

Information and Communication Technology Research Opportunities in Dynamic Charging for Electric Vehicle

Presenter : Oussama Smiai

Authors :

Oussama Smiai, Francesco Bellotti, Alessandro De
Gloria, Riccardo Berta, Angelos Amditis, Yannis
Damousis, Andrew Winder

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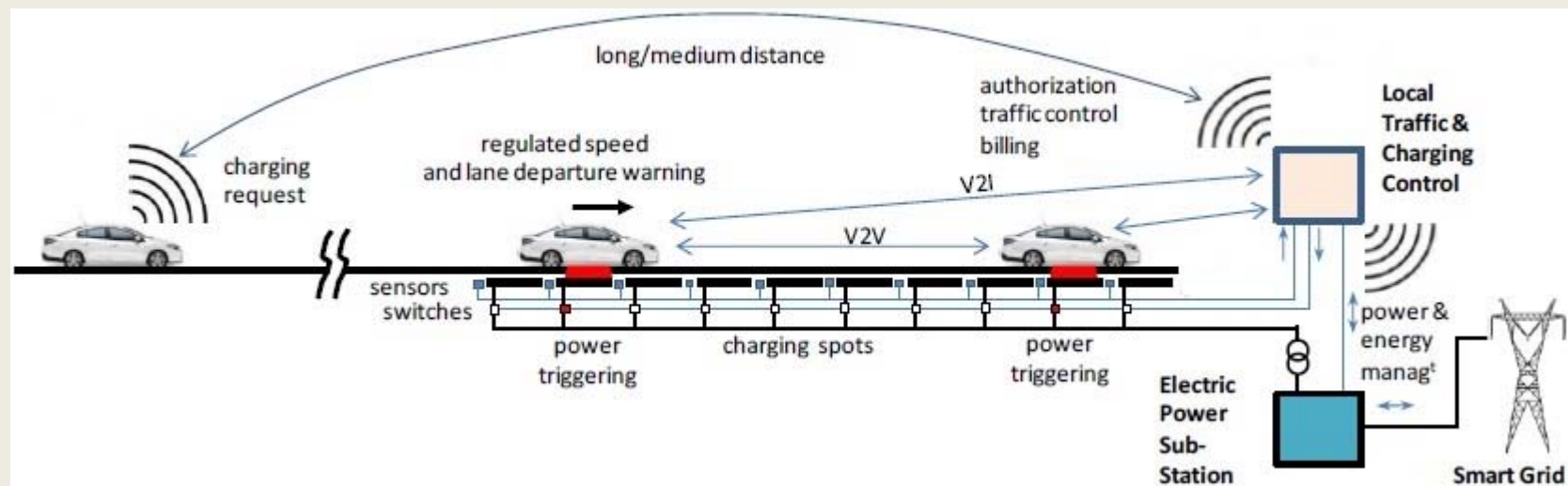
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Dynamic Charging of Electric Vehicle

- Electro- Mobility
 - Can decrease co2 emission
 - EV can not be used for longue distance
- Obstacles
 - Charging time
 - Battery price
- A solution
 - On-route charging

Dynamic Charging of Electric Vehicle



User accounts, booking and billing

- Drivers need to create an account so the charging infrastructure allows them to charge
- The user account allows the driver to charge from different operators
- Charging station relies on booking to satisfy energy demand
- Billing will take in consideration the difference between the energy effectively received by the electric vehicle and the energy delivered by the charging station.

Dynamic routing for EVs

- Itinerary choice
- Charging infrastructure location and availability
- Warning in case of low charge
- Charging location choice
- Saving preferences

EV Identification

- Speed identification an authorization for dynamic charging should be much faster than for static charging
- Traffic signals and barriers can control the access to the charging lane. Enforcement can be detected by a camera
- ANPR and DSRC are mature to identify an electric vehicle

Driver assistance while charging

- Advanced driver Assistance System ADAS can help the driver to stay in his lane while charging
 - Adaptive Cruise Control
 - Intelligent Speed Adaptation
 - Lane Departure warning
- These are safety applications and can be useful for on-road charging vehicles.

Conclusions

- ICT solutions are essential for on-road charging
- The state of art of ICT solutions meets some of the requirements of dynamic charging

Thank you

Oussama Smiai

Oussama.smiai@elios.unige.it

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