

# 7th Conference On Sustainable Mobility & Intelligent Transportation Systems

Πρόσβαση, ανταλλαγή και επαναχρησιμοποίηση δεδομένων  
μεταφορών και ο ρόλος τους στη δημιουργία Ψηφιακών Διδύμων  
των δικτύων μεταφορών

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Πανεπιστήμιο Κύπρου





Data  
Availability

Data Quality  
& Trust

Data  
Accessibility

Share &  
Exchange

Re-Use



The diagram consists of five circles arranged in a pentagonal pattern. The top-left circle is black and contains the text 'Data Availability'. The top-middle circle is black and contains the text 'Data Quality'. The top-right circle is blue and contains the text 'Data Accessibility'. The bottom-left circle is blue and contains the text 'Share & Exchange'. The bottom-right circle is blue and contains the text 'Re-Use'. Each circle has a soft shadow beneath it. On the far right, there is a vertical decorative bar with a green segment at the top, a light blue segment in the middle, and a dark blue segment at the bottom.

Data  
Availability

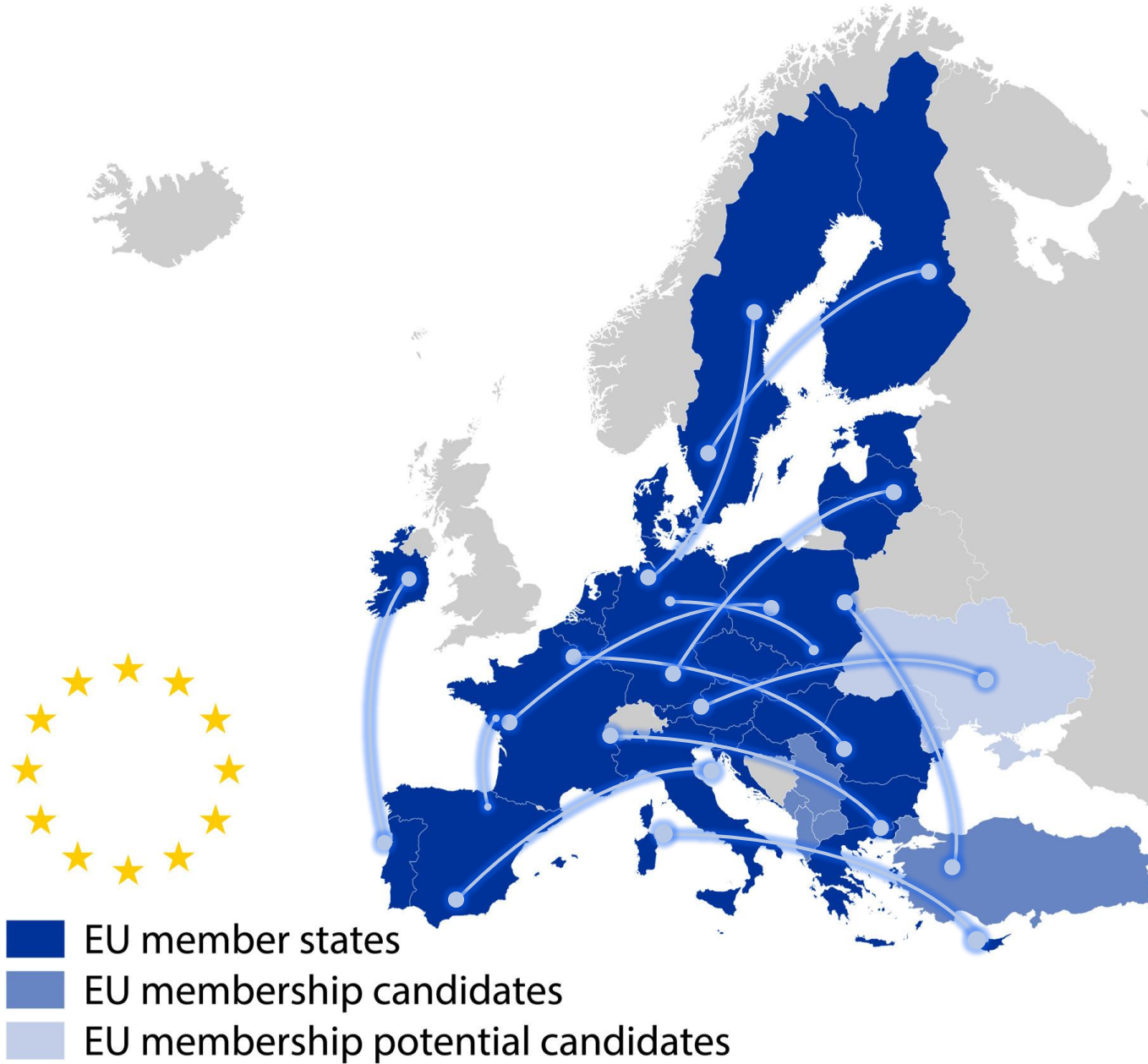
Data Quality

Data  
Accessibility

Share &  
Exchange

Re-Use

# EUROPEAN UNION



## Goals on Harmonization



**Data Collection**



**Data Storage**



**Dissemination of  
data**

# DIRECTIVE 2010/40/EU or ITS Directive

Optimal use  
of road,  
traffic and  
travel **data**

Continuity of  
traffic and  
freight  
management  
**ITS  
services**

ITS road  
safety and  
security  
**application**

**Linking** the  
**vehicle** with  
the transport  
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**National Access Points**



## National Access Point

Facilitate access to standardized, exchangeable and reusable transport data to transport-service providers for improved road and traffic management

[View Services](#)

National Access Point (NAP) service is an open-access data portal that offers transport-related data in a digital machine-readable format. The aim of this national platform is to centralise the access to all available datasets on passenger transport in Cyprus and a crucial step towards Intelligent Transport System (ITS), as per the Directive 2010/40/EU and supplementing Delegated Regulations.

## How we can help

We provide all necessary services within the scope of ITS, as well as information necessary for traffic control and management. In the first phase of development, Cyprus NAP is implemented as a data warehouse. It will be gradually enhanced to support metadata capabilities and provide discovery services for pre-processed data sets. The datasets originate from all possible parties in both the public and the private sector and the data is accessible on a non-discriminatory basis, in a secure manner, as per the privacy regulations.

### TN-ITS Cyprus

Provide a seamless exchange of information on changes in static road attributes for the deployment of ITS applications.

[READ MORE >>](#)

### Open data

CKAN Organisations are used to create, manage and publish collections of datasets. Users can have different roles within an Organisation, depending on their level of authorisation to create, edit and publish.

[READ MORE >>](#)

### Map service

Cyprus map service

[READ MORE >>](#)

