

Masters Thesis Proposal

Wireless 5G networking for power grids

Position available at Hitachi Energy Research in Västerås, Sweden

Opportunity:

- The path to decarbonization and sustainable development involves massive integration of renewable energy sources in power grids
- Reliable and time-sensitive communications are essential for high-performance control and protection of renewable power grids
- Emerging networking technologies, such as 5G, offer the possibility to improve communications performance in power grids, facilitating the integration of renewables and simplifying the path to a sustainable future
- Hitachi Energy, a world-leading supplier of power grid equipment, including control, protection and communication devices, has interest in exploring these possibilities

Topic:

The thesis aims at exploring the performance and capabilities of 5G in the context of critical communications in power grids. Specifically, the focus is on how well state-of-the-art 5G networks can support traffic requirements of typical communication protocols used in power grids, e.g., IEC 61850 and IEEE C37.118.

The work includes theoretical analysis, network simulations and experimental prototyping using Hitachi Energy's 5G devices.

Competences needed:

Successful applicants should have experience with software programming and networking protocols, with a preference for candidates that have been exposed to wireless networking, cellular networks, and network simulation tools.

Previous experience and/or strong interest in energy and power applications are a plus.

Other desired skills are fluency in English (both written and spoken), time management and ability to work autonomously.

How to apply:

Send an email to michele.luisotto@hitachienergy.com, including your CV and transcripts (BSc and MSc)