Vision 2030

Networking Europe

To assure the economic, but sustainable development of Europe, by transforming the networks of today into the networks of tomorrow, able to guarantee better living and working conditions

Networks of infrastructures

Under the umbrella "Networks" the European Commission does include all types of services that are offered to citizens such as:

- **transport infrastructures (roads, railways, waterways ,etc) that assure quick and safe mobility of persons and goods**
- **infrastructures of services (gas, water, energy, telecommunications, postal services, etc)**

Networks make our working and living conditions easier and more comfortable

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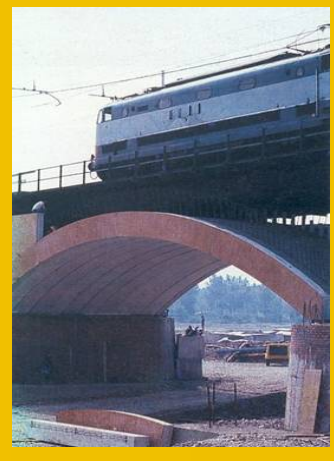
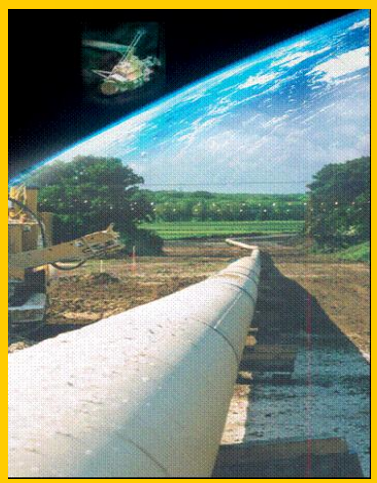
Some data (EU15, 2000)



Roads and highways: approx. 3.520.000 km

Railways : approx. 160.000 km



Gas sector: approx. 1.080.000 km

Water distrib. & sewerage: millions km

Inland waterways: approx. 30.000 km

Focus Area on Networks: managing infrastructures throughout their life-cycle

- Owners and operators of any network, whether at local, national or international level, are legally responsible for its correct, continuous and safe functioning and owe a duty of care to the public and the users/consumers. This means that owners and operators must concern with aspects of safety and security, user satisfaction, congestion, maintaining asset value, sustainability, accessibility, while meeting local, regional and central government objectives on, for example, development, health and social issues.

- All the above demand the maximum usage of the current networks and affect the way growth, operation and up-keeping of networks is funded.

- Furthermore, to provide a commensurate return to governments and stakeholders (including citizens) on their investment in a network (by public money or according to tariffs), the service provided should be satisfactory, and shown to do so.

Operators and owners are therefore the natural interface between the needs of the collectivity and the political and governmental agencies and authorities.

