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# The evolution to 4G cellular systems: LTE-Advanced

Ian F. Akyildiz ... Elias Chavarria Reyes

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## Abstract

This paper provides an in-depth view on the technologies being considered for Long Term Evolution-Advanced (LTE-Advanced). First, the evolution from third generation (3G) to fourth generation (4G) is described in terms of performance requirements and main characteristics. The new network architecture developed by the Third Generation Partnership Project (3GPP), which supports the integration of current and future radio access technologies, is highlighted. Then, the main technologies for LTE-Advanced are explained, together with possible improvements, their associated challenges, and some approaches that have been considered to tackle those challenges.

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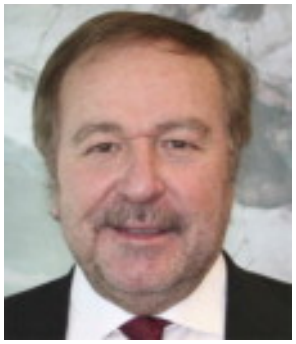
## Keywords

LTE; LTE-Advanced; 4G; Carrier aggregation; CoMP; Relay; MIMO





**Ian F. Akyildiz** received the B.S., M.S., and Ph.D. degrees in Computer Engineering from the University of Erlangen-Nuernberg, Germany, in 1978, 1981 and 1984, respectively. Currently, he is the Ken Byers Chair Professor with the School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, the Director of Broadband Wireless Networking Laboratory and Chair of the Telecommunication Group at Georgia Tech. In June 2008, Dr. Akyildiz became an honorary professor with the School of Electrical Engineering at Universitat PolitÃ¨cnica de Catalunya (UPC) in Barcelona, Spain. He is also the Director of the newly founded N3Cat (NaNoNetworking Center in Catalunya). He is also an Honorary Professor with University of Pretoria, South Africa, since March 2009. He is the Editor-in-Chief of Computer Networks (Elsevier) Journal, and the founding Editor-in-Chief of the Ad Hoc Networks (Elsevier) Journal, the Physical Communication (Elsevier) Journal and the Nano Communication Networks (Elsevier) Journal. Dr. Akyildiz serves on the advisory boards of several research centers, journals, conferences and publication companies. He is an IEEE FELLOW (1996) and an ACM FELLOW (1997). He received numerous awards from

IEEE FELLOW (1998) and an ACM FELLOW (1997). He received numerous awards from IEEE and ACM. His research interests are in nano-networks, cognitive radio networks and wireless sensor networks.

**David M. Gutierrez-Estevez** obtained his Engineering Degree in Telecommunications from the School of Electrical Engineering, Universidad de Granada, Granada, Spain, in July 2009. During the summer of 2007 he held an internship position at the Audio Department of Fraunhofer Institute for Integrated Circuits in Erlangen, Germany. In 2007, he received an Erasmus scholarship to finish his Telecommunications Degree at the Technische Universitaet Berlin, Germany. From April 2008 to June 2009 he was a research assistant within the Broadband Mobile Communications Networks Department of the Fraunhofer Heinrich Hertz Institute in Berlin, where he worked on projects linked to Long Term Evolution (LTE) cellular systems. Currently, he is pursuing his M.S. and Ph.D. degrees at the Broadband Wireless Networking Laboratory, School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, with a fellowship from Obra Social â€œla Caixaâ€. His current research is focused on Next Generation Cellular Networks. He is a student member of IEEE.

**Elias Chavarria Reyes** received the B.E. degree in Electronics and Communication Engineering from Universidad de PanamÃ¡, Ciudad de PanamÃ¡, PanamÃ¡, in 2007. He received his M.S. degree in Electrical and Computer Engineering from the School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, in 2010. Currently, he is pursuing his Ph.D. degree in the Broadband Wireless Networking Laboratory, School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, with a fellowship from â€œSENACYTâ€. His current research is focused on Next Generation Cellular Networks. He is a student member of IEEE.

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