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"**Wireless devices and services for distributed sensing, monitoring, and decision support.**"

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Abstract

Low-power and compact wireless devices, like smart sensors, embedded systems, smartphones, tablets are more and more becoming everyday life tools, bringing advantages not limited to the mobile communications but also referred to improved context awareness. The potentialities of such wireless technologies are enriched by the integration of dedicated real-time processing techniques which enable not only the distributed sensing of heterogeneous parameters, but also the improved management, understanding, and forecasting of complex processes. The output of such analysis is also exploited to support operators in decision making. Representative application examples are in the field of smart cities and communities, where distributed wireless sensors and mobile devices are largely applied both in indoor (e.g., in smart buildings, smart museums, etc.) and outdoor (smart lighting, road security, fleet management, etc.) scenarios.

Federico Viani received the B.S. and M.S. degrees in Telecommunication Engineering and the PhD degree in Information and Communication Technology from the University of Trento, Italy, in 2004, 2007, and 2010, respectively. Since 2011, Dr. Viani is a Research Associate (Post-Doc) at the Department of Information Engineering and Computer Science (DISI) of the University of Trento, Italy, and a member of the ELEDIA Research Center.

Since 2007, Dr. Viani has been the co-advisor of 18 M.S/B.S Thesis. Since 2010 he has been the official teacher of the Bachelor degree course "Design Techniques for Wireless Communications", and since 2007 he has been a teaching assistant of Bachelor degree and Master degree courses in Telecommunication Engineering offered by the University of Trento, including "Electromagnetic Propagation", "Project Course on Wireless Technologies", "Antennas for Wireless Communications", "Biomedical Diagnostic Techniques", "Mobile Communications".

Dr. Viani is author/co-author of over 77 peer reviewed papers on international journals and conferences, including 28 contributions on peer-reviewed international journals, 49 in international conferences. Moreover, Dr. Viani has been cited 574 times and his H-Index is equal to 14 in the Scopus Database. He has been invited to submit papers to International Journals and to present contributions to Scientific Sessions in International Conferences. He has organized and/or chaired 3 Special Sessions in International Conferences. Since 2007, he has attended 7 national and international conferences, presenting as a speaker 15 contributions.

Since 2007, Dr. Viani has been a Participant in 17 Research Projects, funded by EU, Industries, and National Agencies.

The research activities of Dr. Viani are oriented to the development of methodological strategies and applications in the framework of Electromagnetic Fields (S.S.D. ING-INF/02, S.C. 09/F1), with main emphasis on applied electromagnetics. He has been involved in activities concerning the design of multiband, wideband, and ultra-wideband antennas, the study and development of optimization techniques as well as learning-by-example methodologies for the solution of complex electromagnetic problems including inverse problems and active/passive wireless localization. He is also involved in the

design and development of distributed and pervasive monitoring by means of wireless sensor networks (WSNs) and robot swarms, and in the application of decision support systems (DSS) to fleet management and emergency-related applications.

Dr. Viani is a Reviewer for international Journals, including IEEE Transactions on Antennas and Propagation, IEEE Antennas and Wireless Propagation Letters, Progress in Electromagnetic Research/Journal of Electromagnetic Waves and Applications, IEEE Transactions on Vehicular Technologies.

Dr. Viani is a Senior Member of the IEEE, member of the IEEE Antennas and Propagation Society, and of the European Microwave Association (EuMA).

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