### Cooperation between ITS corridor projects

Cross-corridor cooperation in the TEN-T network at a glance









#### **Cooperation between ITS corridor projects**

*Cross-corridor cooperation in the TEN-T network at a glance* 

### Agenda

- Presentation of the individual projects
  X4ITS
  MATIS
  SCALE
  MERDIAN
- Collaboration with NAPCORE & C-Roads
- Practical examples of collaboration
- Open discussion



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■Practical examples of collaboration

■Open discussion



# XITS





### X4ITS – Central Europe Cross border Cooperation for ITS

ITS European Congress 2025 Presented by Damaris Gruber



#### **About X4ITS**

- Call CEF-T-2022 SIMOBGEN
  - Follow up of CROCODILE
- Runtime 2023 2027
- Budget 64.5 Million €
  - EU contribution 50%
- 6 Member States 28 Partners
  - Austria, Croatia, Czech Republic, Hungary, Romania, Slovenia







#### **Objectives**

*Overall goal: improved cross-border cooperation, deployment project* 

- Improve cross-border traffic and transport
- implementing harmonised and synchronised ITS applications (high level road network)
- Increased focus on secondary road network and multimodality
- Availability of data and optimized data exchange
- Implementing C-ITS use cases in urban areas linked to high level road network









WP 1 Project management, communication and cross-corridor cooperation

**WP 2** Cross-border cooperation, TMP maintenance and improvement

**WP 3** Link to secondary road network, multimodal/urban nodes and usage of C-ITS WP 4 Data access and collection

**WP 5** Service delivery to end-users and safetyrelated services implementation

**WP 6** Impact assessment and service evaluation







Planned installation of Roadside Units

108



Planned installation of Onboard Units





Planned implemented or replaced Variable Message Signs

200



Planned kilometres of TEN-T roads equipped with roadside data collection equipment

1,138

Planned kilometres of secondary roads equipped with roadside data collection equipment

643



Planned implemented or replaced CCTV cameras

724



Planned multimodal or urban hubs equipped with digital infrastructure

5

Planned kilometres of secondary road network equipped with digital infrastructure

50

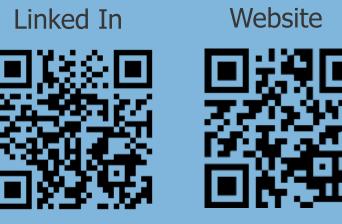


#### Cooperation



- Close contact to organisations and cities in the project
- Cooperation with other corridor projects (MERIDIAN & MATIS):
  - MoU between all three corridor projects
  - Joint workshop and presentations at NAPCORE Mobility Data Days 2024 & 2025
  - Presentation of MERIDIAN and MATIS at the last X4ITS SCOM (10.04.2025)
  - Regular cross-corridor meetings every quarter
- Consideration of C-Roads specifications / inclusion of X4ITS use cases at C-Roads user meetings
- Consideration of NAPCORE recommendations regarding requirements for NAP upgrade
  C-ROADS
  MERIDIAN

10





### Stay in Touch

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<u>x4its.eu</u>



**Cooperation between ITS corridor projects** 

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#### SUSTAINABLE AND SMART MOBILITY FOR MEDITERRANEAN ATLANTIC ARC

#### **ITS European Congress 2025**



Alessandra Pipitone Federico



- **1 MATIS Identity Card**
- 2 History & Partnership
- **3 Key figures & Expected Impacts**
- 4 Tasks
- **5 C-ITS projects**





SUSTAINABLE AND SMART MOBILITY FOR MEDITERRANEAN ATLANTIC ARC



	PROJECT NUMBER	101122786	
	PROJECT ACRONYM	22-EU-TG-MATIS	
	ΝΑΜΕ	MATIS : Mediterranean-Atlantic Transport Intelligent Systems	
	CALL / TYPE OF ACTION	CEF-T-2022-SIMOBGEN-ITS-WORKS	
	GRANTING AUTHORITY	CINEA	
	STARTING DATE / END DATE	19 January 2023 – 18 January 2027	
	DURATION	48 months	
	BUDGET	124.000.000,00€	
	MAXIMUM GRANT AMOUNT	62.000.000,00€ (50%)	
	REPORTING PERIODS (2)	M1 – M24 / M25 – M48	



