Voice, Video, and Data Quality Testing Solutions

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Topics

- Hardware Platforms – VQuad™ and vMobile™
- Voice Analysis Tool (VAT™)
- Voice Quality Testing (VQT) - POLQA and PESQ
- AutoVQT™
- Testing Environments – Mobile Phones, Analog, Radios, VoIP SIP
- Available Metrics
- WebViewer™ - Web Based Client for Voice and Data Quality Testing
- Data Testing
- Video Testing

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Hardware Platforms

Dual UTA HD Hardware Unit

Back Panel

Front Panel

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VQuad™ Probe HD

Back Panel

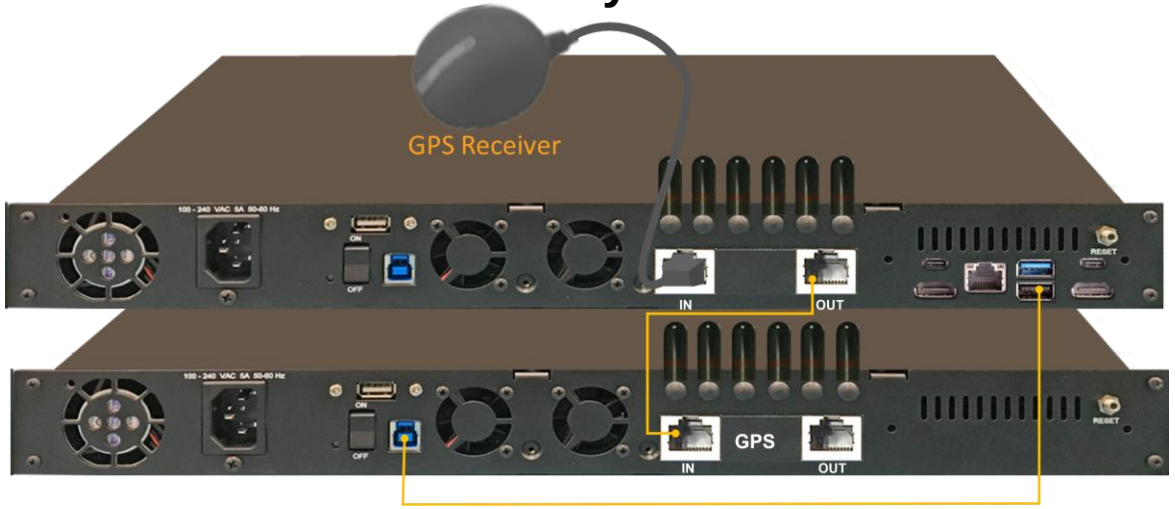
Front Panel

VQuad™ mTOP™ Specifications

Front and Back Panel of VQuad™ mTOP™ 1

Front and Back Panel of VQuad™ mTOP™ 2

GPS connection on mTOP™ 1 daisy chains the GPS to multiple mTOP™ systems



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Current GL Mobile Test Hardware Platforms

vMobile™

vMobile™ Interfaces

VQuad™ Probe HD

Dual UTA HD

VQuad ™ mTOP™

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vMobile™ Hardware Unit

- Fully Automated
- Mobile Phone and Mobile Radio Testing
- Both Bluetooth and Analog modes
- Drive and Walk Testing
- Voice Quality Testing
- Delay Testing
- Solution supports GL WebViewer™
- Works with GL VQuad™, Voice Analysis Tool (VAT™) and Voice Quality Testing (VQT) solutions
- GPS/WiFi Clock sync, High Precision Clock Oscillator with 40 ms daily precision

