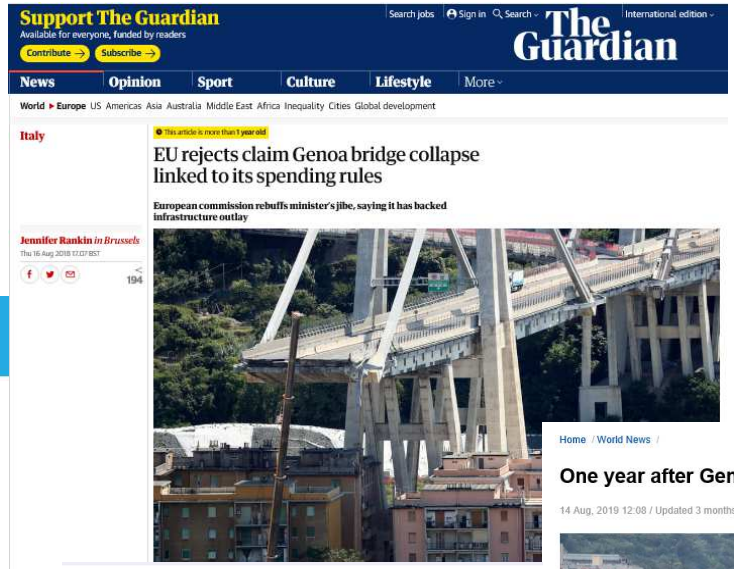
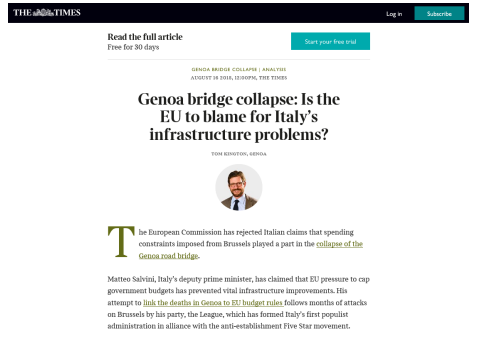
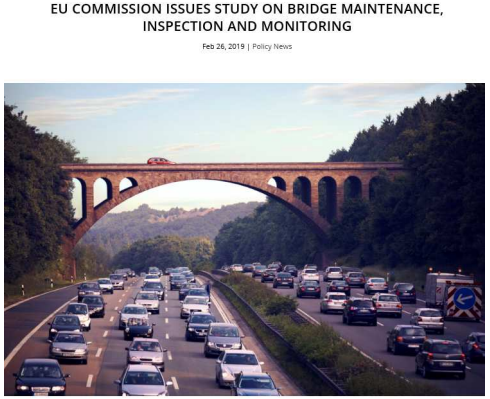
H2020 CSA IM-SAFE context







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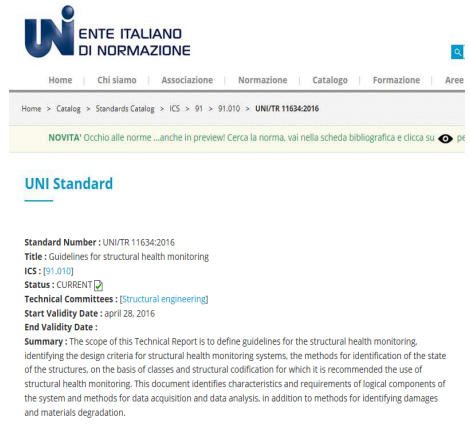
H2020 CSA IM-SAFE context

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.**


ENTE ITALIANO DI NORMAZIONE

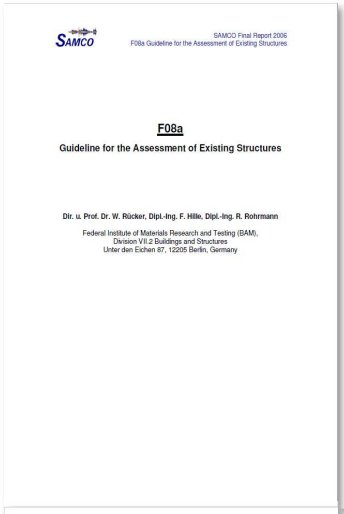
Home | Chi siamo | Associazione | Normazione | Catalogo | Formazione | Aree

Home > Catalog > Standards Catalog > ICS > 91 > 91.010 > UNI/TR 11634:2016

NOVITA' Occhio alle norme ...anche in preview! Cerca la norma, vai nella scheda bibliografica e clicca su

UNI Standard

Standard Number : UNI/TR 11634:2016
Title : Guidelines for structural health monitoring
ICS : [91.010]
Status : CURRENT
Technical Committees : [Structural engineering]
Start Validity Date : april 28, 2016
End Validity Date :
Summary : The scope of this Technical Report is to define guidelines for the structural health monitoring, identifying the design criteria for structural health monitoring systems, the methods for identification of the state of the structures, on the basis of classes and structural codification for which it is recommended the use of structural health monitoring. This document identifies characteristics and requirements of logical components of the system and methods for data acquisition and data analysis, in addition to methods for identifying damages and materials degradation.

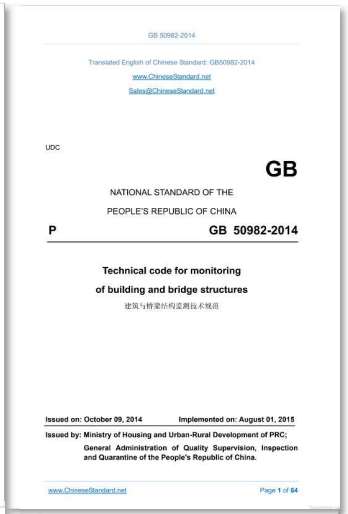

SAMCO Final Report 2006
F08a Guideline for the Assessment of Existing Structures

F08a

Guideline for the Assessment of Existing Structures

Dir. u. Prof. Dr. W. Rücker, Dipl.-Ing. F. Hille, Dipl.-Ing. R. Rohrmann

Federal Institute of Materials Research and Testing (BAM),
Division VII.2 Buildings and Structures
Unter den Eichen 87, 12205 Berlin, Germany


GB 50982-2014

Translated English of Chinese Standard: GB50982-2014
www.ChineseStandard.net
Sales@ChineseStandard.net

UDC

GB

NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

P GB 50982-2014

Technical code for monitoring
of building and bridge structures
建筑与桥梁结构监测技术规范

Issued on: October 09, 2014 Implemented on: August 01, 2015

Issued by: Ministry of Housing and Urban-Rural Development of PRC;
General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China.

www.ChineseStandard.net Page 1 of 64


Die FSV Publikationen Veranstaltungen Zulassungen Zertifizierung

RVS Richtlinien & Merkblätter
13 Qualitätssicherung bauliche Erhaltung
13.03 Überwachung, Kontrolle und Prüfung von Kunstbauten

RVS 13.03.01 Monitoring von Brücken und anderen Ingenieurbauwerken
Februar 2012

Beschreibung

Diese RVS ist für das Monitoring von Brücken und anderen Ingenieurbauten anzuwenden und richtet sich sowohl an die Erhaltungsverpflichteten und Bauherren als auch an die Anbieter von Monitoringsystemen.

