



UNECE

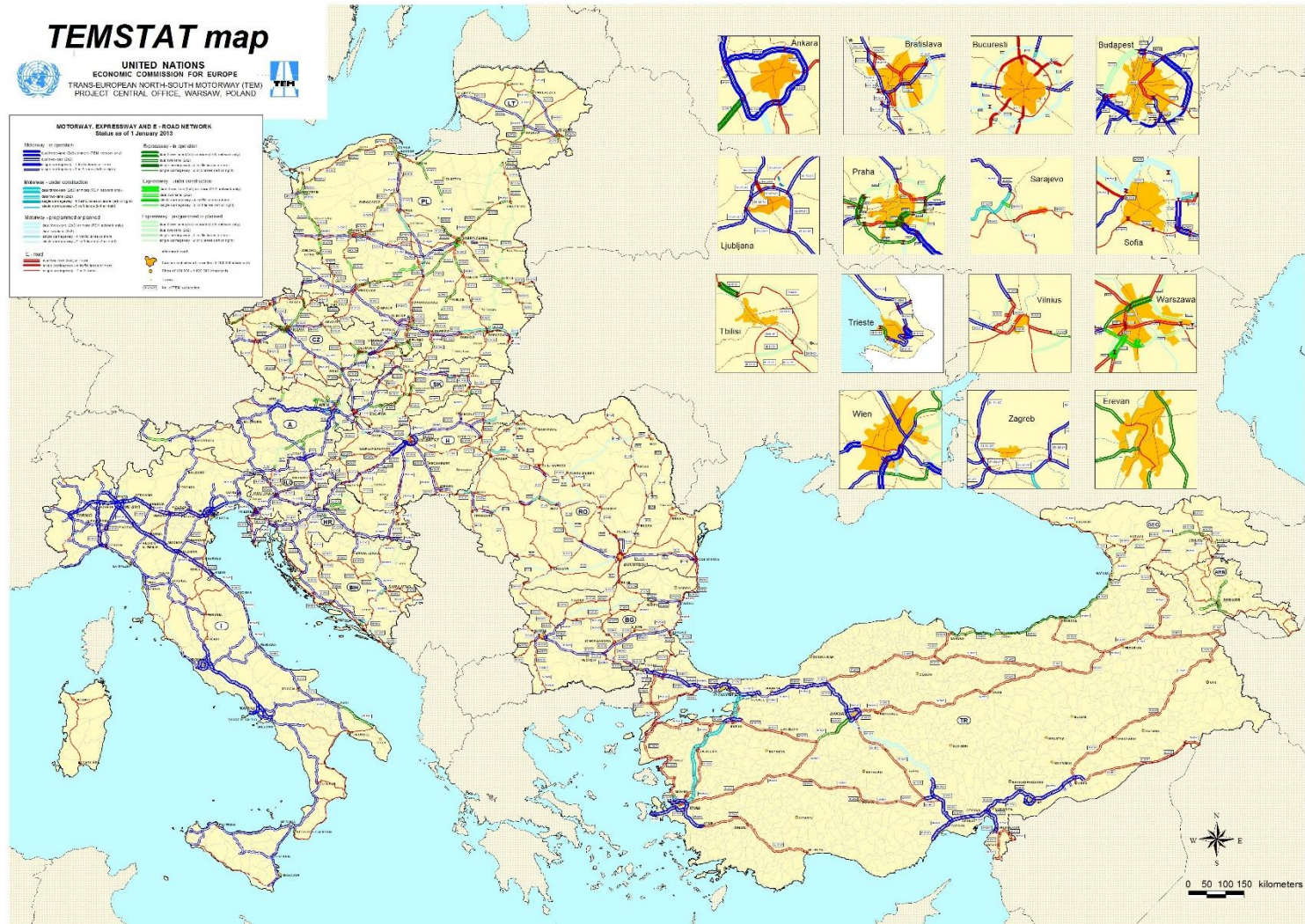
TRANS-EUROPEAN NORTH-SOUTH MOTORWAY PROJECT (TEM)

