Autonomous Smart Sensing Card (ASSC) is offered by European consortium for technical cooperation agreement

- SCHEDA
- APPROFONDIMENTI

Identificativo proposta:TOGR20210723001 **RICHIEDI MAGGIORI INFORMAZIONI**

A European consortium has developed a unique Autonomous Smart Sensing Card (ASSC), which combines an energy autonomous multi-sensor platform in a credit card-size device. It is ideal for several applications in buildings and as a wearable. The consortium is looking for companies and R&D institutions interested in using the card or tailoring the design to fit their needs. The consortium is interested in technical cooperation agreement.

The consortium consisting of 8 partners, research institutes, universities and SMEs from Belgium, Croatia, Greece, Netherlands, Switzerland, and UK. The consortium is developing a miniaturized and adaptable Autonomous Smart Sensing Card (ASSC) to create a fully autonomous sensor platform with the size of a credit card and a thickness of up to 3mm. The development is taking place under an H2020 project. Thanks to a fully integrated power generation and management system, the ASSC will be fully energy autonomous. Multiple sensors are integrated to serve a wide variety of applications. They are connected to integrated processing capabilities for onboard sensor/data fusion and low-power edge intelligence. Finally, there is also onboard wireless short- and long-range connectivity option, using Bluetooth and/or LoRa technology (Long Range low power data transmission). These standard communication protocols enable easy integration into larger ecosystems. To support a wide range of applications, three different configurations are targeted. There will be versions for wearable applications, indoor and outdoor applications. Depending on the application, the card can be adapted with integration of several hardware components such as different type of sensors (acceleration, acoustic, atmospheric pressure, humidity, image, light, temperature, etc.), processing systems, power sub-systems (battery, solar energy harvesting, power management), different connectivity options (Bluetooth, LoRa) and more. The card can be used as general-purpose sensor platform, by using software to fit the required needs. The development is focusing on specific main applications. First case of application concerns the monitoring of our well-being and safety. The application focuses on environment and thermal comfort monitoring as well as fire monitoring, either for indoor or outdoor conditions. An example of the ASSC use in such an application is that it can be part of a distributed environmental sensing platform for HVAC (Heat, Ventilation and Air Condition) control and fire monitoring in an office or factory environment. Second case of application is assets tracking and occupancy monitoring. Specific application is occupancy monitoring in a parking lot, both indoor and outdoor. Here the ASSC will function as a smart sensor in a larger (cloud) based application. A wearable version of the card can be used for asset and persons localization potentially combined with access control. Finally, an application of the ASSC is targeted to mitigate the effects of the current and future pandemics. The card can be used to monitor transportation conditions of medicines/vaccines by keeping track of the environmental parameters during transport. This use-case can easily be expanded to the transportation of other fragile and/or high value goods. The final use-case currently under development is the use of the ASSC for crowd counting in social distancing applications. The consortium is looking for partners interested in: 1) Adapting the card in their own application, either as is or a derivative version. This can be in one of the application areas currently targeted by the Consortium, but also other application areas are possible. 2) Using one or more of the state-of-the-art hardware of software components. 3) Using the ASSC platform to build a proof-of-concept or demo application. Types of potential partners include sensor manufacturers, system integrators, Original equipment manufacturer, Universities/R&D institutes, solution providers. Depending on the partner needs a collaboration the aspects of the technical cooperation agreement can be defined.

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