



PROVING GROUND PROJECT HUNGARY

Project summary

Jul/2018



CONTENT

Project concept

Proving Ground development

Unique services





PROJECT CONCEPT

2014-2017
Industrial inputs
Iparági inputok



commsignia



evopro



NOKIA



Focus on autonomous vehicles

Inspiring factors for development

1 Zero Emission

- Fuel-consumption reduction
- Reducing emission



2 Demographic pressure

- Support of insecure leaders
- Increase the elderly mobility



3 Risk of accidents

- Avoidance of the accidents by reducing the effect of human mistakes



4 Increasing traffic density

- Management of transport process
- Comfortable, time-saving travel



5 Assistance systems

- Intelligent sensors for appropriate process
- Intelligent actuators (steering, brakes, etc.)



Source: VDA

Decision on strategic R&D investment

Unique test facility

Capacity constraints in Europe in area of vehicle dynamic testing

Technology change in vehicle industry – single vehicle vs. co-operative vehicle control: different development environment is required

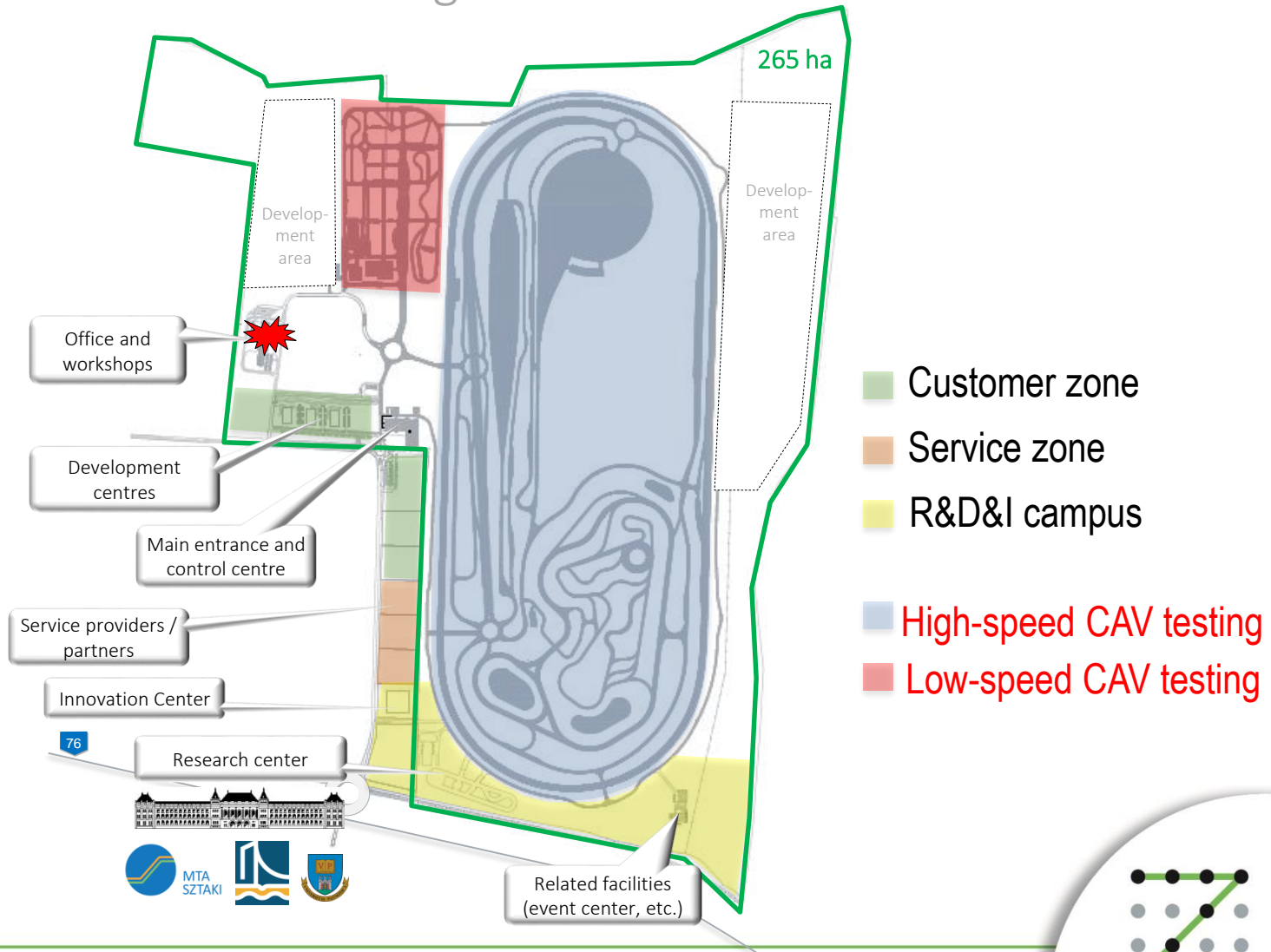
Decision of Hungarian Government in 2016: „contribution to the European automotive community”

