

<b>Position</b>	<b>ESR4.3</b>		
<b>Title</b>	Advanced Monitoring and Controls of the Electrical Distribution Grid		
<b>Centre</b>	GE Global Research (GE, <a href="http://www.ge.com/research">www.ge.com/research</a> )		
<b>Location</b>	Munich, Germany		
<b>Start date</b>	1 July 2016	<b>Duration</b>	36 months
<b>Closing date for applications</b>	<b>6 March 2016</b>		
<b>Communications of results</b>	<b>15 May 2016</b>		

## Job description

### Individual Research Project

In contrast to the transmission grid, the electrical distribution network typically consists of a large number of buses and loads, while only a very limited number of measurements are available. Simple load allocation methods can lead to large inaccuracies, especially in the presence of electric vehicle charging and distributed energy generation. The objective of this Individual Research Project is to develop state estimation methods that are able to deal with different types of load and power generation profiles. It should also investigate methods for improving the observability of the network by identifying the minimal number, type and optimum location of additional measurement elements.

### Tasks

- Optimal automatic meter reading and remote technical unit placement to enhance observability of the electrical network.
- Dynamic state estimation to leverage sensor information for estimating the state of the network and state prediction.
- Demonstrating the benefits of the developed monitoring tools in simulations and show cases.
- Documenting and presenting your results within GE, within the INCITE consortium and on international conferences.

### Career

In Marie Skłodowska-Curie Actions, ESRs are paid a competitive salary, including a Mobility Allowance and a Family Allowance (subject to family situation). The successful candidate will be working on an Individual Research Project (IRP) at GE (Controls & Embedded Systems Lab) and will have secondments related to their research at Catalonia Institute for Energy Research (IREC, [www.irec.cat/en/](http://www.irec.cat/en/)) and Delft University of Technology (TU Delft, [www.tudelft.nl](http://www.tudelft.nl)). She/he will be enrolled in the TU Delft PhD programme and conduct the research corresponding to the IRP at GE (Controls & Embedded Systems Lab) as part of her/his thesis. Tuition fees will be covered by the fellowship and the network will also support training activities and periodical events, which will allow the ERSs to develop their career in a multi-sectorial environment and to obtain a wide knowledge on the control of electrical networks.

### PhD Programme

The successful candidates will be enrolled in the PhD programme of the TU Delft Faculty Graduate School (<https://intranet.tudelft.nl/en/3me/organisation-services/graduate-school-3me>).

### Supervisor

Dr. Rosa Castane Selga



## Planned secondments (compulsory)

The ESR will perform secondments at IREC (Barcelona, Spain) and TU Delft (Delft, The Netherlands), which will be less than 30% of the total employment time.

## Eligibility conditions

1. The candidate must not have resided or carried out his/her main activity (work, studies, etc.) in **GERMANY** for more than 12 months in the 3 years immediately prior to his/her recruitment under the project (short stays such as holidays are not counted).
2. The candidate must be within 4 years of the diploma granting you access to doctorate studies at the time of recruitment and has not yet been awarded the doctorate degree.
3. The candidate may be of any nationality.
4. The candidate must work exclusively for the project during the employment contract.
5. The candidate must fulfil the conditions to be admitted in the PhD programme of the TU Delft.

**These conditions must be fulfilled at the starting date of the contract. The starting date for each position is tentative.**

## General requirements:

### Education Degree

To be eligible for the 3mE PhD programme of the TU Delft Faculty Graduate School, the candidate must:

1. have an Msc degree or equivalent
2. proven proficiency in the English language (e.g. being a native speaker or having a TOEFL score of at least 100 or an IELTS score of at least 7).

### Qualifications

Preference will be given to candidate with:

- strong knowledge in control and estimation theory, ideally demonstrated in Master's thesis (please include detailed list of relevant classes / exams / projects in your application)
- outstanding academic track record
- knowledge in power systems is an advantage, but not mandatory

### Language(s)

**English:** Good communication skills both oral and written.

### Experience

- Experience with MATLAB / Simulink and/or other modelling and simulations tools, such as MapleSim, Modelica.
- Desirable background in Numerical optimization, Optimal control, Applied mathematics, Programming.
- Industrial experience is a plus.



**Skills**

- Excellent communication skills
- Can-do attitude, open, creative & flexible
- Team-work & commitment

**Job details**

<b>Gross salary</b>	Salary and benefits will be in compliance with the rules of the ITN-MSCA, as foreseen in the Marie Skłodowska-Curie Actions Work Programme 2014-15. The position covers tuition fees and other training expenses.
<b>Duration</b>	36 months
<b>Type of contract</b>	Full-time
<b>Hours per week</b>	40 hours
<b>Place of work</b>	Garching bei München, Germany
<b>Province/State</b>	Bayern
<b>Local language</b>	German, working language: English
<b>Country</b>	Germany

The contract will be subject to the regulations of the Marie Skłodowska Curie Innovative Training Network Fellowships of the European Commission and in accordance with the work contract regulations of Germany.

**Selection criteria**

The evaluation committee will take into consideration the academic records, research experience, publications, letter of motivation and scientific references. After the first selection stage, the top five candidates will be invited to perform a face-to-face or remote interview. **Equal consideration will be given to female and male applicants.**

**Applications**

All applications must include:

1. The **application form** (INCITE template).
2. A detailed **CV**, including list of publications, a Master thesis summary and the names of two referees (name, title, affiliation, e-mail and telephone number(s)) who are willing to provide detailed recommendation letters about the candidate (INCITE template).
3. One **motivation letter** for each position applied for (INCITE template).
4. **Copies of academic transcripts and degree certificates**, in English.

All applications must be submitted by means of on-line application on the official website of INCITE - [www.incite-itn.eu](http://www.incite-itn.eu) using the templates available in the website.

For further information: [coordinator-incite@irec.cat](mailto:coordinator-incite@irec.cat).