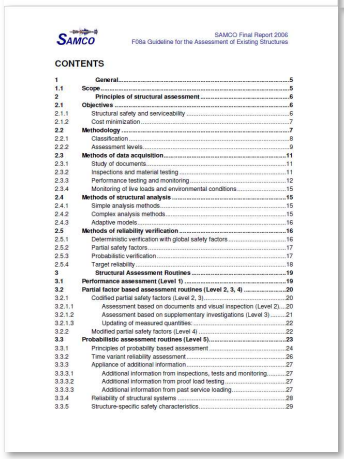
Sie beschreibt die Grundlagen für folgende Problembereiche:

- Messtechnische Erfassung und Bewertung des aktuellen Zustandes
- Beurteilung von Tragfähigkeit, Gebrauchstauglichkeit und Dauerhaftigkeit (z.B. in Bezug auf Ermüdung)
- Erwartetung von Risiken
- Dringlichkeit der Einleitung von Instandsetzungsmaßnahmen
- Durchführung von Lebenszykluskostenrechnungen

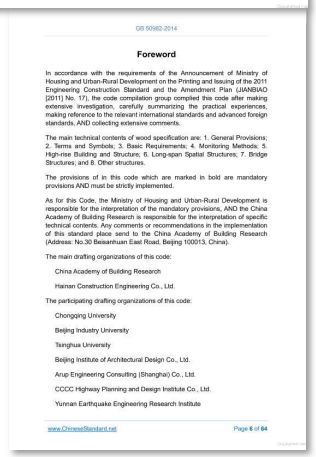
Inhaltsangabe

1. Anwendungsbereich
2. Begriffsbestimmungen
3. Allgemeines
4. Ziele und Verfahrensablauf
5. Konfiguration einer Monitoringanlage (Messsystem)
6. Messgrößen
7. Aufgabenstellungen und Beispiele
8. Qualifikation des Monitoringpersonals
9. Anhang: Eingliederung des Monitorings in das Lebenszyklusmanagement
10. Angeführte Normen und Literatur
11. Zusätzlich zu beachtende Normen und Literatur

Seiten 20
Ausgabedatum 1. Februar 2012
Verbindlich Vom BMVIT zur Anwendung empfohlen!
Arbeitsausschuss BrÜ7 Überwachung, Kontrolle und Prüfung von Brücken und anderen Ingenieurbauwerken


SAMCO Final Report 2006
F08a Guideline for the Assessment of Existing Structures

CONTENTS


GB 50982-2014

Foreword

In accordance with the requirements of the Announcement of Ministry of Housing and Urban-Rural Development on the Printing and Issuing of the 2011 Engineering Construction Standard and the Amendment Plan (JIANBIAO [2011] No. 17), the code compilation group compiled this code after making extensive investigation, carefully summarizing the practical experiences, making reference to the relevant international standards and advanced foreign standards, AND collecting extensive comments.

The main technical contents of wood specification are: 1. General Provisions; 2. Terms and Symbols; 3. Basic Requirements; 4. Monitoring Methods; 5. High-rise Building and Structure; 6. Long-span Spatial Structures; 7. Bridge Structures; and 8. Other structures.

The provisions of in this code which are marked in bold are mandatory provisions AND must be strictly implemented.

As for this Code, the Ministry of Housing and Urban-Rural Development is responsible for the interpretation of the mandatory provisions, AND the China Academy of Building Research is responsible for the interpretation of specific technical contents. Any comments or recommendations in the implementation of this standard place send to the China Academy of Building Research (Address: No.30 Beisanhuan East Road, Beijing 100013, China).

The main drafting organizations of this code:

China Academy of Building Research

Hainan Construction Engineering Co., Ltd.

The participating drafting organizations of this code:

Chongqing University

Beijing Industry University

Tsinghua University

Beijing Institute of Architectural Design Co., Ltd.

Arup Engineering Consulting (Shanghai) Co., Ltd.

CCCC Highway Planning and Design Institute Co., Ltd.

Yunnan Earthquake Engineering Research Institute

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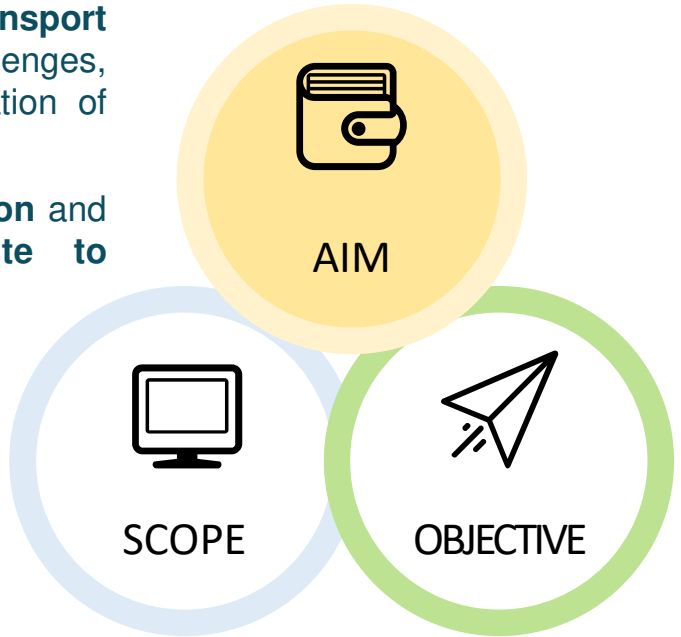
H2020 CSA IM-SAFE set-up

IM-SAFE aims to **support the European Commission and the European Committee for Standardization (CEN)** to preparing a **new standard in monitoring for optimal maintenance and safety of transport infrastructure** based on a comprehensive insight into the trends, challenges, best practices, and technology developments, including the integration of digital innovations.

IM-SAFE aims to **achieve broad acceptance for new standardization** and to **enable public authorities and industries to contribute to standardization, roll-out, and implementation**



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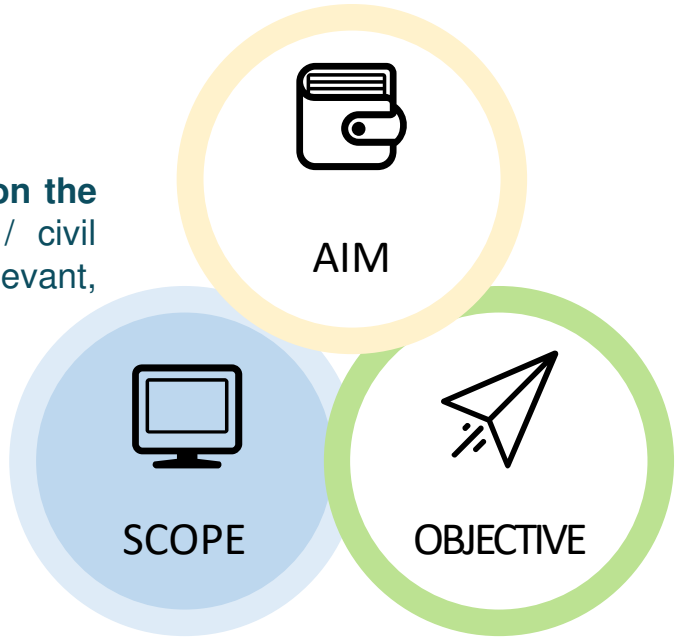
H2020 CSA IM-SAFE set-up

