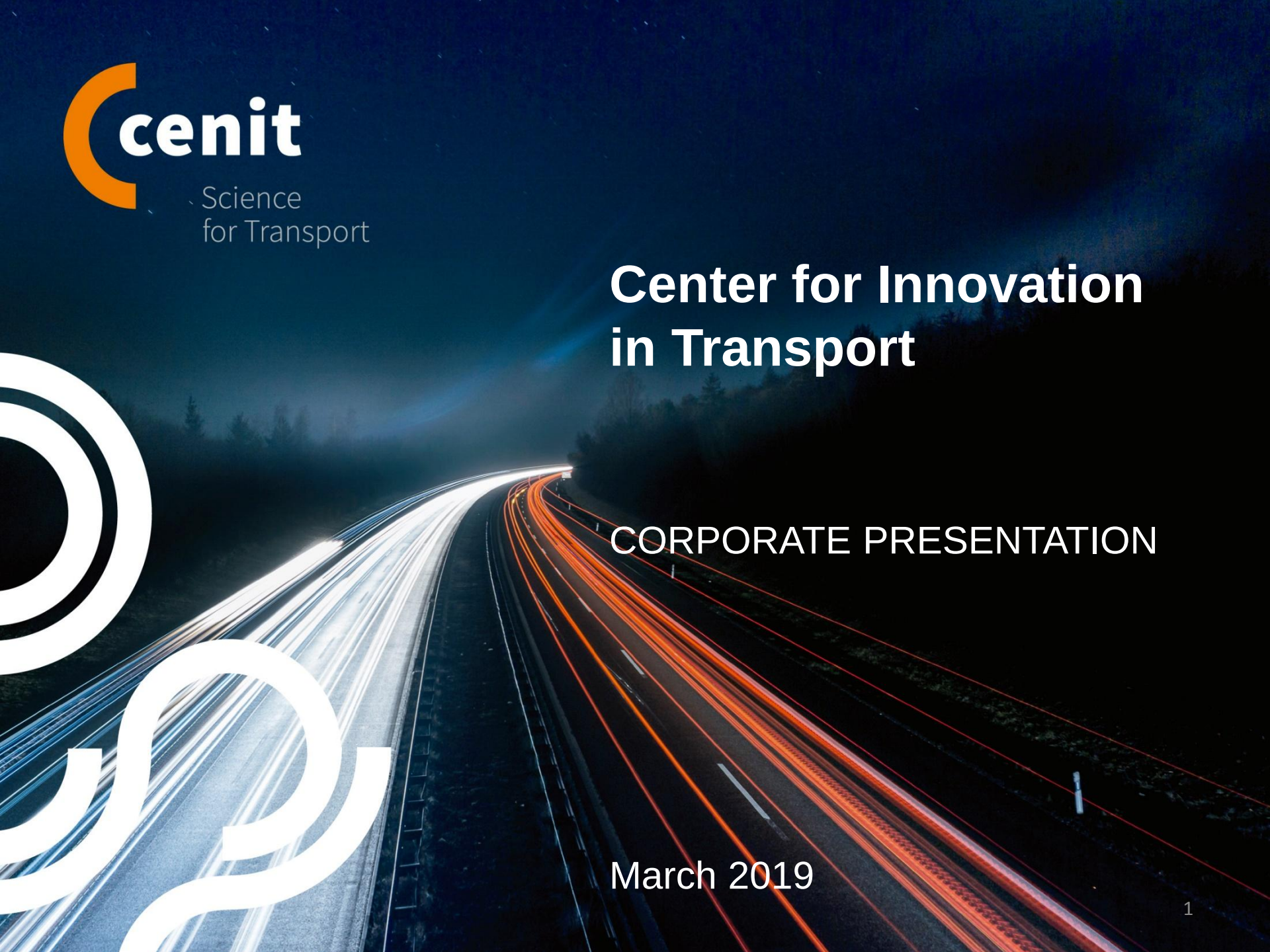


Center for Innovation in Transport

CORPORATE PRESENTATION

March 2019

Who we are

The Center for Innovation in Transport (**CENIT**) is a research group of the prestigious International Centre for Numerical Methods in Engineering (**CIMNE**), a consortium of the Catalan Government and UPC-BarcelonaTech with the cooperation of UNESCO.

CENIT was created in 2001 as a partnership between the **Catalan Government** and the **Polytechnic University of Catalonia (UPC-BarcelonaTech**) to centralize expertise in transportation innovation**.** In 2017 CENIT became a member of CIMNE.

