Technology Watch Report
EUCAD CONFERENCE 2021

27 AVRIL 2021

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Contents

Prepared by A. Auert – 27Apr21

DESCRIPTION

- **Objet :** Report on the EUCAD conference 2021
- **Location:** online event
- **Date:** 20 to 22 April 2021
- **Web site:** https://eucad2021-conference.eu/
- **Participant:** Anthony Auert, Cluster Manager – AutoMobility, Luxinnovation
- **Report version:** version #1

OBJECTIVES

- Improve market intelligence in emerging technologies in the field of connected & automated driving.
- Detect new initiatives and technologies that could contribute to the development of the Luxembourg automotive eco-system.

SUMMARY

The EU Commission is willing to establish a new Partnership on CCAM under Horizon Europe with the aim to align better public and private efforts through a common and long-term research & innovation (R&I) agenda. The expected result is the acceleration of the implementation of smart and sustainable mobility solutions for the benefit of all.

The first two days of the programme were primarily policy-oriented while the third day was fully dedicated to break-out sessions discussing specific R&I challenges in the area of cooperative, connected and automated mobility (CCAM). The overall discussions and break-sessions converged to the conclusion that CCAM will offer new mobility solutions that will be cleaner, safer and more consumer-focussed than ever, but equally create new areas of business for the automotive industry.

A couple of Luxembourg based companies & RTO have contributed to the exhibition by showcasing EU funded projects such as 5G-Mobix or Avenue.

ABOUT THE EUCAD CONFERENCE

The third European Conference on Connected and Automated Driving is a high-level and evidence-based conference where policy challenges meet innovative solutions to deliver on societal benefits. The event is the only conference in Europe that brings together political leaders from the European Commission and Member States with high-level representatives of industry, knowledge institutes and road authorities to exchange knowledge and experience on the most recent technological developments and policies in the area of CCAM.

Over the course of three days, EU leaders, CEOs and representatives from academia and major road transport stakeholders debated on:

- The vision and objectives of the upcoming CCAM Partnership
- The role of R&I to answer specific policy goals and societal issues, illustrating the need for European political and technological leadership in developing cooperative, connected and automated mobility solutions
- Exploring the way forward towards CCAM implementation by identifying next challenges through multisector cooperation

Participants enjoyed plenary sessions, as well as thematic breakout sessions to discuss specific R&I challenges. A virtual exhibition of projects was accessible throughout the three-day event.

ATTENDED CONFERENCES

1) PLENARY 2: AUTOMATED ROAD TRANSPORT: FROM HORIZON 2020 TO HORIZON EUROPE

▪ **Speakers:**

Dirk Beckers, CINEA Director, European Commission

Angelos Amditis, ERTICO Chairman and Research Director, ICCS

Karen Vancluysen, Secretary General, POLIS

Aria Etemad, Senior Project Manager, Volkswagen Research Innovation

Emilia Silvas, Cluster Program Manager, Integrated Vehicle Safety Department, TNO

▪ **Abstract:**

Horizon 2020 funded projects have resulted in significant research actions aiming to advance key technologies for innovative connected and automated driving functions and applications, particularly through demonstrations and pilot tests that explore the performance, safety and user acceptance of these systems. Panellists provided an overview of the achievements of CCAM-related Horizon 2020 calls and projects and discuss how to best integrate their results and lessons learned to the R&I priorities under Horizon Europe and how synergies can be further exploited in the new framework programme.

2) PLENARY 5: INVESTED IN CCAM

▪ **Speakers:**

Herald Ruijters, Director for Directorate Investment, Innovative and Sustainable Transport, DG MOVE , European Commission

Christel Fiorina, Deputy Director Public Road Network and Traffic Management, French Ministry of Transport

Eckard Steiger, Director Industrial Cooperation Automated Driving, Robert Bosch GmbH

Jacqueline Erhart, Team Leader CCAD and Digital Infrastructure, ASFINAG and Chairwoman Permanent Committee on ITS and Connected & Autonomous Vehicles, ASECAP

Carlo van de Weijer, General Manager Eindhoven AI Systems Institute, TU/e Eindhoven University of Technology

▪ **Abstract:**

Public and private stakeholders from local, regional, national and international arenas involved in developing CCAM systems and services need to share and foster a common vision in order to roll out innovative and resilient mobility services that are tailored to the needs of future users. Collectively, they need to define a coherent deployment plan at the appropriate geographical level, analyse and agree on necessary investments in infrastructure, equipment, and required financial and human resources, and define the relevant business models that can attract the right actors for the long-term.