IM-SAFE covers **bridges, tunnels and other large infrastructures on the road and railway networks**. IM-SAFE deals with the structural / civil engineering part of transport infrastructure and, where relevant, complementary other infrastructure elements, e.g. railway electrical



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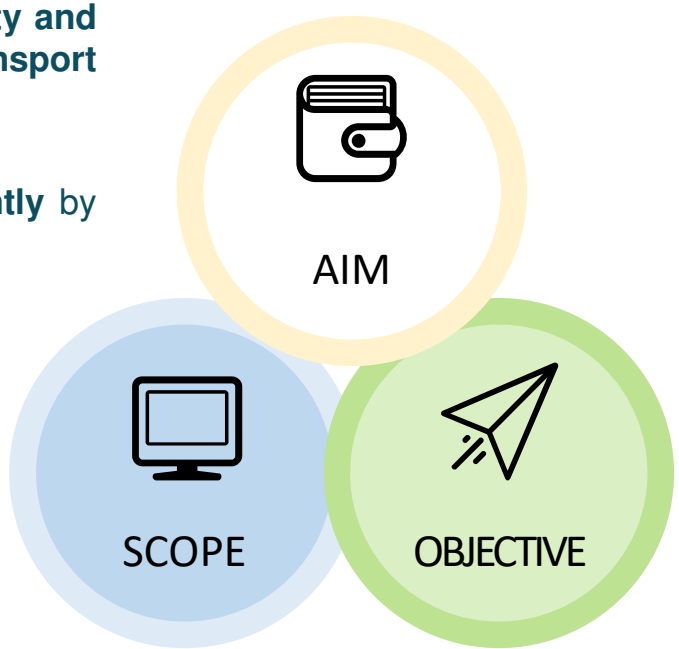
H2020 CSA IM-SAFE set-up

IM-SAFE enables paradigm shift from the time-based/corrective maintenance towards **risk-based/predictive maintenance through data-informed decision-making,** benefiting from digital transformation.

New and harmonised European standards provide for **meeting safety and availability demands and improved cost-effectiveness of transport infrastructure.**

The **new standardization is supported and implemented coherently** by the public authorities and the industrial stakeholders across Europe.



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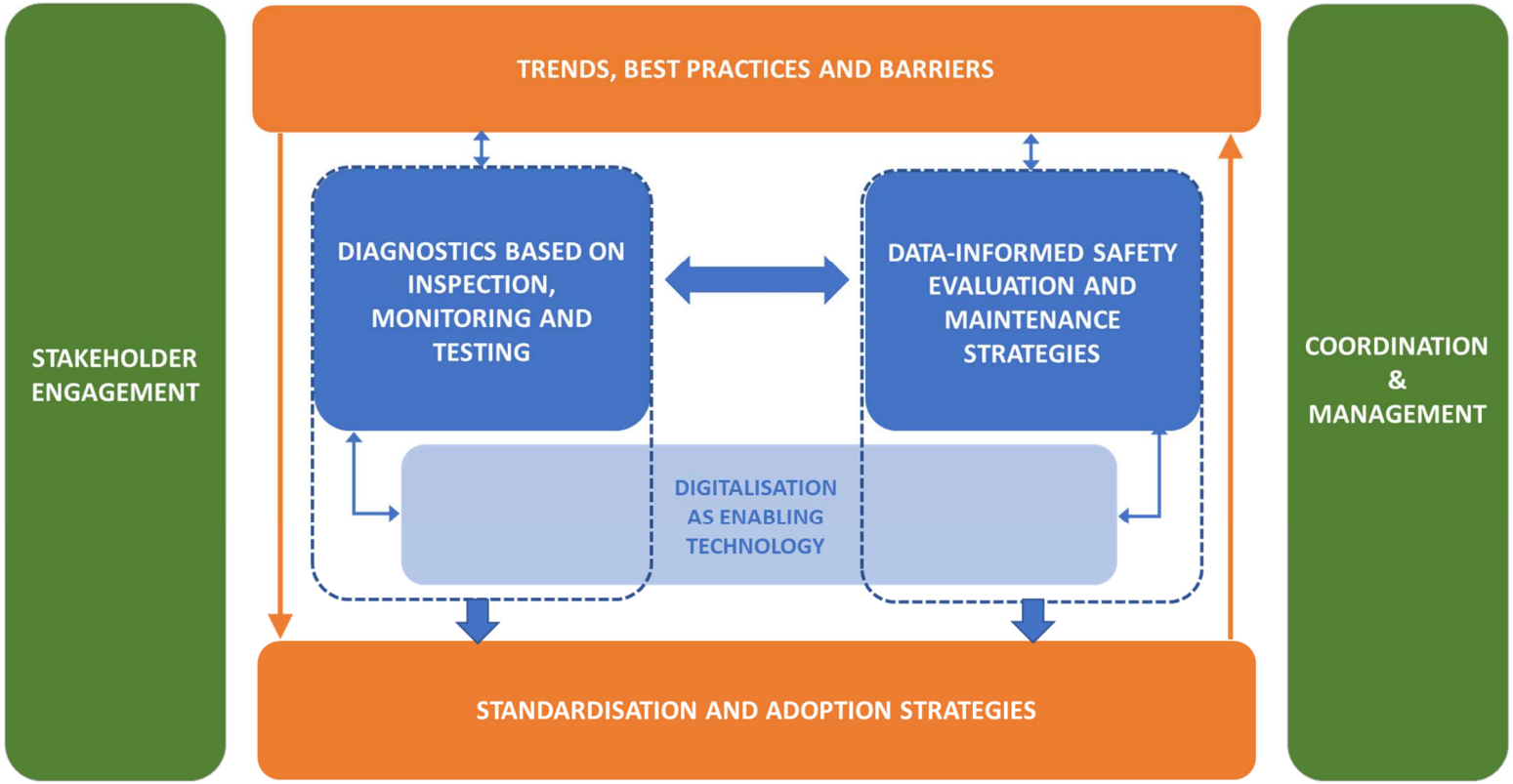
PROJECT FOCUS AREAS



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PROJECT PARTNERS

The Netherlands
- **TNO** Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek
- **CROW** Kennisplatform voor Infrastructuur, Verkeer, Vervoer en Openbare Ruimte

