

**ANALISIS PERBANDINGAN KUALITAS  
JARINGAN 4G LTE PADA *PROVIDER*  
TELKOMSEL, INDOSAT, XL, DAN SMARTFREN  
DI FAKULTAS TEKNIK UPN VETERAN JAKARTA  
MENGUNAKAN METODE *QUALITY OF SERVICE*  
(QOS)**

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**ABSTRAK**

Internet menjadi kebutuhan utama bagi masyarakat terutama Mahasiswa, Mahasiswa tentu ingin memilih jaringan operator seluler yang memadai dan optimal untuk memenuhi kebutuhan internet mereka. Pada penelitian ini dilakukan analisis perbandingan kualitas jaringan antar *Provider* melalui penggunaan metode Quality of Service (QoS). *Provider* yang akan diuji coba adalah Telkomsel, Indosat, XL, dan Smartfren. Parameter QoS yang akan diukur meliputi *Throughput*, *Delay*, *Jitter*, dan *Packet Loss*, dengan menggunakan aplikasi WireShark dan OpenSignal. Pengukuran dilaksanakan di dua tempat, di Ruang Himpunan FT UPNVJ dan di Sekitar FT UPNVJ. Pada proses analisis hasil pengukuran Parameter Quality of Service (QoS) di Ruang Himpunan FT UPNVJ, menunjukkan bahwa *Provider* Indosat menjadi *Provider* paling optimal dan stabil untuk digunakan di Ruang Himpunan Mahasiswa FT UPNVJ dengan nilai Parameter QoS: *Throughput* (2837,6 Kbps), *Delay* (2,98), *Jitter* (2,98) dan *Packet Loss* (0,1136%). Sedangkan untuk di Sekitar FT UPNVJ menunjukkan bahwa *Provider* XL menjadi *Provider* paling optimal dan stabil untuk digunakan di Sekitar FT UPNVJ dengan nilai Parameter QoS: *Throughput* (2768,8Kbps), *Delay* (3,29ms), *Jitter* (3,29ms) dan *Packet Loss* (0,3478%)

**Kata Kunci:** Quality of Service (QoS), *Provider*, *Throughput*, *Jitter*, *Delay*, *Packet Loss*, Jaringan 4G

**COMPARISON ANALYSIS OF 4G LTE NETWORK QUALITY  
ON TELKOMSEL, INDOSAT, XL, AND SMARTFREN  
PROVIDER AT UPN VETERAN JAKARTA FACULTY OF  
ENGINEERING USING QUALITY OF SERVICE (QoS)  
METHOD**

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**ABSTRACT**

*The internet has become a primary necessity for society, especially for students. Students naturally want to choose a mobile network operator that is adequate and optimal to meet their internet needs. This research aims to analyze and compare the network quality among providers using the Quality of Service (QoS) method. The providers being tested are Telkomsel, Indosat, XL, and Smartfren. The QoS parameters to be measured include Throughput, Delay, Jitter, and Packet Loss, using the WireShark and OpenSignal applications. The measurements were conducted in two locations, the FT UPNVJ Student Union Room and the vicinity of FT UPNVJ. The analysis of the Quality of Service (QoS) measurement results in the FT UPNVJ Student Union Room shows that Indosat is the most optimal and stable provider to be used in the FT UPNVJ Student Union Room, with the following QoS parameter values: Throughput (2837.6 Kbps), Delay (2.98), Jitter (2.98), and Packet Loss (0.1136%). On the other hand, in the vicinity of FT UPNVJ, XL is the most optimal and stable provider to be used, with the following QoS parameter values: Throughput (2768.8 Kbps), Delay (3.29 ms), Jitter (3.29 ms), and Packet Loss (0.3478%).*

**Keywords:** *Quality of Service (QoS), Provider, Throughput, Jitter, Delay, Packet Loss, 4G Network.*