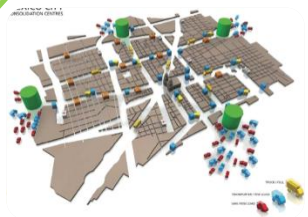
Our mission at CENIT is to build the next generation of solutions in global transport.

Our team is comprised of a diverse and experienced group of multilingual researchers including civil engineers, economists, computer engineers, naval architects and mathematicians.

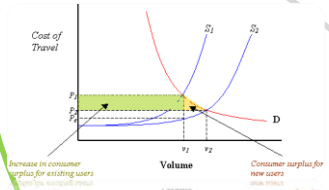
Consortium of:

PORT AND MARITIME TRANSPORTATION

PORT LOGISTICS AND MARITIME TRANSPORT



LOGISTICS AND FREIGHT DISTRIBUTION



TRANSPORT ECONOMICS

SUSTAINABLE MOBILITY AND TRAVEL BEHAVIOUR

TRAFFIC MANAGEMENT

PUBLIC TRANSPORT

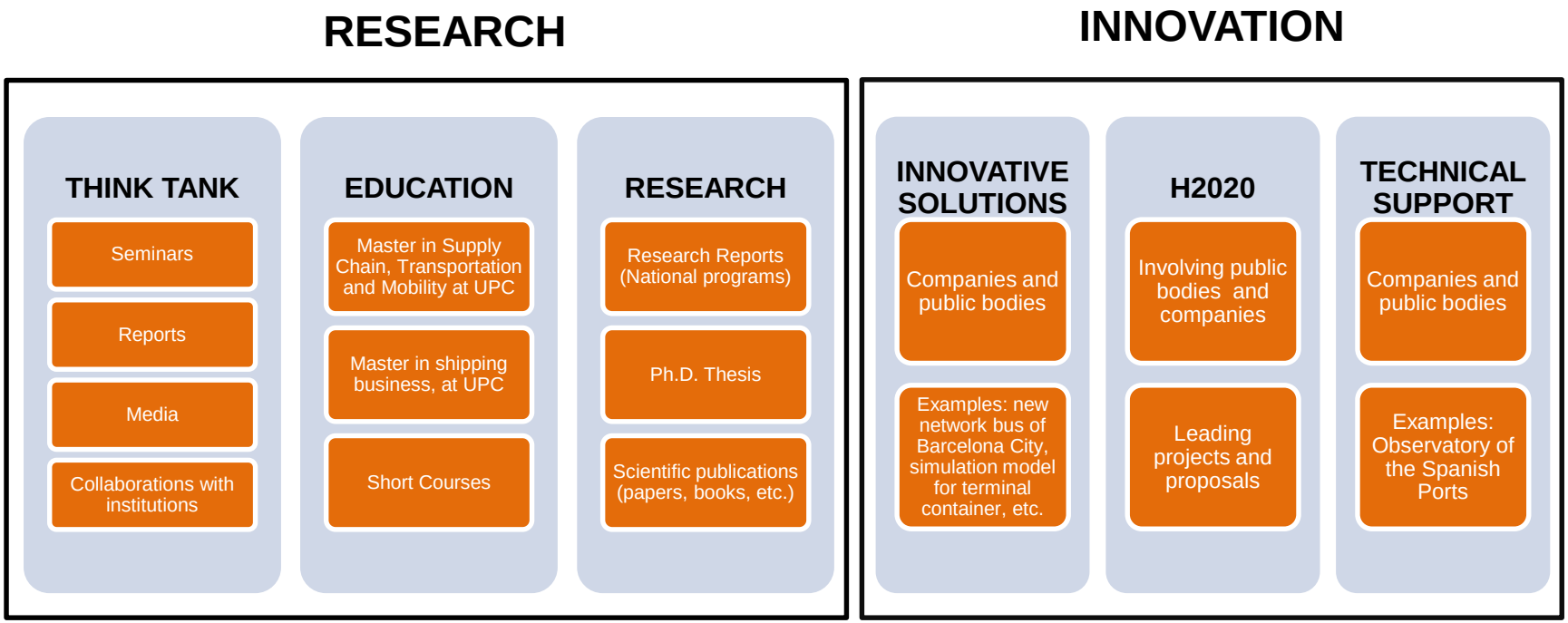
URBAN MOBILITY

RAIL TRANSPORT

AIR TRANSPORT

INFRASTRUCTURE MANAGEMENT

How do we work?

