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Telecommunications Engineer, Universitat Politecnica de Catalunya, Spain, 1990
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Professional Biography:

MsC (1990), PhD (1995), Prof.(2001). Since October 1990 he is with the Communications Department of the Polytechnic University of Valencia (UPV), currently Full Professor on Signal Theory and Communications. Prof. Cardona is Director of the Research Institute of Telecommunications and Multimedia Applications (iTEAM), with over 170 researchers including assistant professors & research fellows. Additionally, he is the Director of the Mobile Communications Master Degree (since 2006). Prof. Cardona has led National and European research projects, Networks of Excellence and other research forums in FP6, FP7 and H2020, always in Mobile Communications aspects. At European scale, he has been Chairman of the EU Action COST IC1004 (2011-2015), Vice-Chairman of the Actions COST273 (2003-2006) and COST IC15104 IRACON (2016-2020), Chairman of the National Network of Excellence ARCO5G (2015-2016), and member of the Steering Board of METIS (7FP; 2011-2015), WIBEC (H2020 ITN; 2016-2019), PI of WAVECOMBE (H2020 ITN; 2017-2021), and partner of the 5G-PPP projects: METIS2, 5G-XCAST, 5G-TOURS, 5G-SMART, and 5G-CARMEN. He has organised and participated to the Committees of international conferences, being General Chair of IEEE ISWCS 2006, IEEE PIMRC 2016, and EuCNC 2019, and TPC Chair of IEEE VTC 2015, among others. His current research topics are Radio wave propagation, Planning and Optimisation of Mobile Access Networks, Digital Multimedia Broadcasting, Dynamic Spectrum Management and Wireless Body Environment Communications.

Connected Humans in the 2030 Information Society

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The most relevant changes in the new generation of telecommunication systems, and in particular in the wireless networks, will be the de-concentration of the elements that nowadays are integrated in a single user terminal like the current smartphones. Security, privacy, flexibility, usability, and commodity among other aspects, will make more convenient to separate the user identity (nowadays in the sim cards), the RF terminal, the human interfaces and the IoT entities around and inside the human body. So far the evolution of human-machine and human-environment interfaces takes place apart of the evolution of the wireless network technologies. New peripheral devices like those of virtual reality, biometrics, tactile internet, remote control, or any other IoT linked devices, are simply integrated in the mobile terminals load, and networks adapt to the new traffic profiles, but always with the mobile user terminal as the intermediate and final edge of the connectivity services.

This talk offers a disrupting view to such focus, looking at the future connectivity requirements from the user end side, and anticipating the next generation of human interfaces, which are nowadays almost a reality, in particular: holography, eHealth devices, biometric sensors, immersive reality and virtual screens. Finally, the talk identifies which should be the optimal connectivity services for a wireless network of any kind to accommodate, in the most optimal and secure manner, the future *connected humans*.

New 5G deployment challenges in some emerging verticals

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Right after the publication of the 5G standard first release, some entities have already begun talking about 6G. It is rather obvious that talking about " 6th " generation has in fact the bias of relaying on the existing " 5th " generation, meaning that any approach to 6G will be at the very end an evolutionary view over the 5G legacy. How the evolution of the mobile networks ecosystem and its business models is expected to be after the full deployment of 5G?. Any new advance in the mobile networks towards a future generation (6G) has at the very end to continue providing new business opportunities for the mobile operators who are the main players nowadays, and mostly the owners of the infrastructure cellular networks. If the current plans for 5G deployment and commercial exploitation are accomplished, by 2025 several new vertical markets will be generating huge data traffic, and so rewarding business models, for the 5G operators. The application of 5G to such verticals, like Automotive, Industry, Logistics, Health, Agriculture or Entertainment, is not as soft as the evolution of the personal services from 4G to 5G. This talk explains the difficulties and open challenges that the application of 5G to new vertical sectors is facing in 2019, at the early stage of 5G networks deployment. After that, the potential evolution beyond 5G to overcome such limitations is presented.