Multifunctional IoT devices for on-board highly Interactive EVs and their flexible manufacturing (industry 4.0 compliant)

M-IoT 4.0/5G

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Multifunctional IoT devices for on-board highly Interactive EVs and their flexible manufacturing

ECS 2017
Our digital future

Challenges and objectives

- Develop accelerators for product makers integrating advanced IoT with high mix of sensing and actuating functionalities for low and mid volume applications
- Reduce investments for design, prototype, validation and manufacturing of products,
- Integrate in a miniature platform a multitude of advanced functionalities such as facial and voice recognition, inertial platforms, near field distance measurements, precise localization, etc.. while assuring state of the art security.
- 5G connectivity for **V2X** use cases,
- 5G Connectivity for Inland to Inland **I2I** in manufacturing environments.

Technical goals

- Develop novel multifunctional easy to use IoT devices,
- Integration and demonstration of these devices on a variety of products,
- Demonstrate the use of the proposed platform in flexible manufacturing environments,
- Overcome the complexity of the current approaches on hardware development when integrating advanced sensing and actuating functionalities; thus making the platform accessible to a large number of non highly specialized industries,

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Topic: Electronic Smart Systems ICT-07-2018

Partnership

- **Current: 3 Italy** (1 Large, 2 SMEs), **3 Germany** (1 Large, 1 Inst, 1 SME), **1 Ireland** (Inst), **1 Greece** (Univ.)…
- **Final**: Other partners with expertise on: Advanced Manufacturing, CPS, A.I.

Parent topics:
5G for coop-connected, automated mobility, ICT-18-2018
Artificial Intelligence, ICT 26-2018-2020

Economical impact

- Miniature platform integrating a multisensing and actuating network with high computational power.
- State of-the-art quantum secured architecture.
- Applications in all modalities of transport and advanced manufacturing environments.

Contact

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Expected Duration / budget (optional)

- 36 Months, Budget to be defined… IA/RIA

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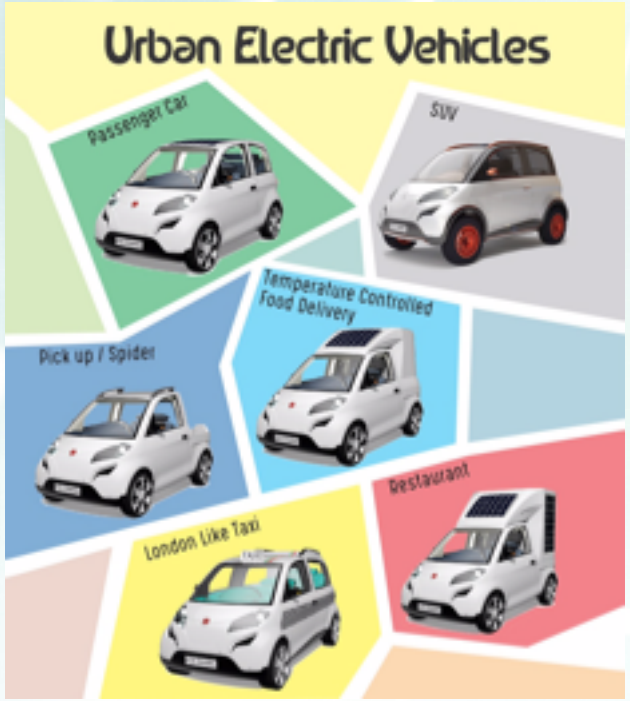
H2020 OSEM-EV I-FEVS Vehicle and the I-FEVS novel e-bike
will integrate on-board the first proposed multifunctional IoT device

