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Development of a Platform for Global Road Safety Data Analysis

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George Yannis[a], Katerina Folla[a], Dimitrios Nikolaou[a], Anastasios Dragomanovits[a], Xuesong Wang[b]

[a]*National Technical University of Athens, Greece*
[b]*Tongji University, China*

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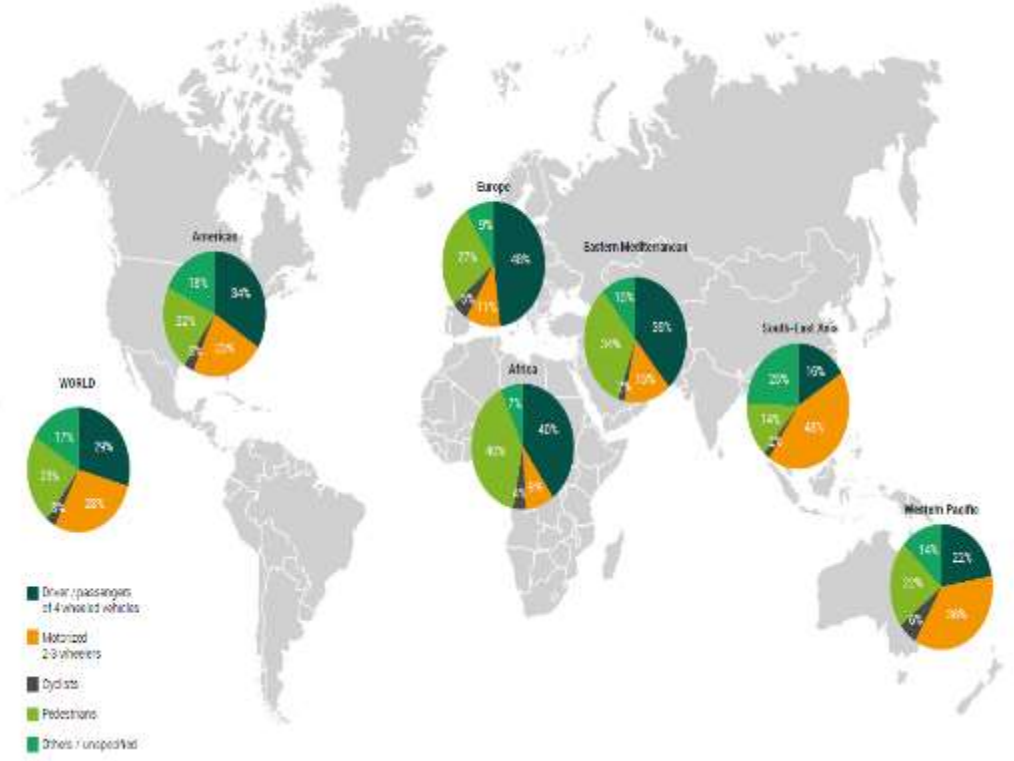
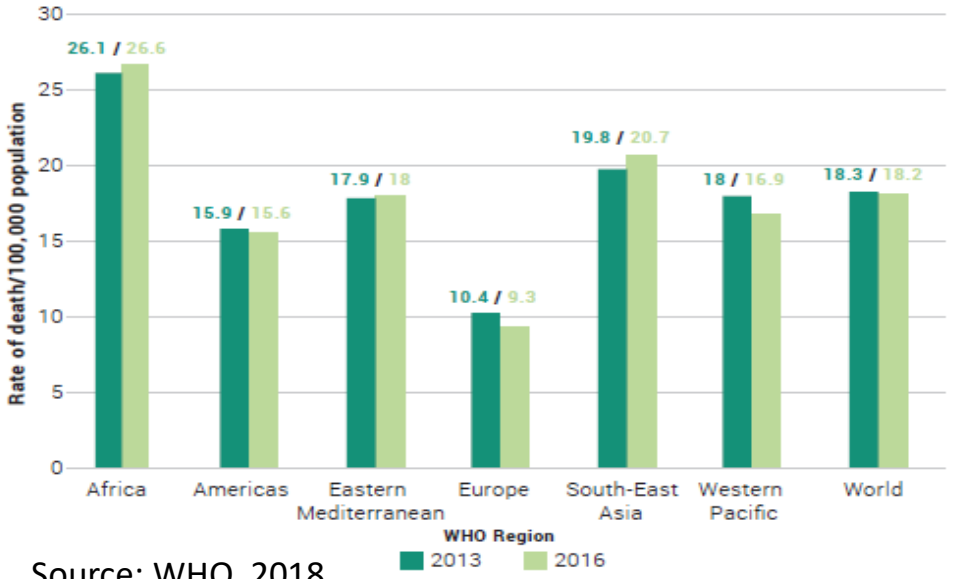
Road Safety Worldwide

