SOFTWARE AND DATA INTENSIVE SERVICES COMPETENCE CENTRE

2019-1.3.1-KK-2019-00011

The project will be implemented in cooperation with a consortium, with the help of the following partners:

- E-GROUP ICT SOFTWARE Informatikai Zártkörűen Működő Részvénytársaság
- Eötvös Loránd Tudományegyetem

Amount of fund (HUF):   1.825.702.983, - HUF

Total project cost (HUF):   180 687 485, - HUF

Start of implementation of the project: 21.02.2021.

Planned deadline for the physical completion of the project: 31.01.2024.

DETAILED CONTENT OF THE PROJECT

One of the main drivers of modern economic systems based on intellectual capital is the growth of a knowledge-intensive service sector, which relies more than ever on the integration of the 3 missions of higher education: education, research and knowledge utilisation mechanisms. The realisation of these higher education missions is the Software and Data-Intensive Services Competence Centre. The Competence Centre created in a form of a consortium under the leadership of the ELTE Faculty of Informatics. It is focusing on 3 service focus areas Finance, Healthcare and Industry 4.0. The aim is to develop IT solutions and research infrastructures to boost both business and academic competitiveness. The members of the consortium led by the ELTE Faculty of Informatics include E-GROUP ICT SOFTWARE Zrt., MEDISO KFT. and HIDROFILT KFT.

MOTIVATION AND BACKGROUND

Today, the role of innovation capabilities, relative to capital and labour, has become spectacularly valued worldwide as a key driver of economic performance and competitiveness. The emergence of info-communication technologies, software-intensive solutions, cloud computing, software security, data protection, data science, artificial intelligence, plays a key role in almost all industries and service areas, from healthcare thorough direct

manufacturing industries to the financial sector. IT is not only among the fast-growing sciences and industries, but also a major driver of change in the global economy. Progressively changing technological needs, conditions and the rapid growth in the number of software-intensive systems demand solutions in which the software industry and the underlying R&D knowledge base flexibly integrate technological elements of emerging megatrends, such as big data management or artificial intelligence. The Software and Data-Intensive Services Competence Centre aims to develop IT solutions based on the knowledge base of the ELTE Faculty of Informatics, which can be applied in various industries, like the financial sector and the healthcare to increase business competitiveness. At the ELTE Faculty of Informatics, these type of cooperation models have been successfully operating for a long time (e.g. EIT Digital Budapest CLC, Ericsson Software Technology Lab, industrial departments: Department of Data Science, Department of Artificial Intelligence, Mediso Lab, SAP Applications Lab, Innovation Lab, etc.). The Competence Centre will be established in two locations, Budapest and Szombathely.

ACTIVITIES OF THE CENTRE

The Centre's 2 main areas of activity are:

1. Development of research infrastructure (establishment of research laboratories) in both locations.

2. Research and development activities to meet local/regional industrial needs: development of new processes, tested prototypes or marketable products, services, technological processes to increase market efficiency and competitiveness in the following areas:

- Digital transformation of financial services, development and application of data science processes in digital banking and in Fintech.
- Development of signal and image processing and data processing methods for diagnostic imaging devices. Developing the informatics underpinning new medical procedures by linking large health databases and analysing health data.
- Supporting the introduction of I4.0 based manufacturing processes, optimising manufacturing technology.
- I4.0 and Fintech master's degree, launching a dual master's degree in informatics, integrating R&D into professional training.

E-GROUP SOFTWARE & BEYOND

Eötvös Loránd Univers
Faculty of Informatics

NATIONAL RESEARCH, DEVELOPMENT
AND INNOVATION OFFICE
HUNGARY

PROGRAM
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THE NRDI FUND

The tasks of E-Group Zrt. include the development of research infrastructure and research & development activities in digital transformation of financial services, the development and application of data science processes within digital banking services and in Fintech.

RESEARCHES

The collection and organisation of data with heterogeneous structures and data protection challenges, accumulating in different disparate systems, so-called silos, according to a common set of disciplinary principles is of great importance. E-Group, in cooperation with ELTE, plans to increase the deep learning competences of the DLX platform in three high priority areas (Healhtech, Fintech, Govtech) in the SmartData & Analytics direction to lay the foundation for the digital transformation of the domain. In response to the evolution of quantum technologies, cryptography will undergo an important change in the next few years. In our research, we will look for solutions that can stand up to both traditional and quantum computing, whether the challenge is an algorithm change or other technological barrier. There are also many attempts to find ways to increase the level of security of identification without compromising user-friendliness. One new direction is to combine user control of a mobile phone or other personal device with "geolocation" data. However, authentic "geolocation" is not only of interest for user authentication issues, but also for example in logistics, for truck tachographs, self-driving car/taxi control, or for the security of the increasingly widespread "car sharing" platforms. In the banking sector, there are additional specific requirements for face-to-face identification of customers and analysis of biometric data. In addition to fingerprints and facial images, other data are being experimented with in the sector, of which ECG is one of the most promising directions.