Norway
- **NTNU** Norges Teknisk-Naturvitenskapelige Universitet

Spain
- **UVIGO** Universidad De Vigo
- **FER** Ferrovial Construction

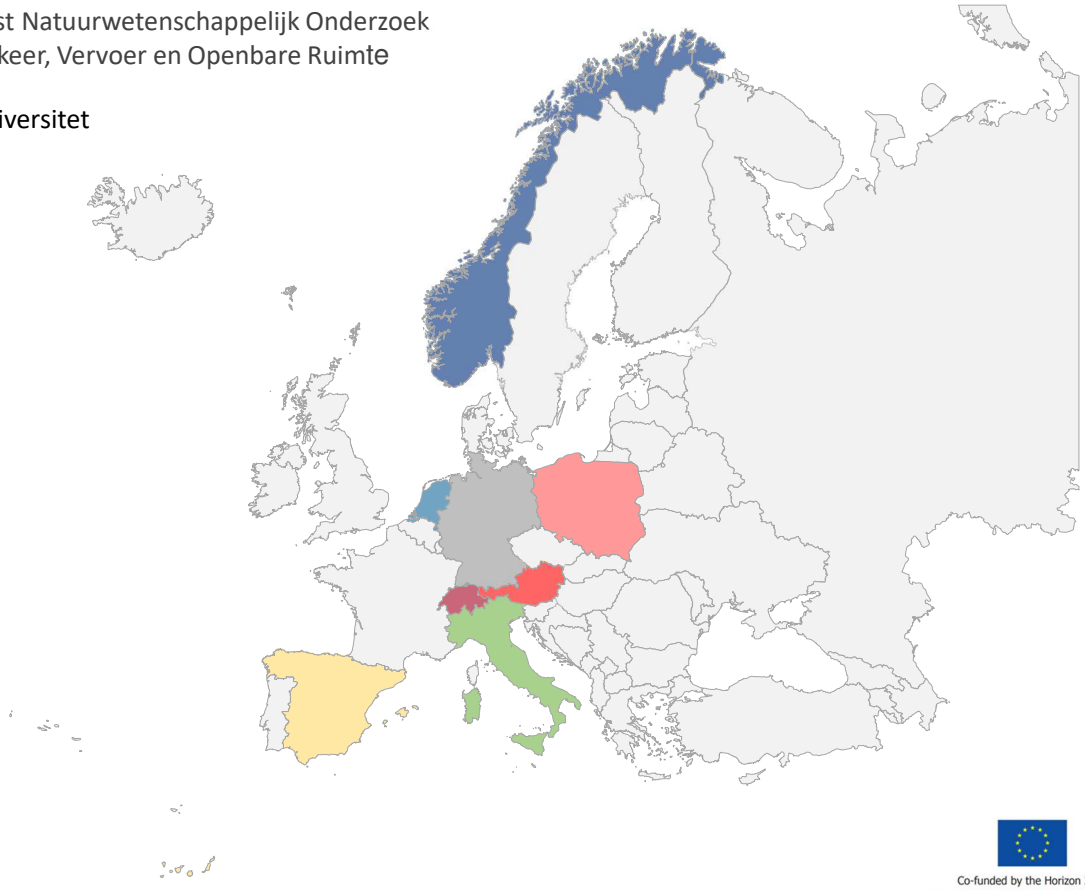
Austria
- **BOKU** Universität für Bodenkultur Wien

Italy
- **SAC** SafeCertifiedStructure Ingegneria S.r.l

Germany
- **AEC** AEC 3 Deutschland GMBH

Switzerland
- **IBM** IBM Research GmbH

Poland
- **MOW** Mostostal Warszawa S.A.



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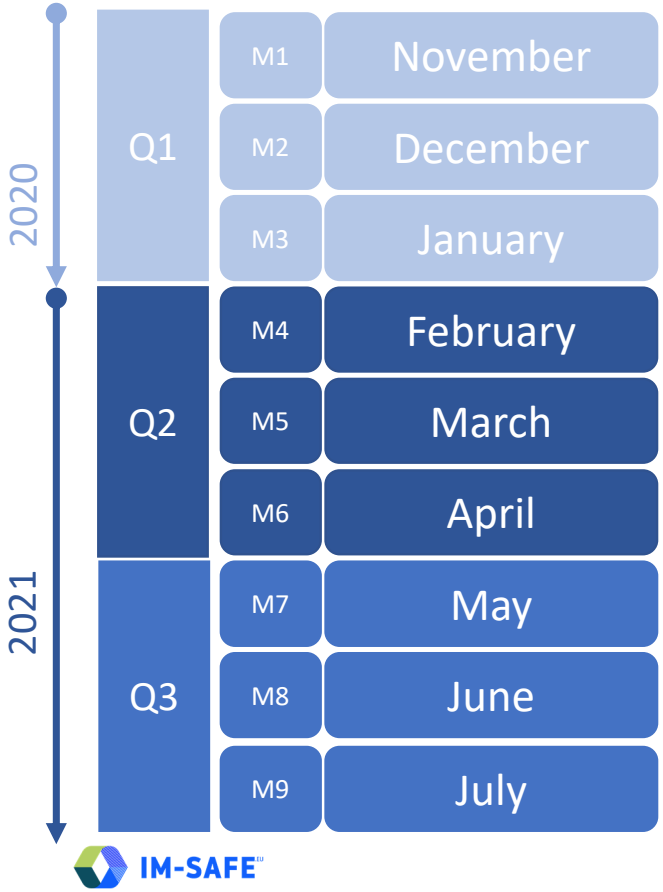
Timeline of project activities



Initial overview of the **state of standardisation**

Preliminary definition of the **scope of the mandate**

Dialogues with EC and CEN

Complete overview of the **state of standardisation**

Definitions of **gaps and needs for standardization**

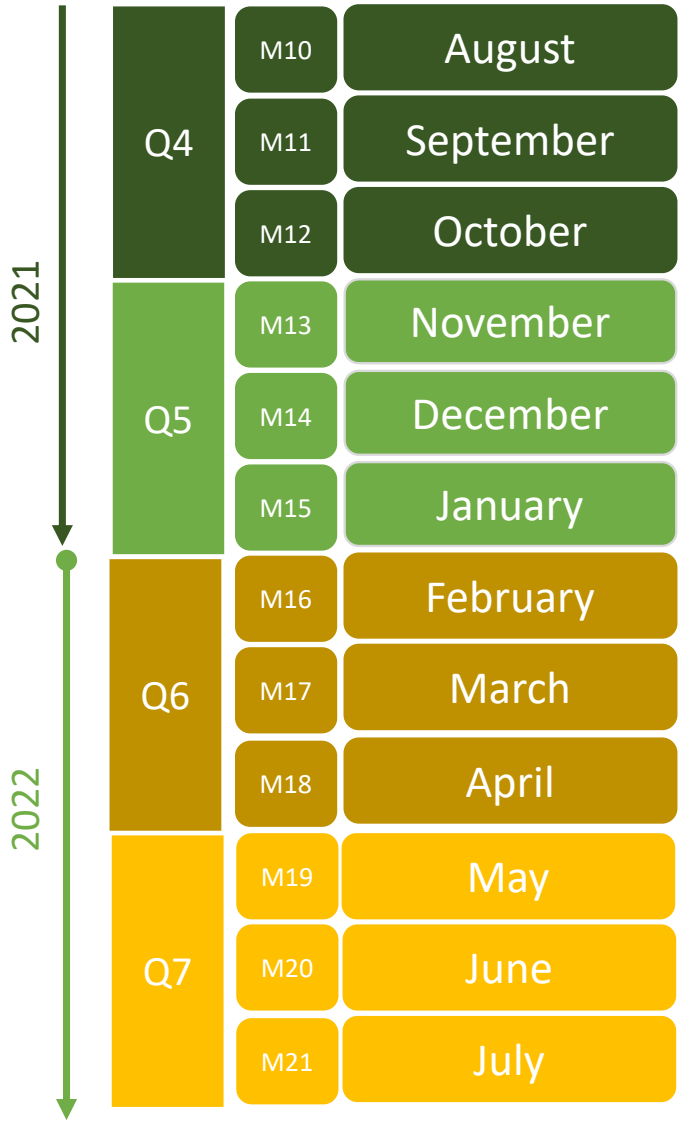
Initial **best practice analysis**

Actual and future **context of monitoring and maintenance**

Initial **PEST** (Politic, Economical, Social and Technological analysis and preliminary definition of **gaps and needs for standardization**

