Application of an in-car video-based assessment system among learner and novice drivers – The Austrian field trial within the EU PROLOGUE project

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PROLOGUE project

The project **Pro**moting real **L**ife **O**bservations for **G**aining **U**nderstanding of road user behavior in **E**urope – for short PROLOGUE (Seventh Framework Programme of the European Commission) - aims to contribute to reducing the number of road casualties in Europe by further developing and testing the naturalistic observation methodology.

The naturalistic observation method enables the observation of road users in an inconspicuous way by equipping the passenger cars with devices that continuously monitor various aspects of driving behavior including information about vehicle movements, the driver and the direct environment.

PROLOGUE Objectives

1. Show the current technical, methodological and organisational possibilities in a number of small scale trials;
2. Demonstrate the potential usefulness of naturalistic observations for various aspects of road safety through fundamental research questions and applied research.
3. Serve as pilots for a future large-scale naturalistic study by revealing strengths and weaknesses of the data collected by the various instruments used, by identifying solutions for potential difficulties with data collection and data analysis.

Project partners:

SWOV - The Netherlands (Project Coordinator)

CERTH/HIT – Greece

OR Yarok – Israel

TOI - Norway

KfV – Austria

TNO – The Netherlands

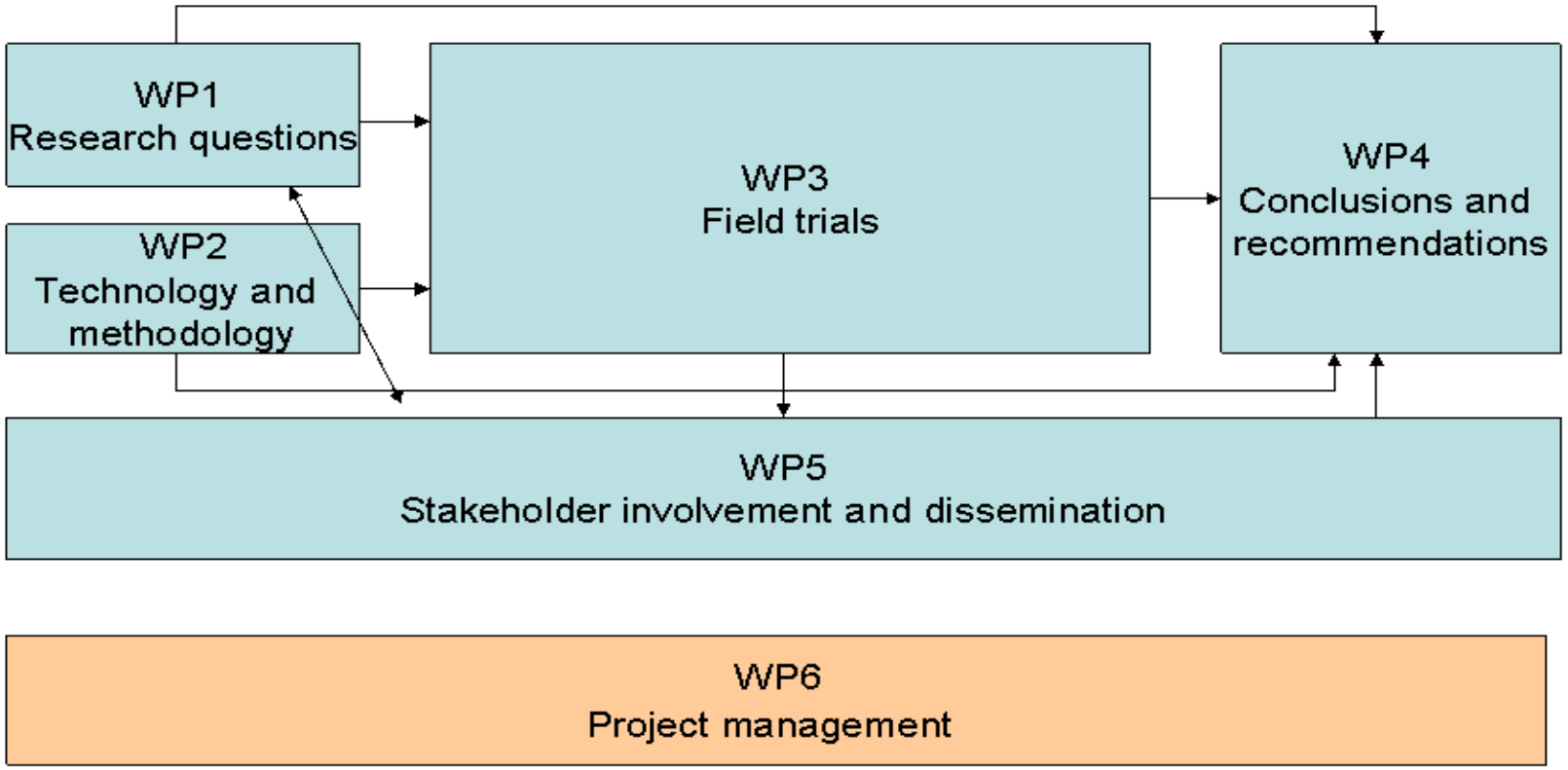
TTI - Austria

Univ. Loughborough– UK

Univ. Valencia – Spain

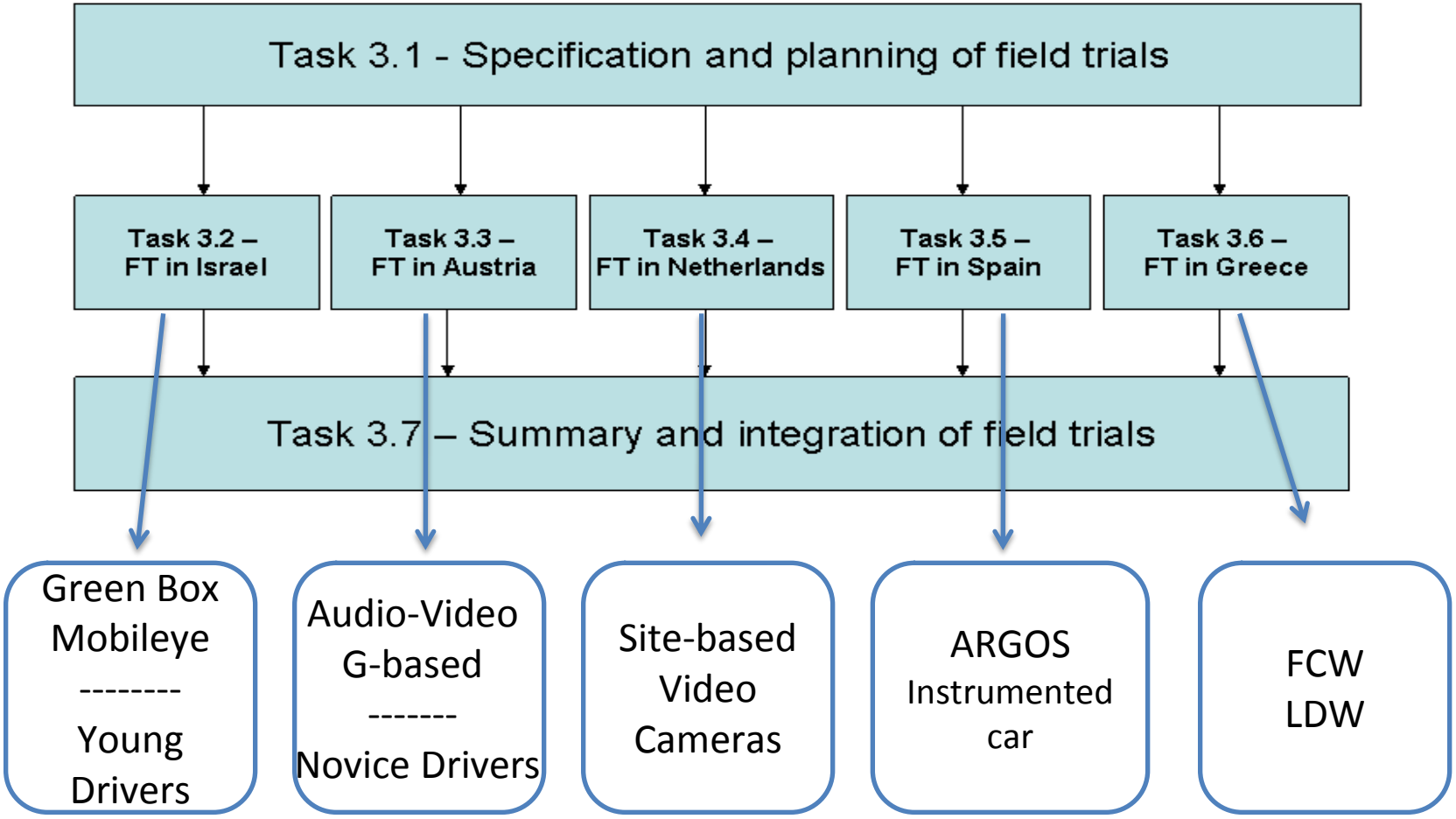
PROLOGUE WP description

Work package description:



PROLOGUE WP3

Description of field trials (WP 3) :



PROLOGUE WP3

Description of field trials *(cont.):*

Main research issues

	Reliability of data collection equipment	Data reduction and interpretation	Relationship ND data and self reports	Cross cultural comparability	Evaluation of interventions	Area of interest
FT Israel	x	x	x	x	x	Novice drivers
FT Austria	x	x	x		x	Driver education
FT Netherlands	x	x				Pedestrians and cyclists
FT Spain	x	x				Active safety technology
FT Greece	x	x			x	In vehicle information systems