COMPLETING NETWORK – IMPROVING MANAGEMENT – RESPONDING TO TRENDS

UNIQUE PLATFORM FOR ROAD INFRASTRUCTURE PROVIDERS, MANAGERS AND OPERATORS

SEPTEMBER 2018

Who we are



UNECE

TRANS-EUROPEAN NORTH-SOUTH MOTORWAY PROJECT (TEM)

Why we were established



What we do

UN Sustainable Development Goals (TEM perspective)

- ✓ G.3.: Good health and well-being
- ✓ G.4.: Quality education
- ✓ G.5.: Gender equality
- ✓ G.6.: Clean water and sanitation
- ✓ G.7.: Affordable and clean Energy
- ✓ G.8.: Decent work and economic growth
- ✓ G.9.: Industry, Innovation and Infrastructure
- ✓ G.10.: Reduced inequalities
- ✓ G.11.: Sustainable cities and communities
- ✓ G.12.: Responsible production and consumption
- ✓ G.13.: Climate action
- ✓ G.14.: Life below water
- ✓ G.15.: Life on land
- ✓ G.16.: Peace, justice and strong institutions
- ✓ G.17.: Partnerships for the goals

TEM Project Strategic Objectives

- ✓ Facilitating road traffic in Europe
- ✓ Improving the quality and efficiency of transport operations in UN ECE region
- ✓ Balancing existing gaps and disparities between motorway networks in Western, Eastern, Central and South-Eastern Europe
- ✓ Assisting the integration process of European transport infrastructure systems



How we do so

PROJECTS and ACTIVITIES UP TO 2021

Standards:

- Safety standards in work zones
- Development of a standard catalogue of public services in terms of road infrastructure
- Standards for road equipment for the protection of the environment

Cooperation with partners:

- UN Regional Commissions, Specialized Agencies, Programs and Funds, Departments and Offices
- Highways Engineering Exchange Program, IRF, OECD ITF, PIARC, CEDR
- UNECE (i.e.: WP.5, SC.1, WP.1, WP.29, WP.6)

Evaluation of effectiveness and efficiency:

- road safety infrastructural means
- solutions for the protection of the environment
- tolling systems

Internal business processes:

- Data collection, measurement and dissemination processes for road operators
- Alternative methods of energy production in the management of road infrastructure
- Building Information Modeling for road operators



Areas of interest

TEM Project Strategic Objectives

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NETWORK

ANALYSIS AND PROJECTS COORDINATION

OPERATIONAL PROFICIENCY

BUSINESS PROCESSES IMPROVEMENT

TRENDS

UNDERSTANDING AND RESPONSE



Network



LEGACY:

- TEM Master Plan has been prepared in 2006 and revised in 2011;
- It contains revised list of priority projects of TEM backbone network;
- The expected status of the network in 2020 is also projected.

CURRENT PROJECT:

- **TEM Network Report** has been scheduled to be prepared in 2018;
- It will examine progress of network development;
- Transport growth and transport needs in terms of road infrastructure will be presented;
- Road safety has been taken into consideration, as well as
- Border crossings as probable bottle necks on the network



Network

TEM Network Report



1. Economic data:

- Transport growth evolution in TEM countries
- Trade exchange flows by transport mode (% by tkm) in TEM countries
- Employment by transport mode in TEM countries
- Gross investments spending in road infrastructure in TEM countries
- Maintenance expenditures in road infrastructure in TEM countries
- Registered vehicles by type of vehicles in TEM countries

2. Structure of the national TEM Members network

- Road Network data
 - Total road network (KM) and High Speed Roads
 - Dual and single carriage roads (tolled and not tolled) (KM)
 - Road network density by country (km roads/km² land area)
 - Traffic density by country AADT
- General Transport Data
 - Road passenger and goods transport (pkm+tkm)
- Road Safety

3. Structure of TEM Network

- Road type present and planned
- Number of lanes present and planned
- Sections:
 - In operation, under construction, planned/programmed
 - Years of construction
 - Estimated costs
- AADT volume
- Accidents and fatalities

4. Border Crossings of TEM Network

- Roads
- Average Time
- Services
- Number of HGV
- AADT



Operational proficiency



PROVIDE SAFETY

INCREASE UTILITY

**DECREASE TOTAL
COST**

**INCREASE LIFETIME
VALUE**

**FUNDING,
CAPABILITIES,
GOVERNANCE**

PROJECTS DELIVERED:

