

AUTOPILOT Webinar Series (III): Hazard and VRU Warnings for AVs

Italian PS: The IoT instantiated in Tuscany

FIA Webinar

Paolo Pagano (CNIT)

September 24th 2018



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731993



Webinar Agenda

- 16:00 – 16:05** Webinar introduction: AUTOPILOT context and motivations (Paolo Pagano, CNIT)
- 16:05 – 16:15** AUTOPILOT testbed and use cases (Lorenzo Pieri, AVR Group)
- 16:15 – 16:25** The ICON oneM2M platform (Paolo Scalambro, TIM)
- 16:25 – 16:35** Vehicle features and IoT assisted AD manoeuvres (Leandro D’Orazio, CRF)
- 16:35 – 16:45** OBUs, pothole detector, smart traffic light, algorithms for pedestrian detection (Daniele Brevi, ISMB)
- 16:45 – 17:00** Q&A session



Webinar Objectives and Audience

Objective

- Present the pilot sites, use cases and approaches to external public
- Communicate the evaluation and findings to stakeholders
- Include external audience into the project development and into the automated driving debate

Audience

- Research stakeholders
- Industry stakeholders
- Institutions and authorities
- AUTOPILOT partners



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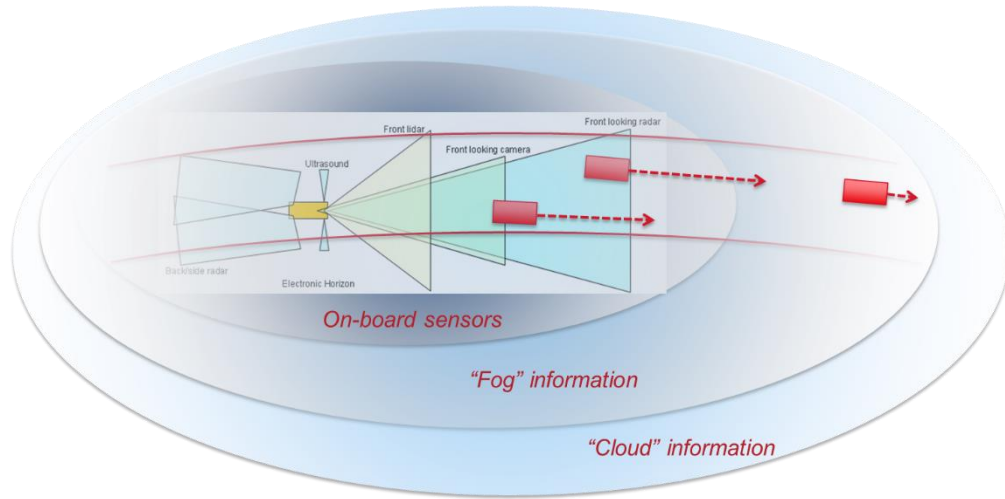
Italian PS scenario

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Italian PS specifications



Technical motivations: extending the electronic horizon



- On-board sensors provide support to the automated driving by detecting information in a range of 100 mt;
- As we go further, vehicular network provides additional information;
- All IoT readings are retrieved from an IoT platform.

Pilot Sites and Applications

					
Country	City/Region	Valet Parking	Highway Use	Platooning	Urban Driving
	Tampere	✓			✓
	Versailles	✓		✓	✓
	Livorno-Florence		✓		✓
	Daejeon				✓
	Eindhoven	✓	✓	✓	✓
	Vigo	✓			✓



Our eco-system: Port of Livorno

- The Passenger Port: ferry and cruise terminals (100,000 m²), ship repair and ship building
- The Commercial Multipurpose Port: 2.5 million m² (850,000 m² customs boundary) 90 berths and 13 km of quays, 3 railways & 60 km of tracks, freight traffic fully separate from the urban one
- The Industrial Area: refinery, oil stock areas, energy power stations, chemical and automotive component industry
- The Freight Village “A. Vespucci”: 2.8 million m², cargo consolidation with multimodal access, distribution centres, packing firms, customs clearance and scanning area, railstation, 3 MWh PV park, etc.
- The Dry port “Il Faldo”: car stocking and distribution area fully automatised, 640,000 m², capacity 25,000 cars, road and rail



ESPO conference 2019



Our eco-system: highway

- The SGC FI-PI-LI connects Florence to Pisa and Livorno:
 - along two separated branches;
 - total extension of 100 kilometers of dual carriageway with central barrier;
 - 26 exits and 3 important junction with national motorways;
 - TCC with full fledged DATEX-2 node integrated in the National Motorways Information System;
 - 40,000 vehicles/day with 20% share of heavy vehicles;
 - distributed sensing stations and ETSI-G5 Road Side Units.