Analysis of **state-of-the-art of safety evaluation and risk management methods**

Analysis of **safety evaluation and risk management methods including diagnostics, inspections and data acquisition processes**



Preparation **first draft input for mandate**

Discussion of first draft mandate with EC

First draft of **technical background material**

Preparation of **complete draft for mandate**

Review of **surveying technologies and diagnostics of structures**

Recommendations to remove the **PEST** barriers

Guidelines for **data acquisition, processing, and quality assurance**

Review of **AI and Big data analytics**

Analysis of the **minimum maintenance level** and **Condition State Classification** in EU countries

Update on **safety evaluation and risk management methods including diagnostics, inspections and data acquisition processes**

Update on review of **methodologies and instruments for diagnostics of transport infrastructure**

Online **catalogue of surveying technologies and maintenance methods** in EU

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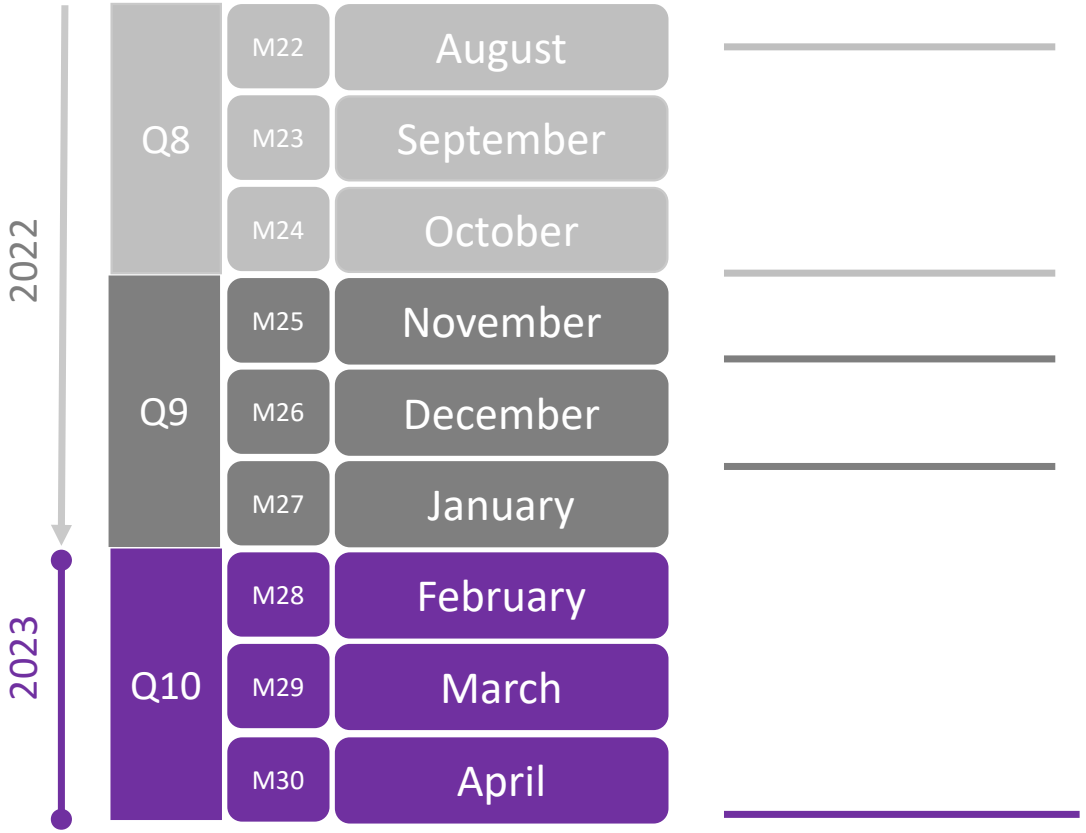

Guidelines for **adoption plan of new standards**, change management and pilot project setup

Action plan and recommendations for **complementary standardisation in digitalisation**

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Stakeholder engagement

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Italian Community of Practice (CoP)

- Autovia padana
- Aiscat Servizi
- Alfredo Cigada [POLIMI]
- ASPI_Autostrade per l'Italia
- ASPI_Tecne S.p.a
- Italferr
- Lombardi Ingegneria
- RAV_Raccordo Autostradale Valle d'Aosta
- RINA Consulting S.p.A.
- SALT_ Società Autostrada Ligure Toscana
- SAV_Società Autostrade Valdostane
- Sina S.p.a.
- Torino Municipality

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Importance of stakeholder engagement

1. Improvement of standards for monitoring of constructions
2. EU standards => to be implemented in EU countries
3. Common practise to be included
    - Country specific circumstances to be taken into account
    - Good practise exchange => best practise in standard
4. New developments / innovation to be included
    - Country specific innovation to be taken into account
    - Feasible standards for EU wide implementation

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Benefit for stakeholders

Exchange of information (inter)nationally:

- Current practice and approaches,
- Experiments and pilots,
- Barriers for implementation

In order to:

- Improve service level
- Understanding needs of owners, operators, industry
- Start transition to new standards during creation

How to organise?

