EXTENDED ANALYSIS

GWS takes benchmarking to the next level by providing custom reports to meet customers needs.

As the largest independent provider of wireless quality benchmarking services, GWS manages a nationwide fleet of test vehicles. In addition to this strong operational experience, GWS has developed custom analysis and reporting that support all major wireless technologies and test equipment vendors. No commercial off-the-shelf post-processing platform and no other benchmarking services provider has the same capability to provide accurate and reliable data for both single market and multi-operator, multi-technology testing programs like GWS can and does every day.

Building on the standard benchmarking reports, Extended Analysis extracts additional information from collected information to help customers achieve specific goals. This can include focused data mining to extract specialized information about a drive test or can provide a big picture view of the network to aid in evaluation of design guidelines at a macro level. Some of the custom offerings prepared by GWS and available in conjunction with Voice and Data Benchmarking campaigns include:

High Level Overview Reports: Summarized results present details of a benchmarking campaign in a format tailored to provide executive management a quick look assessment of the network.

Single Network Performance Reviews: Designed to highlight areas of interest in a market, identify trends and propose potential opportunities for improvement.

Multiple Network Performance Reviews: Provide a cross network perspective of benchmarking results. Useful for regulatory agencies assessing licensees or for corporate organizations evaluating regional performance.

Before and After Analysis: Benchmarking campaigns and reports in conjunction with new market acquisition and integration, network retunes, infrastructure vendor replacement and other important events.
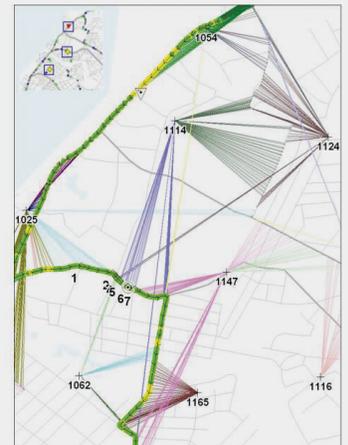
SLA Validation: Customized testing to provide an independent assessment of service or equipment providers performance towards Service Level Agreement metrics.

Detailed Failed Initiation diagnostics:
Area with no Dominant Server: Avoid ping-pong.

1. 17:53:55: Normal Terminate on 1025/5 (BCCH 529/30).
2. 17:54:25: Call Attempt Starts on 1025/5 (BCCH 529/30).
3. 17:54:32: Handover from 1025/5 to 1062/4.
   BCCH/BSIC from 529/30 to 530/37.
4. 17:54:37: Handover from 1062/4 to 1124/6.
   BCCH/BSIC from 530/37 to 518/20.
5. 17:54:42: Handover from 1124/6 to 1114/6.
   BCCH/BSIC from 518/20 to 524/14.
6. 17:54:56: Failed Init on 1114/6 (BCCH 524/14).
   RxLev/RxQual is -58/0.
   Srv from -58 to -51.
7. 17:55:08: Reselection from 1114/6 to 1147/6.
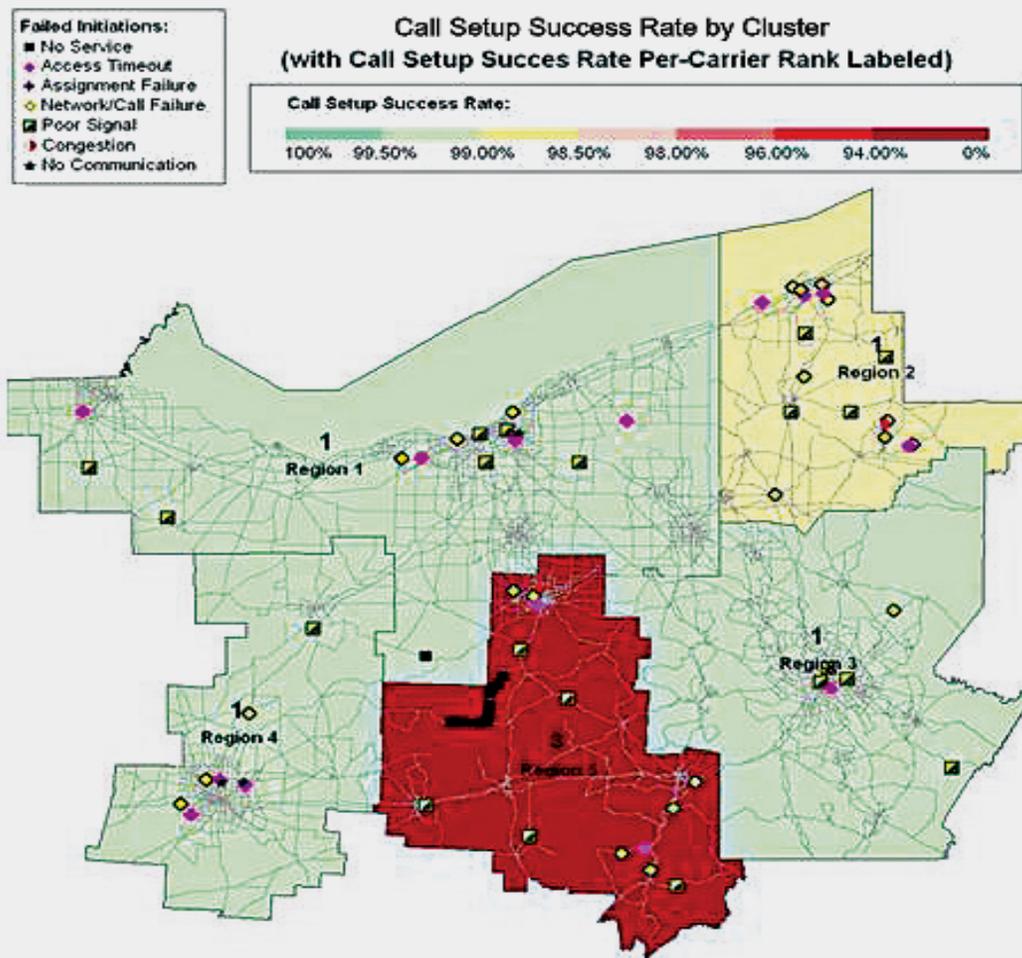   BCCH/BSIC from 524/14 to 516/21.

Note: Similar to failure on previous slide, after Assignment Complete, Mobile was put into a Progress state during the 3 handovers that occurred within a 10-second duration. The the call attempt never recovered from the Progress state within the 30-second call attempt window.

Remedy: Clean up the handover situation in this area. One of the neighboring sites needs to provide dominant coverage via handover parameterization, re-orient, or downtilt.

Extended Analysis offers additional details on network trouble spots and specific diagnostics on call failures following delivery of the Voice and Packet Data reports including:

- Area Based Accessibility, Retainability and Reliability statistics

- Persistent Call Failure Report and Maps for historical drives

- Detailed call event spreadsheets

- Detailed (per second) data file for each call failure containing critical RF parameters for troubleshooting

- Detailed Drop Call Event Analyses/Diagnostics of negative events

- Worst Interference condition areas

- In-service Coverage Limited condition areas

- Handovers Resulting in Signal Degradation

- Soft Handover Analysis

- Handover Ping-Pong situations

- Over-Shooting Cell sites

- Estimated site count information on all carrier networks collected in the test area

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.

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

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

gws

www.gwsolutions.com