

## ESR9

*ESR9 project title-* **Industrial wearables for work safety**

*Lead beneficiary (place of employment)* – University “Politehnica” of Bucharest, Romania

*Supervisory team* - Prof. Ion Marghescu and Dr. Alexandru Rusu-Casandra (University “Politehnica” of Bucharest, Romania), Prof. Jan Hajny (Brno University of Technology, Czech Republic) and industrial mentors: Dr. George Suciu and Drd. George V. Suciu (Beia Consult International, Romania).

*Project tasks and objectives:* To reduce the work place injuries in industrial environments by at least 85%, through the use of accurate person tracking through wearable devices, such as bracelets and wearables weaved in overalls and head-helmets; To detect unsafe postures and high-risk motions through wireless-based motion detectors; to optimize the interoperability of IoT wearables sensors used in real-time complex event processing; to test the developed algorithms in an industrial underground environment, such as buildings, mines and tunnels while in the industrial secondment. The ESR will also have the possibility to participate in the Advisory Board of the network (two ESRs are selected annually by voting among the 15 ESRs of the network). The ESR will also be involved in social media promotion of the network, such as Webropol surveys, Facebook and LinkedIn groups, Youtube video channels, Twitter and blogging.

*Mobility/cross-country and cross-sector secondments including industrial training:* 12 cumulated months at Brno University of Technology, Czech Republic and 3 months of industrial experience at Beia Consult International consulting, Romania

*Eligibility:* MSc degree in a relevant degree obtained after Sep 2015 and not having lived or worked more than 12 cumulative months in Romania during Aug 2016-Aug 2019.

*Preferred starting date-* September 2019

*Trial period* - 6 months

*Target degree* –double PhD degree from University “Politehnica” of Bucharest, Romania and Brno University of Technology, Czech Republic

*Approximate gross salary* – about 2000 EUR/month for researchers without family (and about 2400 EUR/month for researchers with family)

*Additional skills* - knowledge in any of the followings will be considered a bonus: wearables, sensors, human bond communication, cloud computing, IoT, MQTT, Grafana, GDPR, blockchain

*Working and living conditions in Romania*

**Romania** is an European country situated at the crossroads of Central, Eastern, and Southeastern Europe. It is a dynamic country, rich in history, arts and scenic beauty. Over the last decade Romania had undergone a significant development. Romania’s natural beauty and cultural diversity surprises each visitor. Bordering the Black Sea in South-eastern Europe, the country’s assets also include the Danube River and Carpathian Mountains. In the Prosperity Pillar rankings, Romania performs best on Safety & Security and Business Environment.

**Bucharest** is the capital and largest city of Romania, as well as its cultural, industrial, and financial centre. Bucharest is the sixth-largest city in the European Union by population within city limits, after London, Berlin, Madrid, Rome, and Paris. It is a safe place with its crime rate rather low in comparison to other European capital cities. Economically, Bucharest is the most prosperous city in Romania and is one of the main industrial centres and transportation hubs of Eastern Europe. The city has big convention facilities, educational institutes, cultural venues, traditional "shopping arcades", and recreational areas. The extravagant architecture and cosmopolitan high culture won Bucharest the nickname of "Little Paris" of the

East. It is the labyrinth of narrow cobblestone streets and architecture of times-gone-by of Bucharest's old town that attracts visitors in droves to linger in the antique shops, cafes, and galleries.

**University POLITEHNICA of Bucharest (UPB)** is the oldest and the most prestigious engineer university in Romania consisting of 15 faculties. With a tradition of 200 years made possible by the efforts of some of the greatest Romanian professors, its specificity relies in creating knowledge through research and technological innovation, as well as through its implementation by means of education and professional training at a European level. UPB supports multi- and interdisciplinary research and development, providing 47 research centres and 71 advanced research laboratories equipped at high-performance standards for researchers, professors and students. Inside UPB, the mission of the Faculty of Automatic Control and Computers and Faculty of Electronics, Telecommunications and Information Technology is to empower high-quality scientific research, to share knowledge through education in the domains of Computer Science and Information Technologies, Systems Engineering, Electronics and Telecommunications as well as to offer a stimulating, high-level professional and social environment to the students and academic staff within the faculties.

*Information about the industrial partner – **BEIA Consult International**, a SIEMENS partner, is an innovative SME and one of the leading suppliers of ICT and telemetry systems in Romania, with an experience since 1991 in more than 900 commercial projects. BEIA is active in service innovation, development of hardware, sensors, actuators, information technologies, data storage and processing, interfaces, SW, integration, communication technologies, learning & training, standardization, marketing, business development, project management. BEIA provides e-learning and go-to-market acceleration services to entrepreneurs, start-ups and spin-offs and offers guidance for students working on their PhD, BSc or MSc theses. BEIA received the certification of Science Friendly Company from the Lodz Univ. of Technology.*

Some useful links:

<https://theculturetrip.com/europe/romania/articles/the-12-most-beautiful-spots-in-romania/>

<http://romaniatourism.com/>

<https://www.uncover-romania.com/>

<https://upb.ro/en/>

<http://international.upb.ro/>