

The development of a Transport Analytics Centre of Excellence (TrACE) in Cyprus: A Brief Description of the Scope

Transport plays an important role in today's economy and society and has a large impact on growth and employment. On the other hand, transport causes considerable chronic congestion hence traffic delays, high costs, consumption of resources, air/noise pollution, problematic accessibility especially for vulnerable people and fatalities mainly through road accidents, all influencing the people's quality of life. These problems are faced in Cyprus especially in urban areas suggesting an urgent need for a more efficient land transport sector. Further to the latter, Cyprus is a significant shipping centre hence maritime is a very successful sector with a great impact on its economy hence 'blue economy' and EU's relevant Maritime Policy (2012) are expected to highly contribute to a sustainable economic recovery, to create new jobs and to foster innovation. Both, the effort for sustainable transport and the further development of the maritime sector in Cyprus require strong collaboration from national and regional authorities, business and civil society in terms of financing, access to research, education and training for the development of integrated support measures, customised regional or local innovative approaches by exploiting the available big data and technologies. Clearly, the role of research and development (R&D) sector for this endeavour is critical and the current spending in Cyprus is very low (only around 0,47% of GDP), compared with the average figure in EU which is around 2.06% for 2012 emerging a need for the development of new or the enhancement of existing competitive infrastructures and centres of excellence.

With the aforementioned facts in mind, and the commitments of member states to EU, the Cyprus Government has developed three interlinked strategic documents which include policies and actions towards the strategic goal of restructuring and evolution of the Cypriot economy and society, based on the principles defined by the strategic framework "Europe 2020". These three documents are: the Partnership Agreement (with EU) for Cyprus for the period 2014-2020; the Cyprus National Reform Programme (2014); and the Cyprus Smart Specialization Strategy (CySSS) (2015) which aims to enhance the efficiency of the current research and innovation system in Cyprus that can act as a dynamic tool to boost the efforts towards the strategic goal. In this context, CySSS defines the transport/shipping sector as one of the main pillars providing excellent prospects for the economy through developing relevant research and innovation high level actions and it also identifies the priority themes of that sector.

Therefore, the Ministry of Transport, Communications and Works of the Republic of Cyprus which is the national authority responsible for both the land and maritime transport have set the aim to establish an interdisciplinary Transport Analytics Centre of Excellence in Cyprus (TrACE). The mission of TrACE will be to promote research and innovation through addressing critical transport-related scientific, technological, educational and industrial issues with a focus on competitiveness and entrepreneurship and on Big-Data Analytics in order to facilitate society and economy towards sustainable development. The vision of the new Centre is to gradually evolve as an autonomous world class Centre of Excellence with international contribution and reputation. In this context, four are the defining attributes of the Centre: (i) the establishment of a strong relation with an external international, regional and local network of collaborators, clients and stakeholders from public sector, private sector, academia, NGOs and citizens; (ii) the creation and integration of innovation and entrepreneurship components so as to emerge industrial commercialisation and venture opportunities through liaison and venture finance networks; (iii) the facilitation of research in

transport Big-Data Analytics by collecting, producing and exploiting the existing big data available through the Ministry of Transport Data Hub (or other available Data Hubs) and (iv) the development of a “Living Labs” environment utilised for proof-testing of the new concepts/paradigms will be developed (or those developed elsewhere) by the exploitation of transport Big Data.

The achievement of the new Centre’s mission and vision suggest the following main objectives: (i) to carry out research, development and innovation in critical transport priority themes; (ii) to provide services and support to the central government, local authorities and private entities in Cyprus; (iii) to provide executive, consultancy services, innovation management and entrepreneurship support services, nationally, regionally and internationally and; (iv) to assist in the creation and development of innovative start-up firms from exploitable research results by developing new products and the licensing of others.

The new Centre is planned to be divided in four basic research units/clusters based on the priority themes defined by the CySSS, that is: (i) Transport Planning/Engineering/Policy, (ii) Intelligent Transport Systems, (iii) Green Transport and (iv) Marine Transport/Blue Economy. Each of the four units involves related sub-themes described in the full proposal. In addition, two horizontal units reflect the noted defining attributes of the Centre: the Data Analytics Unit and the Entrepreneurship and Innovation Unit. Further to the noted operational units, Living Labs will be also a real life entity representing for instance towns, cities, regions and sea hubs/corridors in Cyprus to integrating research and innovation processes within a public-private-academia-citizens partnership.

The outputs of the Centre will be basic and applied research findings, technological and methodological contributions which further to their scientific value they can be transformed into consultation, policies, spin-off products, services and potentially start-up firms. These outputs will have impacts which can fall in five categories: scientific, economic, social, environmental and cultural which will contribute to the strategic goal of the Cypriot government, that is, the restructuring and evolution of the Cypriot economy and society towards a multi-level sustainability. In addition, beneficiaries of the outputs will be the various stakeholders noted earlier as the external network of the Centre.

Partners towards this effort are: the Ministry of Transport Communications and Works (Coordinator), the Institute for Transport Studies of the University of Leeds (UNIVLEEDS), the Institute of Transportation Systems (DLR-TS) (Berlin-Germany), the University of Cyprus (UCY) through the Department of Civil and Environmental Engineering and KIOS Centre for Intelligent Systems and Networks and; the Cyprus International Institute of Management (CIIM). The consortium is seeking funding from the EU’s WIDESPREAD Programme. This involves: a ‘Stage 1’ proposal (in 2016) for a one year action, with maximum funding of 400,000 euro, to develop a business plan for the new Centre. This business plan will form the basis of a ‘Stage 2’ proposal (in 2018) for funding of around 15 million euros for a 5-7 year project to establish the new centre. If this Stage 2 proposal is successful, the Cyprus Government will provide additional matching funding of 15 million euros for the centre over the same time period.