#### 2 – HISTORY & PARTNERSHIP

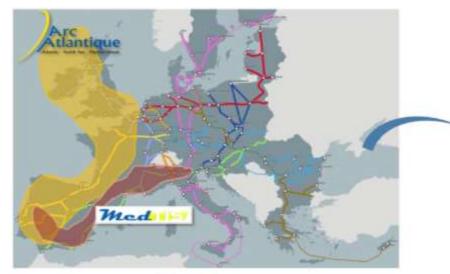
#### SUSTAINABLE AND SMART MOBILITY FOR MEDITERRANEAN ATLANTIC ARC

CEF 2

MA

#### **2 former projects:**

- > Arc Atlantic I & II
- MedTIS 1 & 2



CEF 1



#### **39 partners:**

- > 11 beneficiaries
- > 28 affiliated entities



**8.000**km of the TEN-T **3** TEN-T corridors: **4** countries **89** ITS individual core network and Mediterranean, 10.000 km of the France, Italy, Spain projects Atlantic, North-Sea and Portugal Mediterranean comprehensive network 3.000km deployed on 10.000km deployed on 3.500km deployed on **TEN-T** network 3.000km deployed on TEN-T **TEN-T network reducing TEN-T** network network enhancing road congestion and thus enhancing operations enhancing traveler contributing to safety and securing service information services decarbonize road traffic delivery **3% reduction of lost hours 3% reduction CO2** for road users during emissions on main congestion on main strategic bottlenecks strategic bottlenecks of the of the corridor **corridor** (considering the same level of traffic along (considering the same level of traffic along time) time)



#### TRAFFIC MANAGEMENT SERVICES AND TRAFFIC MANAGEMENT PLANS, INCLUDING CROSS-BORDER PLANS

1.New equipment for data capture and traffic control

2.New intelligent vehicle tracking systems, speed detection systems and traffic counting systems

3.New intelligent tools and software for assisting TMC operators in simulating, predicting travel time and monitoring traffic flows and level of service

4. Field traffic management systems and equipment

#### **USER SERVICES AND INFORMATION**

1.Enhancing national data exchange and access points for data

2.Web portal and App for traffic and travel information

3.New generation field equipment for traffic information

#### **ROAD SAFETY**

1.Advanced incident detection systems, including ghost vehicles detection

2.New hazardous goods tracking systems

3.New dynamic control systems for measuring weight of vehicles

4.New dynamic control systems for measuring height of vehicles

5.ITS equipment to enhance tunnel safety

6.Detection systems of weather conditions for increased safety

7.Equipment for increased safety in a sensitive section

8.New generation SOS services

#### **OPERATIONS AND SECURING SERVICE DELIVERY**

1.Systems for supervision, remote control and data acquisition

2.Cybersecurity for ITS systems protection

3. High performance IT network for increased ITS resilience

4.New generation radio communication systems

#### C-ITS DEPLOYMENTS TOWARDS THE CONNECTED AND AUTOMATED MOBILITY



➢ 5 C-ITS projects deployed on very high level of traffic networks in Portugal and Italy

- ➢ Project 154:
- ➢ North of Italy
- ≻ Over 100 KM
- > A new high speed telecommunication network (ITS G5/5G solutions)
- ➢ More than 150 RSUs deployed
- > A V2X solution acting as an integrated system based
- A full CCTV system to monitor the whole system's operation, (infrastructure and user's needs / behavior)
- > An agreement with a car manufacturer.
- ➢ In link with the use cases indicated by the C-ROADS platform.



#### For what purpose?

- To better know the traffic flow and motorists behaviour in all circumstances and react in a prompt and a right way
- ➢ To improve the users safety by delivering a high quality road information to the only vehicles concerned , at the right place and at the right time.
- To adapt the infrastructures to the new mobility requests from travelers and to the delivering of innovative services for road users and operators
- To communicate with the new generation connected vehicles, but also with a view to making it possible to use the most advanced levels of automatic driving assistance



