

MEASURING SERVICE QUALITY OF IP DATA OVER UMTS NETWORK

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To

My Beloved Mother, Father, Brothers and Best friend Salem.

and to

*the Souls of ever one who helped me and
devoted their lives towards protectively of Islam .*

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In the name of Allah, Most Gracious, and Most Merciful

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ABSTRACT

Third Generation (3G) services are becoming more and more required by the users for high demanding for higher data rate transfer. In order to ensure that, in the end, the subscriber is served with a proper Quality of Service, certain measurements must be performed. However, the key to have a right evaluation of such services requires a proper definition of the performance indicators that is related to that service. In this project, we present the analysis and performance to data service application (HTTP) aiming to identify the performance of a real WCDMA (Wide Code Division Multiple Access)-mobile telecommunication networks based on live 3G network. We will provide the analysis of the results that are obtained during WCDMA field measurements and some of the statistical measurements that were recorded during the test as well. The network was tested and the data was collected by using QVOICE as a measurement tool. In addition, we will illustrate the impact of some mechanisms that may have effect on the service performance such as coverage. Finally, based on the evaluation results, we provide a set of recommendations that might help to improve the service and fulfill the user's requirements.

Abstrak

Perkhidmatan 3G merupakan teknologi yang amat diperlukan pada masa kini terutamanya kepada pengguna yang memerlukan kadar pemindahan data yang pantas. Untuk menjayakan penyelidikan ini, satu pengukuran telah dilaksanakan supaya semua pelanggan mendapat satu tahap bersesuaian dipanggil “Quality of Service” (QoS) yang memadai. Akan tetapi, untuk mendapat satu skema yang sesuai untuk menilai pengukuran tersebut, pemilihan definisi bagi penilaian tertentu yang tepat mesti ditentukan dengan teliti. Dalam kajian penyelidikan ini, menganalisa dan perbandingan terhadap aplikasi perkhidmatan data (HTTP) untuk menentukan keupayaan WCDMA dalam pergerakan jaringan telekomunikasi yang berdasarkan kepada 3G jaringan yang “hidup”. Seterusnya, keputusan analisis keupayaan bagi bidang WCDMA dan pengukuran secara statistik telah direkod semasa dalam pengujian tersebut. Di samping itu, jaringan ini telah diuji dan kesemua data telah direkod dengan menggunakan alat penguji; “QVOICE”. Tambahan pula, faktor-faktor yang akan mendatangkan kesan kepada perkhidmatan yang sedang dikaji akan turut dibincangkan seperti kawasan liputan. Akhir sekali, berpandukan kepada keputusan yang diperolehi; senarai cadangan akan dikemukakan supaya perkhidmatan kini dapat dipertingkatkan untuk memenuhi kehendak para pengguna pada masa yang akan datang.