STUDY OF MONITORING AND COMUNICATION SYSTEMS FOR SMART GRIDS

SUMARY

Being the smart grids conceived as electric grids that can deliver electricity in a controlled, smart way from points of generation to active consumers, the usage of this "smart grid" paradigm could be adapted to the railway systems. Those smart technologies adapted to the railway systems are the core of my PhD research and, since I have a lack of knowledge on monitoring and communication systems applied on the grid, this supervised research might be useful to the future where some of the technologies used in the utility grid might be used in the railway systems.

The monitoring systems will be studied, focusing the study in smart metering, advanced metering infrastructure, energy management systems and energy information systems. On the communication side, a study on wireless and wired communications will be performed. The results will be compiled in a report to be delivered in the final of this course.

WORKPLAN AND EXPECTED RESULTS

- Study of monitoring systems
  - Directive 2009/72/EC that promotes the usage of smart metering systems in the utility grid (1 week – 4h)
  - Advanced metering infrastructure (0,5 weeks – 2h)
  - Energy Management Systems (0,5 weeks – 2h)
  - Energy Information Systems (0,5 weeks – 2h)
- Writing the section on monitoring systems (1 week – 4h)
- Study of communication systems
  - Wired communication systems (1 week – 4h)
  - Wireless communication systems (1,5 weeks – 6h)
- Writing the section on communication systems (1 week – 4h)
- Review and final writing of the report (2,5 weeks – 10h)

Total of hours of contact: 38h

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