

BASt topics

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TRA2022 Conference Lisbon

The TRA2022 Conference in Lisbon, Portugal was the 9th Transport Research Arena conference.

From 14 to 17 November, 2200 participants gathered under the theme "Moving together – reimagining mobility worldwide".

In the accompanying exhibition of TRA2022, more than 60 exhibitors took part. On a joint stand with the Federal Ministry for Digital and Transport (BMDV), the BASt provided insights into several of its research activities. The Road and Transportation Research Association (FGSV), the Federal Maritime and Hydrographic Agency (BSH), the Autobahn GmbH and Fraunhofer IML were also represented at the German stand.

Focus areas showcased by BASt were „Automated and Connected Driving“ as well as „Digital Technologies“. On 6 displays, current research projects, data platforms like Mobilithek and digital

technologies such as Copernicus and MESAS were presented.

Complementing these displays, experts from BASt showed their research results in technical and strategic sessions as well as in poster sessions. Their themes covered a wide range of topics from different research fields. Among these were topics from automotive and traffic engineering including Connected and Automated Multimodal Mobility (C-Roads, CCAM, Effects of Euro 7 Emission standard), and the assessment of effects and mitigation of traffic-related noise. The organization of the European National Access Points as new treasure trove for mobility research which is aim of the NAPCORE project was presented and discussed in a dedicated invited session.

In the field of road infrastructure, the role of in-service pavement studies in the innovation process and the assessment of resilience were presented to the attendants of TRA. In addition,

Enterprise Architecture Management for the digital transformation of road management was a topic that gained high attention.

Launched in 2006, the Transport Research Arena (TRA) is held every two years in a European city. It is supported by the European Commission and various European Technology Platforms. TRA Conferences address all transport modes and all aspects of mobility, bringing together experts from Europe as well as from around the world, thus sharing best practices of policy and implementation.

Find out all BASt contributions to TRA2022 here:

www.bast.de/TRA ■

CCAM Partnership

Connected Cooperative and Automated Mobility (CCAM) aims at creating a more user-centered and inclusive mobility system, increasing (road) safety while reducing congestion and the environmental footprint of mobility. The CCAM Partnership is one of almost 50 co-programmed partnerships in Horizon Europe, belonging to the climate, energy and mobility cluster. The European Commission has

this amount in the Horizon Europe phase (2021-2027). Industry, public authorities, universities and research providers – to name only a few categories of its almost 200 members – bundle their interests in the CCAM Association, a non-for-profit association under Belgian law set up in 2021. BAST, as a full member, represents the interests of the German Federal Ministry for Digital and Transport (BMDV)

Main tasks of the partnership comprise setting up and maintaining a Strategic Research and Innovation Agenda (SRIA) for the entire decade, drafting Work Programmes for Horizon Europe, accompanying the research projects funded by the European Commission (amongst others FAME, MODI and SUNRISE, featured in this issue of BAST topics) and documenting the implementation progress concerning the objectives of the partnership. BAST has taken up a coordinating role, shared with ERTICO, in one of the seven research and innovation clusters, dedicated to integrating the vehicle in the transport system. The consultation with the membership, collecting inputs to SRIA and the Work Programmes, forms an essential part of the partnership's activities. Multi-cluster meetings (World Cafés) such as in March and October 2022 have been proven very successful in collecting and sorting inputs and forming a fresh and up-to-date baseline for the partnership activities. More information is available at

<https://www.ccam.eu>. ■



L3 Pilot Driving Automation

dedicated almost 500 MEUR to CCAM research and innovation, expecting partners across sectors to at least doubling

while BMDV itself provides its advice to CCAM via the States Representatives Group.

German-Dutch Directors' Meeting on 12 September 2022 at the BAST

After a two-year break, the German-Dutch cooperation at director level was resumed. Prof. Markus Oeser was pleased to welcome Marlouke Durville (RWS), Machteld de Kroon (TNO) and Anne Rethmann (Autobahn GmbH) as hosts. The first joint meeting after a long time was all about getting to know each other on a personal level to pave the way for the future joint cooperation.