- > Joint declaration with X4ITS (signed in November 2024 in Turin)
- > Joint declaration with MATIS (signed in November 2024 in Turin)
- > Ongoing discussions with Napcore for the signature of a joint declaration
- > MoU between all the corridor projects
- ➢ Joint workshop and presentations at NAPCORE Mobility Data Days 2024 & 2025
- Presentation of MATIS at the last X4ITS SCOM (10.04.2025)
- Regular cross-corridor meetings every quarter
- Cooperation and coordination on the evaluation methodology (cross-corridor workshop organized by MATIS on the 11/06/2025)
- ▶ Invitation sent to all the corridors to join MATIS SCOM (10-11/6/2025) in Barcelona



### **THANK YOU !**

Coordinator (ASFA): Alessandra PIPITONE FEDERICO <u>alessandra.pipitonefederico@autoroutes.fr</u>





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### SCALE

### Strengthening C-ITS Adoption and Lining-up across Europe

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.





### SCALE IN A NUTSHELL



#### **Strengthening C-ITS Adoption and Lining-up across Europe**





### **SCALE PARTNERS**





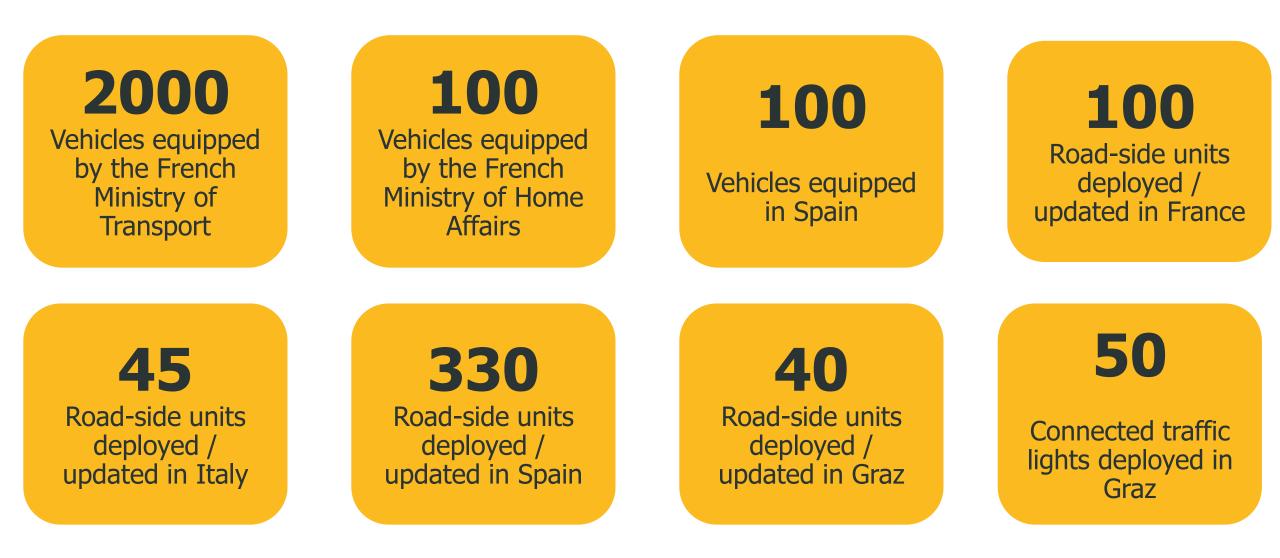
### **PROJECT OBJECTIVES**

The overall objective of SCALE project is to address the remaining challenges that hamper the industrialization of the C-ITS ecosystem in Europe and thus contribute to the implementation of large-scale operational deployment, the extension of the geographical coverage and the achievement of C-ITS continuity

- Technological challenge: C-ITS are currently experiencing different kinds of complementary but also competing communication technologies and architectures. This competition fosters the uncertainty of investment by public and private stakeholders. SCALE aims at addressing this issue by working on technical evaluation for each new use case, so to find the best technologies and architectures to better answer the stakeholders' and end-users' needs.
- Operational challenge: SCALE aims to address the operational topics to level the services by building a framework for the set-up of operations, which involves working on production launch processes and operational compliance, working on the maintenance topics and their consequences
- Socio-economical challenge: SCALE will help the discussions between the stakeholders to find business models that allow the deployment of valued-added services while taking into account the important investments of the different stakeholders, the idea being to find a costs-benefits balance for each of them.