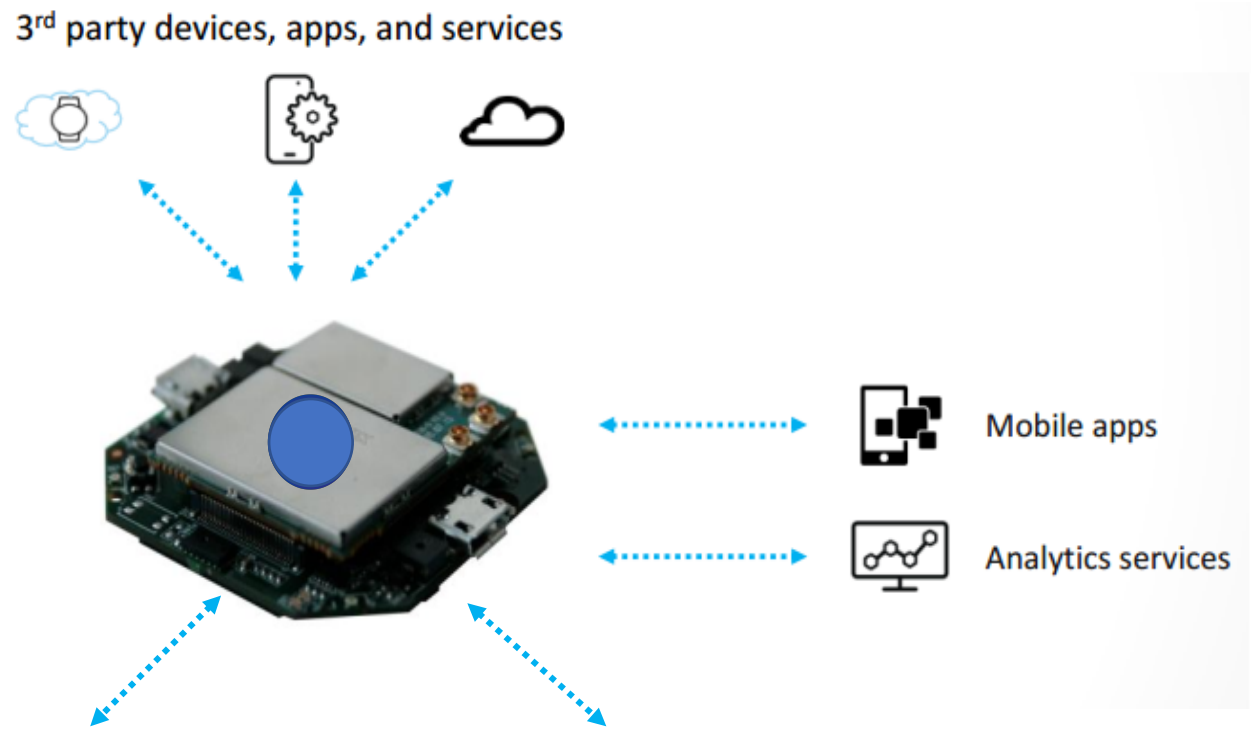
TRA 2018 Vienna

H2020 PERFORM
Evolving with gesture, facial and voice recognition for advanced flexible manufacturing of EVs



I-FEVS (Italy), PGEVS (Turkey), POLEVS (Poland), RUSFEVS (Russia) ….

M-IoT4.0-5GT for Intelligent mobility and manufacturing



I-FEVS 4WD vehicles

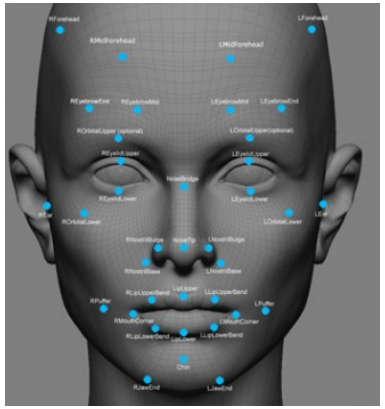
I-FEVS microfactory

M-IoT4.0/5G for Intelligent mobility and manufacturing

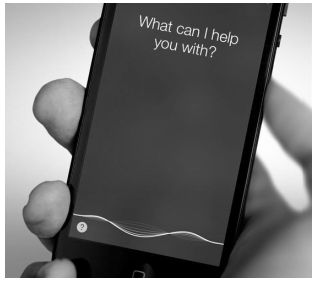
The M-IoT4.0/5G takes advantage of the most innovative technologies in terms of:

- gesture control

- face recognition



- voice interaction



- 5G connection

- V2V…Inertial platform for vehicle stabilization…Accelerometers ….Battery charging system….+++

M-IoT4.0/5G for Intelligent mobility and manufacturing

Human Machine Interaction through gesture

The user with the use of gesture can:

- Set-up the working island
- Interact with AGV(Automated guided vehicle)
- Request maintenance
- ……