vMobile™

vMobile™ Interfaces

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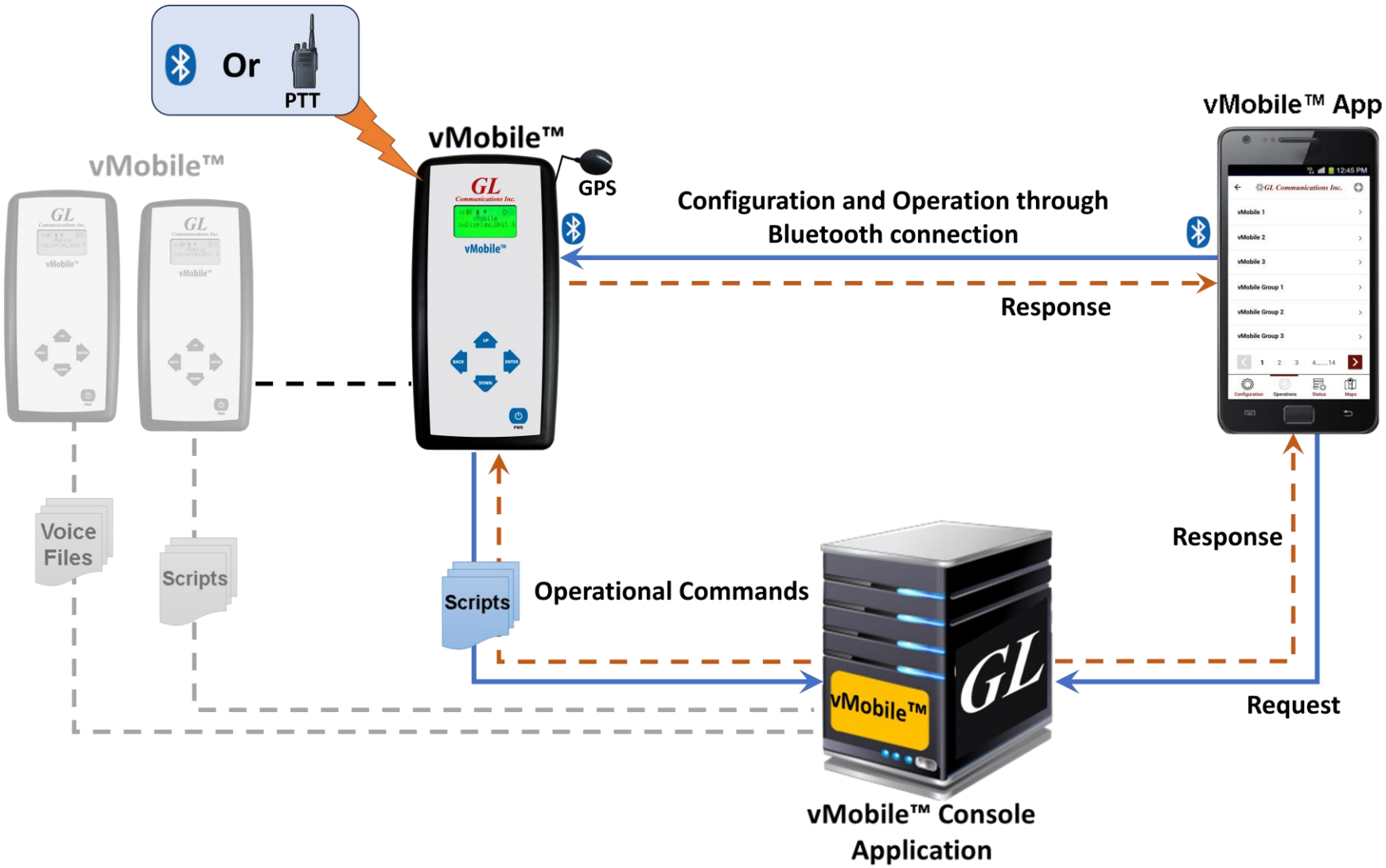
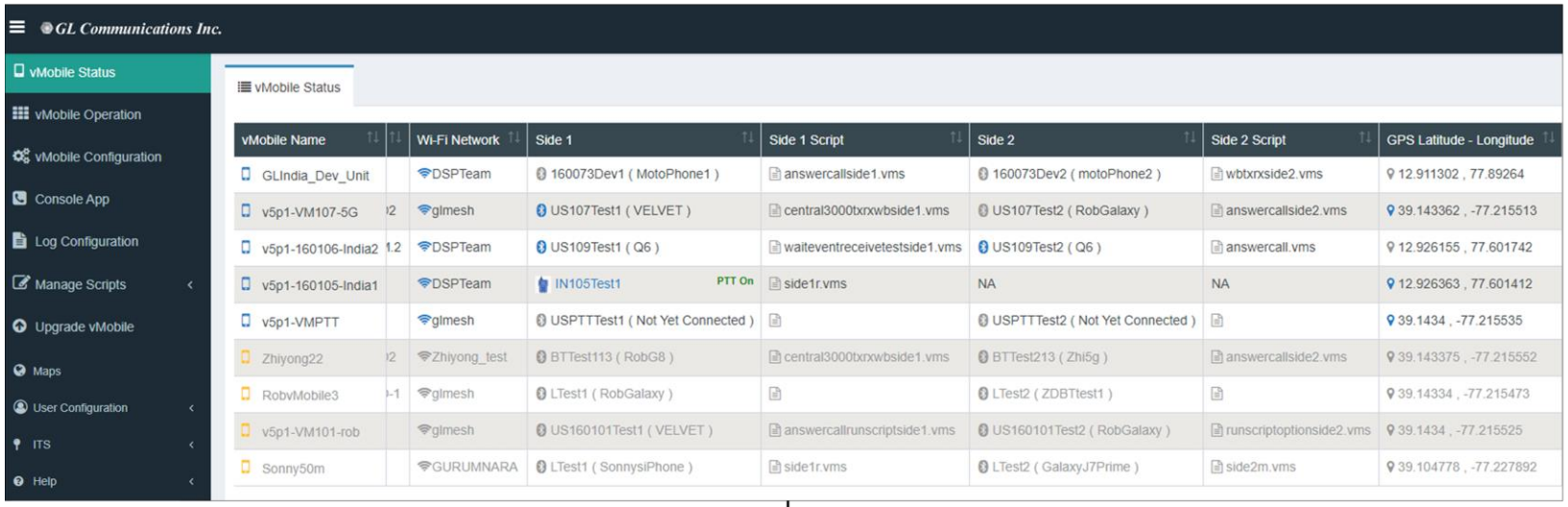
vMobile™ Configuration and Operation using Console and Console App

- The vMobile™ Console can run from any web-browser or using the Console App from any Android/IOS device
- Used to Monitor, Configure, and Operate the individual vMobile™ units
- vMobile™ Console can be used to create and edit vMobile™ scripts as well as upgrade the vMobile™ software when available
- Multiple vMobile™ units can be controlled from a single Console or Console App
- Remotely Upgrade vMobile™ software and audio files
- vMobile™ Error logs can be accessed from the Console or Console App

