**Smart Mobility Solutions**

Introduction

Implementation of smart mobility solutions

* Levels of integration, means of transport and main challenges
* Overview of likely relationship between EVs and railways
* State-of-the art of electronically and its synergies with railways
  + Park-and-ride solution
  + EV- station solution

Electric Vehicles, Charging stations and V2G concept

* Charger types
* Chargers by location
* Time of Use Tariffs/Demand side response
* V2G

Reasons and motivation for the use of Smart management of railway network

* Energy efficiency in the railways
* State-of-the art of energy smart management in railways
* Infrastructure role within smart management of railway network
* Current situation

Future challenges in the smart management of smart railway networks

* Industrial and regulatory framework
* Technical challenges
* Customer behaviour, Demand side management and Demand side response

Case studies

* Smart management of railway networks case studies with power losses analysis
  + Driving strategies
  + Timetable scheduling
  + Infrastructure upgrading
* Smart-hubs
  + Integration of infrastructure

Smart Gird Lab/Energy Lab

* Energy Test Bad
  + Controllable DC Link with a multiple of DC/DC convertors
* Multiple communication interfaces
* Real-time network simulator
* Test results- case studies in the Lab