In addition to the successful ongoing cooperation in which BAST supports RWS in the conversion of skid resistance measurements to the German SKM stan-

dard, and the WG for the exchange of new technologies for the determination of the load-bearing capacity of roads, the coordination group identified three new topic areas which would benefit from a bilateral cooperation: Sustainable Asphalt Road Construction, the Life Cycle Approach to Roads, and Climate Change Adaptation. Initial meetings at technical level have already taken place.

In order to further develop the successful cooperation, annual director meetings are planned again in the future. ■

Visit of a delegation from KOTSA on 17th May 2022

In 2010, the Korea Transportation Safety Authority (KOTSA), and BAST signed a Memorandum of Understanding. Since then, there have been regular meetings to exchange on a variety of common topics for the benefit of both partners. After an interruption due to the Corona Pandemia, BAST was very happy to welcome a delegation of nine high-level Korean experts. Lead by Mr. Yongbok Kwon, President of KOTSA, they exchanged with the relevant experts from BAST on Driver Assistance Systems, topics around Automated Driving and a Pro-active Road Infrastructure Safety Management. ■

MODI: A leap towards SAE4 automated driving features

The European Commission, through the Horizon Europe framework program, has awarded a funding grant of € 23 Million for a total budget of approximately € 28 Million, and a 29-partner strong consortium to test and validate the implementation of CCAM solutions for real-logistics operations. The MODI project will demonstrate automated heavy-haul vehicles without safety drivers use cases on the motorway corridor from Rotterdam in the Netherlands to Moss in Norway, crossing four national borders and demonstrating terminal operations at four different harbours and terminals en route.

Automated transport will significantly contribute to improving European transport and logistic chains. The MODI re-

search project will make substantial steps toward identifying and resolving barriers preventing this from coming true. Even though the development of automated transport is accelerating, there are still many hindrances to overcome before we see a full-scale introduction of such transportation. These are related to the maturity of the technology itself but also to regulations, harmonisations, and social acceptance. The hindrances escalate when considering border-crossing transport. The project comprises five use cases, each describing a part of the logistics chain. It identifies what is required for automated driving level without human interaction (known as SAE level 4), and what is not possible yet.

First of all, BAST plays an important role

in developing the safety requirement for the SAE L4 vehicles to be used in the project, and secondly in the verification of these requirements during the development and on-site in the Hamburg use case. Here, heavy-duty vehicles are set to travel from the surrounding highways through small city areas into the harbour, with special emphasis to ensuring the safety for vulnerable road users. BAST also contributes to the impact assessment for the project (piloting the Common Evaluation Methodology) and to the definition of the required physical/digital infrastructure including (cooperative) intelligent transport systems (C-ITS).

The project was rolled out in October 2022 for 3.5 years. ■

Visit of KGM on 19 July 2022

In July, a high-level delegation from the General Directorate of Highways (KGM)/ Turkey visited BAST to learn about the new "Directive on Road Infrastructure Safety Management" (EU-RISM). The visit, funded by both the Turkish government and the European Union, aims to assist KGM's Road Infrastructure Safety Management (RISM) capacity building in Turkey in order to achieve a shift towards a safer transport system. Dr. Marco Irzik and further colleagues of BAST informed the participants about the implementation of the RISM I directive (2008/96/EC) in Germany and explained the changes due to the implementation of the new RISM II directive (2019/1936/EC). On the next day, the delegation was welcomed by the Autobahn and the Federal Trunk Road Authority (FBA) to collect additional information from a practical perspective. ■

SUNRISE – Safety assurance framework for connected, automated mobility systems

Safety assurance of Cooperative, Connected, and Automated Mobility (CCAM) technologies and systems is a crucial factor for their successful adoption in society, yet it remains to be a significant challenge. CCAM must prove to be safe and reliable in every possible driving scenario. It is already acknowledged that for higher levels of automation the validation of these systems would be infeasible by conventional methods. Furthermore, certification initiatives worldwide struggle to define a harmonized approach to enable massive deployment of highly automated vehicles.

