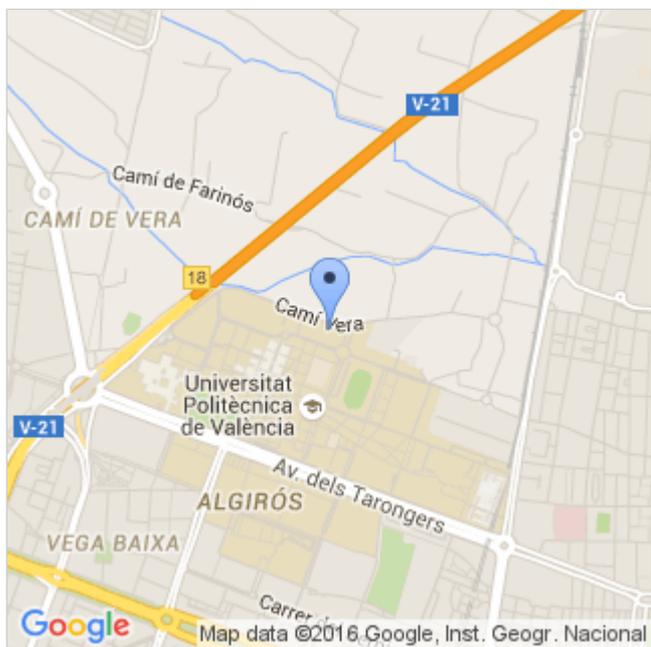


Expression of Interest



Contact Person/Scientist in Charge

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Universitat Politècnica de València (UPV)

Department / Institute / Centre

- **Name:** Institute of Telecommunications and Multimedia Applications (iTEAM) - Universitat Politècnica de València
- **Address:** Campus de Vera, Camino de Vera, s/n, 46022 Valencia
- **Province:** Valencia

Research Area

- Information Science and Engineering (ENG)

Brief description of the institution:

Universitat Politècnica de València (UPV) is the single Spanish Technical University that features in the main University world rankings. It is within the top 5 Spanish Universities with the highest revenue from both public research and knowledge transfer activities, and a national leader in patent license income and start up creation. Constituted in 1971, it comprises nearly 30.000 students, over 2500 academics, and 17 university research centres of excellence.

UPV has a relevant experience in the participation in international research programmes, with over 100 FP7 projects and 40 H2020 projects in the period 2014-2015. UPV researchers are also actively involved all H2020 life program stages, from workprogramme drafting discussions, to project coordination. It is also taking part in several major partnering initiatives (JTIs, PPPs, KICs...).

Brief description of the Centre/Research Group (including URL if applicable):

The Institute of Telecommunications and Multimedia Applications (iTEAM) (www.iteam.upv.es) is a research centre composed of 8 groups that cover all the scientific areas related with the Telecommunication Engineering field. The Mobile Communications Group (MCG) is composed of about 30 people (professors and researchers) developing different activities related to the area of wireless communications. There are three main research topics: Body Area Networks (BAN), Broadcast technologies DVB and 5G technologies. Prof. Cardona is in charge of BAN area, where the MCG is focused on the research of wireless communications from implanted devices. The DVB area is led by Dr Gómez. In its facility, the MCG has a laboratory full of DVB operating end-to-end and a pilot network DVB-T/H on the campus of the UPV. The MCG also owns a DVB-T/H/SH/T2 measurement system which has been successfully tested in several pilot. Finally, the MCG has an important activity in the area of wireless technology, led by Dr Monserrat, which highlights in fields like planning and optimization of UMTS, HSDPA and LTE, management and radio resource optimization in 3GPP networks, and cognitive radio systems transmission techniques for the next generation DVB fixed and mobile systems. In this field, MCG is part of the METIS (Mobile and wireless communications Enablers for the Twenty-twenty Information Society, FP7) and METIS-II (H2020) projects, whose main objectives are lay the foundation of 5G, the next generation mobile and wireless communications system.

Project description:

Body Area Networks, 5G technologies, Digital Video Broadcasting

Body Area Networks: Wireless communications surrounding from inside the human body are envisioned to improve healthcare and wellbeing. However, signal transmission considering the human body is challenging due to the unique characteristics of human tissues. In this context, the MCG is focused on the research of wireless communications from implanted devices (pacemaker or capsule endoscope...). Moreover, the MCG also develops new electromagnetic models of human tissues, also known as phantoms, that allows a fast and easy development and testing of wireless devices operating inside the human body with an important reduction of animal experimentation.

5G Technologies: The MCG participates together with other European partners in the conceptualization of the new family of 5G wireless standards. The group is researching some techniques related with multi-hop cellular, no-coherent transmission and the coordination in transmission and reception from multiple access points.

Broadcast: The Mobile Communications Group evaluates different transmission techniques for the improvement of the spectral efficiency of terrestrial digital television networks. Nowadays, the MCG participates in some DVB Project activities

Applications

CV and letter of motivation