

**Name of the MSC Fellow: Irina Ciornei**

**Nationality: Romanian**

**Host organization: University Politehnica of Bucharest (UPB) and Aalborg University (AAU) for the Secondment Stage**

**Country of the Host: Romania**

**Project Acronym: DCNextEvE**

**Project start and end date: 1/06/2016 – 15/10/2018**

**Type of MSC action, H2020: IF**



**Your story: “DCNextEvE - the way we see the future of the power systems of tomorrow”**

**Project objectives and research field:**

The project bridges the expertise of the Fellow (power systems and artificial intelligence optimization algorithms) with the expertise of the Supervisor (smart grids, electrical measurements and power quality). The major objective of the project is the design, operation and control of a set of low voltage dc microgrids architectures and the definition of associated power quality indicators.

**Tell us why your topic is important and/ or how it brings to advancement in your research field:**

We are now in the digital era that is changing most of our way of living and that pushes large industries such as power systems to reinvent themselves. We believe that DC microgrids at low voltage are the emerging cells to build on the next generation smart grids. They ensure sustainability, expandability, resilience and innovation due to high acceptance of renewables up to 100% when complemented with storage, smooth transition for electrical transportation, easy decoupling in case of faults (upstream in the grid or internally – within the microgrid). DC microgrids also empower the consumer/prosumer to decide on a variety of business models that might fit his/her long-term objectives and provide financial resilience against regulatory changes. All the above-mentioned benefits are complemented by an increased research interest

in the research field of microgrids and the growing deployments of such systems worldwide.

### **What are the benefits of participating in a MSC action?**

The major benefits for a researcher like me, at the beginning of professional career after PhD were: to propose and pursue a research subject of interest in which both I and my Supervisor truly believe in; I became more independent and got experience in Project Management; I complemented my research skills with hands-on training from the Host Organization (UPB) on power quality and signal processing assessment and with control of DC microgrids from the Host for Secondment (AAU). DCNextEvE brings several benefits to the society at large, such as: adoption of more renewables in the distribution power grid with minimum or no investment from the Distribution System Operator (DSO) side, increased reliability and resilience of the local grid with high potential to empower the prosumer on the way he/she manages the consumption and production of energy, smooth transition of the community prosumers to the electrical transportation with minimum impact to the stability of the power system.

### **Did you encounter any challenges during application/ implementation and did you get any help?**

During application I have asked and received help from the NCP of Cyprus, Mr. Pierantonios Papazoglou. He also helped a lot before the employment contract was signed between me and UPB, in the sense that he indicated me the specific paragraphs from the Annotated Model Grant Agreement (AMGA) that clearly express the work and implementation conditions for the work contract with UPB, where at the time, there was no previous experience with such type of grants. For the implementation of the Project we didn't encounter any great challenges. We prepared both the project management and the personal development plans from the proposal stage and we followed them closely during the project implementation.

### **Why did you choose a widening country as a Host? What was the reason that convinced you? What is making you professionally happy here?**

To be honest, I didn't even think at the time of application that I am going to be one of the first returning/incoming Individual Fellowships for Romania. For me it was only the subject and the Supervisor that counted at the time of application. My Supervisor has well established experience in managing large international projects and she is a well-known international professional the fields of microgrids and power quality. Her lab is well equipped, and I knew a bit the team from MicroDERLab, because we had briefly collaborated in another project, a Romania-Cyprus bilateral. Therefore, these were the things that counted the most for me when I took the decision to apply for this Grant. I am also Romanian; therefore, I didn't expect any integration barrier.

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**Would you recommend others to apply? What useful advice/ tips can you give them?**

Yes, I strongly encourage others to apply. This Grant is a first step for an independent professional career in research. For any Researcher willing to apply for such Grants I would recommend visiting the Lab/Host before applying, to see the facilities and arrange meetings with the Team to make realistic expectations, as well as for getting a first feeling of work experience there. The Grant offers good salary incentives, but it will not provide funding for equipment. Also, if the Researcher opts for a Secondment, in another country than the Host, to supplement the experimental facilities, he/she has to have in mind that this might lead to a reduction of the number of conferences to attend, with a single budget covering both (networking and travels).