Building from the Horizon 2020-funded project HEADSTART and other initiatives, the SUNRISE project will develop and demonstrate a commonly accepted, extensible Safety Assurance Framework for the test and safety validation of a varied scope of CCAM systems.

The project will define, implement and demonstrate the building blocks of this Safety Assurance Framework: harmonized and scalable safety assessment methodologies, procedures and metrics tailored for use cases, a European Scenario Database framework and its necessary data interfaces, a commonly agreed simulation framework including tools and interfaces. SUNRISE will work closely with CCAM stakeholders, such as policy makers, regulators, consumer testing and user associations.

Among others, BAST is responsible for the communication with vehicle safety bodies and contributes to the development of track testing methods and the scenario database framework. The project with more than 20 international partners is led by IDIADA and started in September 2022 with a duration of 36 months. ■

V4SAFETY (Vehicles and VRU Virtual eValuation of Road Safety)

The V4SAFETY (Vehicles and VRU Virtual eValuation of Road Safety) project that was granted in the Horizon Europe 2022 call started on the 1st of October 2022. Since the road traffic system is changing rapidly due to innovations and changes in the mobility system (increasing share of cycling, CCAM, new technologies like AI and wireless V2X), authorities are faced with the great challenge to enable the fast development and introduction of new safety technology for public roads while making sure that it has a positive impact on traffic safety. The V4SAFETY project aims to address the need for a method for a widely accepted and harmonized assessment of safety measures for all kinds of road users.

Therefore, V4SAFETY will provide a prospective safety assessment framework that can handle a large variety of safety measures, ranging from in-vehicle safety technology, new vehicle types, and infrastructure solutions to regulations and a change in road user behavior. The framework will include guidance for the use of different simulation methods, driver and VRU models, and methods to project the results over time and EU regions. A demonstration of use cases and a description of the validation and verification process aim to enhance broad acceptance of and trust in the framework. The resulting transparency and consistency in simulation-based safety assessment lead to much-improved comparability and reliability

of assessment conclusions. BAST is involved in the development of the framework (special focus on the validation and verification process) and the modeling of baseline cases.

The V4Safety consortium, led by TNO, consists of the following international partners:

BMW, BAST, Chalmers, Fraunhofer IVI, IDIADA, IKA, LAB France, SWOV, THI, TME, UNIFI, VIF, VCC, ZF, ERTICO, W2Economics. The project will run for 3 years. ■

Framework for Coordination of Automated Mobility in Europe (FAME)

FAME is a 23 partner-project coordinated by ERTICO, addressing the research and innovation needs as identified in the research coordination cluster of the CCAM Partnership. It has started in July 2022 and will run for three years, making use of a budget amounting to 5.7 MEUR. FAME will implement three key recommendations from the CCAM Platform (COM Expert Group, Final Report 2021), maintaining and enhancing the EU wide Knowledge Base on Connected and Automated Driving (which has been established by the predecessor project ARCADE), establishing an EU Common Evaluation Methodology (CEM) for CCAM

testing and to provide a framework for sharing test data. A taxonomy tool as well as a legal and ethical framework will complement the European framework for CCAM testing. In addition, FAME will foster the stakeholder engagement and organise key events such as the EU CAD Conference (next forthcoming in May 2023).

BAST contributes to FAME with experts from three sections: Connected Mobility, Automated Driving as well as Traffic Management and Road Maintenance Services. Content wise, it is planned to include the facts and findings from the

BAST-hosted monitoring of CAD test fields (www.testfeldmonitor.de) to the EU wide Knowledge Base, to bring in methodological contributions for HMI research in the context of large scale demonstrations, to extend and accompany the Common Evaluation Methodology

with a branch of impacts which are not directly based on test data but receive increasingly larger public attention (e.g. wider economic impacts, distributional impacts, land use) and to pilot CEM in synergy with large scale demo projects such as HiDrive and MODI.

www.connectedautomateddriving.eu ■



picture: ERTICO

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