

5G-CARMEN NEWSLETTER # 1



THE PROJECT HAS STARTED!

Dear Readers,

the 5G-CARMEN project has now been up and running for six months. Time to present some highlights of what the project consortium has done and achieved so far.

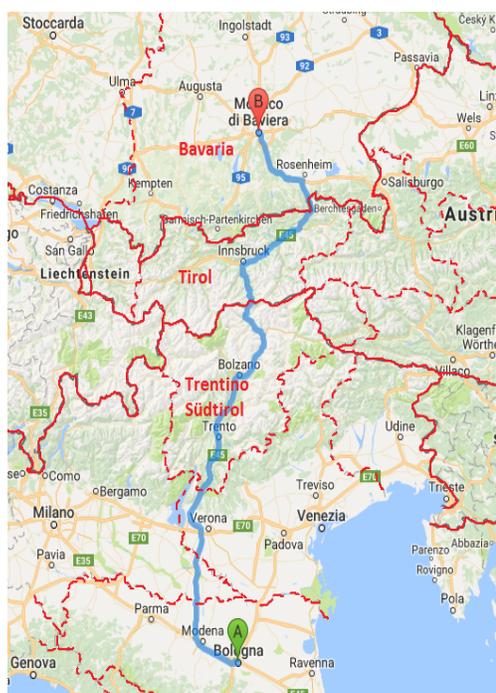
We also report below about interesting discussions with the European policy makers and mobility stakeholders during the EUCAD 2019 Conference in Brussels where we organized a booth together with the other 5GPPP ICT18 projects.

Designing and developing a 5G digital corridor for the connected and automated mobility of the future on European roads. This is the goal of 5G-CARMEN, a project, which is one of the 3 European Corridors that are the front runners of 5G experiment in the mobility sector.

Security, advanced management of emergencies, traffic sustainability, environment protection aspects: there are many challenges that await to be faced thanks to the most innovative technologies that will allow cars to be connected to each other and to land structures for a better management of vehicle traffic.

KEY FACTOR

The "Munich-Bologna corridor", which covers 600 km of roads across three countries (Italy, Austria and Germany), is one of the most important corridors identified by the European Union for an initiative to improve the mobility of people and goods throughout Europe. The key factor will be the 5G technology that will allow the current 4G mobile radio network to evolve in order to obtain a better response to the needs of services in terms of speed of data exchanged and response times of the network infrastructure for the implementation of next-generation connected, cooperative and automated vehicles





CONTRIBUTION TO MAJOR EVENTS

5G-CARMEN, together with the other 5GPPP projects 5G MOBIX and 5G CroCo, participated to the EUCAD 2019 Conference in Brussels. Because of the relevance of this conference it was considered of significance to organise a dedicated stand.

The most interesting discussion raised by the visitors to the 5G-CARMEN experts regarded road services automation and related verification and validation issues.

The value of comprehensive, reliable, balanced and complementary physical and simulated tests has been discussed in order to guarantee the safety of vehicles before their deployment to public roads, and many suggestions were collected:

- real life awareness: this type of testing should focus on the final application of technologies to mobility scenarios. It should be based on real use cases to enhance completeness and reliability; a significant part of it should involve the identification and design of these scenarios.

- platforms testing: it should be based on the validation of newly developed functionalities to ensure proper and reliable integration with legacy systems; the current methodologies should be adapted by integrating testing procedures belonging to different disciplines.

- granularity: details on technical layers should be incorporated into the testing environment. The identified levels should address at least:

- o System Level;
- o Vehicle Level;
- o Component Level.

Around 1.000 experts participated in the conference and around 150 of them visited our stand

- the validation approach related of connectivity services must allow enough flexibility for adaptation to further potential regulation

- a thorough review should be conducted in relation to safety verification. Specifically, there is a risk of potentially outdated measures regarding passenger safety validation.





EuCNC Valencia

European Conference on Networks and Communications | Valencia, Spain



We will also be active at the EUCNC Conference of Valencia with a booth, where 5G-CARMEN will present its use cases 1) vehicle manoeuvre negotiation at various levels of automation, 2) infotainment, and 3) emission control in sensitive.

The 5G New Radio will be used to support latency sensitive and/or bandwidth hungry services and applications.

The projects complement C-V2X with LTE and C-ITS technologies, targeting interoperability and harnessing a hybrid network.

Live V2V and I2V use cases will be shown to highlight the progress made by 5G-CARMEN project in securing functional C-V2X and 5G NR platforms to support on time field deployment and test.

In addition to the live demo, video recordings from CES2019 and MWC2019 will demonstrate how these platforms were successfully used to support live demos of maneuver negotiation between cars over C-V2X and streaming of HD content to cars on public road over 5G NR live network.

Early results on green driving will also be shown through a PoC-based demonstrator comprised of commercial vehicle equipment.

The goal of the demonstrator will be to simulate the generation of emissions and the triggering of AI-based recommendations to the driver/autonomous vehicle towards adopting a greener driving approach based also on national regulations and taking cross-border setups into account.

In order to reach this goal, the main technical challenge is to design a service-oriented, federated and secure platform taking in account the functional and operational aspects of decentralized resources and service orchestration within and between administrative domains.

In the first semester of the project life the overall architecture of 5G-CARMEN has been shaped and a great effort has been dedicated to set the expected Quality of Services requirements. The MEC instances for each country have been planned and the delivery is expected within 2019.

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