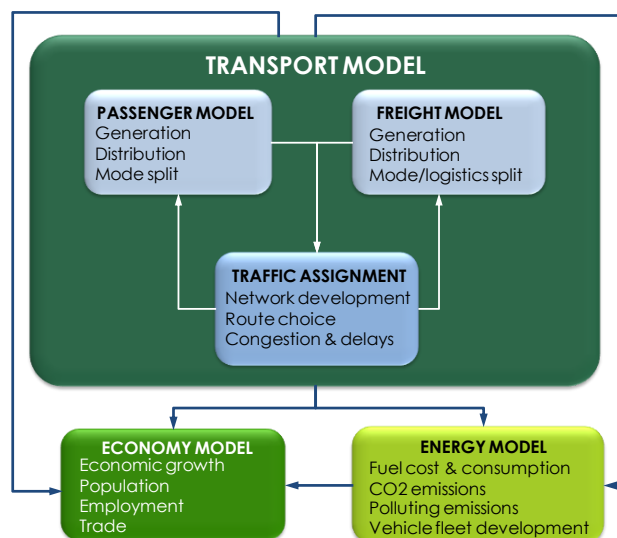# TRIMODE
TRansport Integrated MODel for Europe

TRIMODE is a sophisticated transport network model integrating energy and economy components to be used by the European Commission for the assessment of major transport infrastructure projects as well as of a wide range of transport policies.

TRIMODE concept

TRIMODE modelling system integrates three main components:

- A **transport model** simulating passenger as well as freight transport activity for EU28 and neighbouring countries. The model estimates Origin-Destination trip matrices between zones at NUTS3 level or lower as well as local intra-zone trips and intercontinental demand. All transport modes are represented (including active modes) as well as multimodal chains. The multimodal model network provides traffic at links and nodes.

- An **energy model** estimating the dynamic of vehicle fleets and the impact of transport activity in terms of energy consumption, greenhouse gas emissions, polluting emissions, noise and safety. This model reflects the effect of changes in energy prices and of technological changes.

- An **economy model** describing the macro-economic development of several economy sectors for EU Member States and neighbouring countries at NUTS-III level. The economy model provides background conditions influencing transport demand generation (e.g. population, intra-regional trade) and estimate impact of policy on regional and national economy.

TRIMODE is designed to develop projections by taking into account the reciprocal influences and feedbacks between the three components transport, economy and energy. At the same time its modular structure allows to produce quicker appraisals when a full representation of all influences is not required.

TRIMODE base year is the year 2015 and the model is calibrated to reproduce Eurostat statistics regarding transport, economy, energy consumption and emissions as well as observed traffic data on the TEN-T network.

TRIMODE provides projections for future time horizons up to the year 2050.

The TRIMODE model is being developed in two phases:

- The **Phase I** model has been developed for six European Countries: UK, NL, DE, AT, IT, SI. This version is being used to prove the robustness and soundness of the adopted methodology.

- In **Phase II** the model will be extended to all the EU28 member states and neighbouring countries.

TRIMODE
Transport Integrated Model for Europe

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Innovative aspects of TRIMODE

A number of innovative features has been introduced in TRIMODE:

► The modelling of **competing logistic chain options** based on the methodology successfully implemented in the BYFM national transport model for freight in Great Britain.

► The **intra-zonal modelling for both passengers and freight**, based on a combination of distance bands with zone types.

► The modelling of **light duty vehicles** and of innovative ways of using car: e.g. car sharing, car pooling.

► The representation of **trade patterns at NUTS-III level** sensitive to both changing macro-economic conditions and changing regional accessibility as a consequence of transport policies and transport infrastructure implementation.

► The detailed representation of the **vehicle fleets** for all modes of transport addressing new energy carriers and aspects such as heterogeneity of consumer preferences and second-hand car market.

► The integration of all model components into a **computationally efficient software platform** based on PTV VISUM software.

TRIMODE web interface

TRIMODE is installed on server machines and enables transparent access for two groups of users.

► **Model developers** that are capable to edit every aspect of the model and set up the building blocks from which scenarios are composed. They also arrange scenario runs, modifying model inputs and defining the sequence of the model components to be run.

► **Model analysts** that access the model through a simplified, custom-built interface to look at results from previously computed model runs or request new model runs based on changed scenario assumptions.

The TRIMODE team

► TRT TRASPORTI E TERRITORIO (IT) Leading Partner
► PTV (DE)
► E3MLAB (GR)
► MDS TRANSMODAL (UK)
► M-FIVE (DE)
► ISI FRAUNHOFER (DE)
► BAUHAUS LUFTFAHRT (DE)
► INRIX (UK)
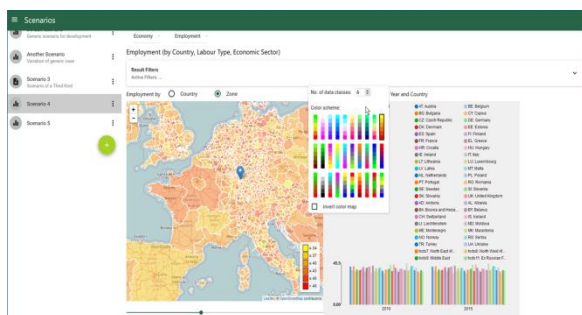
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