- RSA and RSI on the TEM Network

CURRENT PROJECTS:

- Maintenance standards for roads and highways
- Governing and funding of road infrastructure
- Benchmarking of Transport Infrastructure Construction Costs

LEGACY:

- TEM Standards and Recommended Practice (design, construction, maintenance)



Operational proficiency

REPORT: Governing and funding of road infrastructure



1. Road sub-sector's goals and public services

- Governance and public services according to the UN System understanding
- the goals and services for road authorities, taking into consideration literature review and international best practice
- Generic Balanced Scorecard for road authority

2. Governance and organization of the road sub-sector:

- Roles and responsibilities of ministries, agencies and organizations
- Legal forms of these organizations
- Supply chain organization
- Private Sector involvement

3. Capabilities of the road sub-sector:

- Asset management maturity and strategy
- Data collection and management
- Planning and programming processes
- Performance measurement

Permanent workgroup with iHEEP on Asset Management

4. Funding strategies and PPP Projects:

- Funding sources
- Governance of funding
- Debt financing
- Road expenditures
- Preparation and management of PPP projects



Trends



Trends in economy and transportation

- Electrification
- Sharing-economy
- Automation



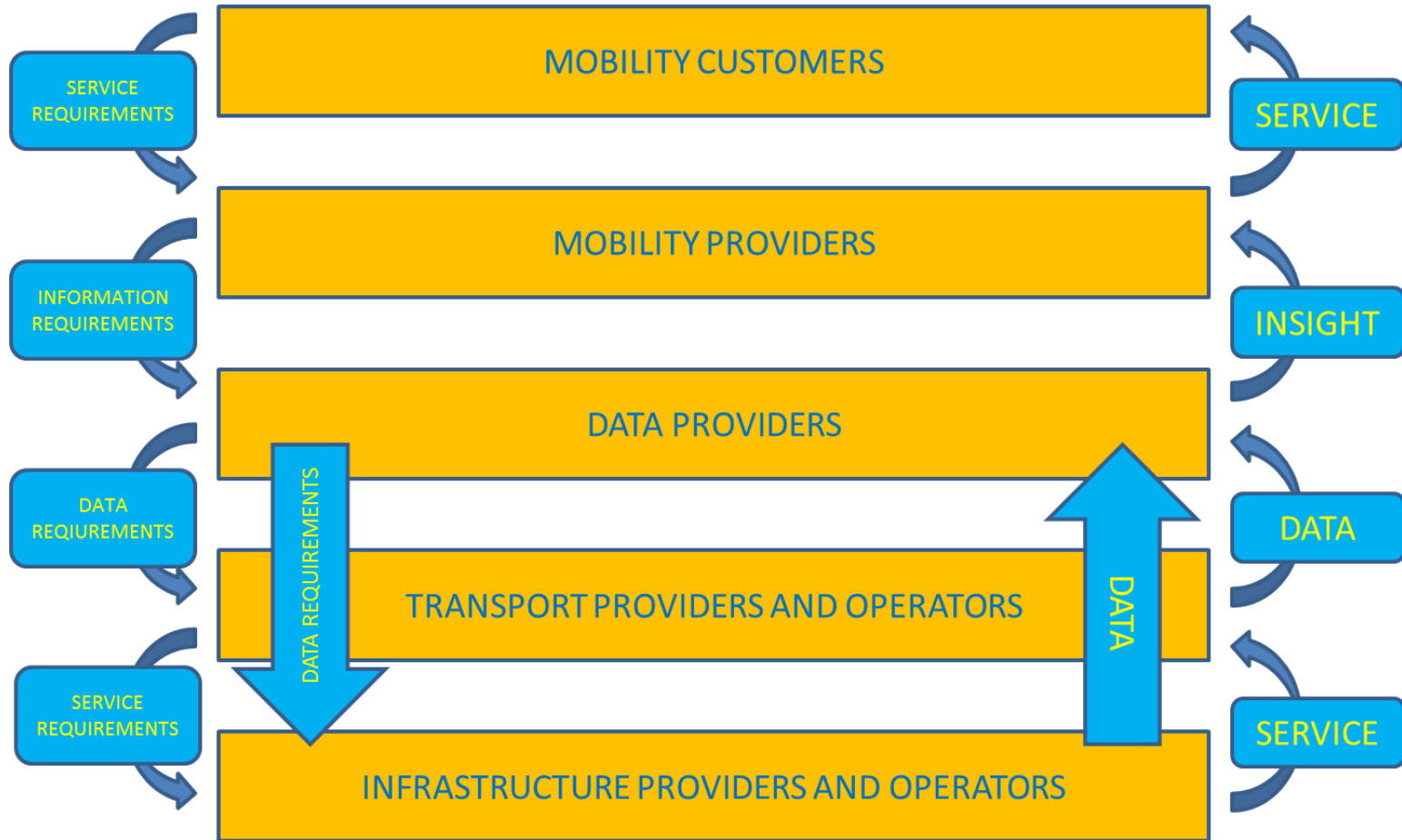
Road operators response in terms of:

