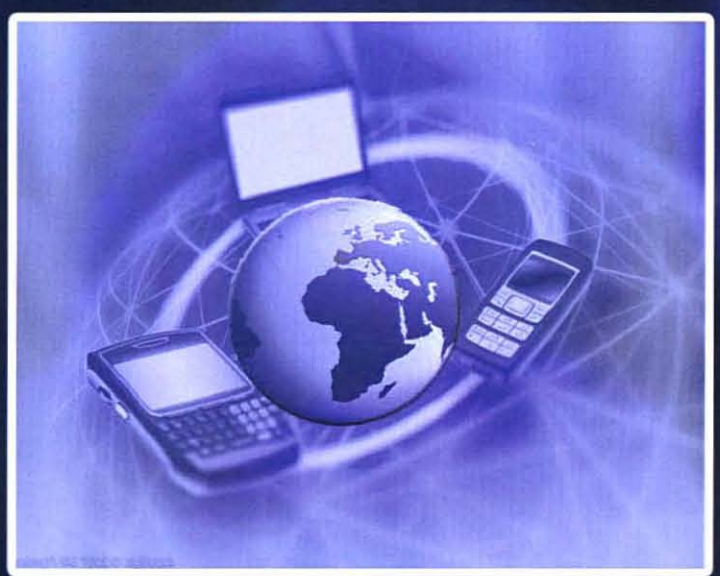
Research Issues in Wireless

Communications and Networking

Farhat Anwar
Wajdi Al-Khateeb



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EMAIL: iiumprinting@yahoo.com

Chapter 37

Network QoS Architectures

Omer Mahmoud[1,a], Farhat Anwar[2,b], Aisha Abdallah[3,c], Othman O. Kalifa[4,d] and Rasheed Saeed[5e]
[1,2,3,4,5]ECE Dept, Fac. of Eng., International Islamic Univ. Malaysia (IIUM)
Jalan Gombak, 53100 Kuala Lumpur, Malaysia
[a]omer@iium.edu.my, [b]farhat@iium.edu.my, [c]aisha@iium.edu.my, [d]Khalifam@iium.edu.my, [e]rashid@iiu.edu.my

37.1 INTRODUCTION

There is huge growth in internet recently. This growth is started initially at slow rate with limited number of application. However as the time progresses the network has expanded in term of users and applications. This expansion dictated a alteration and modification of the original protocol to enable higher Quality of service. This chapter provides tan over view about QoS requirement, architecture and mobility support.

37.2 QUALITY OF SERVICE PARAMETERS

Quality of service in a network is measured by using three important parameters [1]

Delay: is generally defined as time take for a packet to travel for sending source to receiving destination and it has two components

1) Propagation delay PD

2) Queuing Delay QD

$QD = \sum DQi$ where DQi is queuing Delay at router I

The total delay $D = PD + QD$

Due to the variation in queuing process the delay could vary a little bit therefore we could have minimum delay and maximum delay and when delay is used without specifying minimum or maximum it generally refer to average delay

Delay variation: This is also known as Jitter, there is variation in delay, this is because each packet experience different delay while crossing the network due to variation queuing time.

Throughput: The term throughput rate of traffic the network is capable to handle per unit time is slight different from the term bandwidth which refer to capacity of network and it loosely tied with time.

Losses: Refer to dropped packets as result to congestion or any malfunctioning within network.

These parameters act as indicator that measure the network performances. The weight or the importance given to these parameters could vary from a set of applications to another. The application is roughly divided in two categories real time application and non-real time applications real time application refer to time sensitive application such as audio and video utilizing application . real time application is sensitive to delay and delay variation on the other hand non real time applications is sensitive to losses and less sensitive to delay and jitter example of this application is email webpage.