### **IMPACTS OF THE PROJECT**







### **THANK YOU**

Name: Sylvain BELLOCHE, on behalf of Marie-Christine ESPOSITO DGITM / DMR / PEI-ISC Email: <u>sylvain.belloche@developpement-durable.gouv.fr</u> <u>marie-christine.esposito@developpement-durable.gouv.fr</u>



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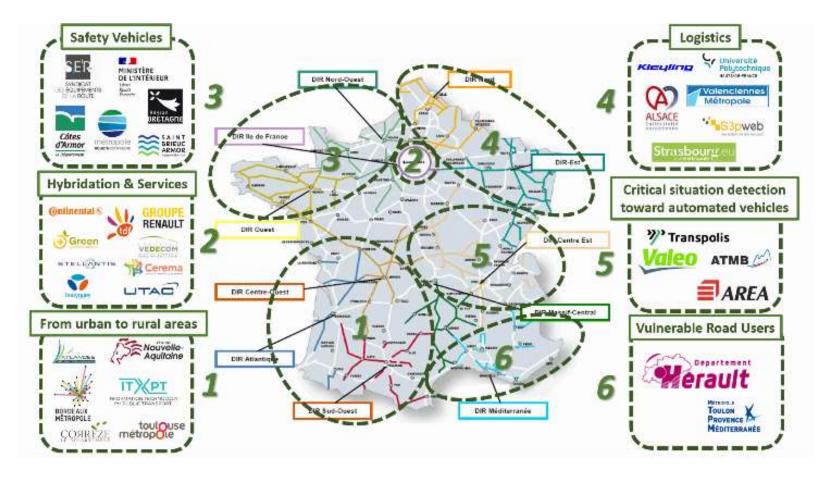
### **EXAMPLES OF USE CASES**

- Dedicated lanes for public transport in cities and ring roads to ensure punctuality in urban nodes
- Connected intersections giving signal priority to emergency and public transport vehicles and securing vulnerable road users
- GLOSA (Green Light Optimal Speed Advisory) to reduce emissions and enhance comfort
- •• **Smart level crossings** that alert drivers and train operators of stopped vehicles
- MaaS-type (Mobility as a Service) solutions and new user services (e.g., schedules, park & ride info) to encourage modal shift in low-emission zones
- Onboard incident logbooks for operators to document accidents, share alerts with nearby vehicles and emergency services, and coordinate from traffic control centers



#### 6 Pilote and Operation Sites in France:

- South-East : Vulnerable Road Users
- South-West : From urban to rural mobility
- North-West : Safety vehicles
- Paris Region : Hybridization & Services
- North-East : Logistics
- Center-East : Critical situation information from/to AV





#### 2 Sites in Italy:

- Urban areas new use cases (with Verona, Torino & Trento):
  - Modal transfer information
  - Process optimization for logistics use cases
  - Terminal slot request and assignment for heavy vehicles
  - I2V information on traffic management and parking information
  - RWW Mobile Extensive work zone
  - Urban logistic
  - Emergency or Rescue/Recovery Vehicle in Intervention

#### Motorways new use cases:

- Modal Transfer Information
- Terminal slot request and assignment for HDT
- Process optimization for logistics use cases

 	Con D	 nees/ use	
			-

Extension of existing new consists furgerate

New services/use cases\*

Use Cases	Torino	Trento	Verona	Use Cases	Torino	Trento	Verona
HLN – Emerg. Veh. Appr,				HLN – Stationary Veh.			
HLN – Emerg. Veh. Interv.				HLN – Accident zone			
HLN – Traff. Jam ah. Warn.				HLN – Weath. cond. Warn.			
RWW – Road/Lane closure				HLN - Temp.Slippery Road			
IVS - Free Text				HLN – Anim/Pers on the R			
PVD - Event Data Collect.				HLN - Alert Wrong Way Dr.			
SI – GLOSA/TTG				HLN – PT Veh at a stop			
SI – Traff. Light Priority				RWW - Winter Mainten.			
Vulner. Road User Protect.				IVS – Traffic Signs			
On Street PKG Managem.				PVD - Veh. Data Collection			
Off Street PKG Info				SI - Emergency Veh. Prior.			
Traff. Info & Smart Routing				AVG - SAE Level Guidance			