3) PLENARY 6: CCAM AROUND THE WORLD

▪ **Speakers:**

Jane Lappin, Chair of Standing Committee on Road Vehicle Automation, Transportation Research Board

Seigo Kuzumaki, SIP-adus Program Director, Fellow, Advanced R&D and Engineering Company, Toyota Motor Corporation

Rita Excell, Executive Director, Australia and New Zealand Driverless Vehicle Initiative (ADVI)

Lam Wee Shan, Group Director, Chief Innovation & Transport Technology Officer, Land Transport Authority (LTA) Singapore

Young-Jun Moon, Chief Director, Department of National Transport Technology R&D, Korea Transport Institute (KOTI)

- ▪ **Abstract:**

    International cooperation is key to getting CCAM on roads around the world. Global standards, joint approaches, exchanging knowledge, experience and best practices can contribute to this. The objective of this session was to learn about new policies and research activities of different regions of the world to support the development and deployment of CCAM and to discuss main benefits and future priorities for International Cooperation.

4) BO3: AFTER THE CORONA PANDEMIC: NEW PERSPECTIVES FOR CCAM AND QUALITY OF LIFE?

- ▪ **Speakers:**

    Patricia La Torre, Head of Strategic Partnerships, Humanising Autonomy

    Yvonne Barnard, Senior Research Fellow, Institute for Transport Studies, University of Leeds

    Hannah Rakoff, Social Scientist, Volpe National Transportation Systems Center, U.S. DOT

    Endre Angelvik, Chair of UITP Combined Mobility Committee, Vice President Mobility Services, Ruter

- ▪ **Abstract:**

    During the pandemic many of us re-evaluated ideas about mobility and how it influences the Quality of Life (QoL), or in other words, the societal impacts such as personal mobility, safety, environment and well-being. CCAM could play a role in making mobility more sustainable and equitable, combining automated forms of transport with active forms (walking and cycling), public transport and micro mobility. This session addressed how QoL can be defined for different cities and regions; how the measures of QoL are linked to a sustainable transport system; and whether CCAM solutions can support the goal of improving the QoL and under which conditions.

5) BO10: BOOSTING CCAM WITH AI: HOW TO ENSURE EFFECTIVENESS AND ACCEPTABILITY?

- ▪ **Speakers:**

    Patrick van der Smagt, Director of AI Research, VW Group

    Clara Otero Perez, Senior Director of Systems Innovations, NXP Semiconductors

    Marieke Martens, Professor Automated Driving & Human Interaction, Eindhoven University of Technology (TU/e)

    Nandita Mangal, Platform Owner – HMI Vehicle Experience, APTIV

    Grigori Parfjonov, Transport Department Traffic Expert, City of Tallinn

- ▪ **Abstract:**

AI has a huge potential to change the (in-vehicle) decision making process as well as new services or safety solutions supported by AI. To unlock this, a major challenge is to understand and boost user acceptance of the AI-supported CCAM technologies, as well as safety and effectiveness. The session discussed what is a possible joint approach to achieve this, together with the roles several stakeholders will have in the execution of this approach.