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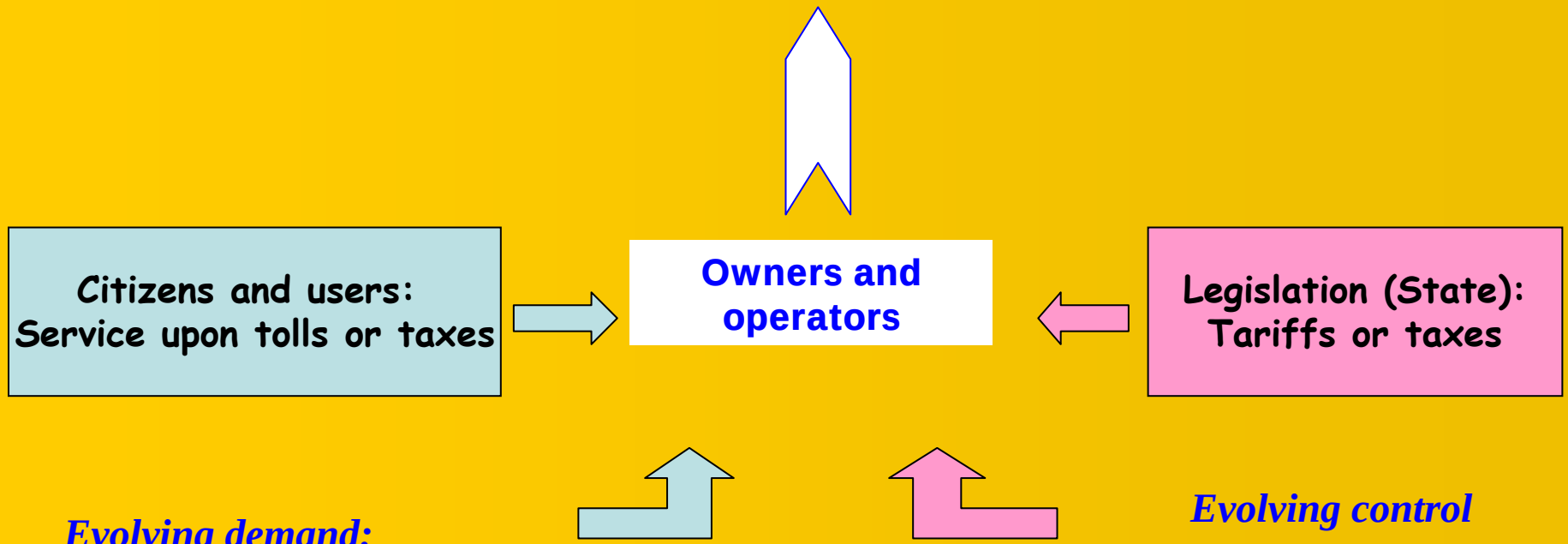
Need for research and innovation



Evolving demand:

- **Accessibility**
- **Functionality**
- **Safety**
- **Information**
- **Friendly and smart infrastructures**

Evolving control

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Change in perspective

From research to optimal use

From components to system

From construction, thru operation and maintenance to…..

- The infrastructure in itself is an integrated product or system, that includes different functions and answers to different needs throughout its life-cycle
- Construction is the construction of the innovated system (no individual components, no individual problems): all components must be studied, optimised and integrated within their global context
- Integrated approach and perspective to networks is necessary

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Challenges

- Enlargement of the European Union
- Urbanisation
- Capacity of the infrastructures: demand will grow, existing assets will have to be upgraded and new constructions planned.
- Change in mobility patterns as well as distribution patterns of utilities (gas, electricity, water and drainage).
- Telecoms growth and ICT impact
- Technology transfer and implementation
- Resources management
  - climate change (i.e. greater water consumption and drainage needs)
  - changes in volume and distribution patterns of electricity and gas
  - nature and landscape (i. e. floods)
- Financing
  - changes in infrastructure ownership and new forms of financing
- Environment
  - increasingly limited resource use and environmental pressures
  - increase in durability and damage growth
  - sustainability
- Risk management (natural hazards and external risks such as terrorism), safety and security

