

DATA BENCHMARKING

GWS has driven more than 9 million data collection miles for its customers.



Packet data is one of the greatest opportunities and greatest challenges for the wireless industry today. New packet data services drive subscriber and revenue growth. Operators use advertising to present competing packet data coverage claims to customers. Regulators carve out spectrum to encourage the growth of high speed wireless data in their country. Infrastructure vendors chase new technology contracts to secure future revenue growth. GWS began providing Data Benchmarking during the rollout of GPRS and 1XRTT in the United States, enhanced the offering in conjunction with major 3G operators and were the first to provide benchmarking services for fledgling 4G networks.

GWS' Data Benchmarking reports allow operators to compare performance between competitors, markets and technologies; evaluate performance trends over time; identify focus areas for competitive improvement; and evaluate Quality of Service problems. Data Benchmarking reports utilizes key parameters that are independent of technology for comparison including:

(RF) Connection Accessibility: A metric of the user's ability to successfully activate a PDP session on the network.

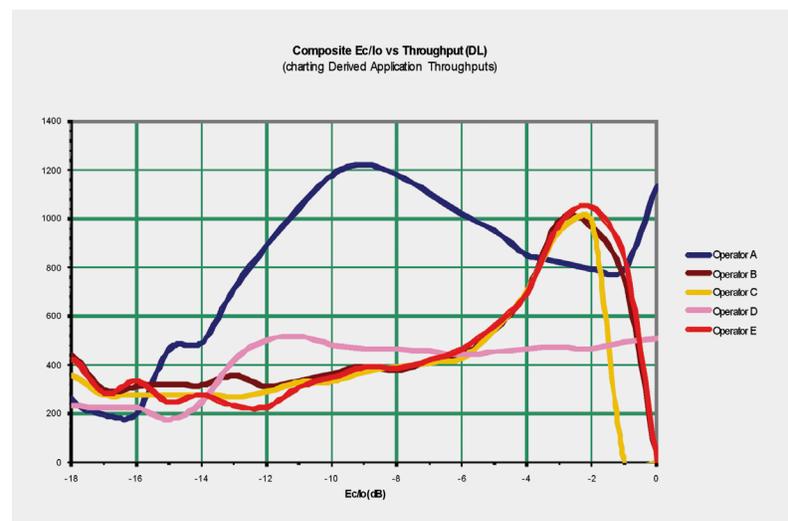
(RF) Connection Retainability: A metric of the user's ability to successfully deactivate a PDP connection on the network.

Task Accessibility: A metric of the user's ability to successfully start a task. The successful task initiation rate is detailed by protocol and direction (HTTP, FTP downlink, FTP uplink).

Task Retainability: A metric of the user's ability to successfully complete a task. The successful task termination rate is detailed by protocol and direction.

Throughput: Throughputs are detailed per task type.

Ping Delay: Ping delay (round-trip) mean, percent of ping delay < 1 second and graphical distributions.



These industry leading Data Benchmarking reports provide extensive in depth analysis of collected, multi operator data including numerous figures, charts and maps such as:

Events

- Reselection Successes per task
- Percentage of Technology Changes
- Percentage of Tasks with high number of Reselections
- Effect on Mean Application Throughputs
- No Service Tasks
- Failed Tasks

Follow Data

- RSSI
- Application Task Mean Throughputs (downlink and uplink)
- Application Momentary Throughputs (downlink and uplink)
- RxLev versus Throughput
- Signal Quality versus Throughput

Maps

- Session Results (No Service Regions, RF Setup Fails, Session Setup Fails, RF Channel Drops, Session Timeouts)
- Application-level throughput (downlink and uplink)
- Reselection Count per Task (downlink and uplink)
- Mean Signal Quality (downlink only)
- RSSI
- Timeslot Usage
- Roaming
- Technology Usage



About GWS

Global Wireless Solutions, Inc. defines the industry standard for network benchmarking, performance analysis and testing. Working with some of the world's largest wireless network providers, GWS offers standardized, high-quality network data and engineering analysis to its customers through a suite of benchmarking products, services, and diagnostic apps that includes drive, venue and in-building testing.

Founded in 1996, GWS is headquartered in Dulles, VA. At last count, GWS has driven more than 9 million data collection miles for its customers. For more information, visit www.gwsolutions.com and follow us on Twitter at @gwsolutionsinc.