

Call for applications for Short Term Scientific Missions

December 2018 – STSM2 Round 2

Wider Impacts and Scenario Evaluation of Autonomous and Connected Transport



Short Term Scientific Missions (STSM) are funded as part of the COST Action CA16222 **Wider Impacts and Scenario Evaluation of Autonomous and Connected Transport (WISE-ACT)**. This is a research network funded by COST European Cooperation in Science and Technology. The Action aims to build a European network of experienced scholars, young researchers and industry representatives working on the transition to autonomous and connected transport.

Short-Term Scientific Missions (STSM) allow scientists to conduct short research and study visits to a research institution or laboratory in another COST Country in order to strengthen the existing networks and to foster collaboration, to learn a new technique or to use instruments, data and/or methods not available in their own institution and to contribute to the scientific objectives of the Action.

The COST Action CA16222 has five working groups. STSMs are considered a great opportunity for participants to focus their work on research interests that have been highlighted by WGs or introduce new ones in light of the COST Action objectives (for details visit <http://www.cost.eu/actions/CA16222>). In this Call, the Action wishes to focus on a number of tasks as outlined in the MoU and WBP2. Applicants may focus on all or part(s) of the proposed topics to fulfil Action tasks and objectives. Note that this does not exclude other topics, which might also be funded through this or other Calls in the course of this Action.

1. STSM Topic: ***Legal framework and ethical issues linked with Artificial Intelligence and Robotics applications in Autonomous and Connected Transport***

Description: *The STSM will conduct a preliminary study on legal and ethical issues surrounding Artificial Intelligence and Robotics applications, focusing on its application in ACT and Intelligent Transport Systems (ITS). As an outcome, this STSM will provide a map of EU institutions, research centers and universities involved in research projects on Artificial intelligence and Robotics, and a literature review of EU reports and academic publications about the social impact of such technologies, with a particular focus on safety and (cyber)security of vehicles and infrastructure.*

Potential Host: *University of Udine (IT)*

2. STSM Topic: ***Travel Time Savings in the era of Autonomous and Connected Transport****

Description: *As the most important benefit accounting for 80% of road project impacts in developed countries, Travel Time Savings (TTS) challenge conventional approaches for the appraisal of Autonomous and Connected Transport. The key question is how can TTS be understood and measured. Therefore, the outputs of this STSM will include the following, which will comprise the core of a joint journal publication:*

1. *Mapping of existing perspectives (mainstream and critical) about Travel Time Savings*
2. *A review of the Autonomous and Connected Transport literature on Travel Time Savings*
3. *A conceptualisation of the role of Travel Time Savings in a fully operational ACT scenario*

Potential Hosts: *Technion University (IL)*

3. STSM Topic: ***Extended Data Collection and Advanced Behavioural Modelling towards AVs across countries***

Description: *The focus of the STSM will be on analysing the behaviour of AV end users by comparing preferences and choices among countries with detailed behavioural surveys. The STSM will collect and review existing travel surveys conducted by COST partner institutions on behaviour related to Autonomous Vehicles for passengers and/or freight. The outcome of the STSM will be the choice of selected extended survey instruments and groups of partners willing to collaborate to collect/analyse data in their countries. The STSM will propose a data collection methodology to assure homogeneous sampling strategies, comparativeness and consistency of results. The STSM will include the analysis of at least one such comparative survey conducted. The outcome of this STSM is in accordance with the WISE-ACT objective for the identification of the key economical, demographic, behavioral and cultural factors and barriers that determine a positive attitude of users towards AVs introduction.*

Potential Hosts: *KU Leuven (BE), University of the Aegean (EL), Sorbonne – UTC (FR), Technion University, (IL)*

4. STSM Topic: ***New methodologies for investigating public perception of autonomous and connected transport****

Description: *Despite the increasing number of ACT trials, there is yet limited collaboration among academics and practitioners in designing surveys focusing on public perception about ACT. The aim of this STSM is to develop methodologies assessing public acceptability of ACT and inform researchers about the level of societal impacts to be included in such surveys. The output of this STSM would be a literature review and potentially a trial of the developed methodology through an autonomous public transit vehicle.*

Potential Host: *Istanbul Technical University (TR)*

5. STSM Topic: ***Literature review, data sets identification and/or data analysis regarding Automated Vehicles' (AV) Implications on Travel Behaviour***

Description: *The STSM will perform a comprehensive literature review regarding the implications of automated vehicles on activity and travel behaviour, and methods of data collection and modelling to better understand such implications. It will also try to identify existing data sets that can be used for this purpose, and analyse the results of surveys distributed among COST countries in relation to these issues.*

Through an extensive review of academic and grey literature as well as contacts with leading researchers in the field, this STSM will compile a:

- 1. Review of current evidence and research evaluation of potential impacts of AV on activity and travel behaviour, including emerging travel services such as Uber and Mobility as a Service (MaaS).*
- 2. Review of data set, data types, methods used, and methods suggested to study AV implications on travel behaviour.*
- 3. List of potential data sets to be used to study the implications of AV on travel behaviour.*
- 4. Analysis of responses to a questionnaire on these topics distributed among WISE-ACT participants and/or the general public.*

Potential Hosts: *Sorbonne Universités - Université de Technologie de Compiègne (FR), Politecnico di Torino (IT)*

6. STSM Topic: ***Comparison of Multi Agent Systems and scheduling tools for assessing on-Demand Mobility Scenario of Autonomous Vehicles.***

Description: *Autonomous Vehicles have the ability of both scheduling their own routes and following the schedule of a centralised system, organising the service of a fleet of vehicles. This STSM will investigate the potential benefits, i.e., the advantages and inconveniences of:*

- a) *simulating self-organized transport model using Multi-Agent System tools (NetLogo, GAMA,), and/or,*
- b) *simulating centralized transport models scheduling systems tools*

The particular focus of this STSM will be first to study the modeling capability of the simulation tools for representing a specific On-Demand scenario of Autonomous Vehicles. Then, when it is relevant, compare the organization mode through the assessment of meaningful indicators.

Potential Host: *University College Cork (IE)*

** See material on the WISE-ACT website for full details regarding this STSM.*

Those interested in submitting an application should consult the CA16222 STSM Guidelines attached to this Call for details about eligibility, grants, criteria for evaluation of applications/proposals and how to apply.

Grant Period: This Call covers the grant period 1st May 2018 – 31st March 2019 and any STSM should be completed during this period. This Call will fund STSMs up to a total value of EUR 2500, subject to ECI and ITC adjustments according to the relevant COST guidelines.

Deadline: Applications should be received by e-mail until **9th December 2018**. Decisions will be announced by 12th December 2018.

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Additional information about the COST Action CA16222: http://www.cost.eu/COST_Actions/ca/CA16222

Additional information available in the COST Vademecum <http://www.cost.eu/Vademecum>