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Supported by

European Union
European Regional
Development Fund

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VIRTUAL EXHIBITION

A virtual exhibition of EC projects was accessible throughout the three-day event. Some of the showcase projects involved Luxembourg based companies or RTO:

5G-MOBIX

- **Luxembourg partners:**
  Luxembourg Institute of Science and Technology
  University of Luxembourg
  Intrasoft International S.A.
- **Abstract:**

5G-MOBIX aims to match the benefits of the 5G technology with advanced Cooperative, Connected and Automated Mobility (CCAM) use cases in order to enable innovative automated driving applications, both from a technical and business perspective. 5G-MOBIX is executing CCAM trials along two Cross-Border Corridors (CBC) and six urban Trial Sites. 5G-MOBIX trials address five defined categories of CCAM use cases, which are aligned with the work of 3GPP: Advanced Driving, Platooning, Extended Sensors, Remote Driving and Vehicle quality of Service Support. The trials allow 5G-MOBIX to conduct impact assessments, including business impact and cost/benefit analysis, particularly in sparsely populated cross-border areas with mild market failures of mobile network connectivity. As a result of these evaluations and consultations with stakeholders on technical requirements and operational conditions, 5G-MOBIX will identify new business opportunities and propose recommendations and deployment scenarios to overcome challenges to cooperation, business, technical and regulatory innovations.

AVENUE

- **Luxembourg partners:**
  Sales-Lentz
  Ville de Esch
- **Abstract:**

The AVENUE project, funded by the European Union's Horizon 2020 program, has been operating since May 2018 automated mini-bus public transport services in 4 different European cities. The project is entering its 4th year, and it has started operating automated mini-buses with on-demand, door-to-door services, demonstrating the full power of automated mini-buses in public transportation. Our first site operating on-demand, door to door services is in Geneva, at the Belle-Idee estate (a 38-hectare hospital site with mixed traffic and with more than 9Kms of covered routes). The site offers more than 70 virtual bus-stops, operating three automated mini-buses at almost 100% automated operation (no safety operator intervention), from trip reservation, to mini-bus dispatching, and even vehicle depot entry and exit.

During the 4th year of the project, in addition to the project other three sites, in Lyon, in Copenhagen, and in Luxembourg, 3 new sites will start operating, in Sion (CH), in Esch-sur-Alezette (LU – European Culture Capital 2022) and in Slagelse (DK), all under different levels of on-demand, door to-door operation, and deploying different sets of passenger and transport services, targeting passenger safety and comfort. The experienced gained will result in sets of recommendations and roadmap towards the adoption of automated mini-buses for public transportation in urban and sub-urban environments.

L3PILOT

- **Luxembourg partners:**

Delphi
- **Abstract:**

L3Pilot tests the viability of automated driving as a safe and efficient means of transportation on public roads. The project focuses on large-scale piloting of automated driving functions of SAE Levels 3 and, partially, Level 4 on public roads across Europe. The functionality of the systems is exposed to variable conditions across seven European countries, including cross-border routes.

The technologies being tested cover a wide range of driving situations, including parking, overtaking on highways and driving through urban intersections. The tests will provide valuable data for evaluating technical aspects, user acceptance, driving and travel behaviour, as well as impact on traffic and safety.

With the comprehensive piloting of automated driving functions in test vehicles, L3Pilot will pave the way for large-scale field tests of series cars on public roads. L3Pilot partners will define a set of rules for system engineering and safety validation of automated systems, captured in a Code of Practice for Automated Driving.

PASCAL

- **Luxembourg partners:**
  Luxmobility
  Volvo e-bus competence centre
- **Abstract:**

The aim of the PAsCAL project, is to improve the understanding of the implications of connected and automated vehicles (CAVs) on society. The project will create a "Guide2Autonomy" to capture this new knowledge. Outcomes from the project will contribute to the training of future drivers and passengers and will help decision-makers to move towards the new forms of individual and collective mobility made possible by the spread of driverless cars.

During the PAsCAL project, the perceptions and expectations of citizens regarding the new autonomous and connected driving technologies will be examined, as well as the behaviour of drivers in semi-autonomous vehicles and that of all other road users. To these purposes, specific surveys will be prepared and accurate behavioural analysis will be carried out with extensive use of modern technologies, such as driving simulators and virtual reality platforms. The results of the simulation experiments will provide a better understanding of the reasons for the distrust towards CAVs expressed by many European citizens. In addition, PAsCAL will finally create 5 road-transport pilot projects, conducted in different countries of the European Union.

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