Service extension Incl. up-grade / new release New in city \* excl. intermodal



••• **1 Site in Spain**, divided in 4 areas:

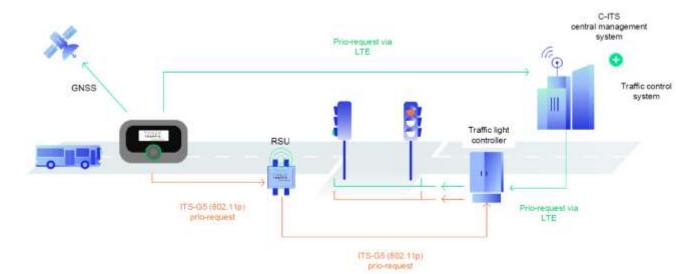


135 RSUs and 7 OBUs



- I Site in the city of Graz (Austria) with the following use cases :
  - Signal phase and timing information
  - Traffic condition (central based message control)
  - Railway level crossing
  - VRU / Right turn assistant
  - Virtual traffic light
  - Public transport prioritisation
  - Support for automated vehicles





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## MERIDAN



#### Introduction

Facts & Figures
 Achievements
 Outlook 2025
 Visit us

Co-funded by the European Union



# MERIDIAN -



## Achievement

- Despite initial setbacks caused by the coronavirus pandemic and global supply chain disruptions, the rollout of Road Works Warning Trailers (RWW) equipped with C-ITS has gained impressive momentum.
- The milestone of the <u>1,000th C-ITS</u> <u>equipped RWW</u> was celebrated with an official handover to the road maintenance departments.
- Looking ahead, the Autobahn GmbH is accelerating further, with plans in motion to deliver at least another 1,000 RWWs.
- These innovative units are now strategically positioned along Germany's TEN-T corridors and major motorways, enhancing road safety and connectivity.

				and connec	tivity.	
Introduction	Facts & Figures	Achievement 1	Achievement 2	Achievement 3	Outlook	Visit us
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# MERIDIAN =



Facts & Figures

Achievement 1

## Achievement

- Successful completion of Task 'Safety Priority System - I2V data provision for incar warnings' with an Event in Amersfoort,NL
- Real-Time In-Car Safety Alerts
- Emergency Vehicle Communication
- Seamless ITS Integration
- Cross-Sector Collaboration
- Innovative Traffic Management
- Euro NCAP & Policy Shifts

Achievement 3

**Achievement 2** 

Future-Ready smart infrastructure

#### The Netherlands Leading the Way

Full deployment in ambulances, fire trucks & more. Plus Future-Ready Infrastructure incl. smart systems transforming road experiences

Outlook

Visit us

 $\bigcirc$ 

Introduction

Co-funded by

the European Union



#### Achievement

- In 2023, the Smart Cycling working group kicked off its mission, led by MERIDIAN's partner MUNY NRW.
- Collaborating with the Interreg project MEGABITS, MERIDIAN explored the exciting potential of ITS in cycling—leading to the creation of the Smart Cycling Roadmap.

Curious to see how ITS can revolutionize cycling? Join us on <u>May 20 / 16:15</u>\_at the <u>Commission's booth</u> for an insightful presentation on <u>Smart Cycling in</u> <u>MERIDIAN</u> and the groundbreaking <u>Smart</u> <u>Cycling Roadmap</u>, brought to you by MERIDIAN and MEGABITS.

Outlook

Visit us



## Outlook

Month	Event & Location		Topics
March	Event "Experience the latest in road safety", NL		Meeting the C-ITS experts of MERIDIAN Part3 -Safety Priority Services-
ongoing	Experts' Workshops		TMP exchange in the Brennero corridor - DE,IT,AT,(CH)
May	Event "ITS Congress" Seville, Spain		Presenter / Booth EC "Corridor Session"
May	Event "Steering Committee Meeting" Seville, Spair	ı	Working groups & project administration
June	Event "Transport&Logistics" Munich,Germany		Multimodal - Digitalization of ports and freight transport
June	Experts' Workshop Knowledge Building		Cybersecurity in Mobility
June	Event "Matis SCOM"		Presenter & Participant Evaluation Workshop
July	Event "C-ITS & urban nodes" Amsterdam, NL		Meeting the C-ITS experts of MERIDIAN -TCC-
Oct	Event "Steering Committee Meeting" Utrecht, NL		Working groups & project administration
Oct	Event "Smart Cycling Summit" Brussels, Belgium		Roadmap Smart Cycling
Nov	Experts' Workshop Multimodal Services		C-ITS & Multimodal Services
ongoing	Expert's Workshop Smart Cycling		Smart Cycling

Introduction	Facts & Figures	Achievement 1	Achievement 2	Achievement 3	Outlook	Visit us
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# Visit us.