- **1,35 million people** are killed in road accidents worldwide.
- Road accidents constitute the **8th cause of death** and the 1st cause of death among people aged 5-29 years old.
- **Europe** presents the lowest traffic fatality rate per population globally.
- **Africa** has the worst road safety performance (up to 10 times more fatalities per population compared to the best performing European countries).





Source: WHO, 2018

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The i-safemodels project

- **Project partners:**
  - National Technical University of Athens (www.nrso.ntua.gr)
  - OSeven Telematics (www.oseven.io)
  - Tongji University (https://en.tongji.edu.cn)
  - Third country partners:
    University of Central Florida, US
    Purdue University, US.
    Loughborough University, UK
    German Aerospace Center, DE
- **Duration of the project:** 36 months (2019 – 2022)
- **Operational Program:** "Competitiveness, Entrepreneurship and Innovation" (EPAnEK) of the National Strategic Reference Framework (NSRF): Greece - China Joint R&D Projects
- **Objective**: to propose international comparative analyses of road traffic safety statistics at macroscopic and microscopic level.

European Union
European Regional Development Fund

ΕΣΠΑ 2014-2020
ανάπτυξη - εργασία - αλληλεγγύη

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ

ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΕΡΕΥΝΑΣ ΚΑΙ ΤΕΧΝΟΛΟΓΙΑΣ

EPAnEK 2014–2020
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Objectives and Methodology

Objective:

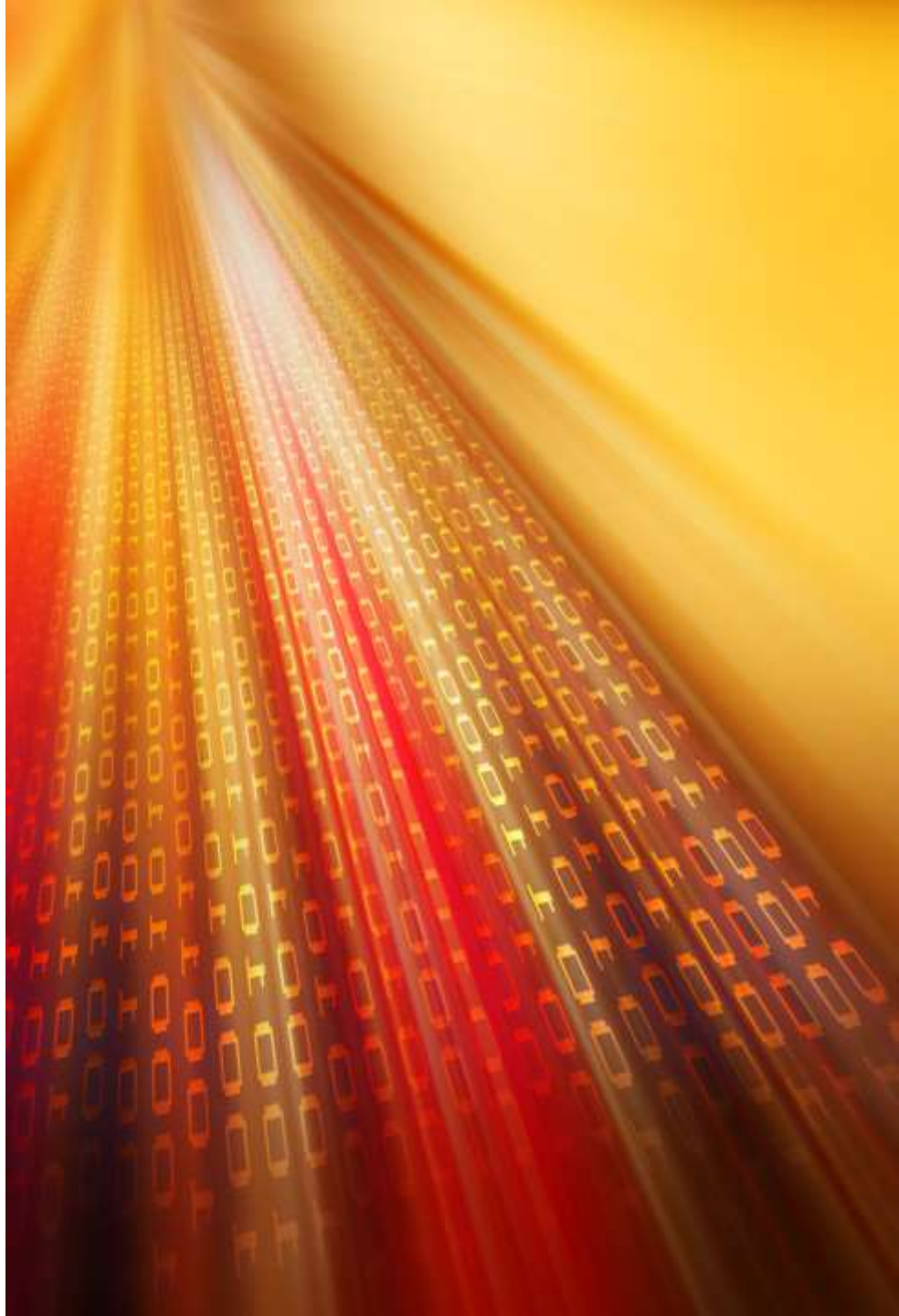
- To present the methodological approach for the **development of a platform for global road safety data** to support macroscopic road safety modelling and international comparative analyses