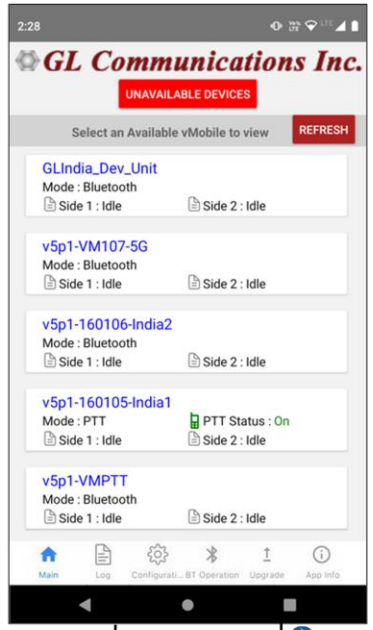


vMobile™ Control and Operation

vMobile™ Console



vMobile™ Console APP



Configuration and Operation through Internet connection

Internet

Configuration and Operation through Bluetooth connection

vMobile™

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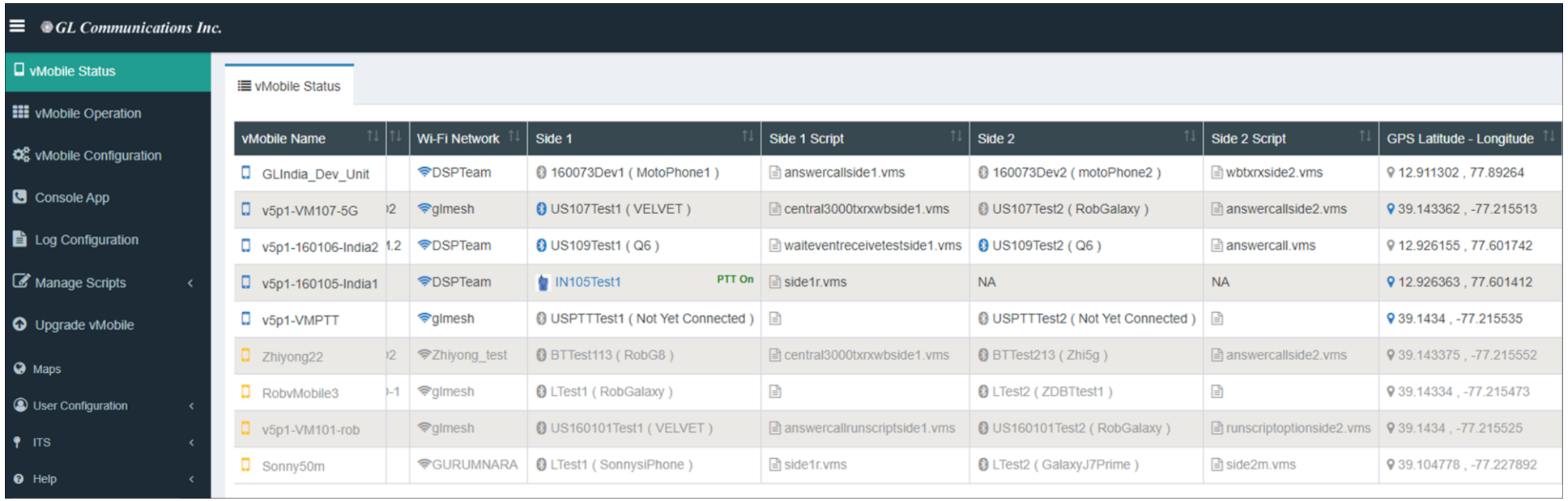
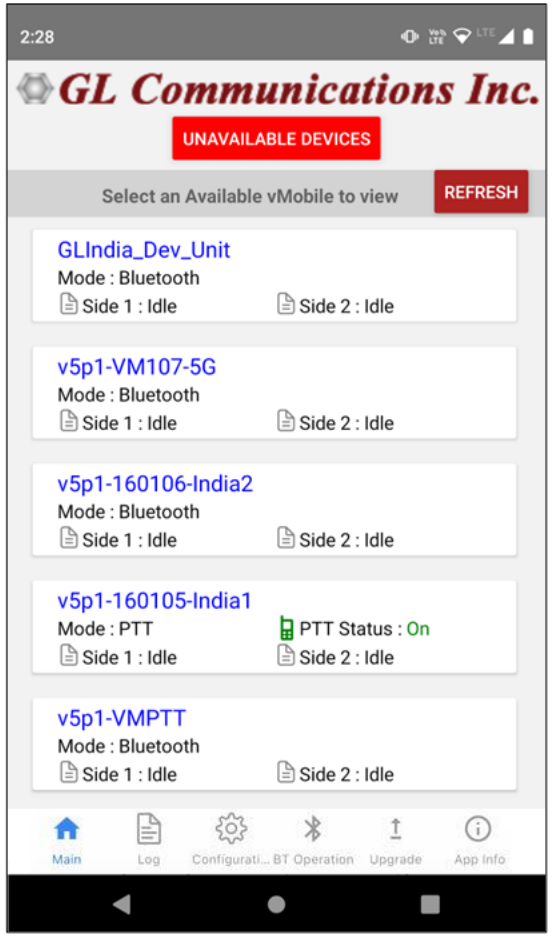
vMobile™ Status



vMobile Name	Wi-Fi Network	Side 1	Side 1 Script	Side 2	Side 2 Script	GPS Latitude - Longitude
GLIndia_Dev_Unit	DSPTeam	160073Dev1 (MotoPhone1)	answercallside1.vms	160073Dev2 (motoPhone2)	wbtxrxside2.vms	12.911302 , 77.89264
v5p1-VM107-5G	glmesh	US107Test1 (VELVET)	central3000txrxwbside1.vms	US107Test2 (RobGalaxy)	answercallside2.vms	39.143362 , -77.215513
v5p1-160106-India2	DSPTeam	US109Test1 (Q6)	waiteventreceivetestside1.vms	US109Test2 (Q6)	answercall.vms	12.926155 , 77.601742
v5p1-160105-India1	DSPTeam	IN105Test1 PTT On	side1r.vms	NA	NA	12.926363 , 77.601412
v5p1-VMPTT	glmesh	USPTTTest1 (Not Yet Connected)		USPTTTest2 (Not Yet Connected)		39.1434 , -77.215535
Zhiyong22	Zhiyong_test	BTTest113 (RobG8)	central3000txrxwbside1.vms	BTTest213 (Zhi5g)	answercallside2.vms	39.143375 , -77.215552
RobvMobile3	glmesh	LTest1 (RobGalaxy)		LTest2 (ZDBTtest1)		39.14334 , -77.215473
v5p1-VM101-rob	glmesh	US160101Test1 (VELVET)	answercallrunscriptside1.vms	US160101Test2 (RobGalaxy)	runscriptoptionside2.vms	39.1434 , -77.215525
Sonny50m	GURUMNARA	LTest1 (SonnysiPhone)	side1r.vms	LTest2 (GalaxyJ7Prime)	side2m.vms	39.104778 , -77.227892