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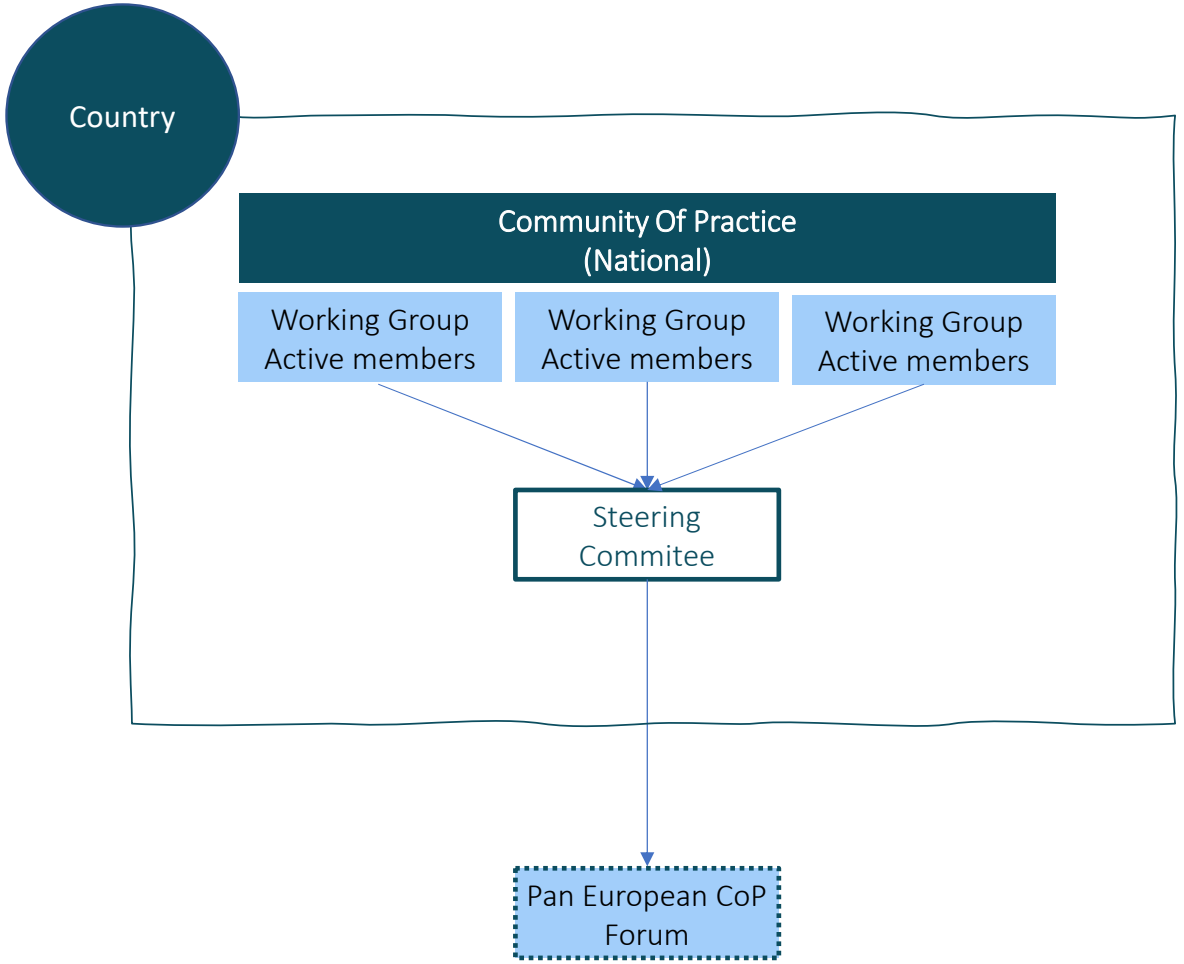
National CoP Structure



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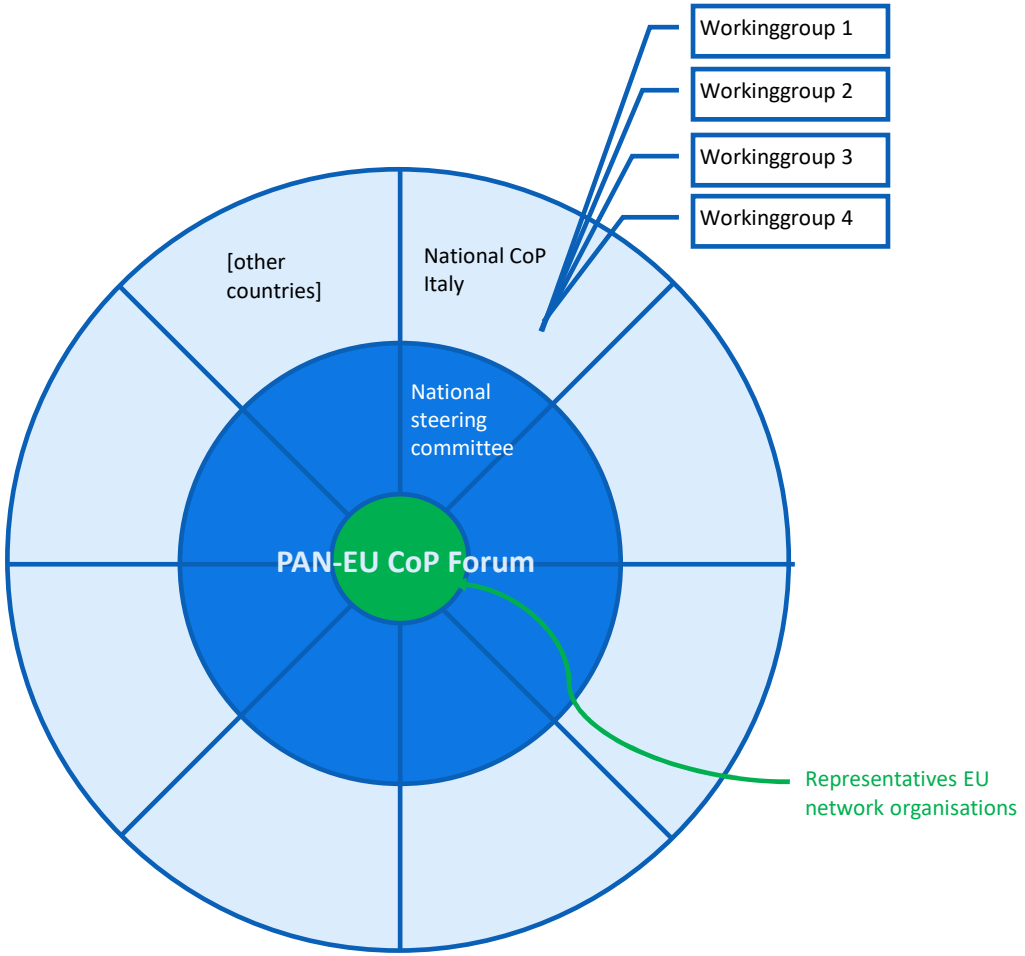
PAN European structure



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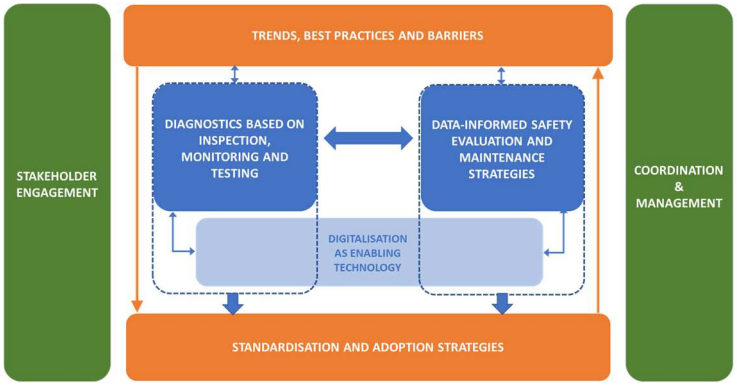
Working group themes



Themes set for all project focus areas.

For each theme national groups can be established

1. **Best practices in monitoring, data-informed safety assessment and condition-based and risk-based maintained**
   - Input to case studies, feedback on analysis results
2. **Barriers & impact of standardization**
   - Input for identification PEST barriers and impact analysis, feedback on analysis results and translation into plan of approach for the execution of the mandate
3. **Surveying technologies and diagnostics of structures**
   - Input for review and analysis of detection (testing, inspection, monitoring) techniques and diagnostic methods, feedback on analysis results and translation into mandate
4. **Risk management & decision making**
   - Input for appraisal of methods for safety evaluation and risk management, feedback on analysis results and implementation of decision-making regarding maintenance strategies in mandate
5. **Digitalization**
   - Input for guidelines on digital solutions (data handling, quality assurance, integration of IoT, BIM and GIS for transport infrastructure, IT platforms, data analytics), feedback on analysis results

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Role and tasks steering committee

IM-SAFE country representative

1. Be the representative of your country
2. Propagate national interests of your country in Pan-EU CoP Forum
3. Attend meetings (Pan-EU CoP Forum, working groups, …)

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CoP activities

1. **Meetings / workshop**
   a. Pan-EU meetings / workshops
   b. Local CoP steering committee meetings
   c. Local CoP working group meetings / workshops
   d. International CoP working group meetings / workshops

2. **By E-mail**
   a. Questionnaires
   b. Review of results

Best strategy for a specific communication / input to be decided by IM-SAFE constortium

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International networking organisations Dissemination Plan

- ECTP
- CEDR
- ENCORD
- FEHRL
- ECCREDI
- Shift2Rail
- bSI building SMART
- fib
- IABSE
- Eurostruct
- IALCCE
- IABMAS
- RILEM
- JCCS
- ITA-COSUF
- ?

