



eltic-Plus⁺

Smart Connected World



Celtic-Plus Proposers Day
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“Bridging/Merging” 5G/Radar V2V communication Autonomous Driving - Collaborative Sensing

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iN2Car





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Teaser



What is the main benefit of the idea/proposal?

- 5G and radar 77 GHz = new opportunities: e.g. “Bridging/Merging” communications between vehicles and radar devices.
- With the help of these technologies (and the new, cheaper devices):
 - Making the **representation of the (dynamic) environment more accurate**, e.g. via the exchange of high-rate data from the sensors of neighbouring vehicles.
 - Creating a **SAFTEY SHIELD** for road-users, essential for autonomous driving.

What makes the added value?

Objective of the proposal is to support progress in areas such as :

- ADAS, connected vehicles, collaborative sensing, autonomous vehicle
- 5G communication technologies and radar 77 GHz. (e.g. standardization)
- “Bridging/Merging” communication devices/products based on 5G and radar 77 GHz.

Why should I participate in the project?

- ADAS systems, connected vehicles, autonomous vehicles all contribute to higher safety, less fuel consumption, less traffic jams, more ecological mobility, etc.
- Market opportunities for these technologies are “enormous”.
- Creating new jobs

Company Name	iN2Car
General Manager	Mondher ATTIA (PhD)
Business Field	<p>V2X products and services provider based on patented innovations overcoming 802.11p – ETSI G5 actual deployment runs up against:</p> <ul style="list-style-type: none"> • Deployment of RSU (Road Side Units). • Performance degradation in the event of heavy traffic. • Limiting range communications. • Network integration of vulnerable road users through Smartphone implementation <p>Patented innovations:</p> <ul style="list-style-type: none"> • subdividing the flow of road traffic into groups of vehicles that communicate with each other and define one of them to act like an RSU. • using WiFi Direct widely implemented in Smartphone to integrate all (vulnerable) road users. • using sectorial beamforming antenna.
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Proposal Introduction (1)

vision, motivation:

- Supporting and developing 5G technologies (high-rate data, very small latency time, MIMO antenna...) in order to make these technologies available on a pragmatic basis for the car industry.
- Frequency bands (71 to 76 and 81 to 86 GHz) are available for 5G transmission; these frequencies are on either side of the radar 76/77 GHz spectrum. This opens up new opportunities for “Bridging/Merging” communication devices between 5G / radar technologies. This is particularly valuable in urban areas where communication distance between 5G inter-sites is about the same as radar: 150 to 200 m.

Content:

Several development/work packages will be necessary – leading up to a fully operational car, to be tested on (special) roads. In parallel, this also involves work on technical standards.

Proposal Introduction (2)

Short info on expected outcome,

- « Bridging/Merging » 5G and radar 77 GHz technologies.
- Collaborative Sensing: exchange of high-rate data from the sensors of neighboring vehicles
- A communication/radar system that acts like a SAFTY SHIELD for road-users.

Impacts

- Making mobility safer, more ecological, less stressful, ...
- Making these electronic devices more integrated with each other and cheaper – and hence more quickly available for the car industry.

Existing consortium, involved countries.

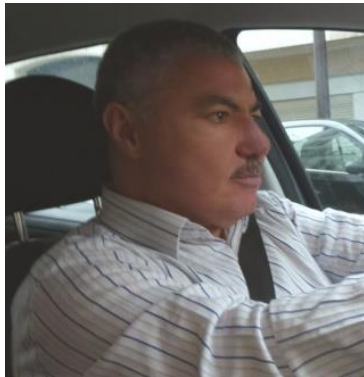
- PSA Peugeot Citroën has shown interest...
- IFSTTAR « French institute of science and technology for transport development and networks » – Team LEOST

Expertise, profiles and types of partners you are looking for

- Other carmakers
- Telecom / equipment company
- Chip maker, ex. NXP, TI...
- University institutions
- Any other company working in this field.

Contact Info

For more information and for interest to participate please contact:



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