Standard to Normative in Italy

- New regulation on Smart Roads:
 - decree signed on February 28th, published on April 18th;
 - requesting the upgrade of the whole Italian road infrastructure (starting from TEN-T) to ETSI-G5;
 - enabling Day-1 services;
- AD on public roads:
 - possible on Smart Roads;
 - upon approval by the Ministry of Transportation.



Il Ministro delle Infrastrutture e dei Trasporti

VISTO il Regolamento (CE) n. 377/2014 del Parlamento e del Consiglio Europeo del 3 aprile 2014, che istituisce il programma Copernicus e abroga il Regolamento (UE) n. 911/2010;

VISTA la direttiva n. 2010/40/UE del Parlamento europeo e del Consiglio del 7 luglio 2010, sul quadro generale per la diffusione dei sistemi di trasporto intelligenti nel settore del trasporto stradale e nelle interfacce con altri modi di trasporto;

VISTA la legge 24 dicembre 1969, n. 990, e successive modificazioni, recante: "Assicurazione obbligatoria della responsabilità civile derivante dalla circolazione dei veicoli a motore e dei natanti";

VISTO il decreto legislativo 30 aprile 1992, n. 285, di seguito codice della strada, e, in particolare, l'articolo 13, comma 6;

VISTO il decreto legislativo 30 luglio 1999, n. 300, e successive modificazioni, recante: "Riforma dell'organizzazione del Governo";

VISTO il decreto legislativo 30 marzo 2001, n. 165, e, in particolare, l'articolo 4, comma 1, lettera b), il quale prevede che agli organi di governo spetta la definizione, tra l'altro, di direttive generali per l'azione amministrativa e per la gestione;

VISTO il decreto legge 18 ottobre 2012, n. 179, convertito, con modificazioni, dalla legge 17 dicembre 2012, n. 221, e, in particolare, l'articolo 8 il quale, ai fini del recepimento della richiamata direttiva n. 2010/40/UE, stabilisce i settori di intervento costituenti obiettivi prioritari per la diffusione e l'utilizzo, in modo coordinato e coerente, di sistemi di trasporto intelligenti sul territorio nazionale;

VISTO il decreto legislativo 18 aprile 2016 n. 50, recante: "Codice dei contratti pubblici", e, in particolare, l'articolo 214, comma 3;

VISTA la legge 27 dicembre 2017, n. 205, e, in particolare, l'articolo 1, comma 72, il quale autorizza la sperimentazione su strada delle soluzioni di Smart Road e di guida connessa e automatica, prevedendo che con decreto del Ministro delle infrastrutture e dei trasporti, sentito il Ministro dell'interno, sono definiti le modalità attuative e gli strumenti operativi della sperimentazione;

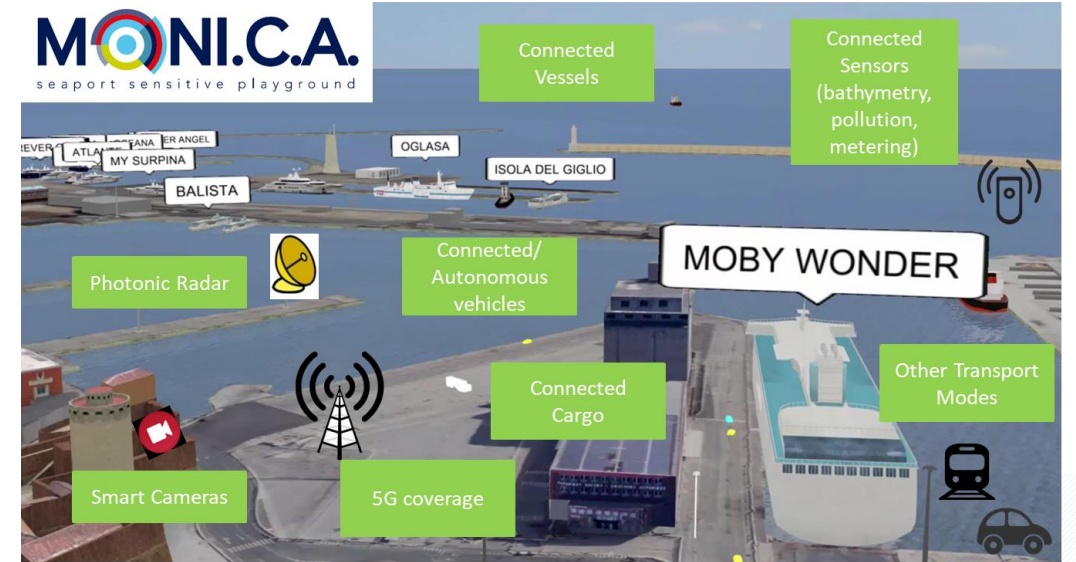
VISTO il decreto del Presidente della Repubblica 24 novembre 2001, n. 474, recante: "Regolamento di semplificazione del procedimento di autorizzazione alla circolazione di prova dei veicoli", e, in particolare, l'articolo 1, comma 1, che elenca i soggetti autorizzati alla circolazione di prova per i quali non sussiste l'obbligo di munire della carta di circolazione i relativi veicoli;