For more information and engagement, please visit <u>www.meridian-corridors.eu</u> and/or contact us via info@meridian-corridors.eu



Cross-corridor cooperation in the TEN-T network at a glance

Presentation of the individual projects

Collaboration with NAPCORE & C-Roads

Practical examples of collaboration

■Open discussion



# Collaboration with C-Roads

# Fostering Harmonised C-ITS deployments across Europe

Collaboration of X4ITS, MATIS, Meridian, SCALE, C-Roads Germany Phase 3, and C-Roads Austria 3 with the European C-Roads Platform: commitment to use C-Roads Specifications and to provide feedback for possible improvements.

Date:	20 <sup>th</sup> of May 2025
Time:	12:45 – 13:15
Location:	EC booth, ITS Europe Seville



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# Collaboration with NAPCORE



# NAPCORE & Corridor Projects

- Member State coordination for implementing the ITS Directive
- Recommendations for harmonizing National Access Points and National Bodies
- Common work on data accessibility and usability
  - mobilityDCAT-AP
  - Data exchange standards
  - Data quality frameworks
  - Data dictionary
- Topic related community management
- NAPCORE academy & training

#### National Access Point Coordination Organisation for Europe

- Active since 2021
- EC funded via Connecting Europe Facility (CEF), 2021-2025-2027, 14 Mio € & 11 Mio €
- All Member States and further countries
- Stronger focus on multi-modal mobility & engagement of cities and regions





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# Practical examples of collaboration





#### X4ITS & NAPCORE Cooperation – practical example

Uptake of NAPCORE recommendations for X4ITS implementations

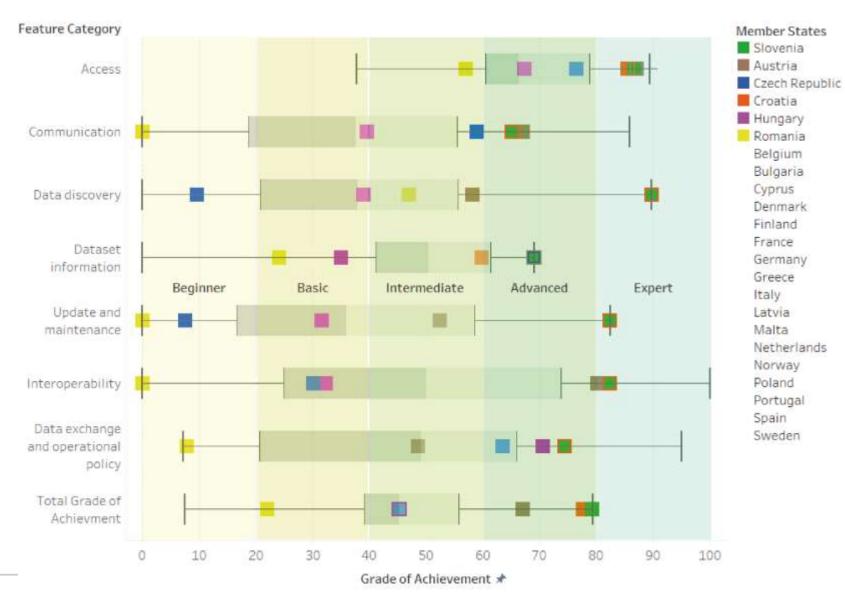


#### **National Access Points**

- Facilitate access, exchange and reuse of transport related data
- Support the provision of EU-wide interoperable travel and traffic services
- Implementation of delegated acts adopted under Directive 2010/40/EU
- Various forms possible: database, data warehouse, data marketplace, repository, and register, web portal or similar
- Harmonisation through "The National Access Point Coordination Organisation for Europe" (NAPCORE)
  - Development of recommendations for interoperability
  - Data standard harmonisation
  - Expansion of availability and access of mobility related data