More information on: www.prologue-eu.eu

PROLOGUE WP3

Description of Austrian field trial:

The Austrian field trial investigates possible impacts of **video-based feedback on learner drivers and** identifies driving behavior patterns among **novice drivers**.

Thus, the trial helps to identify and evaluate **meaningful risk indicators**. It also provides data to assess whether the initial driver training approach has a positive impact on learner driver behavior by means of a safer driving style, e.g. by making drivers reduce risk margins or in terms of speed choice.

A series of interviews or questionnaires (before, during and after the application) provides additional knowledge on the way drivers learn, make experience and interact with the observation/feedback system and with the driving teacher/instructor.

PROLOGUE WP3

Main research questions :

1. Can learning to drive be enhanced with immediate and follow-up video-based feedback?

2. What are the effects regarding learners self-evaluation?

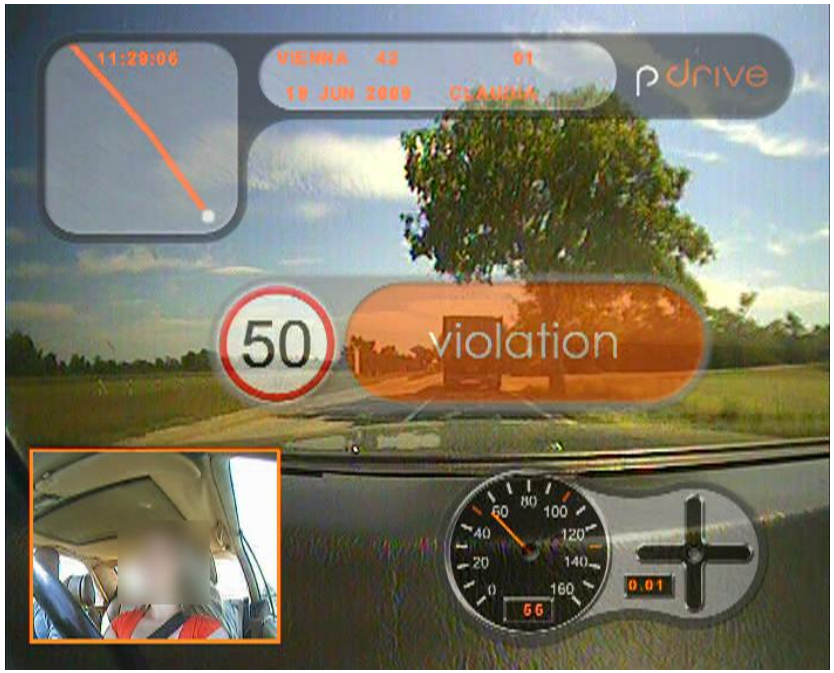
3. What is the pedagogical impact of an in-car system (pdrive) for learner drivers and driving instructors?

