Project BG05M2OP001-1.003-0002 "Big data for a smart society" (GATE)

Procedure: BG05M2OP0011.003 - "Complementary support for Bulgarian research organizations implementing projects under the Horizon 2020 Framework Program, WIDESPREAD-Teaming competition, phase 2"

Beneficiary: Sofia University "St. Kliment Ohridski"

Associated partners:

Chalmers University of Technology, Sweden;

Chalmers Industry Technique, Sweden;

Budget: BGN 29,203,118.38;

Duration: 42 months

Project aim:

The project aims to set up a Center of Excellence (CoE) "Big Data for Intelligent Society" (GATE) in Bulgaria, which will focus on improving scientific excellence and sustainable growth of big data and artificial intelligence through an attractive research environment, and modern infrastructure supporting open innovation and a vital ecosystem to support research and innovation tailored to the needs of the society. GATE's research is focused on four areas of major social importance - future cities, smart government, smart industry, and digital healthcare. These are the areas that are among the priorities of Cluster Sofia - a City of knowledge. The GATE Center of Excellence will be a fully autonomous research institute, established as a joint initiative between Sofia University "St. Kliment Ohridski ", Chalmers University of Technology, Sweden - a leading European institution with extensive experience in research, education, and innovation in the field of big data, and Chalmers Industrial Technology, Sweden - a leader in innovation management, university-industry co-operation, and in the technology transfer.

The project activities envisage the construction and bringing into service of a new building, compliant with sustainability, economy and energy efficiency, contributing to the establishment of a Science Park of Sofia University, which will house modern technological laboratories and equipment:

EUROPEAN UNION

EUROPEAN SOCIAL FUND
EUROPEAN REGIONAL DEVELOPMENT FUND

GATE

OPERATIONAL PROGRAMME
SCIENCE AND EDUCATION
FOR SMART GROWTH

- Big Data Appliance - includes both open source technologies and integration with public cloud platforms, as well as industrial platforms and big data technologies from specialized providers that are hosted locally and / or in a cloud environment;

- Laboratory for interdisciplinary cooperation with industry (Digital Twin Lab) - within the laboratory will be set up a unique environment with advanced technologies for simulation and demonstration of the application of big data in the industry. The laboratory will be equipped with mechanized hands, sensors, and virtual and augmented reality technologies. Data analysis and the creation of 3D models will help to optimize the overall production processes and will increase the efficiency and quality of the created products. It will simulate industrial processes and will be equipped with robotic systems, relevant sensors, and specialized equipment such as interactive whiteboards, mobile devices, and more. The Digital Twin Lab will be built in collaboration with GATE's strategic partners;

- Laboratory for virtual reality and visualization of big data (Visualization Lab) - the Laboratory will be built with specialized equipment for virtual and augmented reality. It will be divided into three separate spaces - Fusion Studio, visualization Lobby, and Workspace. The equipment specification will be based on the experience of Chalmers University.

- City Living Lab - many different sensors and monitoring devices will be installed. They will allow the collection of data in real-time, thanks to which it will be possible to model, forecast, and improve the processes underway in the city.

- Training Lab - The equipment of this Lab includes a high-resolution screen, an interactive whiteboard, tables with a touch screen, multimedia equipment, and modular configurable furniture systems.

The GATE project is an initiative that takes full advantage of the opportunities created by the rapid development of the innovation ecosystem and the Big Data market in Bulgaria, the technological impetus in the field of artificial intelligence in Sweden and the European Union (EU) and global research and development efforts in the field of Big Data. The Center of Excellence will provide economic and social benefits by training data professionals and promoting closer co-operation between academia, government and industry, this way will support the competitiveness of Bulgarian organizations and industry in various sectors. The implementation of the project activities is aiming at the institutionalization of the Center of Excellence as a global ecosystem for fundamental research and innovation in the field of Big Data, to achieve significant social impact by addressing the scientific and

technological challenges identified in the Innovation Strategy for Smart Specialization of the Republic of Bulgaria 2014 - 2020 and transformation of scientific knowledge into new societal significant applications. Strengthening human and scientific potential in all big data research aims to make the GATE Project a model for attracting, training, motivating and involving a new generation of young scientists in the field, to establish a motivating environment for entrepreneurship, to stimulate the demand for new business opportunities and the commercialization of research. The build-up of an integrated and interoperable with strategic national and European infrastructures scientific infrastructure in the field of Big Data. Successful integration into the European Research Area and achieving high world recognition.

Project results:

The GATE Center of Excellence will contribute to building a sustainable ecosystem: university-government-industry-society established as a national, regional, and European hub for significant scientific achievements, education, and innovation in the field of Big Data and artificial intelligence. Capacity building will ensure the successful implementation of the strategy and obtaining significant results with the opportunity to commercialize and create innovations. As the only Center for Excellence for Big Data established in Eastern Europe, the GATE Research Institute will play a strategic role in disseminating best practices and innovative models in the countries on the list of Widening countries of Horizon 2020.

The project is an example of the synergies between European Structural and Investment Funds and the Horizon 2020 Programme as the funding from OP "Science and Education for Smart Growth" is complementing the funding, received by the project from Horizon 2020 Framework Program, WIDESPREAD-Teaming competition, Phase 2.

Project site: https://www.gate-coe.eu