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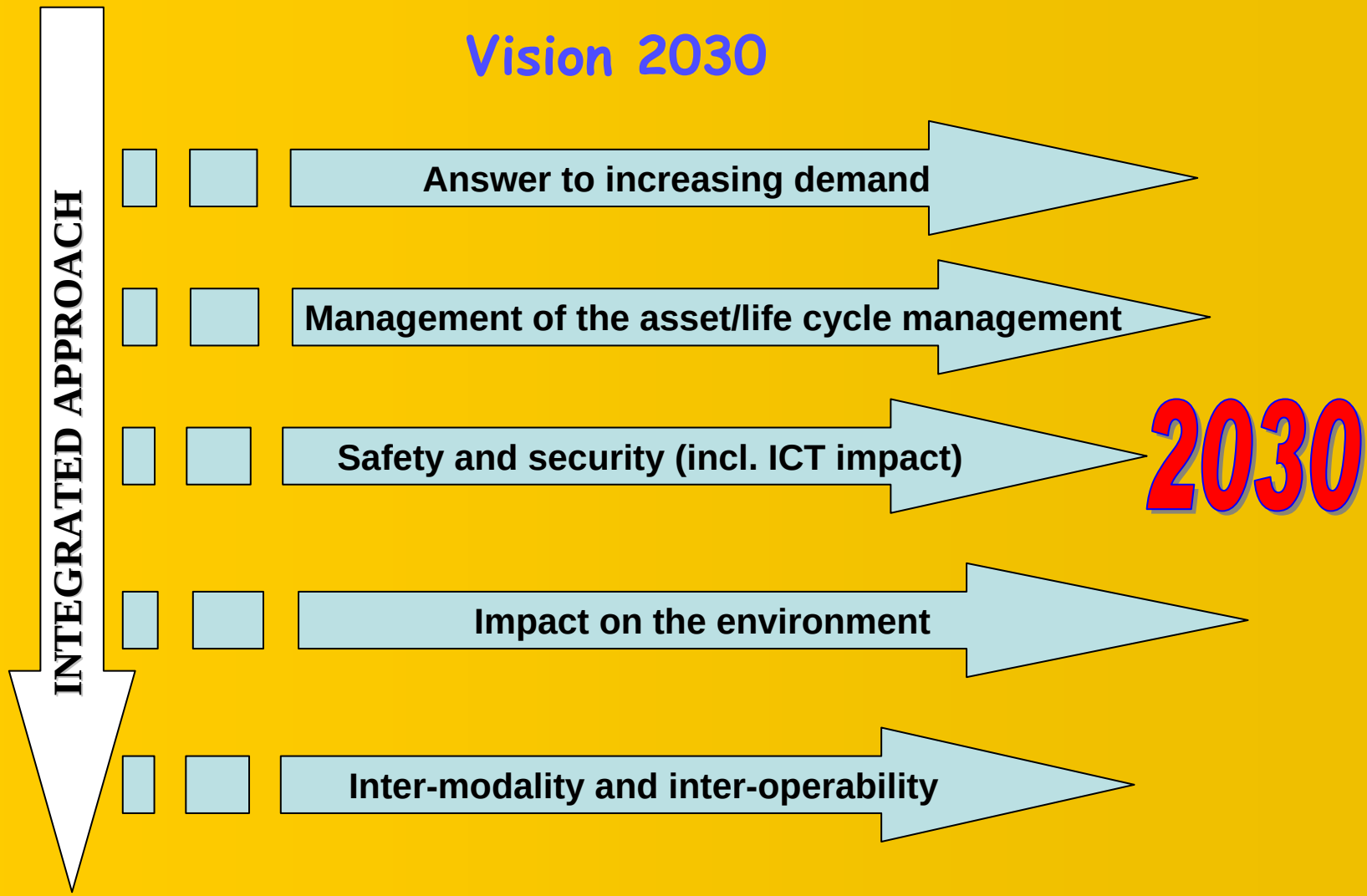
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INTEGRATED APPROACH
Answer to increasing demand
Management of the asset/life cycle management
Safety and security (incl. ICT impact)
2030
Impact on the environment
Inter-modality and inter-operability

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Advanced ICT systems in service: toward the users

- **Integration of solutions that can improve communication between users, the infrastructure and the operators**
- **Impact on infrastructures**

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Management of the asset/life cycle management

- **Optimal management of existing (Maintenance and models)**
  - **Design, development and application of new materials and maintenance techniques based on available experience (advanced BD)**
  - **Development of models to assess and follow the performance of structures over time with the aim of extending their life cycle**
- **Operation (Life-extension and monitoring)**
  - **Optimisation of management and operational tools to assure increase in durability with an optimal response to demand, lower impact on service and optimal use of economic funding**
  - **Intelligent materials (nanotech, ICT, ITS) and solutions able to extend life-cycle**

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Safety and security (incl. ICT impact)

