PANACEA project

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PANACEA
FITNESS TO DRIVE

PANACEA Final Event
10 September, 2024

Aims

- Holistic pre-, during and roadside monitoring and assessment system of driving ability
- Assess physical, cognitive, and physiological Fitness-to-Drive (commercial drivers)
- Cloud-based countermeasures and coaching tool deploys solutions to drivers, operators, and enforcement

The PANACEA project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement number 953426

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16 partners

ETSC European Transport Safety Council

vti

virtual vehicle

LEITAT managing technologies

CTL UP CENTRO DI RICERCA PER IL TRASPORTO E LA LOGISTICA

Loughborough University

datik Irizar Group

AIT AUSTRIAN INSTITUTE OF TECHNOLOGY

CHALMERS

WEGEMT MARINE UNIVERSITY ASSOCIATION

transdev

ROADPOL European Roads Policing Network

deepblue

uni.systems

Senseair

CERTH CENTRE FOR RESEARCH & TECHNOLOGY HELLAS

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PANACEA FITNESS TO DRIVE

Basic facts

- Horizon 2020 funded project – Research and Innovation Action (RIA)
- Duration: 42 months (May 2021-October 2024)
- Budget: €3.49 million
- 10 Work Packages
  - Definition of needs, gaps, benchmarking and Use Cases
  - Setting the technological foundation: specifications, architecture and database
  - Defining the algorithms for the data collection and the methodology of the fitness to drive assessment
  - Develop the PANACEA solution with the integrated CHTs
  - Create the Countermeasures system
  - Run the pilots and analyse the results
  - Conduct the impact assessments
  - Dissemination, exploitation, standards
  - Management and ethics assessment

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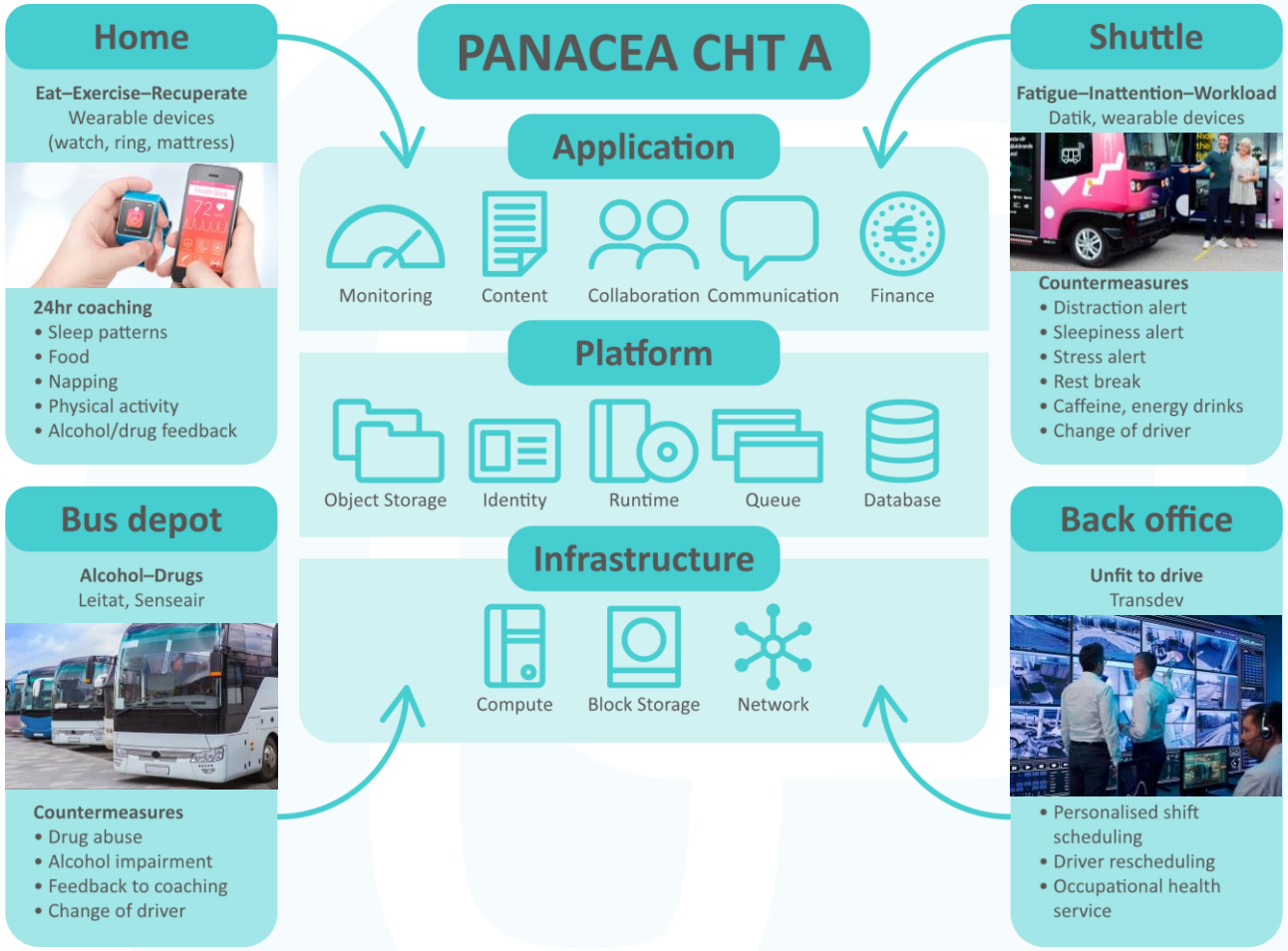
Use cases

