



## VOICE BENCHMARKING

GWS is the largest independent provider of competitive benchmarking for the wireless industry.

The wireless industry is filled with competitive challenges. Operators compete for the loyalty of their customers through network investment and for new subscribers with their advertising. Markets compete for resources from corporate to maintain and improve their networks. Engineers compete to provide more coverage and higher quality service than the other networks in their territory. Infrastructure vendors compete for the chance to provide equipment to operators who are launching new technologies. Key to all of the many different types of competition is benchmarking—the ability to measure performance and determine success.

Benchmarking of competitive wireless network quality is the core business of Global Wireless Solutions, Inc. (GWS). The largest independent provider of competitive benchmarking for the wireless industry, GWS brings a complete understanding of the key aspects of multi-technology test equipment, management of a large collection fleet, data quality assurance and data reporting intelligence to this industry leading offering.

GWS' comprehensive Voice Benchmarking services have been successfully used by operators to evaluate competitive performance against their competition; to validate performance before and after infrastructure

equipment swap outs; to provide support to quality claims used in marketing campaigns; to measure outsourcing SLAs, and to direct network improvement investment. GWS has supported regulators using benchmarking data to confirm operator performance on license requirements and identify unserved or underserved areas and has helped infrastructure vendors to test new technology rollouts. GWS is unmatched in experience and capacity to provide a customized service to meet any benchmarking need.

GWS' comprehensive Voice Benchmarking reports provide competitive analysis utilizing key parameters that are independent of technology including:

**Accessibility:** A metric representing the user's ability to successfully initiate a call.

**Retainability:** A metric defined as the percentage of calls that successfully terminated out of the total number of successful initiations.

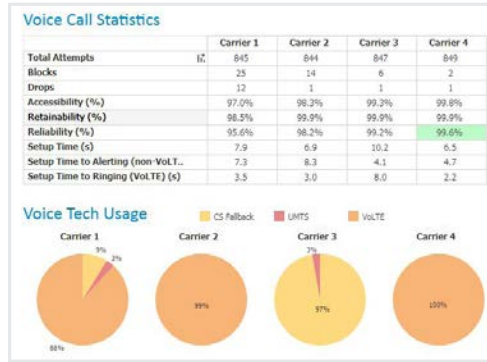
**Reliability Score:** An overall network score taking into account the Accessibility and Retainability results.

**Voice Quality:** A measurement representing the user's perception of the quality of speech on a network.

GWS Voice Benchmarking reports provide extensive analysis of collected, multi operator data including numerous figures, charts and maps such as:

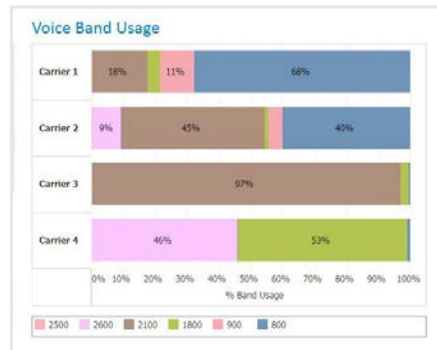
## FIGURES AND CHARTS

- Signal Quality versus Voice Quality
- RSSI Distributions
- Signal Quality Distributions
- Voice Quality Distributions
- RSSI Before and After Handover
- Signal Quality Before and After Handover
- RSSI versus Signal Quality Scatter Plot
- Handover Improvement Plot
- Dropped Call summary



## SUMMARY AND TECHNICAL TABLES

- Executive Summary of Network Performance
- Summary of Network Parameters
- Network Usage Summary with roaming statistics
- Network Usage Summary for home network only
- Worst Server Interference and Poor Coverage areas
- Handover Statistics including counts per carrier
- Summary of system alleviation of Interference cases and Poor Coverage cases
- Handover Analysis including bad handover selection cases and handovers with large RSSI improvements
- Interference Coverage-Type cases after Handover
- Detailed Breakdown of all Failed Initiations and Dropped Calls



## MAPS

- Call Exceptions Plot
- No Service Attempts
- Blocked calls detailing Access Timeouts, Assignment Failures, Call Failures, Reorders, Service Rejections, System Busy
- Foreign System IDs
- Dropped Calls
- RSSI plot
- Receive Quality Plot
- Voice Quality Plot
- Band/Sub-Band Plot
- Handover Plot, locating handover quality of each handover



Global Wireless Solutions, Inc.  
23475 Rock Haven Way, #165  
Dulles, VA 20166

Tel: (703) 661-7000  
Fax: (703) 661-7001  
marketing@gwsolutions.com



www.gwsolutions.com

## EXPERIENCE MATTERS

Benchmarking for  
**24 YEARS**

Services provided in  
**25 COUNTRIES**

Tested  
**14,500 LOCAL MARKETS**

Driven and walked  
**13 MILLION MILES**

## ABOUT GWS

GWS is the world leader in testing wireless markets. Services include:

**Voice and data benchmarking** – Network data and engineering analysis through drive, venue, and in-building testing

**MobiStat™** – Interactive web-based reporting and mapping tool

**OneMeasure™** – Configurable app for mobile and Wi-Fi network performance testing

**OneScore™** – Network performance ranking combining engineering data with consumer research

**Big Data Analytics** – Large scale network evaluations using big data tools and techniques