Acronym – SCUDO

Title – Safe and Comprehensive Urban Development and Transport Management for Disruption-Resilient Operations.

Scientific coordinator – Silvio Nocera

Project ID – 101203037

CUP (National Project ID) – F73C24001360006

Topic – HORIZON-CL5-2024-D6-01 – Safe, Resilient Transport and Smart Mobility services for passengers and goods

Department – Department of Architecture and Arts

Iuav Role – Project Partner

Lead partner – ERTICO – European Road Transport Telematics Implementation Coordination Organization (Belgium)

Other partners – Technische Universiteit Delft (Netherlands), Technische Universitaet Muenchen (Germany), Ethnicon Metsovion Polytechnion (Greece), Ministerie van Infrastructuur en Waterstaat (Netherlands), Municipality of Venice (Italy), De Vervoerregio Amsterdam (Netherlands), Statheres Sygkoinonies Monoprosopi Anonymi Etaireia (Greece), Die Autobahn Gmbh Des Bundes (Germany), Frontier Innovations Ee (Greece), Inova+ Innovation Services, SA (Portugal), Fenix Network Cross-Border Data Sharing Association (Belgium)

Duration – 36 months

Start – 01 May 2025

Closure – 30 April 2028

Project budget – € 3 499 456.24

Iuav budget – € 379 111.88

Funding to Iuav – € 379 111.88

Source of funding – HORIZON EUROPE – HORIZON-RIA HORIZON Research and Innovation Actions - HORIZON-CL5-2024-D6-01

Description – SCUDO develops novel methodologies for the design, planning and operations of transport systems which are resilient, safe and energy efficient.

SCUDO identifies and classifies **scenarios of disruptive changes**, analyzes their impact to different socio-economic groups, improves the monitoring of disruptions and the quantification of uncertainties, develops novel methods for the design & management of transport systems based on the Safe System Approach, and establishes a Pan European Platform which integrates digital solutions and data in order to allow for the comprehensive evaluation of the impact of different types of disruptions to different geographical areas and user groups.

SCUDO treats safety as an integral part of **resilient systems** and innovates in the following directions:

1. develops AI models for system monitoring and testing, aiming for the quantification of uncertainties and the detection of disruptions,
2. develop AI-based predictive models and traffic forecasting approaches, aiming to use existing and opportunistic data sources to identify disruptions, classify them, and forecast their potential impact to different socio-economic groups,
3. develop strategic/tactical planning and real time decision models following a Safe System Approach, aiming to design resilient transport infrastructure and transport systems which are safe and energy efficient,
4. combines the developed models into a Pan European Platform and tests them in 4 diverse Use Cases related to resilient public transport management (Athens, GR), resilient traffic management (Bavaria, DE), resilient strategic planning of transport infrastructure networks considering future housing developments and climate change (Amsterdam, NL), and resilient network management (Venice, IT).

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Objectives – SCUDO has outlined the following objectives:

- Objective 1 (O1): Set the ground, engage the public and identify the impact of disruptions on different socio-economic groups at different geographical areas in terms of safety and wellbeing;
- Objective 2 (O2): Identify disruptive changes that can make a transport system unstable, including black swans, improve the quantification on uncertainties, and analyze their consequences on safety;
- Objective 3 (O3): Develop strategic design, tactical planning, and real-time control solutions to tackle disruptions and increase the resilience, safety and energy efficiency of transportation systems.
- Objective 4 (O4): Establish a Pan European Platform which integrates SCUDO's digital tools and evaluates their potential in diverse Use Cases, considering users' socio-economic differences.
- Objective 5 (O5): Develop governance recommendations and business models for the efficient adoption of SCUDO's solutions by transport authorities and operators.

Website – www.scudo-project.eu

Lead Partner website - www.ertico.com

Project factsheet – www.cordis.europa.eu/project/scudo

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