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Autore	Gomez G (Gerardo)
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3GPP UMTS; 2.4.2 CDMA2000-1x Reference Architecture and QoS; 2.4.3 Basic Voice Service with CDMA2000 2.4.4 Packet Data Operation with CDMA2000-1x 2.4.5 CDMA2000-1x Performance; 2.4.6 Mobility; 2.5 WLAN; 2.5.1 Complementary WLAN Access Technology for Cellular Networks; 2.5.2 WLAN-3GPP and WLAN-3GPP2 Architecture; 2.6 Future Outlook; 2.6.1 Heterogeneous Networks; 2.6.2 Physical and MAC Layers Trends; References; 3 Data Services Architecture and Standardization; 3.1 Introduction; 3.1.1 Circuit-Switched and Packet-Switched Services; 3.1.2 Services Architectures and Protocols; 3.1.3 Services Selection; 3.2 Services Architecture; 3.2.1 Services and Service Enablers 3.2.2 IP Multimedia Subsystem (IMS) 3.3 Data Protocols Characteristics; 3.3.1 TCP/IP Networks; 3.3.2 Impact of Radio Interface on Transport Protocols; 3.4 SMS/MMS; 3.4.1 Introduction to SMS; 3.4.2 SMS Architecture and Signaling; 3.4.3 SMS Protocol Stack; 3.4.4 Introduction to Multimedia Messaging Service (MMS); 3.4.5 MMS Architecture and Signaling; 3.4.6 MMS Protocol Stack; 3.5 WAP; 3.5.1 Introduction; 3.5.2 WAP Architecture; 3.5.3 Protocol Stack; 3.5.4 Signaling; 3.6 Web; 3.6.1 Introduction; 3.6.2 Architecture; 3.6.3 Protocol Stack; 3.6.4 Signaling; 3.7 Push-to-Talk over Cellular (PoC) 3.7.1 Introduction 3.7.2 PoC Architecture; 3.7.3 PoC Protocol Stack; 3.7.4 PoC Signaling; 3.7.5 PoC Performance Requirements; 3.8 Network Gaming Services; 3.8.1 Introduction; 3.8.2 Network Requirements; References; 4 Quality of Service Mechanisms; 4.1 What is Quality of Service?; 4.1.1 QoS Definition; 4.1.2 Need for QoS Differentiation; 4.1.3 QoS Standardization; 4.1.4 Data Services Classification; 4.2 IP-Based QoS; 4.2.1 Motivation of IP QoS Mechanisms; 4.2.2 QoS Paradigms; 4.2.3 IP-QoS Management in UMTS Networks; 4.2.4 Traffic Handling Mechanisms; 4.3 QoS Architecture in 3GPP and 3GPP2 4.3.1 End-to-End QoS Introduction

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## Sommario/riassunto

This comprehensive resource contains a detailed methodology for assessing, analyzing and optimizing End-to-End Service Performance under different cellular technologies (GPRS, EDGE, WCDMA and CDMA2000). It includes guidelines for analyzing numerous different services, including FTP, WEB streaming and POC, including examples of analysis and troubleshooting from a user point-of-view. Focuses on the end-user perspective, with a detailed analysis of the main sources of service performance degradation and a comprehensive description of mobile data services Includes a detailed presentatio

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