Test field for classic and automated and connected vehicles in Hungary

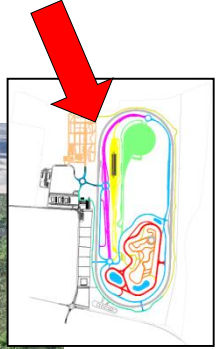


Layout of the Proving Ground

Traditional and autonomous testing modules



Test track vision





PROJECT DEVELOPMENT



Phases of the project

Phase 1: 2018 Q4



- Dynamic platform
 - Braking surfaces
 - Handling course – high speed
 - Smart City basic road grid I
 - Rural road – Eastern section
 - Main entrance building
 - Technical building
- (Innovation center – industrial park)*

Phase 2.a: 2019 Q3



- Dynamic platform
- Smart City basic road grid
- Braking surfaces
- Handling course – high speed
- Rural road – Eastern section
- Smart City road grid II, facades, buildings
- Highway section
- Rural road – Southern section
- Handling course – low speed
- Main entrance building
- Technical building
- Control center

Phase 2.b: 2020 Q4



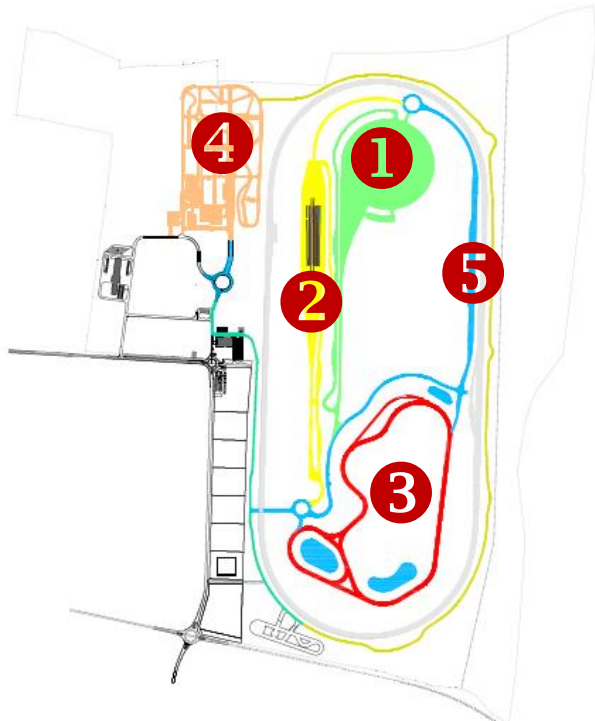
- Dynamic platform
- Smart City basic road grid
- Braking surfaces
- Handling course – high speed
- Rural road – Eastern section
- Smart City facades, buildings
- Highway section
- Rural road – Southern section
- Handling course – low speed
- Smart City technology+
- Further dynamic modules
- High-speed oval
- Main entrance building
- Technical building
- Control center
- Research center