- Self-explaining roads
- Well-maintained roads and signs
- Road traffic information
- Data collection and sharing
- New digital infrastructure
- Safety and security policies and procedures



Trends

Report about Mobility as a Service



INTERNATIONAL TRANSPORT
INFRASTRUCTURE OBSERVATORY

BENCHMARKING TRANSPORT
INFRASTRUCTURE
CONSTRUCTION COSTS

CLIMATE CHANGE AND
TRANSPORT

MOBILITY AS A SERVICE

FINANCING TRANSPORT
INFRASTRUCTURE

TRENDS AND CHALLENGES IN THE
ROAD SECTOR

1. TEM NETWORK REPORT
2. OPERATIONAL PROFICIENCY:
GOVERNANCE AND CAPABILITIES

1. CHAIRING THE GROUP
2. PROVIDING SERVICE FOR ROAD
INFRASTRUCTURE SUB-GROUP

INTEGRATION OF CLIMATE
CHANGE INTO ASSET
MANAGEMENT

1. DATA MANAGEMENT
2. CHAPTER PROVIDER FOR THE
MAAS UNECE WP.5 REPORT

1. ROAD FUNDS AND TOLLING
2. PPP: PROJECTS' PREPARATIONS
AND MANAGEMENT

1. ROAD ASSET MANAGEMENT
AND RELIABILITY
2. DATA MANAGEMENT



DATA: TECHNICAL SPECIFICATIONS & OPERATIONAL DETAILS

CORRIDORS: LENGTH, SERVICES, MISSING LINKS, TARRIFS

NEW TRANSPORT PROJECTS

TRAFFIC AND GOODS FLOWS

INTERNATIONAL CONVENTIONS

CONSTRUCTION COSTS

CLIMATE CHANGE ADAPTATION

GOOD PRACTICES AND INNOVATIVE SOLUTIONS

STRUCTURE OF TEM NETWORK

MEMBER STATES' NETWORK AND TEM NETWORK, BORDER CROSSINGS

STRUCTURE OF TEM NETWORK

ECONOMIC DATA AND NETWORK INFORMATION

REPORT'S INTRODUCTION

GROUP OF EXPERTS

CLIMATE CHANGE INTEGRATION INTO ASSET MANAGEMENT

ASSET MANAGEMENT PROCESSES, MOBILITY AS A SERVICE



Conclusions

UNIQUE PLATFORM FOR ROAD INFRASTRUCTURE PROVIDERS AND OPERATORS

**NETWORK
IMPROVEMENT**

**WHICH SECTIONS AND SERVICES EXIST, WHICH ARE MISSING,
WHEN EXPECTED**

**OPERATIONAL
PROFICIENCY**

**HOW TO ENHANCE EFFECTIVENESS AND EFFICIENCY WITHIN
ROAD SUB-SECTOR**

**TRENDS
RESPONSE**

**CONTRIBUTION TO MOBILITY SUPPLY CHAIN, IMPACT ON THE
ROAD INFRASTRUCTURE PROVIDERS, NEW BUSINESS
PROCESSES**



Thank you for your attention

Do not wait any longer. Join us!

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