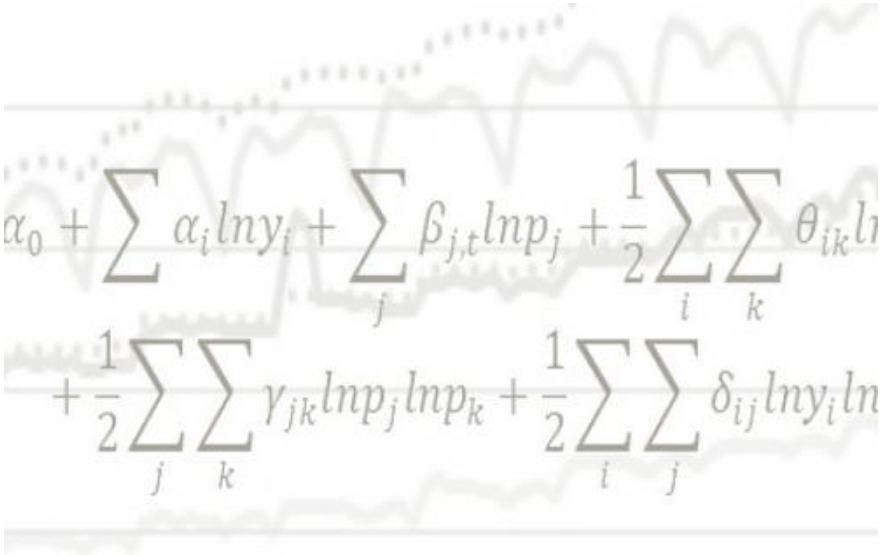


CENIT offers a scientific perspective to analyzing the problems affecting the day-to-day operations of transportation systems, logistics chains and mobility plans.

We use Big Data, Econometric modeling and Operational Research to provide innovative solutions for the transport challenges.

Research Areas

Transport Economics



We are focused on the particular problems encountered by transport authorities and companies involved in the management of transport systems.

Our various fields of study and analysis include:

- **Cost- benefit analysis**
- **Charging systems**
- **PPP concession systems**
- **Financing**
- **Impact of transport investments**

References

SAIT- Handbook for transport investment appraisal
Technical report. Regional Government of Catalonia

Investment Analysis in the Latin American Transport Sector for 2040
Technical report. Corporacion Andean de Fomento - CAF

Pilot Project Study on Innovative Ways of Sustainably Financing Public Transport
Technical report. European Commission - DG MOVE

Public Urban Transport

We offer advisory services for public transport operators to improve operational efficiency.

Our various fields of study and analysis include:

- **Public transport network design**
- **Implementation of the electric bus**
- **Efficiency analysis of the public transport**
- **Optimization of operations**
- **Demand analysis**

References

Zero Emission Urban Bus System- Zeus
Research Project. H2020. European Commission

Retbus I and II. Design of the Barcelona's bus network
Technical Report. City Hall of Barcelona

Annual Observatory of the Taxi of Barcelona
Technical Report. Metropolitan Area of Barcelona

Port Logistics and Maritime Transport

We advise the public sector, port services operators, stevedoring and shipping companies on:

- **Port operations and optimization.**
- **Cost analysis**
- **Demand analysis.**
- **Design of port terminals**
- **Impact of technologies**

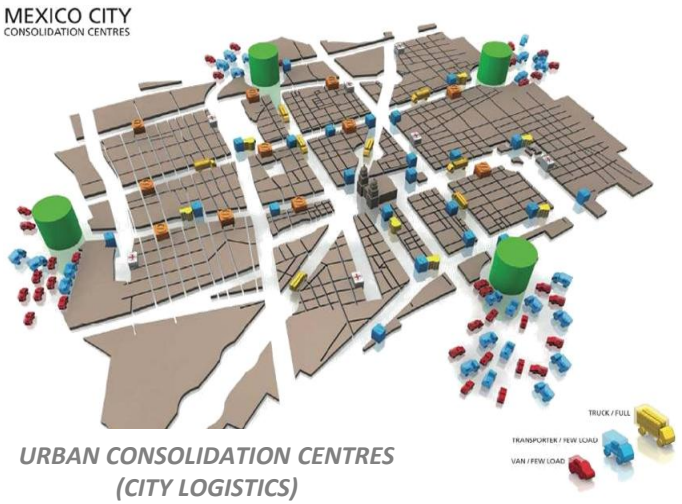
References

Analysis of recent trends in EU shipping and analysis of policy support to improve the competitiveness of Short Sea Shipping in the EU
Technical Report. European Commission – DG MOVE

Port of the Future. Vision 2040 of the Port of Barcelona
Research. Port of Barcelona

Simulation Model for the new container terminal at Port of Barcelona
Technical Report and simulation model. Tercat-Hutchinson

Logistics and Urban Freight Distribution



URBAN CONSOLIDATION CENTRES (CITY LOGISTICS)

fuente: www.dhl.com

Our main research area is urban freight distribution with specific expertise in last-mile delivery.