Ambition by end of 2018

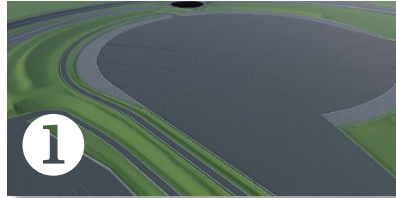
Q1-Q2:
Construction

Q3: Technology
installation

Q4: Business
launch



Dynamic platform



Braking surfaces



Handling course (HS)



Smart City
Basic road grid



Rural road
Eastern section



Innovation center
(by Industrial Park)



Main entrance building



Technical building



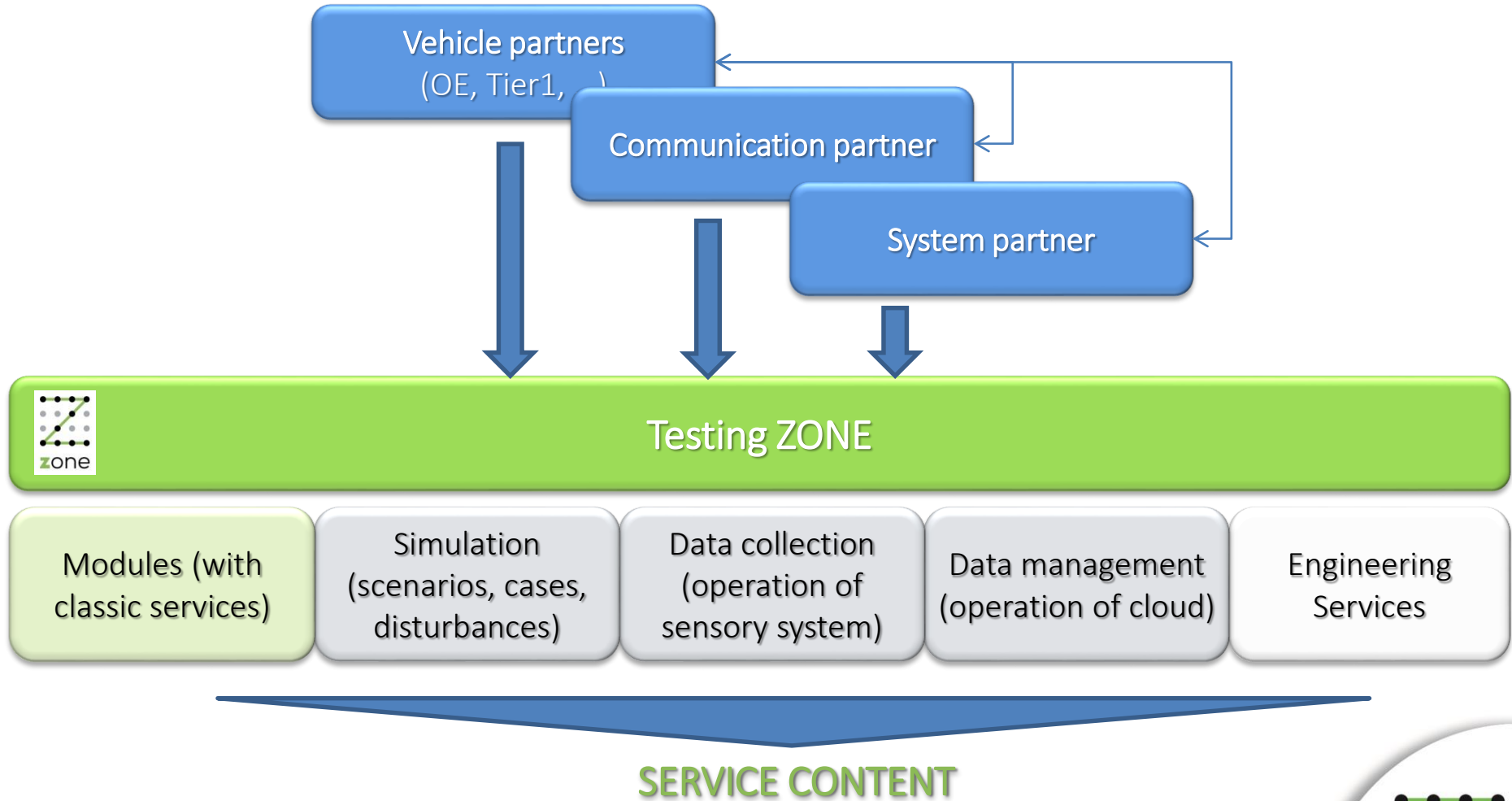
Project status 31/May/2018