- Shuttle and city bus drivers, Linköping, Sweden **(UCA)**
- Taxi drivers and Courier service riders, Thessaloniki, Greece (UCB)
- Coach drivers, San Sebastian, Spain (UCC)
- Transferability to other transportation modes (UCD)



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Web app for drivers / riders

Mobile app for drivers / riders

Web app for operators

USER FACING

Snap4city platform

DSS

CCS

BACK FACING

STRESS

Stress Sensor (GSR)

Stress and Cognitive Load Sensor (ViF/DeepBlue)

Fatigue, Stress and Cognitive Load Sensor (AIT)

FATIGUE

Fatigue Sensor (BMM fatigue model)

Drive State Monitor (Datik)

Fatigue Sensor (Optalert)

ALCOHOL & DRUGS

Alcohol sensor (Wall)

Alcohol Sensor (Go)

Drug Sensor (LEITAT)

BACtrack Skyn (Wristband)

CHTA CHTB CHTC

CHTs

Achievements

- **Created** 3 Commercial Health Toolkits (CHT)
  (Health monitoring, assessment methodologies and technical solutions for commercial drivers)

- **Estimated** their effectiveness and operability
  (Alcohol, licit and illicit drugs, fatigue, stress and cognitive load)

- **Evaluated** their usefulness, ease-of-use, satisfaction and acceptance
  (3 Use-Case Pilots)

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Achievements

- **Developed** and **evaluated** cloud-based coaching and supporting apps and solutions for drivers and operators
- **Piloted** the PANACEA solution and integrated CHTs with drivers and riders in Sweden, Greece, and Spain
- **Recommended** updates policy, legislative and standards and a new definition of Fitness to Drive
- **Assessed** the safety, socioeconomic and Quality of Life impacts

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Lessons learnt & future applications

- Impairment in a professional setting is more sensitive and complex than foreseen with diverse inherent cultural aspects (e.g., acceptance or experience in being monitored).
- Importance of getting drivers/ operators/ relevant stakeholders involved early in the process for better adoption.
- Challenges and successes in integrating new technology into existing systems.
- In testing and evaluation of the solutions and developments we require a research team.

- Can improve road safety by ensuring drivers are fit to drive.
- The solution developed have the potential to be used across various modes of transportation, not just commercial driving.

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Thank you!

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