CYNAP



## Data Collection



## Data Discovery and Access Services



## Data viewer and Traffic information

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## Data Accessibility



## Share & Exchange



## Re-Use



# Data Categories

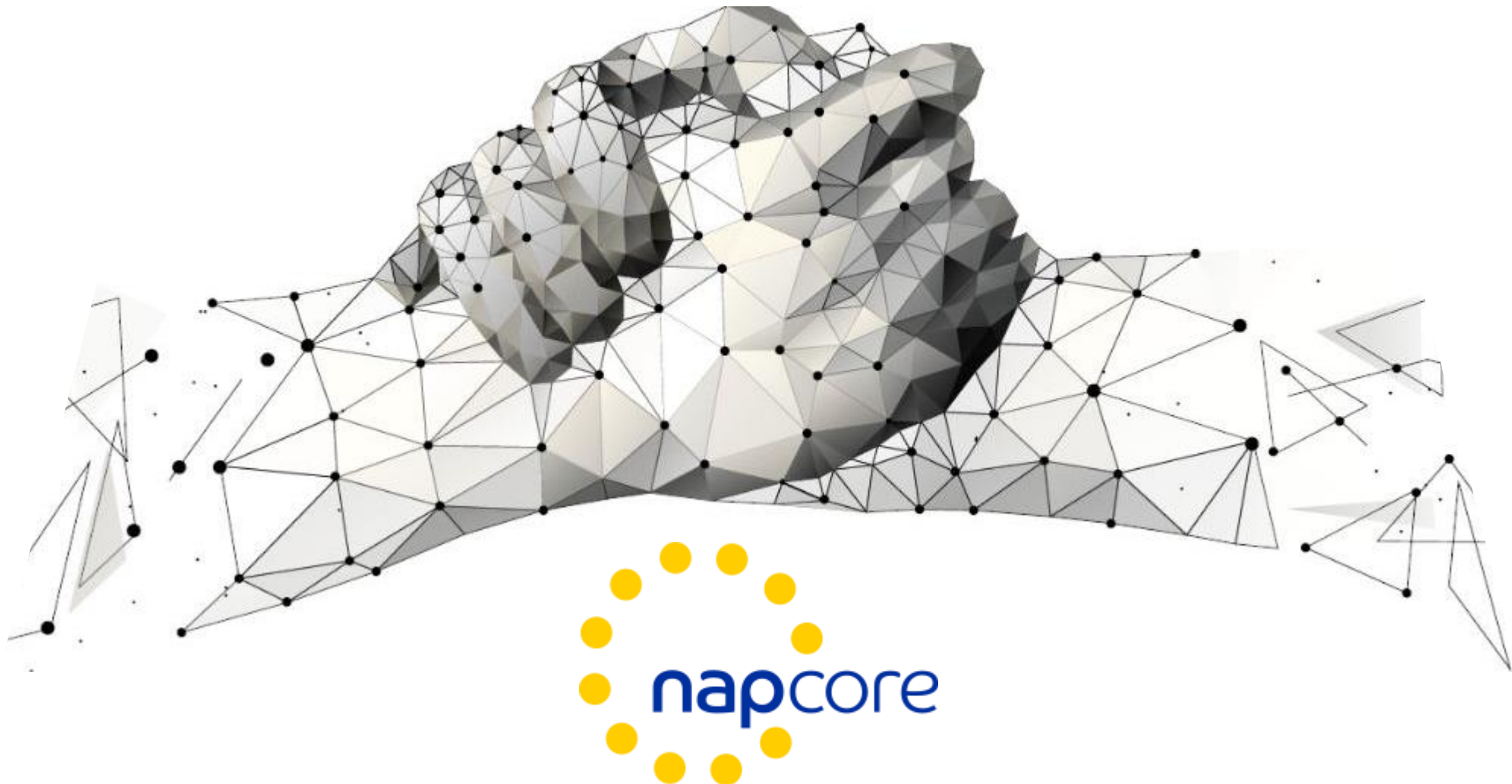
## Mobility Data



## Infrastructure data



# National Access Point Coordination Organisation for Europe

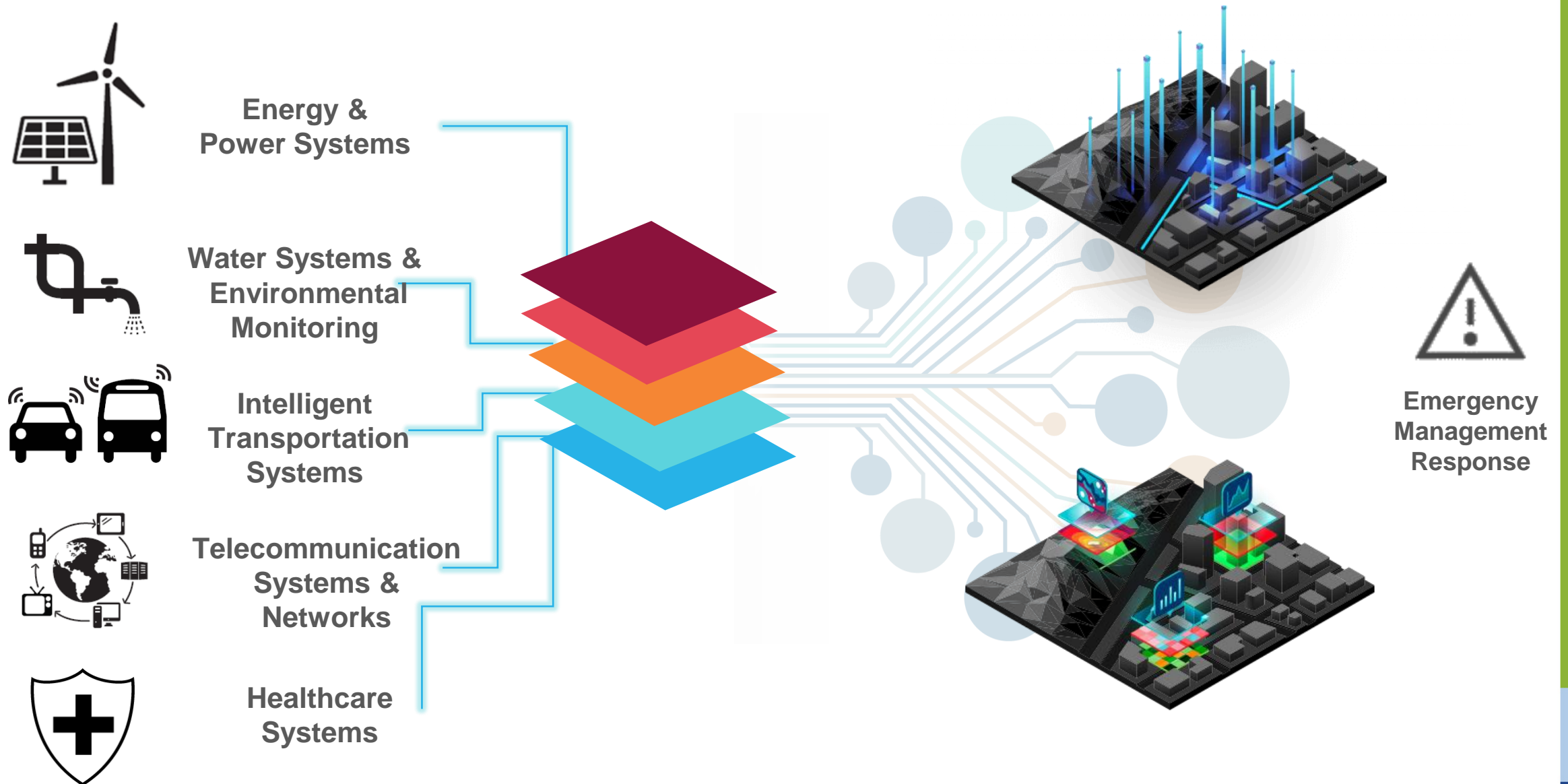


# Toward Digital Twins

- A digital twin is a virtual representation of an object or system that spans its lifecycle, is updated from **real-time data**, and **uses simulation, machine learning** and **reasoning** to help **decision-making (IBM)**.
- Thus, it allows us to **improve the performance of physical entities** by **leveraging computational techniques**.



# Digital Twin of Cyprus Road Network



# Digital Twin of Cyprus Road Network

CYNAP

 data.gov.cy

FixCyprus



ΤΜΗΜΑ  
ΔΗΜΟΣΙΩΝ ΕΡΓΩΝ

waze 





# Conclusions

- 4th Industrial Revolution
- Connectivity
- Model and visualize simple and complex events
- Cyber-Physical systems







# Thank you for your attention

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University  
of Cyprus