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Timeline of the project and interaction with CoP

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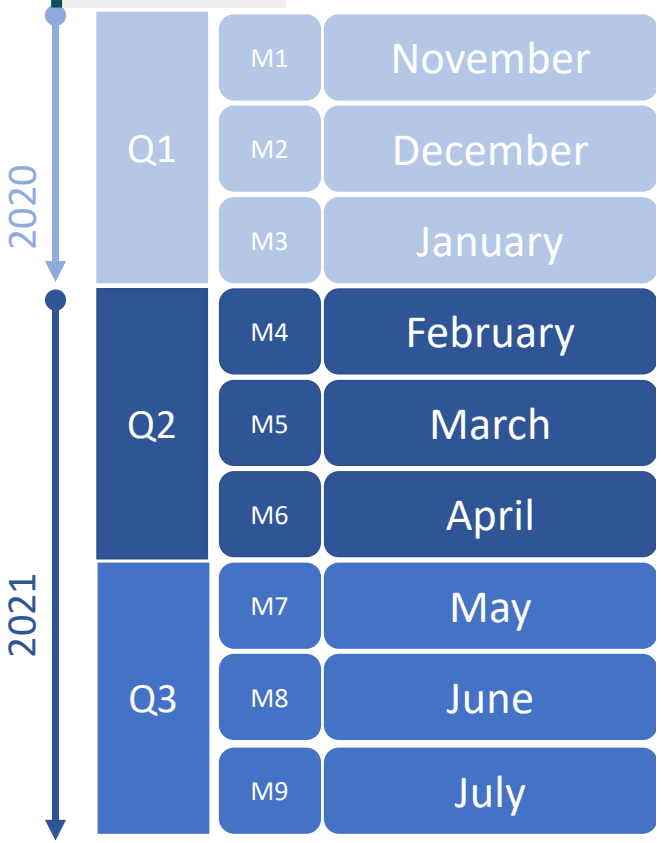
H2020 CSA IM-SAFE CoP

Timeline of CoP involvement

- CoP meetings
- Conferenties
- Website
- Newsletter
- BIM and other ICT user forums en communities
- Journals
- Social Media
- Meetings and network



Publication surveying technologies & diagnostics

Website

Information for CoP
- project infomation for ragional & Pan-EU CoP

Input from CoP
- best practice

Input from CoP
- gaps and needs for standardization
- scope of the mandate

Result for CoP
- status of standardisation

Input from CoP
- PEST analysis
- surveying technologies & diagnostics of structures
- SoA safety evaluation & risk management methods
- data acquisition, processing, and quality assurance
- AI and Big data analytics

Website update

Newsletter

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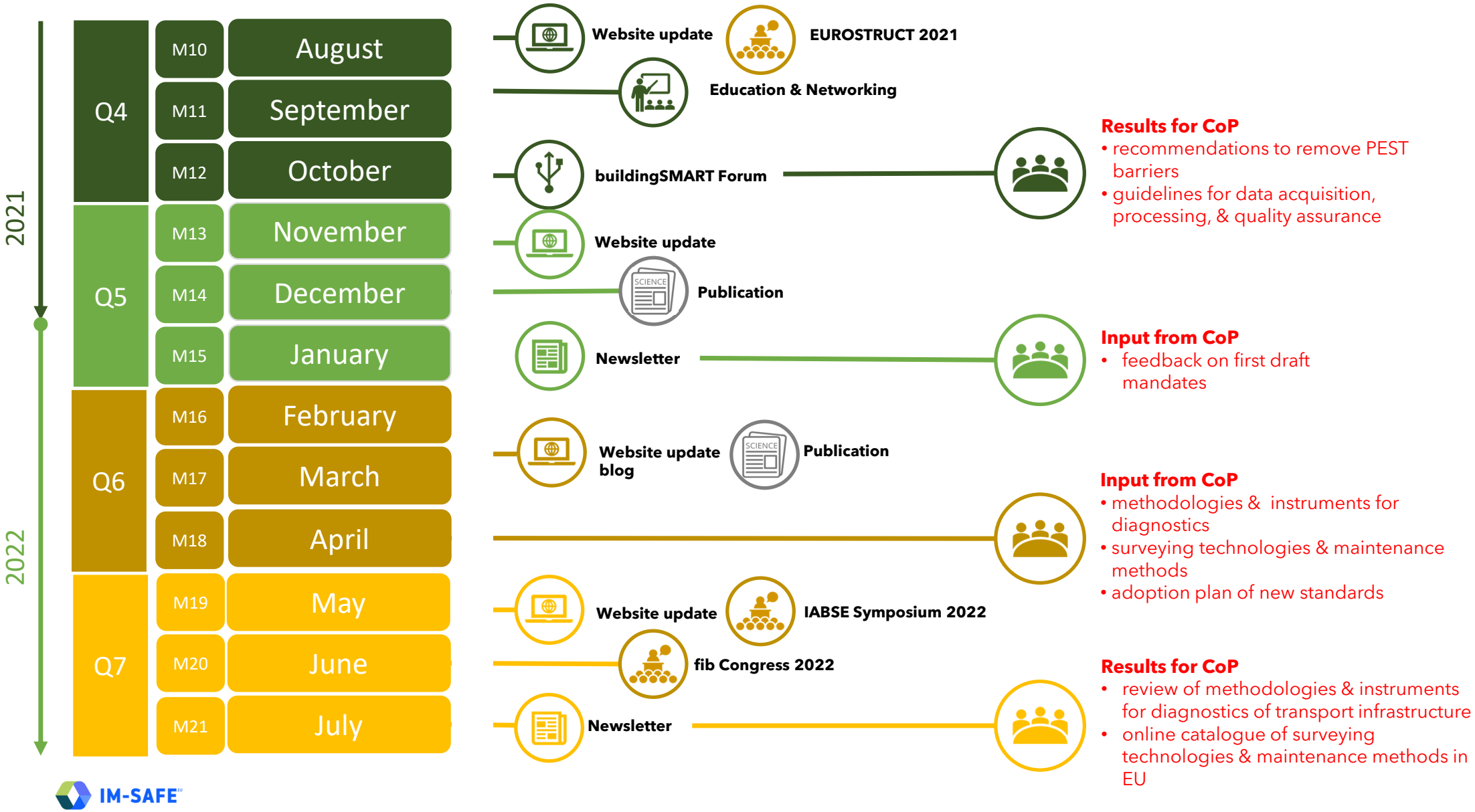
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Education & Networking
buildingSMART Forum
Website update
Publication
Newsletter
Website update
blog
Publication
Website update
IABSE Symposium 2022
fib Congress 2022
Newsletter
Results for CoP
• recommendations to remove PEST barriers
• guidelines for data acquisition, processing, & quality assurance
Input from CoP
• feedback on first draft mandates
Input from CoP
• methodologies & instruments for diagnostics
• surveying technologies & maintenance methods
• adoption plan of new standards
Results for CoP
• review of methodologies & instruments for diagnostics of transport infrastructure
• online catalogue of surveying technologies & maintenance methods in EU