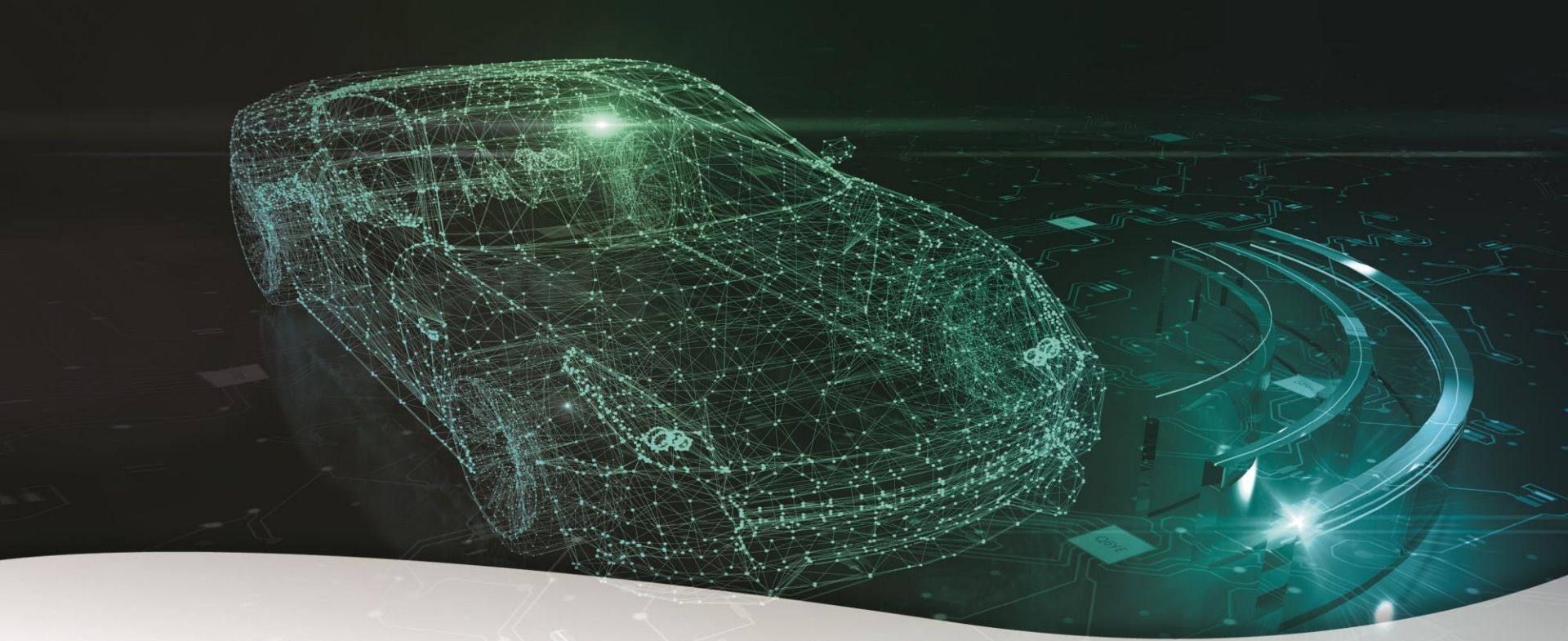


Project development

Business & Operation Model

Operation models will change





Test + simulation

Teszt + szimuláció

UNIQUE SERVICES

ZALAEGRSZEG



REALITY
VALÓSÁG

INTELLIGENCE