Console Status



Console App Status

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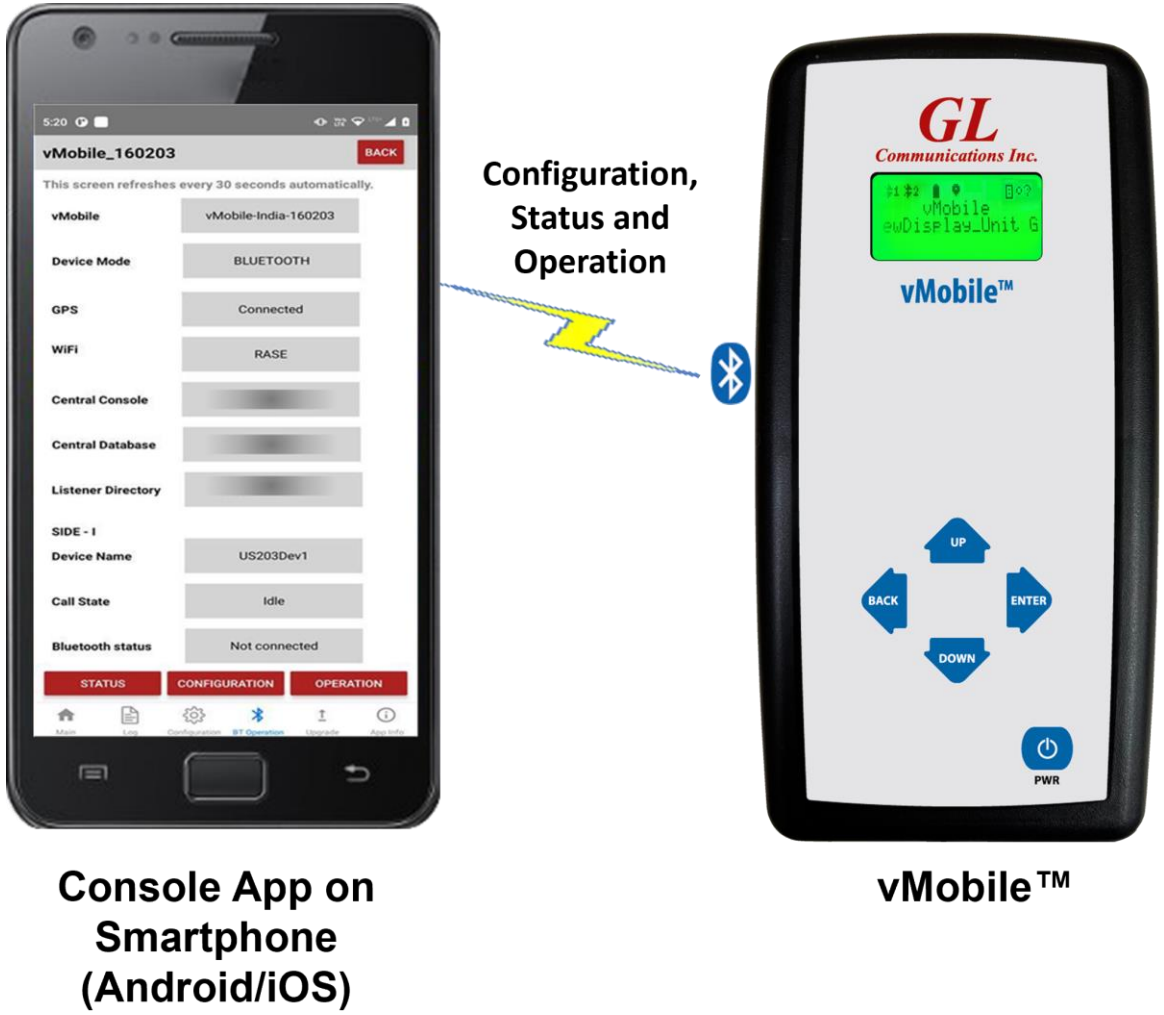
vMobile™ Configuration, Status and Operation via Bluetooth

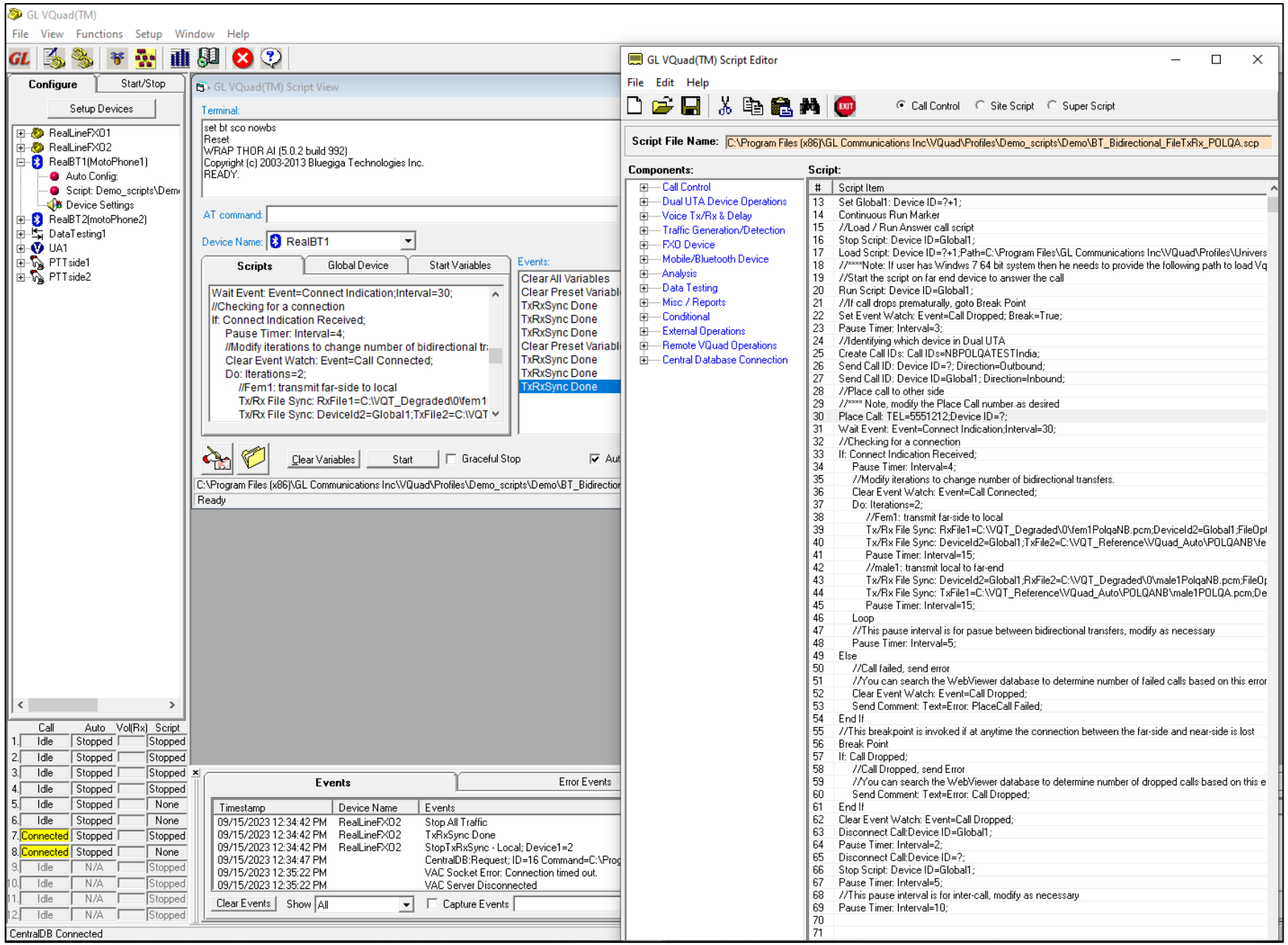
- Console App can be used to configure, get the status and operate vMobile™ via Bluetooth easily
- This feature helps the user to operate, configure, or view status during slow internet/no internet areas



