



**ASECAP**

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*Hosted by*

**seopan**  
Asociación de Empresas Constructoras  
y Concesionarias de Infraestructuras



# Introducing the use of TMAs in Spain, Portugal and Slovakia to protect O&M workers

IGNACIO NIETO CORTÉS  
CINTRA, SPAIN



# Who We Are

**CINTRA** : Global private-sector transportation infrastructure company

FERROVIAL - BUSINESS LINES

Highways

50 Years of  
Experience

25  
Concessions

9 Countries

≈ 1.480 km of  
Highways



# What is the biggest risk of our employees?

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The main risk faced by the field teams are related to **work performed near live traffic** while they are carrying out road maintenance activities.

How can we reduce this risk so that our workers feel safe?



[Link to watch video](#)

# What are Truck Mounted Attenuators?

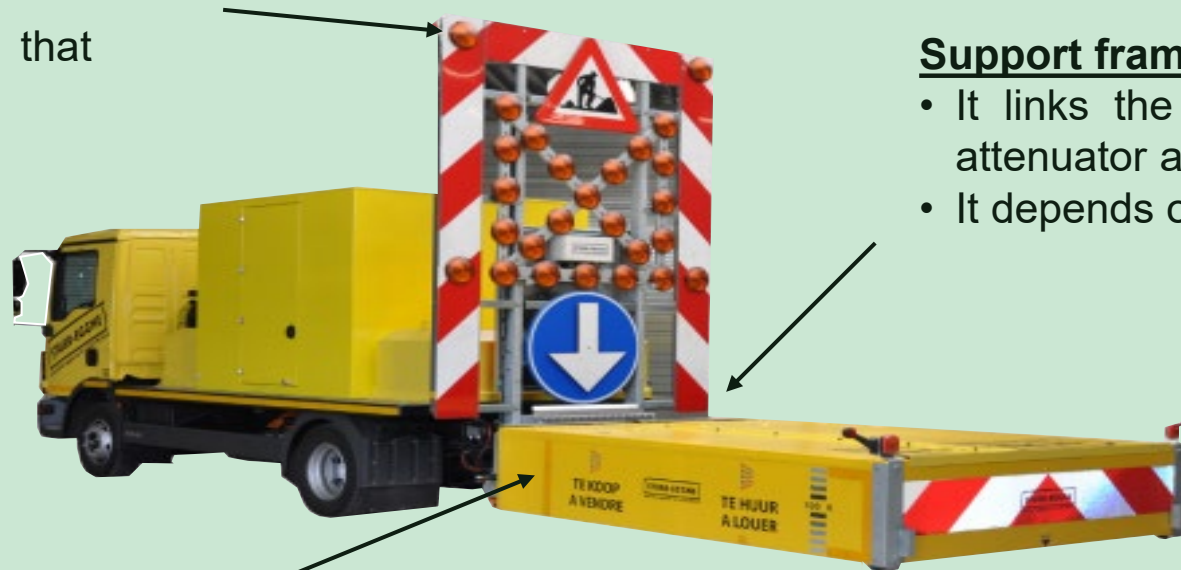
**Truck mounted attenuators**, also known as **TMA**s, are shock absorbing devices, that are attached to the back of large vehicles to protect workers and equipment. The purpose is to protect them **from impact collisions**.

## Vertical signaling panel

- Complementary element that helps to alert road users
- It can be customized.

## Support frame

- It links the three elements: the truck, the attenuator and the vertical signaling panel.
- It depends on the truck.



## Attenuator

- Its main function is to absorb energy when hit.
- Each manufacturer uses different materials, dimensions and characteristics.
- It's usually protected with zinc coat to prevent rusting

# What are Truck Mounted Attenuators?

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- **Impact speed.** The models more common are 100 km/h or 70-80 km/h.
- **Total mass:** The truck mass must keep with the manufacturer requirements.
- **Flexibility:** It may be a limitation in the use of TMA's.
- **Driving Speed limitation:** Variable. Vertical or extended.
- **Regulation:** In Europe, CEN developed the Technical Specification 16786, "Road restraint systems - Truck Mounted Attenuators - Performance classes, impact test acceptance criteria and test performance". While local regulation don't impose it as a mandatory, this document will be always optional.
- **Market options:** Procurement (Supply + Installation). Renting or leasing is not very common, maybe in some markets.