INTELLIGENCIA



AUTOMATED TESTS
AUTOMATIZÁLT TESZTEK



SIMULATION
SZIMULÁCIÓ



PROVING GROUND

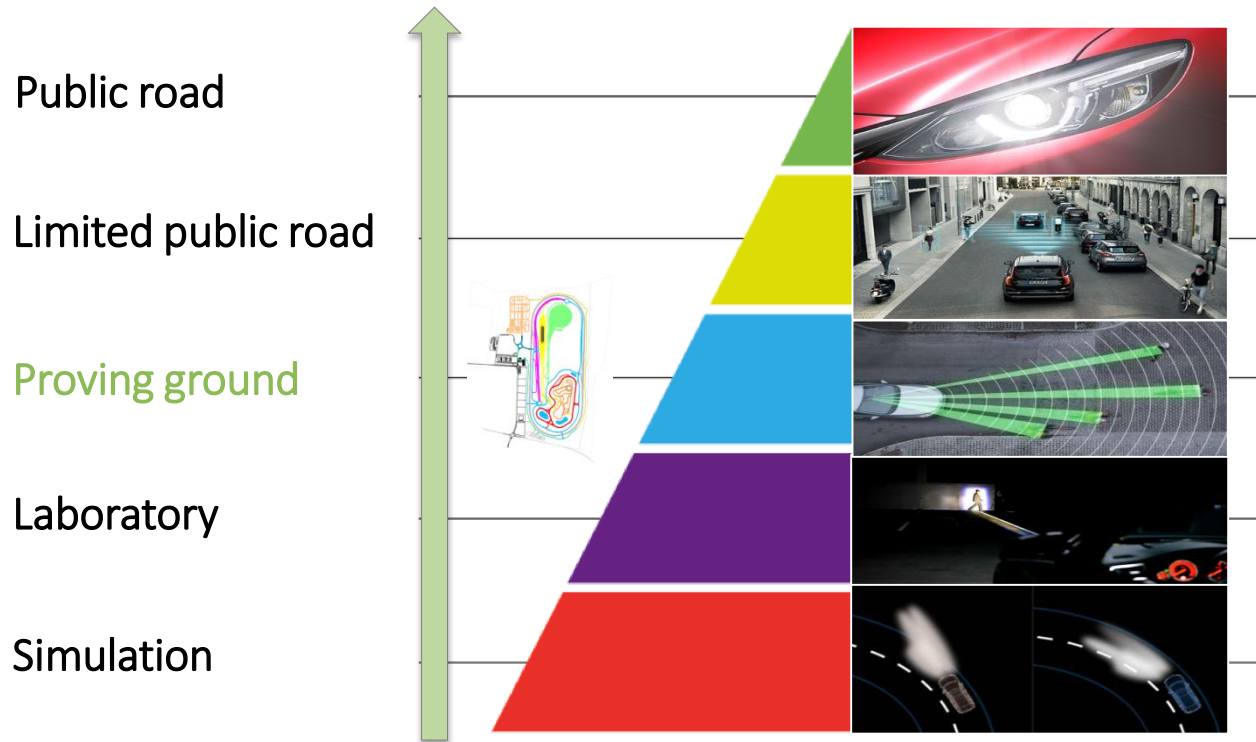


VIRTUALITY
VIRTUALITÁS



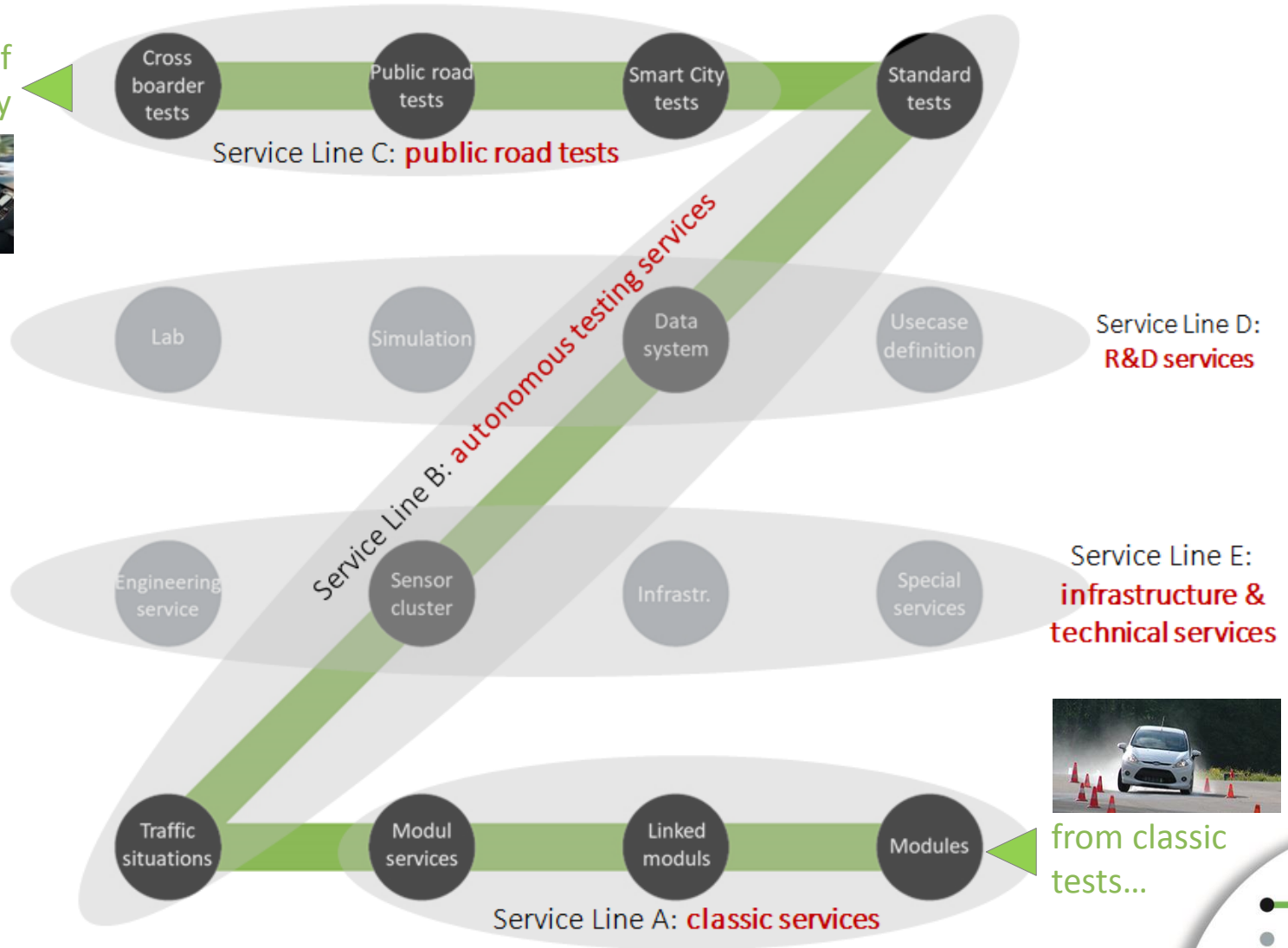
