Project BG05M2OP001-1.002-0010

CENTER OF COMPETENCE IN PERSONALISED MEDICINE, 3D AND TELEMEDICINE, ROBOT-ASSISTED AND MINIMALLY INVASIVE SURGERY

Leonardo da Vinci

http://competence.mu-pleven.bg/

The project BG05M2OP001-1.002-0010 "CENTER OF COMPETENCE IN PERSONALISED MEDICINE, 3D AND TELEMEDICINE, ROBOT-ASSISTED AND MINIMALLY INVASIVE SURGERY" is funded by the "Science and education for smart growth" Operational Program and the European Regional Development Fund. The total value of the project is 23 695 179,29 BGN, of which 20 140 902,40 BGN of European and 3 554 276,89 BGN of national co-financing.

The leading organisation in the implementation of the project is Medical University - Pleven (MU-Pleven) and the main partners are Medical University "Prof. Dr. Paraskev Stoyanov "- Varna and the Institute of Robotics at the Bulgarian Academy of Science (IR-BAS). Associated partners in the construction of the Center of Competence are: "St. Marina" University Multiprofile Hospital for Active Treatment Varna; University Multiprofile Hospital for Active Treatment "Dr. Georgi Stranski" EAD Pleven; Innovation Solutions Company "5th Degree", and Florida Hospital Cancer Institute, USA.

GOAL AND TASKS

The goal of the project is to create an innovative, high-tech and contemporary competence center in the field of personalised medicine, telemedicine and 3D medicine, robot-assisted and minimally invasive surgery, to achieve excellence in research and training of specialists in order to increase the competitiveness of the existing institutions and stimulate the entrepreneurship in the region and in the country. Over the next 10 years, the center will operate on the basis of a high-tech, innovative infrastructure including equipment and specialised software. This will create opportunities for research and development activity, transfer of new knowledge and technologies, training of students, graduates, PhD students and other medical specialists in the following fields: general surgery, gynecology, urology, otolaryngology, orthopedics, pathology, medical genetics and others.

WORK PACKAGES

PERSONALISED MEDICINE DEPARTMENT

The infrastructure will enable morphological and genetic tests to be performed on patients with breast, lung, colon, and ovarian cancer in order to establish pathogenetic mechansms of the diseases and signaling pathways in tumors and to identify mutations that can be targeted in their personalised treatment.

Two major laboratories will be built: Research Laboratory for Precision Oncology and Genomic Medicine and Laboratory for Precision Pathology using telepatology, morphometry and telemedicine methods

3D MEDICINE DEPARTMENT

The department is a modern research structure that will enable modeling, in silico analysis and creation by 3D printing of individual orthotics, 3D model of organs and tissue transplants.

The department activities will take place in two major laboratories: Laboratory for 3D printing, modeling and analysis and Laboratory for research and training of surgeons in a virtual reality environment VR

MINIMALLY INVASIVE SURGERY DEPARTMENT MIS

The Department will provide a structure with minimal invasive surgical interventions from otolaryngology, oncology and gynaecological practice to conduct trials of application and clinical significance.

The department activities will take place in three major laboratories: Integrated interdisciplinary operating unit with navigation and telesurgery systems; Laboratory for stereotactic vacuum aspiration biopsies and Laboratory for experimental development for the needs of MIS at the Institute of Robotics of the Bulgarian Academy of Science

ROBOT-ASSISTED SURGERY DEPARTMENT

It will upgrade and develop the robot-assisted surgery partner base for the implementation of clinical and experimental applied research projects concerning robot-assisted surgery in the field of gynaecology, surgery and urology. The *da Vinci Si* robotic system available in MU-Pleven will be upgraded and further developed for research and development activity. A robotic system will be purchased for the needs of the major partner Medical University - Varna and a robotic simulator will be invented for experimental scientific activity.

The department activities will take place in three major laboratories: Center of Robot-Assisted Surgery at Medical University – Pleven; Center of Robot-Assisted Surgery at Medical University –Varna and Experimental Laboratory of Robot-Assisted Surgery at the Bulgarian Academy of Science

ACTIVITIES

The main activities for the project realisation are: organisation and management of the project; building a new and modernisation of existing infrastructure; conducting research, development and innovation activities; circulation of research results, protection of intellectual property, transfer of knowledge and technology and development of human resources; publicity and visualisation and audit of the project.

The project starting date is on 26.07.2018 and its deadline is on 31.12.2023.