- **Safety (Increase in intrinsic safety and safety of users)**
  - New materials, construction and demolition techniques able to reduce consumption of natural resources and allow recycling and reuse of used materials
  - Integration of solutions (tools, materials, techniques, models, ICT) that increase safety and reduce the risks from external and natural hazards
- **Security: Increase in safety (vulnerability of networks)**
  - New models, design and building techniques, materials and ICT that increase safety and reduce the risks for users and citizens form external and natural hazards

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Impact on the environment

- **Increase in the quality of life: Reduction of environmental impact**
  - New techniques, materials and engineered solutions able to reduce impact and negative effects on users and communities due to transport and service daily activities
- **Impact on environment (construction, maintenance, management)**
  - Optimisation of the application of new materials, construction, maintenance and demolition techniques able to reduce consumption of natural resources and allow recycling and reuse of used materials
- **Impact on territory**
  - New systems for design and planning, upgrading and building able to minimise the impact on the environment
  - Insertion of new networks in the environment minimising consumption of natural non-reproducible resources

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Inter-modality and inter-operability

- **From competitiveness to co-operation**
  - **New integrated conception of systems to take into account the development in use and habits of users and citizens**
  - **New integrated concepts of multimodal infrastructure design for shared structures**
  - **Integrated systems for information and communication to increase security and safety of networked systems**

Expected benefits

- **Guarantee functional networks and services responding to the needs of users and clients by adopting solutions, techniques and materials that extend the life-cycle, increase capacity and durability with low impact on operation and with high standards of safety and security**
- **Support the territorial development and take care of protecting and increasing the value of the territory by a better development of design and construction with use of environmentally-friendly materials and technologies**
- **Cover a leading role both at national and international level to strengthen networks, assets and related innovative services as a major engine for economic European growth and expansion**
- **Safeguard safety and guarantee security by adopting ICT systems for a quick exchange of information and management tools able to predict and quickly restore service conditions**
- **Increase efficiency and efficacy**
- **Create added value for shareholders and stakeholders, reduce costs for ownership and increase the ROIs of their own companies by a better management and allocation of economic funding as a result of the implementations of the innovations proposed**

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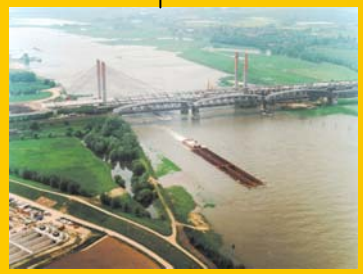
Structure