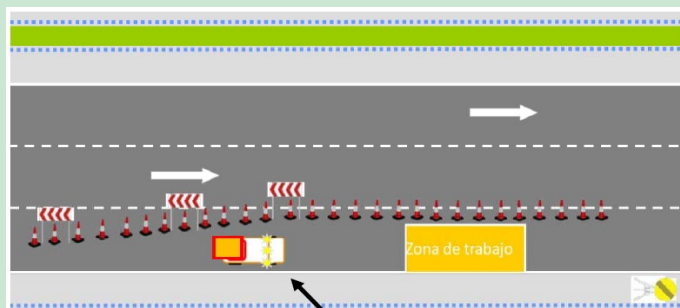


# Use of TMA

- Our **Best Practices Guidelines for Traffic Control Operation** in terms of H&S is to use the TMA in a truck used as Impact Protective Vehicle. It **never can't be used** in a vehicle that is performing an operation.
- This space **will be free and clear** of material, people, and equipment.
- When stopped, the TMA will keep enough **protection distance** from the escorted vehicle or workspace.



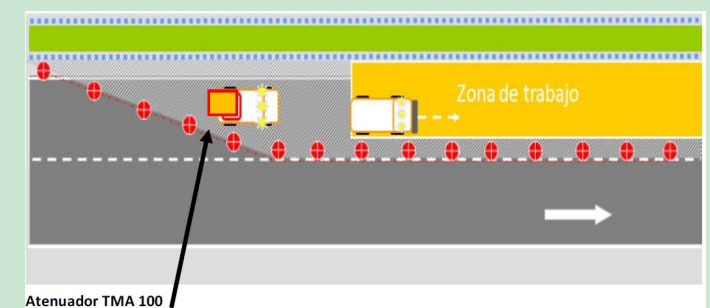
Temporary closure in slow lane



Temporary closure in rapid lane



Mobile lane closure



# TMA's in our Europe assets

## IRELAND

- **Eurolink M3 (Dublin)**  
Scorpion TMA - Traffix Devices
- **Eurolink M4M6 (Dublin)**  
Scorpion TMA - Traffix Devices