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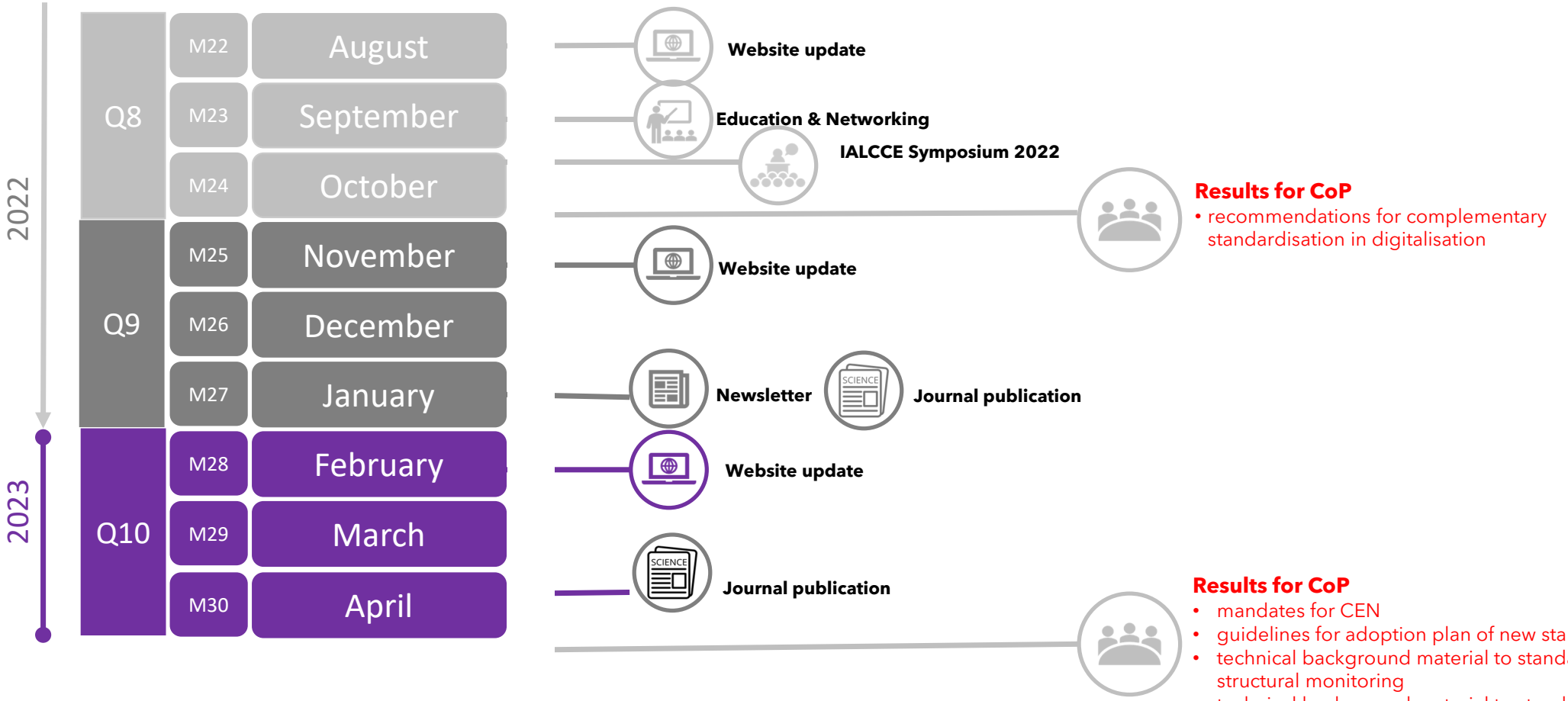

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Short-term activities

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Working group activities

1. **Best practices in monitoring, data-informed safety assessment and condition-based and risk-based maintained**
   - Input to case studies (ongoing) , feedback on analysis results (May/June 2021)

2. **Barriers & impact of standardization**
   - Input for current status of standardization, identification of PEST barriers and impact analysis (March/April2021, May 2021)

3. **Surveying technologies and diagnostics of structures**
   - Input for review and analysis of detection techniques and diagnostic methods (May 2021)

4. **Risk management & decision making**
   - Input for appraisal of methods for safety evaluation and risk management (May 2021)

5. **Digitalization**
   - Input for guidelines on digital solutions (May 2021)

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Framework Programme of the European Union

Thematic workshops

Organized for local CoP between 29.03.2021 - 9.04.2021

Online workshop, followed by a round table discussion:

CURRENT STATE OF STANDARDIZATION IN MONITORING, DATA-INFORMED SAFETY EVALUATION AND MAINTENANCE OF TRANSPORT INFRASTRUCTURE

Participants of the workshop will receive up-to-date information about availability of national and European standards, guidelines and regulations. They will also be given an opportunity to engage in a discussion about the directions for future development of the harmonized European standards on :

- structural monitoring,
- condition-based and risk-based maintenance of transport infrastructure.
- data-informed safety assessment.

Opinions and viewpoints shared by the participants of the workshop will be taken into consideration in formulating the proposals for amendments and extensions to the existing CEN standards.

IM-SAFE

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Pan-European CoP Forum

Organized in May/June 2021

Online workshop, followed by a round table discussion:

BARRIERS AND NEEDS FOR STANDARDIZATION AND PRELIMINARY SCOPE OF THE MANDATE FOR CEN

Participants of the workshop will be given opportunity to share their opinions on barriers and needs for standardization and will receive up-to-date information about the foreseen scope of the mandate for:

- amendment to the existing EU standards on data-informed safety assessment of infrastructure
- new standard on structural monitoring of infrastructure
- new standard for condition-based and risk-based maintenance of infrastructures

Information and viewpoints shared by the participants of the workshop will be taken into consideration in identification of the gaps in standardization and in setting the approach for motivating and formulating the mandate.

IM-SAFE

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Summary & outlook

Communication

Website : www.IM-SAFE-project.eu, www.IM-SAFE.eu

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

IM-SAFE general information : info@im-safe-project.eu

National CoP => IM-SAFE Italian representative :Isabella Alovisi isabella.alovisi@sacertis.com

National steering committee => IM-SAFE Italian representative :Isabella Alovisi isabella.alovisi@sacertis.com

Pan-EU CoP Forum => CROW (responsible IM-SAFE consortium partner)Jos Wessels Jos.Wessels@crow.nl

IM-SAFE Pan-EU Forum membership managed by CROW, to be “appointed” by country representative

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IM-SAFE.EU

www.IM-safe-project.eu
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https://cordis.europa.eu/project/id/958171

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