

ESR8

ESR8 project title- **Centimeter-level accuracy for IoT localization of wearable devices**

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

Supervisory team - Prof. Dragos Niculescu (University “Politehnica” of Bucharest, Romania), Assoc. Prof. Simona Lohan (Tampere University, Finland) and industrial mentors: Daniel Scurtu and Radu Pavel (NXP Semiconductors, Romania)

Project tasks and objectives: To explore indoor positioning technologies that promise high performance localization and orientation, such as hybrid magnetic-WiFi-BLE solutions and UWB positioning; to create a set of open-source software tools for accurate indoor positioning; to explore the trade-offs between instrumentation and training, energy consumption and performance, privacy, and convenience. 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: 9 cumulated months at Tampere University, Finland and 3 months of industrial experience at NXP Semiconductors, 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 Tampere University, Finland

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

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 –NXP Semiconductors Romania (NXP) is NXP's Center of Excellence in Embedded Software. Contributing through firmware, runtime software and development tools to implement NXP vision of driving *Secure Connections for a Smarter World*, the Romanian engineers develop software and solutions for the innovative products designed by NXP in Automotive, Industrial and IoT, Networking, and Security fields.

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/>