Our work includes:

- **Designing routes for freight delivery,**
- **Solutions for the environment,**
- **Use of electric vehicles for freight distribution,**
- **Location of electric charging stations,**

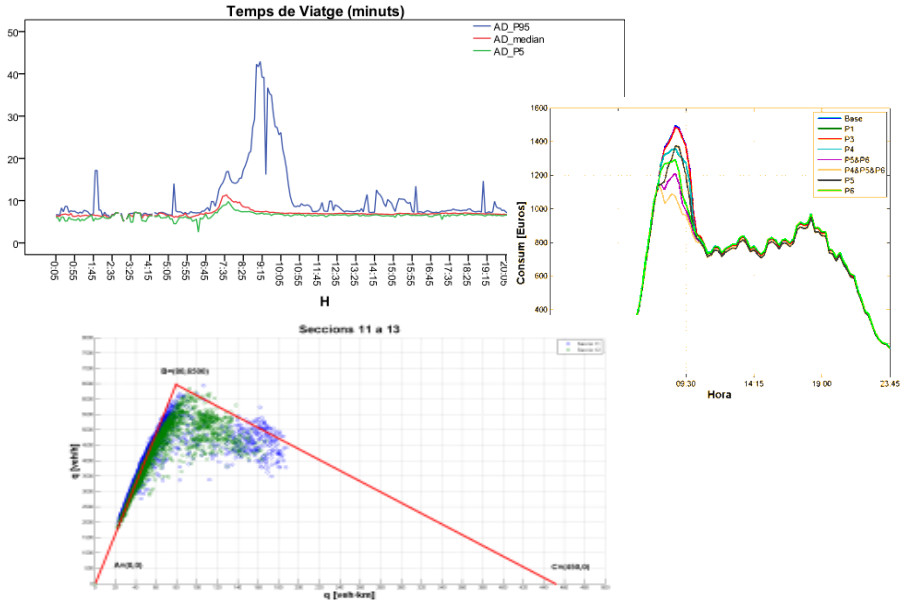
References

NOVELOG New cooperative business models and guidance for sustainable city logistics. H2020 Research Project. European Commission

SMILE: Smart Green innovative urban logistics for energy efficient mediterranean cities. Med Programme (L'Europe en Méditerranée). European Commission

White Paper on the Urban Freight Distribution.
Technical Report. Metropolitan Authority of Barcelona (ATM).

Traffic Modeling



Involving some of our most prominent projects which include:

- **The analysis of speed on urban highways.**
- **Use of dynamic signage and estimated travel time.**
- **Simulation models for cities**
- **Traffic light optimization**
- **Improvement of the urban mobility**

References

Mobility Simulation Tool for the City of Barcelona and traffic light optimization
Research and simulation model. Barcelona City Council

Tramway Extension Project
Research and simulation model. Barcelona City Council

Impact of the speed limit on traffic management
Technical Report. Catalan Agency of Traffic Management

Smart Cities and Urban Mobility

SmartCity solutions for a better performance of the urban mobility. The approach includes both the operational level and policy-making and urban development strategy.

- **Assessment of new modes of transport in cities.**
- **Balance of all transport modes transport in an urban setting.**
- **Traffic Simulation models for cities**
- **Urban mobility Policies**
- **Financing the new mobility solutions**

References

GrowSmarter – Transforming Cities for a Smart Sustainable Europe
Research. EU Horizon 2020 Project

New Paradigm of Urban Mobility – Limit of Modal Changes
Research. Volkswagen - SEAT

Mobility Simulation Tool for the City of Barcelona and traffic light optimization
Research and simulation model. Barcelona City Council

Scientific production

CENIT, as a research center, is committed to analyzing the problems affecting the day-to-day operations of transportation systems, logistics chains/nodes and general mobility from a scientific point of view.

For this reason, CENIT boasts an experienced and diverse team of PhDs and PhD candidates with a high level of scientific production. Our work is published in books, articles and conference papers on a regular basis.

In this way, we add value through support and advisory services to public and private sector entities by developing tools and methodologies that can be applied in different fields of transport and logistics.

Some of our clients

cenit

Science
for Transport

Centre d'Innovació del Transport (CENIT)
C/ Jordi Girona, 1-3, C3, S120, 08034, Barcelona
www.cenit.es

A member of:

CIMNE