Console App on Smartphone (Android/iOS)

vMobile™

VQuad™ GUI with Script Editor



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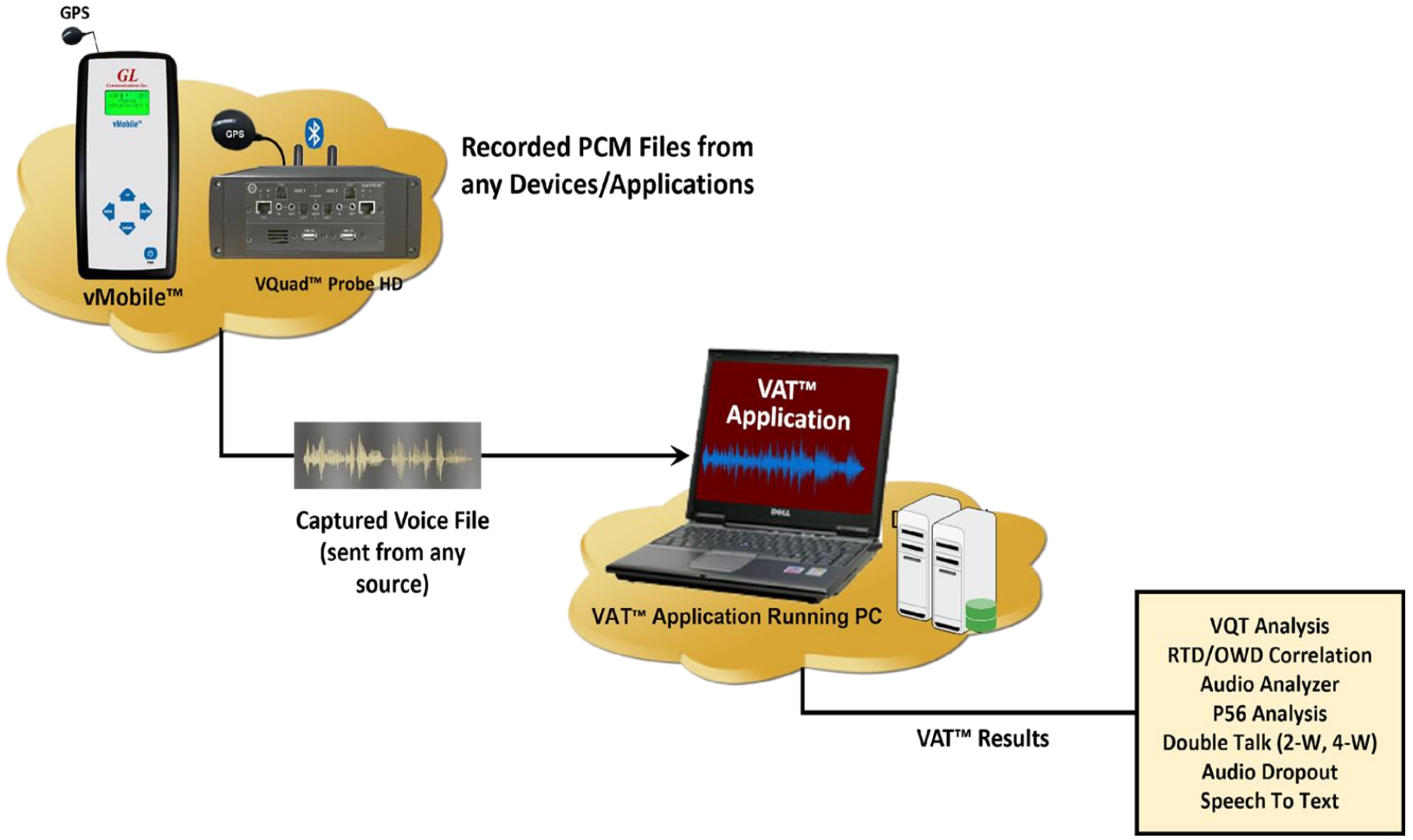
Voice Analysis Tool (VAT™)

Voice Analysis Tool (VAT™)

- GL VAT™ supports analyzing any Raw PCM voice file including NB, WB, and SWB. Audio files can be generated from any application including GL VQuad™ and vMobile™
- Fully automated operation with log file containing results and stored in the GL Central Database which can be accessed easily using the GL WebViewer™
- VAT™ CLI (Command Line Interface) supports remote operation
- Audio analysis includes, Round Trip and One Way Delay, Dropout Audio analysis, Double-Talk, Power Level and Frequency Analysis, Speech Activity, Active Speech Level and Noise Level, and DC Offset
- Supports VQT analysis when coupled with the GL VQT software
- Supports multiple analytical tests per individual voice file



