

Workshop

THE NEXT GENERATION GRID: APPARENT INTERSECTION OF ELECTRICAL AND COMMUNICATION SYSTEM

Organised by:

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With the growing demand of off-grid systems for solving energy access issue across the globe, the grid architecture is slowly evolving. The future grid will be a conglomeration of forward compatible hardware and software technologies to address evolving energy access patterns. Additionally, the next generation grids, with the proliferation of digital infrastructure to improve financial and operational self-reliance, are slowly transitioning into the ones where the intertwining of communication and electrical infrastructure is a requirement. This workshop aims at discussing the communication systems, their topologies and operational advantages for applications like islanded micro grids and solar power plants. Starting from Zigbee based device-to-device communication to Wi-Max and state-of-the-art mesh network topologies, the workshop aims at bringing an exhaustive detail into the micro grid communication process. The applications of the communication systems including smart management, forecasting, optimization and electrical power exchange will be dealt case to case during the workshop. At the end, the authors' experience in developing such communication systems will also be discussed to provide a strong case for necessity of communication intertwined grid infrastructure even in rural areas.

- What is a smart microgrid?
- Types of communication architectures in microgrid
- Evolution of grid communication infrastructure
- Mesh networks infrastructure and advantages
- Applications for a networked microgrid
- Real-time monitoring, operation and maintenance use cases
- Granularity of energy monitoring- Futuristic applications
- Operational nuances and challenges in off-grid monitoring

<http://soe.northumbria.ac.uk/efea2018/index.html>