PROLOGUE WP3

Method :

Two matched groups of novice drivers, each group consisting of 6 subjects, will be observed electronically throughout their learning period (Phase I, Feedback period) and first months of driving (Phase II, Naturalistic Driving).

Phase I – Feedback learning:



The in-vehicle devices are used as an observation system for both groups. One group (intervention group “IG”) receives feedback during the learning period.

The other group (control group ”CG”) is observed with the video system, but gets no feedback at any time.

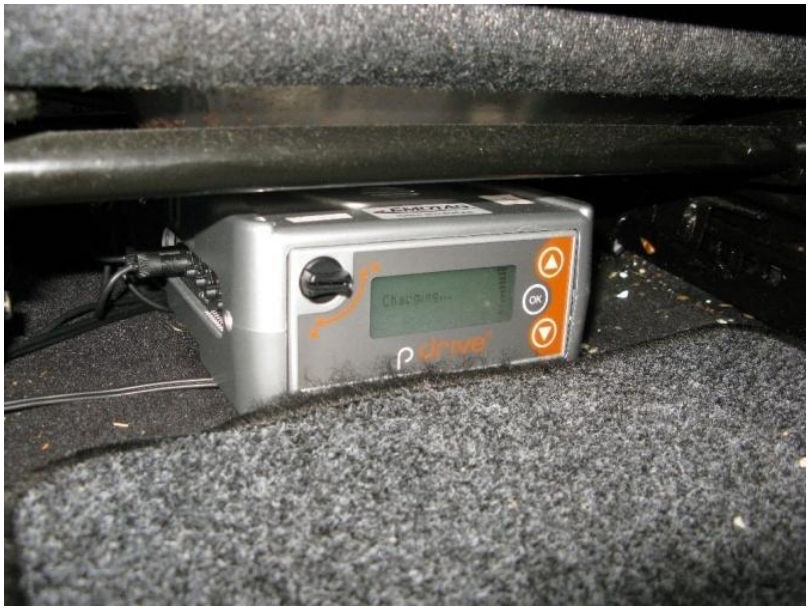
PROLOGUE WP3

Method *(cont.)*:

Phase II – Naturalistic Driving:

After passing the driving test, the video system is installed in subjects´ cars and **purely acts as a naturalistic observation tool** in their early driving career in order to identify meaningful risk indicators.

Cameras – behind rear mirror



Data logger (pdrive)- under seat

PROLOGUE Austrian trial

Dependent variables:

When comparing both groups, the dependent variables will be differences regarding the collected data, i.e. parameters of driving style (e.g. acceleration, braking, speed, distance, trip duration, day/nighttime driving,…).
In case that some pre-defined threshold values are exceeded (e.g. hard braking, abrupt steering, speeding), a short video clip (15 secs before/after the event) is recorded.

PROLOGUE Austrian trial

Dependent variables *(cont.)*:

Also questionnaire data as regards

- the perception of being observed,
- “subjective” exposure, and
- general acceptance

of such a method for both learner drivers and instructors will be compared.

A web-based driving dictionary will be used several times to collect subjective exposure data:

Date of trip
Time of trip: start trip – end trip
Trip's objective (work, shopping etc.)
Trip's location
No. of passengers
Trip aggressiveness
Special (aggressive) events during trip (speeding, lane handling, etc).
No. of special events during trip
Comments

PROLOGUE Austrian trial

Current trial status:

Phase I: running, partnership with 2 local driving schools (both intervention and control group)

Phase II: starting right now with first participants of control group, i.e. driving education without video-based feedback, driving test already passed

Contact

Thank you ☺

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