Multi-level testing environment

From computer to real traffic – essential for automated driving



Proving ground service portfolio

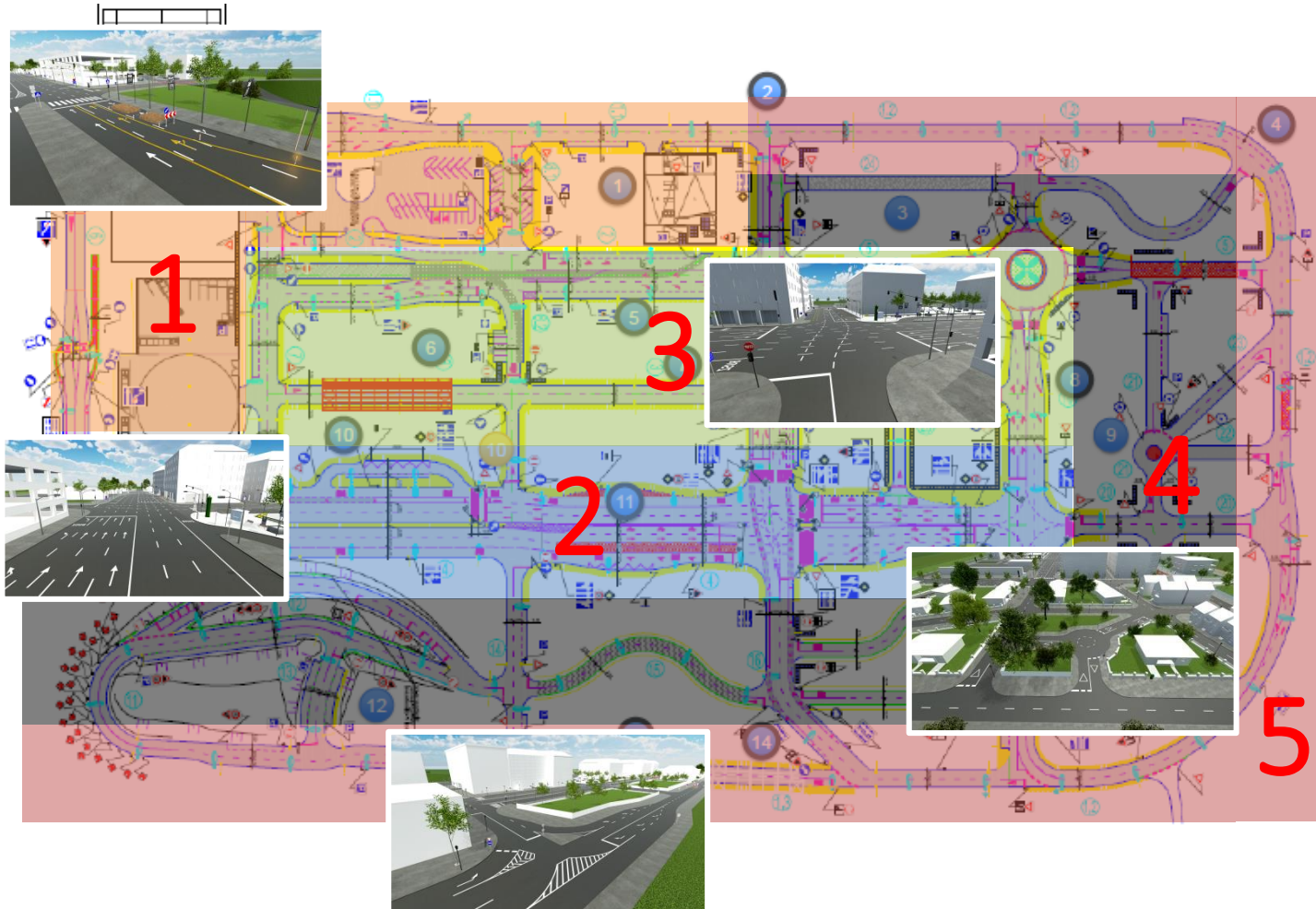
...till future of mobility



from classic tests...