#### NAP Level of Service of X4ITS Partners





#### X4ITS 2<sup>nd</sup> Technical Workshop 9<sup>th</sup> April 2025



#### Learnings

- Every NAP is facing similar problems mostly related to implementation
- Dedicated staff supporting the NAP in a structured and formal way could be helpful
- National Bodies and National Access Points can be under single organisation
- Organisation of NAP-conferences supports harmonized implementation
- Patience and persistence is needed when operating a NAP



#### X4ITS 2<sup>nd</sup> Technical Workshop 9<sup>th</sup> April 2025

#### **Recommendations for data providers**

- Increased accessibility of high-quality data
- Harmonisation of data **structure**
- Automated and regular upload of data to the NAP

#### **Recommendations for the interface of NAP**

- Harmonised user-friendly look and feel
- Simpler registration for data providers
- High-performing searching tool





### X4ITS 2<sup>nd</sup> Technical Workshop 9<sup>th</sup> April 2025



#### **Recommendations for the NAP operator**

- Standardised data evaluation and authorization
- More involvement and information for stakeholders
- Joint efforts and close communication of all NAPs
- NAP upgrades according to NAPCORE recommendations





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MERIDAN

NTS

# MERIDIAN



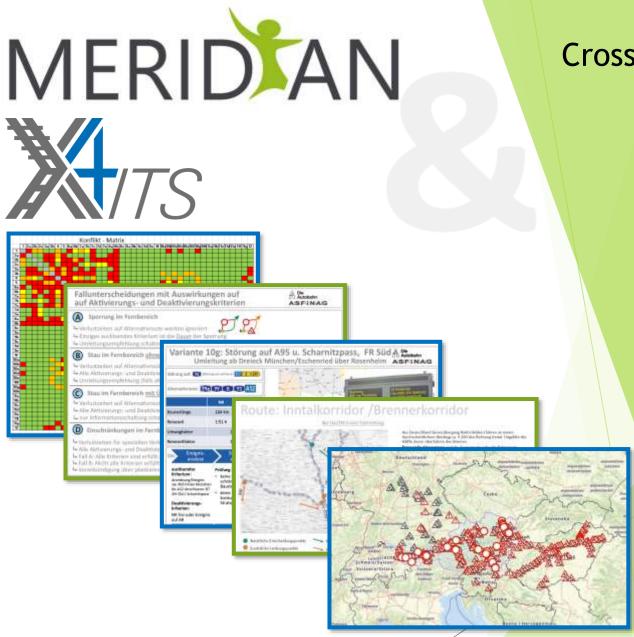
#### Cross-Border-Cooperation in the Alpine+ region

#### Background information:

- First meeting in March 2024
- Key Stakeholders: Motorway authorities, Research institutes, Alpine region representatives
- Expert Meetings & Workshops every month
- Geographical Focus on Alpine regions and major motorways (North-South Axis)

#### 4 Sub<mark>-WGs:</mark>

- Workgroup 1: technical/operational collaboration
- Workgroup 2: data analysis
- Workgroup 3: communication/public relations
- Workgroup 4: coordination of road works/constr. Sites



#### Cross-Border-Cooperation in the Alpine+ region

Challenges:

- Unstructured Multi-Level Communication
- Inconsistent Cooperation & Agreements
- Manual Information Exchange
- 'Traditional' Traffic Management Plan Sharing

Milestones achieved:

- Jointly coordinated press releases
- Joint coordination of redirection recommendations and corresponding messages on the VMS displays
   Strategy handbook 1.0 (covering 39 TMP-strategies)
   Construction site overview map 1.0 (highways & rail)
   Joint data analysis on cross-border HGV traffic



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#### Question

What are the main challenges in achieving seamless cross-corridor cooperation among ITS projects?

*Cross-corridor cooperation in the TEN-T network at a glance* 

Presentation of the individual projects

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■Open discussion

#### Question

What are the tangible benefits of cross-corridor cooperation for stakeholders (partners, EC,...)?

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Practical examples of collaboration

⊃Open discussion

#### Question

How can EC be leveraged to support cross-corridor ITS initiatives?