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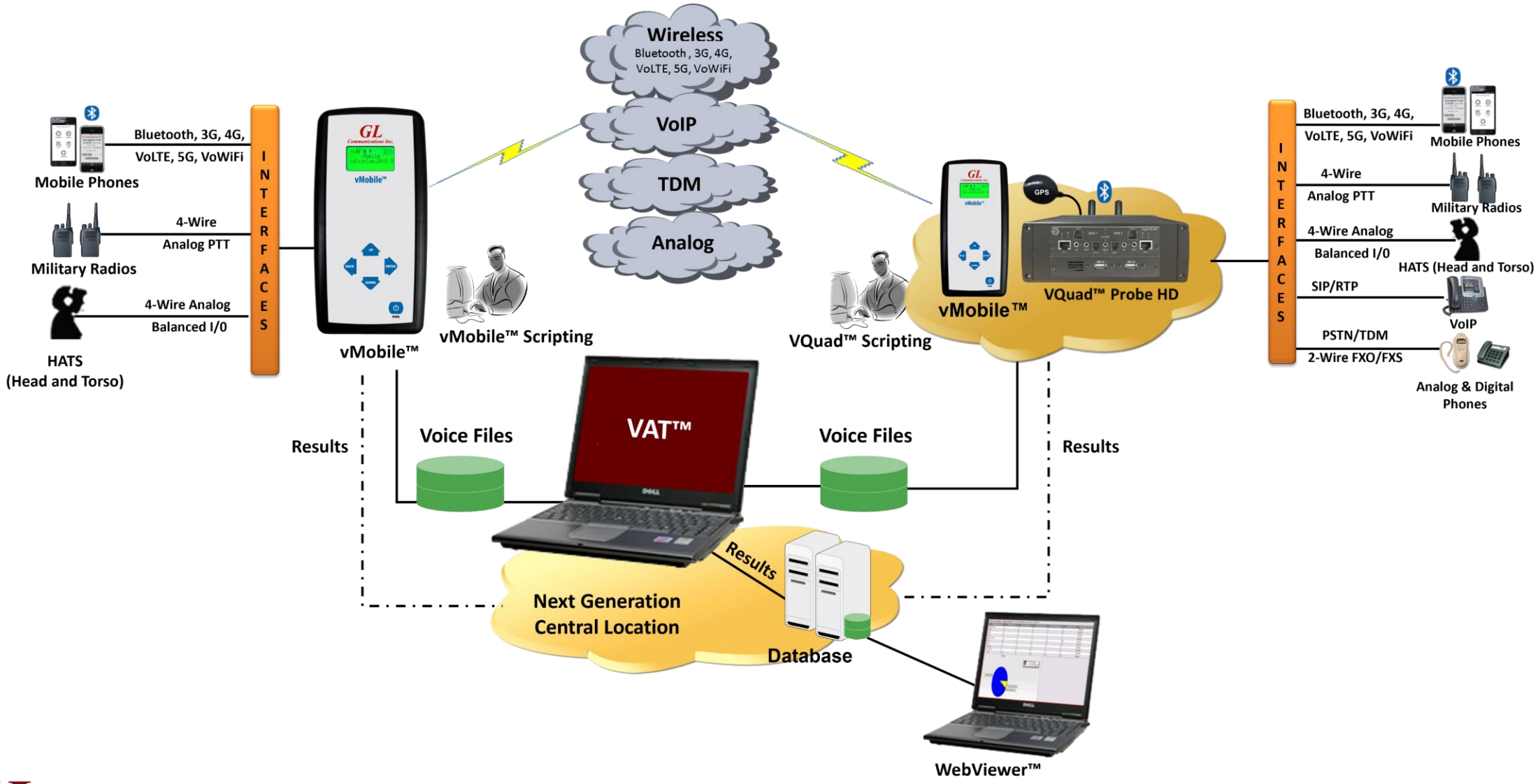
VAT™ Operations



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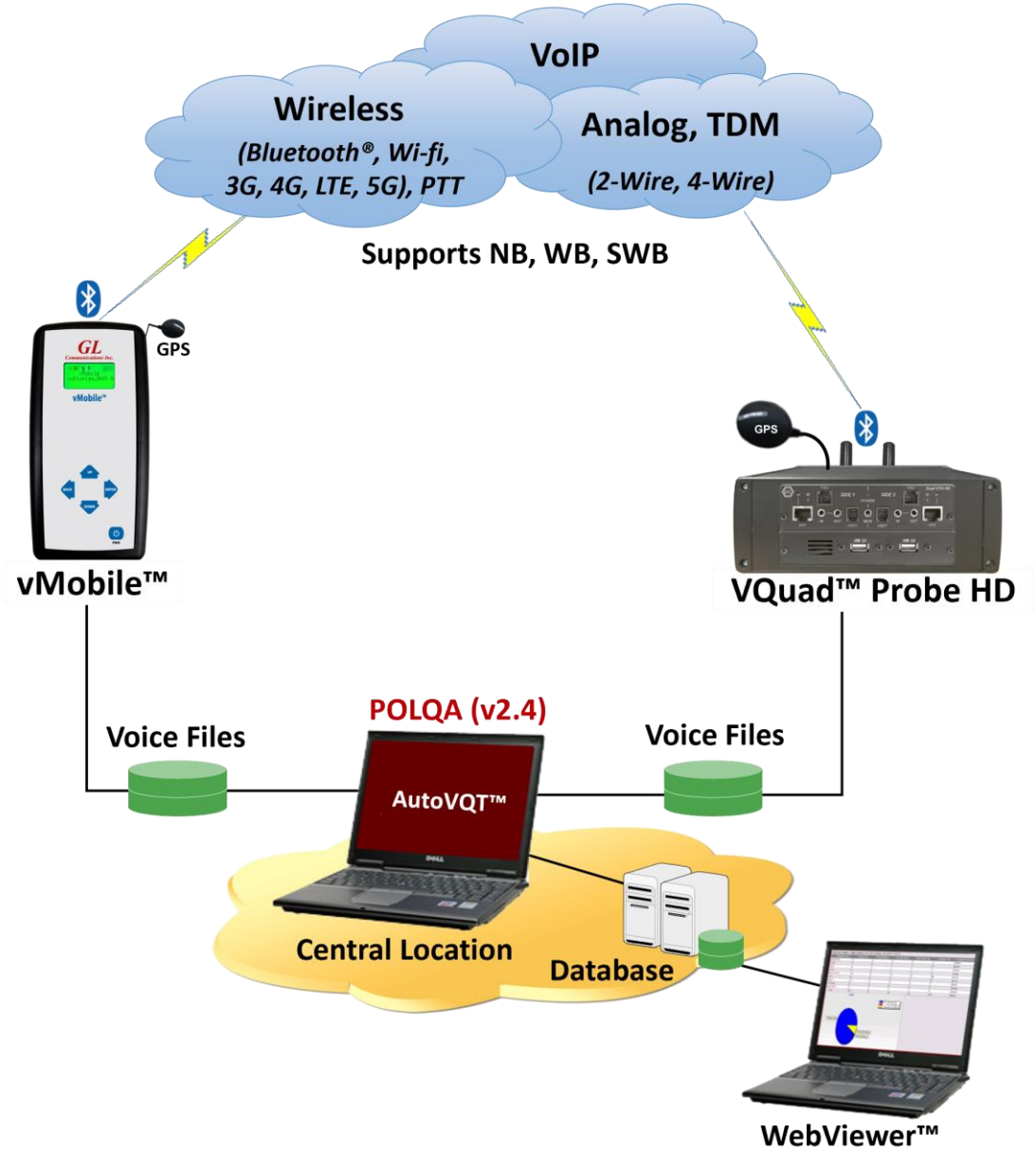
Voice Quality Testing (VQT)

Centralized Voice Quality Testing



- POLQA, PESQ LQ/LQO/WB
- MOS, Jitter, Clipping, Speech and Noise Levels
- Data Testing - Wired and Wireless Networks
- Call Events - Progress & Failures
- Fax Events - Encoding, Resolution, ECM
- Delay Measurements – RTD, OWD
- E-Model, SNR, Signal Level
- Echo Measurements - ERL, Delay
- QoS, Timeouts, Retransmissions
- Google Mapping and Indoor Tracking System