Proving Ground Modules

SMART City Zone – Separated Function Zones



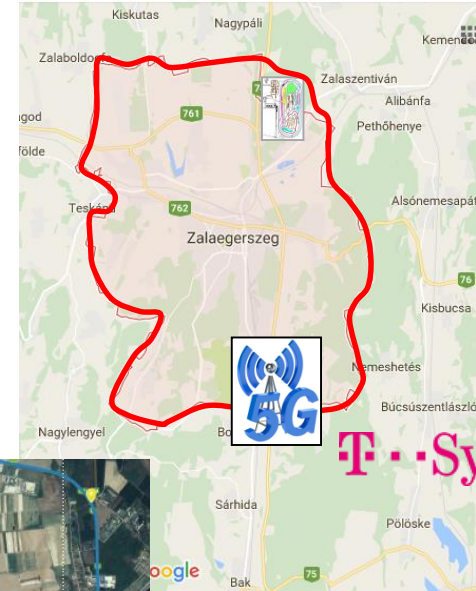
- 1. Low-speed, parking area
- 2. Multi-lane high speed area
- 3. Downtown area
- 4. Suburban area
- 5. T-junction area

Leaving the closed testing environment ...

Zalaegerszeg as Smart/Digitalized City environment for Testing



Test track modules and scenarios for **controlled and repeatable tests** in a safe environment



City environment for random **real-life testing**

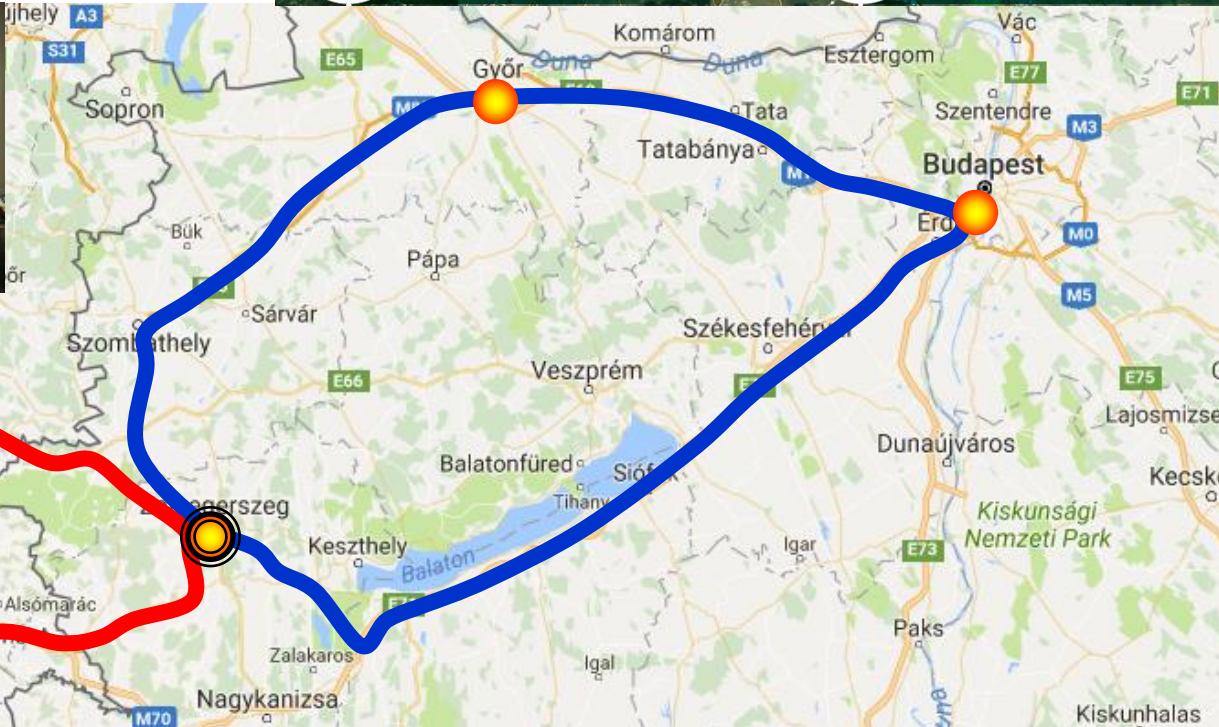
Leaving the closed testing environment ...

High speed testing in real environment – “Triple loop”

Loop_1: City local roads – smart infrastructure

Loop_2: Hungarian roads

Loop_3: International roads



ZALAZONE - Region Zala

