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S1-MME and X2 Interfaces; 3.2.4 Interfaces and Protocols in Basic System Architecture Configuration; 3.2.5 Roaming in Basic System Architecture Configuration  
3.3 System Architecture with E-UTRAN and Legacy 3GPP Access Networks  
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3.6.5 Inter-working Elements  
3.7 PCC and QoS; 3.7.1 PCC; 3.7.2 QoS; References; 4 Introduction to OFDMA and SC-FDMA and to MIMO in LTE; 4.1 Introduction; 4.2 LTE Multiple Access Background; 4.3 OFDMA Basics; 4.4 SC-FDMA Basics; 4.5 MIMO Basics; 4.6 Summary; References; 5 Physical Layer; 5.1 Introduction; 5.2 Transport Channels and their Mapping to the Physical Channels; 5.3 Modulation; 5.4 Uplink User Data Transmission; 5.5 Downlink User Data Transmission; 5.6 Uplink Physical Layer Signaling Transmission; 5.6.1 Physical Uplink Control Channel, PUCCH; 5.6.2 PUCCH Configuration  
5.6.3 Control Signaling on PUSCH

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## Sommario/riassunto

Written by experts actively involved in the 3GPP standards and product development, LTE for UMTS, Second Edition gives a complete and up-to-date overview of Long Term Evolution (LTE) in a systematic and clear manner. Building upon on the success of the first edition, LTE for UMTS, Second Edition has been revised to now contain improved coverage of the Release 8 LTE details, including field performance results, transport network, self optimized networks and also covering the enhancements done in 3GPP Release 9. This new edition also provides an outlook to Release 10, including the

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