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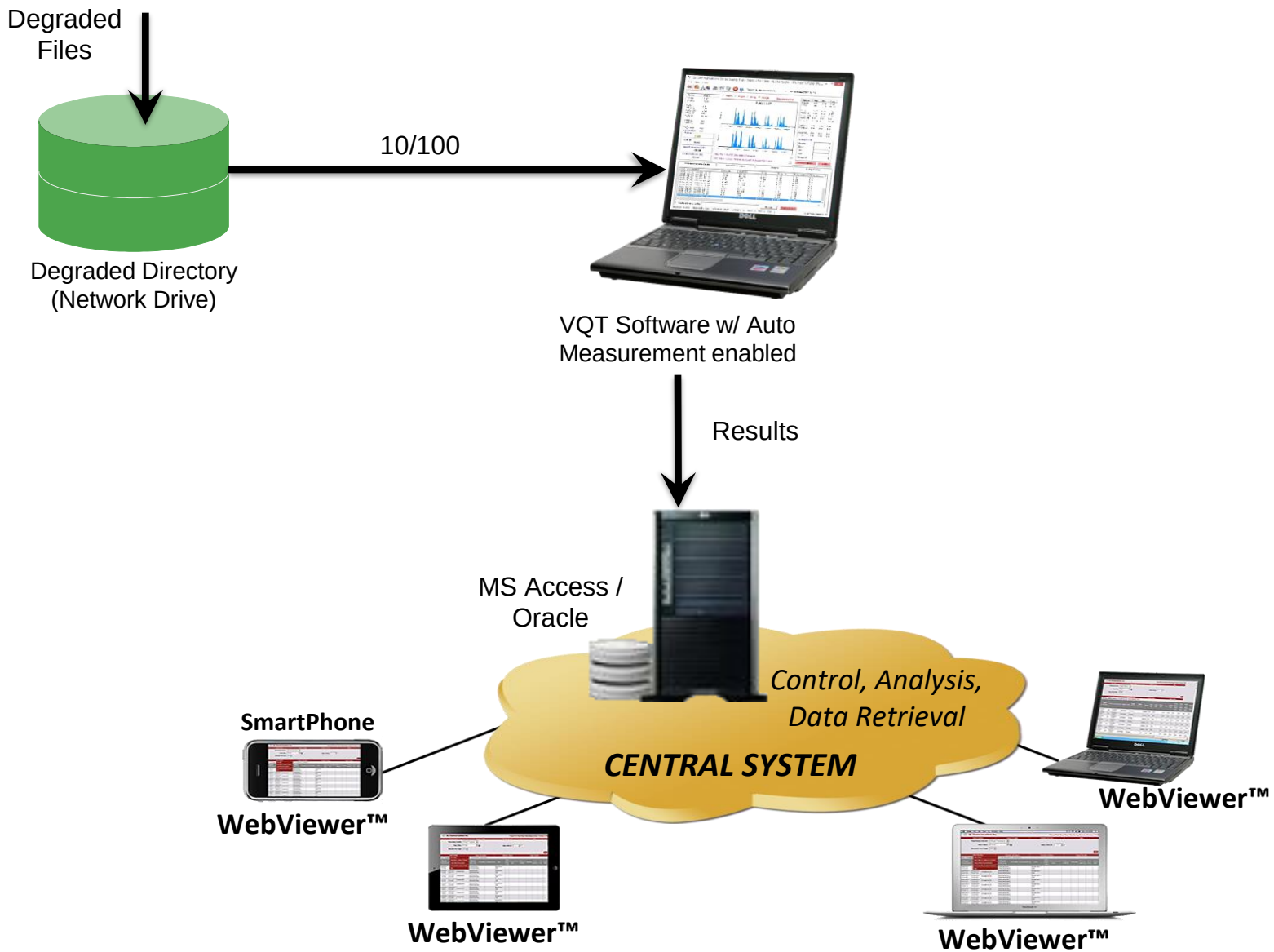
Auto Measurement

- Automatically analyze the degraded files using GL VQT Software
- Detailed results including Jitter (min / max / avg), Clipping (front/back/all), Latency, and Noise / Signal Measurements (activity / peak)
- VQT uses the File Monitor to perform automated measurements on remote locations VQT Solutions



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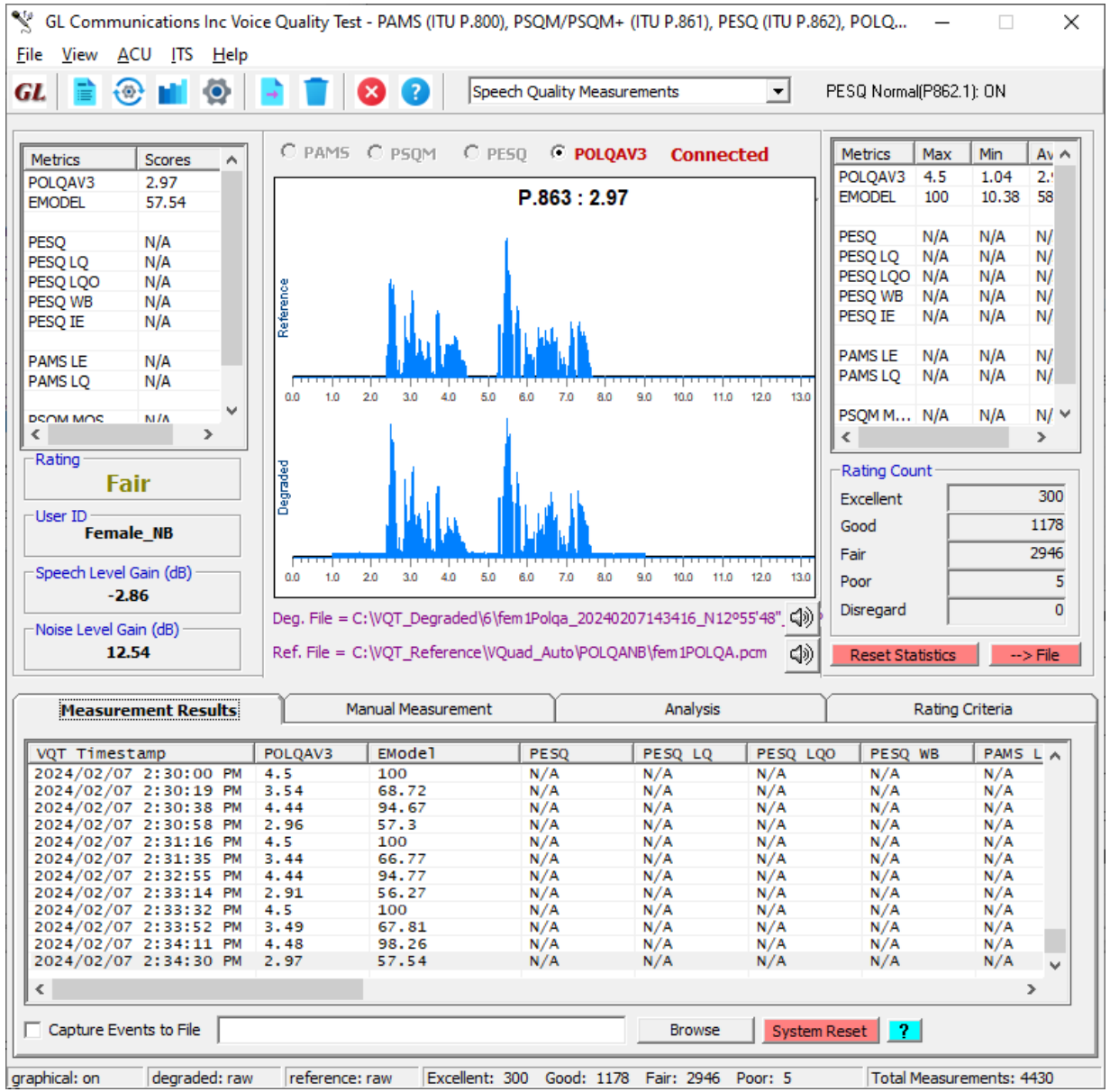
Voice Quality Test Software



