PILOT PREPARATION AND AD FUNCTIONS

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Session SIS45 - Challenges on Testing and Validation of Automated Driving
Testing and Validation of Automated Driving

WHAT IS IT?
WHAT IS IT?

Testing

The process of using or trying something to see if it works, is suitable, obeys the rules, etc. (Cambridge Dictionary)

Validation

Confirmation, through the provision of objective evidence, that the specified requirements for a specific intended use or application have been fulfilled

Verification

Confirmation, through the provision of objective evidence, that specified requirements have been fulfilled

WHAT IS IT?

Source: Challenges in autonomous testing and validation, Koopman & Wagner, 2016
Stages of an Automotive Clinical Trial

- **Preclinical**
  - System testing

- **Phase 1**
  - Check of safety
  - Off-road safety testing

- **Phase 2**
  - Check for efficacy
  - Limited road testing with safety-drivers

- **Phase 3**
  - Confirm findings
  - Expanded road testing with safety-drivers

- **Phase 4**
  - Post market assessment
  - Expansive deployment of driverless

Source: Bryan Reimer, MIT – Tedx Waltham Event, June 2018
MY RESTRICTIONS TODAY

Stages of an Automotive Clinical Trial

**PRECLINICAL**
- System testing

**PHASE 1**
- Off-road safety testing

**PHASE 2**
- Limited road testing with safety-drivers

**PHASE 3**
- Expanded road testing with safety-drivers

**PHASE 4**
- Expansive deployment of driverless

Source: Bryan Reimer, MIT – Tedx Waltham Event, June 2018
L3PILOT IN A NUTSHELL
WHAT IS IT (AGAIN)?

Evaluation

The process of judging something's quality, importance, or value

Cambridge Dictionary
L3PILOT MACRO PROCESS

PREPARE
- Functions implemented into cars
- Testing plan completed
- Methodology set

DRIVE
- Execution of pre-tests & tests

EVALUATE
- Pilot and impact evaluation results
- Code of Practice delivered

Showcases
- User acceptance survey
- FESTA

Sep, 2017 to Aug, 2021
FOCUS

PREPARATION PHASE
PREPARING THE FLEETS FOR A PILOT
A CHALLENGES ODYSSEY

Technologies
Evolution of systems
Cyber Security
Confidentiality

Methodologies
Data collection
Use Cases
Safety Validation
ODDs

Objectives
Technical maintenance
Automation Level
Critical scenarios
Regulations
Time

Common outputs
PREPARING THE FLEETS FOR A PILOT

A CHALLENGES ODYSSEY

Methodologies
Technologies
Process
PREPARING THE FLEETS FOR A PILOT

CHALLENGE 1

Trust
PREPARING THE FLEETS FOR A PILOT

CHALLENGE 2

Commitment

PREPARING THE FLEETS FOR A PILOT

CHALLENGE 3

Inspiration
PREPARING THE FLEETS FOR A PILOT

CHALLENGE 4

Capabilities
PREPARING THE FLEETS FOR A PILOT

CHALLENGE 5

Readiness

UNPREPARED
PREPARING THE FLEETS FOR A PILOT

CHALLENGE 7

... Money
PREPARING THE FLEETS FOR A PILOT
ACHIEVEMENTS/ISSUES IN L3PILOT/SP4 SO FAR

✓ Description and Taxonomy of AD Functions (18)
✓ Proposition for a fleet of vehicles by vehicle owners
✓ Description of realistic experimental procedures
✓ Safety requirements for the experiments
✓ Implementation of AD systems in prototypes
✓ Starting tests for collecting data
✓ …. With all European OEMs + a supplier onboard
Description and Taxonomy of AD Functions (18)

Traffic Jam  N1
Motorway  N2
Parking  N4
Urban  N5

1,000 drivers 100 cars 10 European countries Piloting Automated Driving on European Roads.
THANK YOU VERY MUCH FOR YOUR ATTENTION

😊 And also to Stanley Kubrick for his insights into mystery and complexity 😊