Leaders

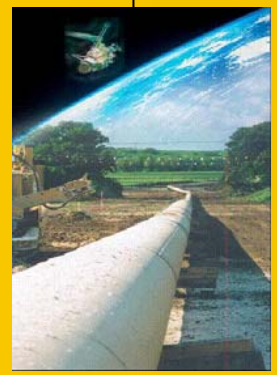
autostrade per l'italia

FEHRL

Roads & Highways

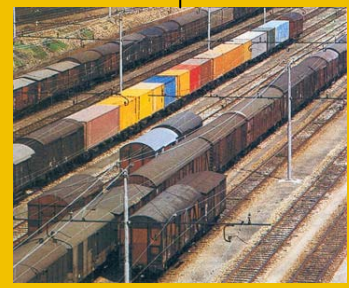


Inland waterways



Gas sector

Water distribution & sewerage



In preparation: Railways

OTHER

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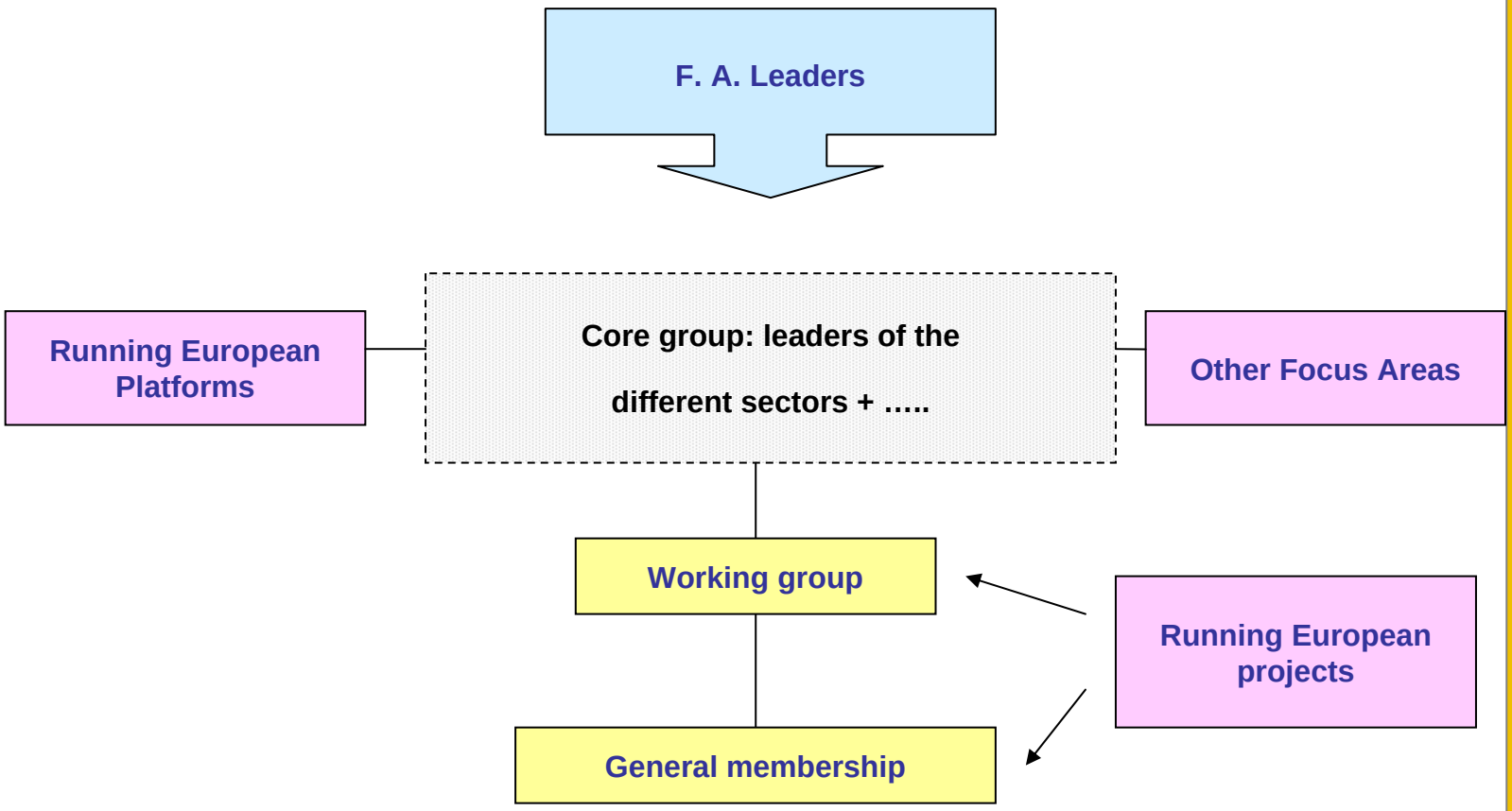
Membership



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INTEGRATION OF STAKEHOLDERS

Joint effort

- Operators
- Contractors
- SMEs
- ICT suppliers
- Material suppliers
- Research institutions
- Universities
- Equipment manufacturers
- Financial Institutions
- Associations

Action plan

❑ Position Paper	AVAILABE
❑ Template Vision 2030 and SRA for roads and highways	AVAILABLE
❑ Draft Vision 2030 and SRA for the other infrastructures	Nov.3rd and 12th
❑ Next meeting	Nov.3rd

For participating:

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