## PORTUGAL

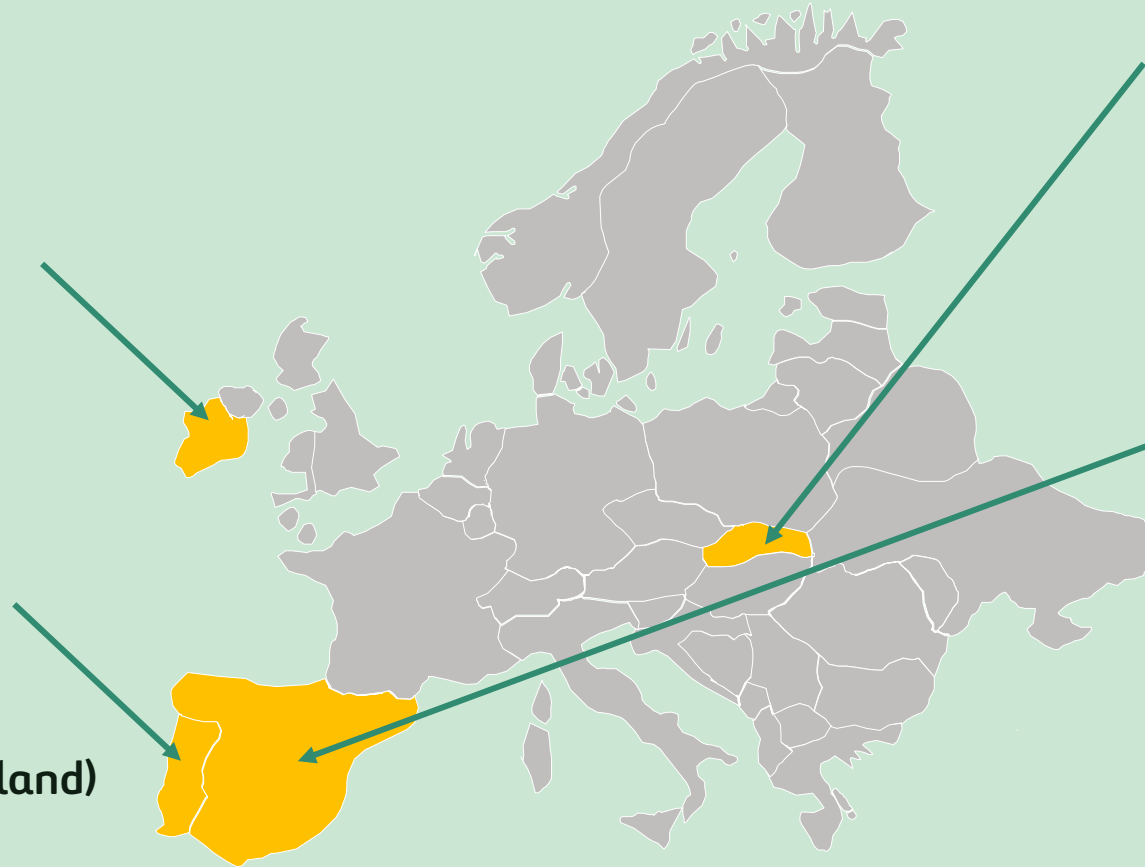
- **Norte Litoral (Oporto)**  
TM US100 - Verdegro
- **Via do infante (Algarve)**  
TM US100 - Verdegro
- **Euroscut Açores (San Miguel Island)**  
Defender - Nissen

## SLOVAKIA

- **D4R7 (Bratislava)**  
Julietta TMA - Steuer-Egghe

## SPAIN

- **Emesa (Madrid)**  
3x TM US100 - Verdegro  
2x LTMA V70K - Verdegro  
2x Scorpion TMA-Traffix Devices
- **A-66 (Zamora)**  
Defender - Nissen
- **Aravia (Zaragoza)**  
Defender - Nissen  
TM US100 - Verdegro  
LTMA V70K - Verdegro
- **Autema (Barcelona)**  
Defender - Nissen





# Julietta (Steuer-Egghe) - D4R7 (Bratislava, Slovakia)

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# Julietta (Steuer-Egghe) - D4R7 (Bratislava, Slovakia)

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# Defender (Nissen) - Autovía de la Plata A66 (Zamora, Spain)





# Defender (Nissen) - Autovía de la Plata A66 (Zamora, Spain)



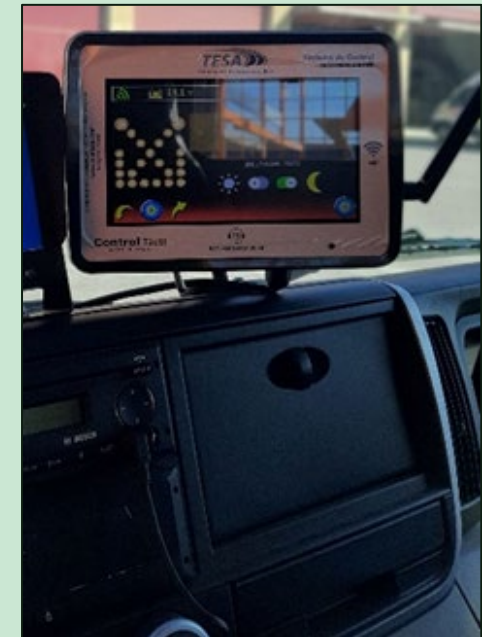


# Scorpion TMA (Traffix Devices) – EuroLink M4M6 (Dublin, Ireland)





# LTMA V70K (Verdegro) – Aravía (Zaragoza, Spain)





# ***Thank you for your attention***

**CINTRA puts health and wellbeing  
at the forefront of all its activities  
for all the personnel**

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**cintra**