Methodology:

- Identification of the necessary **road safety indicators**
- Development of the **methodological framework**
- **Data collection** from international road safety databases
- Exploration of **new emerging technologies** as an alternative data source

Why road safety data?

- Road Safety is a typical field with high risk of **important investments not bringing results**
- Absence of **monitoring** and accountability limits seriously road safety performance
- Decision making in road safety management is highly dependent on appropriate and **quality data**
- Very often we look where the data are and **not where the problems and solutions are**



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Needs for Road Safety Indicators

- The **SUNflower approach** uses a target hierarchy which is comprised by five layers: Structure and culture, Safety measures and programmes, Safety performance indicators (SPIs), Number of killed and injured and Social costs
- Within the **DaCoTA project** (2010-2012) data on road accidents, risk exposure, SPIs, under-reporting of crashes, country characteristics, social costs and traffic laws and measures were collected
- The **UN Global Plan of Action** proposed several road safety activities categorized in five pillars: Road Safety Management, Road Infrastructure, Vehicle, Road User and Post-Crash Services
- **WHO** collects data on road traffic deaths, post-crash response, speed, drink-driving, protective systems use, mobile phone use, road safety management and safer mobility
- In the **SafeFITS project**, a methodological framework was designed combining the five road safety pillars of Global Plan of Action with the concept of the SUNflower pyramid

Database Overview

- **Economy and Management**
  - Demographics
  - Economy
  - Management
- **Transport Demand and Exposure**
  - Roads
  - Vehicles
  - Road Users
- **Measures**
  - Vehicles
  - Road Users
  - Roads
  - Post Impact Care
- **Safety Performance Indicators**
  - Roads
  - Road Users
  - Vehicles
  - Post Impact Care
- **Road Safety Outcomes**
  - Fatalities and Injuries
  - Costs

Data Collection Methodology

- **International Road Safety Databases**
  - United Nations Economic Commission for Europe (UNECE)
  - World Health Organisation (WHO)
  - International Road Federation (IRF)
  - Organisation for Economic Co-operation and Development (OECD)
  - European Commission (EC)

- **Collaboration with national authorities and private companies**
  - questionnaires to be distributed to national representatives
  - new emerging technologies (i.e. telematics data) for the estimation of specific exposure and safety performance indicators

Analysis and Decision Support Tool

- The data platform proposed within this research will be established for the convenience of model development and comparative analyses within the i-Safemodels project
- A **decision making supportive database** will be formulated from all the aspects of safety management strategies, roadway infrastructure design and policy measures based on:
  - Macroscopic analyses, providing a broader spectrum for long-term policy-based measures
  - Statistical methodologies for making country or region comparisons and test model transferability
- A **powerful tool for road safety analysis and decision support** at global level, which will be open and available for the research and policy-making community.