VISTO il decreto del Presidente del Consiglio dei Ministri 11 febbraio 2014, n. 72, recante: "Regolamento di organizzazione del Ministero delle infrastrutture e dei trasporti, ai sensi dell'articolo 2 del decreto legge 6 luglio 2012, n. 95, convertito, con modificazioni, dalla legge 7 agosto 2012, n. 135";



Digital tools of the Port Authority

- Convergence platform for data and services;
- Sharp layer separation:
 - data production;
 - custodial, indexing, retrieval:
 - interaction with other platforms (e.g. Coast Guard, Line Operators, Regional Authorities, City Hall, etc.);
 - data consumption (i.e. final user services and applications).

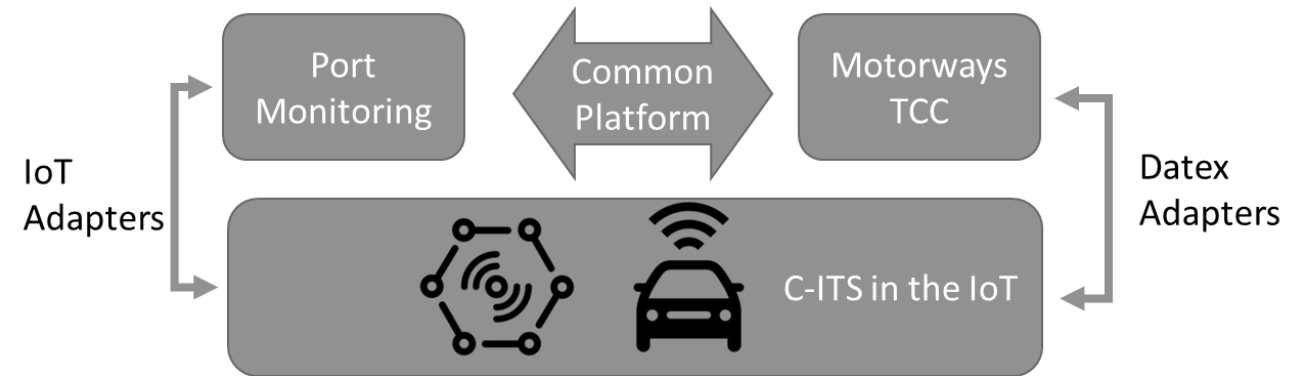


- Standardization, open-data, interoperability:
 - the Authority can interconnect distributed heterogeneous sensors through a new generation network serving terminals and port infrastructures.



Port & Corridor connected

- Starting from ETSI/ERTICO Plugtests 2016 we are sharing information among Control Centers acting at different levels in corridors links:
 - Notably with the Livorno - Florence highway operator and beyond (i.e. towards other important nodes in the Scandinavian - Mediterranean TEN-T corridor)



- AUTOPILOT KETs can be powerful tools in providing information about safety-related and other events on a large scale; being linked with the IoT it provides a pervasive coverage of the sensing areas.

Two-day event in Livorno

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AUTOPILOT

V. 18/09/2018



We are pleased to announce the stakeholder workshop
"Smart roads for AD cars":
IoT-enabled Services for Automated Vehicles

18th October 2018 - Livorno

Highway and urban driving functionalities in hands-on demonstrations will inspire the discussions about business cases, as well as the opportunities and challenges that AUTOPILOT could face in coming to market. Special focus will be devoted to the "Smart Road" national initiative by the Ministry of Transport, as Livorno is the first city in which it has been implemented, and also to the links with the harbour operation ecosystem.

Please mark this date in your calendar. More information, agenda and registration link will follow in the upcoming weeks.

Co-organised by



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Stakeholder
WS

Public Event

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AUTOPILOT

V. 18/09/2018



We are pleased to announce the pilot site public event
"Smart roads for AD cars":
the AUTOPILOT project in Livorno

19th October 2018 - Cruise Terminal

"Smart roads" travelled by Automated Driving cars is not a distant future. Technologies already exist, however the added advantage and successful business cases depend on how they are integrated in services.

The AUTOPILOT project aims to prove that IoT technologies can advance automated driving by means of different use cases under tests, in real conditions, at 6 Large Scale Pilots (5 in EU + 1 in South Korea).

Livorno hosts the Italian Pilot Site and at the event we will demonstrate the achieved results so far and debate with you.

Please mark this date in your calendar. More information, agenda and registration link will follow in the upcoming weeks.

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AUTOPILOT in Italy



Thank you for your attention

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