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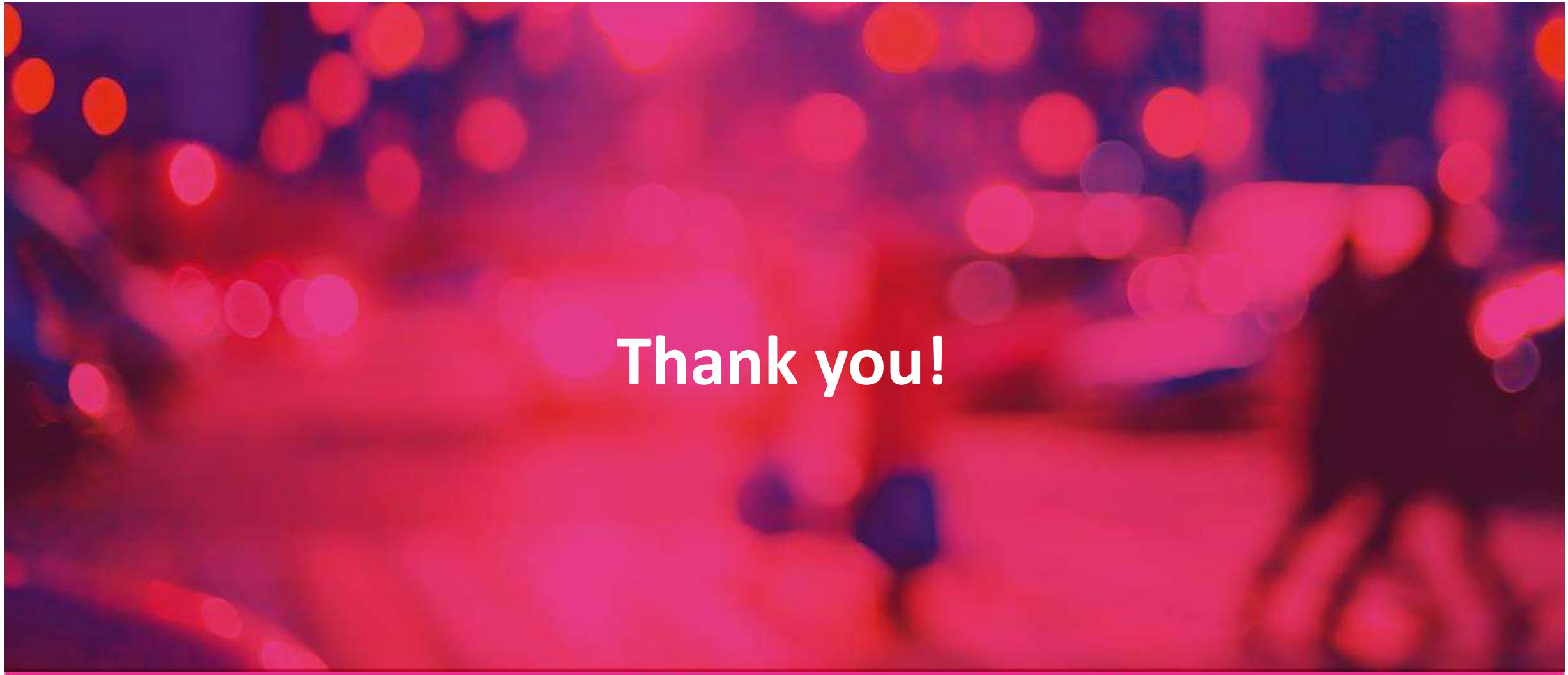
Conclusions

- The development of an i**ntegrated international road safety management system** could be beneficial to policy makers by providing solutions for road safety issues with much less effort and cost

- This could be achieved if **research results and road safety models were transferable** among the different countries and regions

- The collection of the **proper road safety indicators** could support more sophisticated macroscopic road safety analyses

- The combination of **transport related data collected through new technologies** with the traditional road safety indicators could better support decision making process



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