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VQT Highlights

- Supports ITU Standards (POLQA, PESQ LQ/ LQO / WB)
- Supports NB, WB and SWB codecs
- Auto-Measurement Capabilities
- Detailed Results / Statistics
- Criteria Rating System
- Remote Access Capabilities
- Delay Measurement
- Jitter (Min, Max, Average per Utterance)
- Clipping (front, back, all)
- Noise/Signal Levels (Activity, Peak, etc.)

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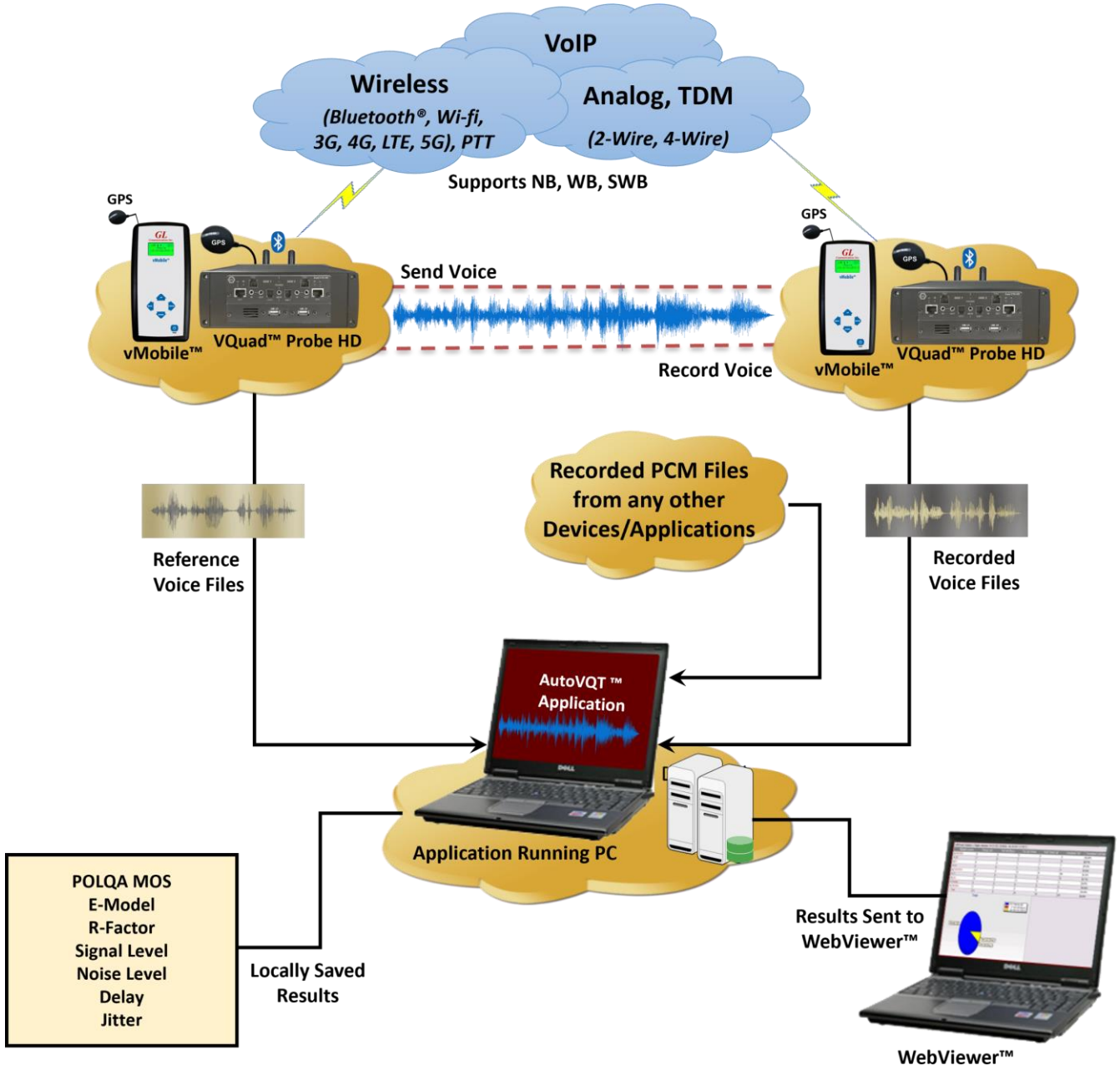
AutoVQT™

AutoVQT™ Operations



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AutoVQT™ Analysis Time

- The following table summarizes the average time taken to analyze PCM files when they are provided at the same time using Windows® 11 Pro 64-bit operating system, equipped with a 12th generation Intel® Core™ i9-12900K processor at 3.20 GHz and on 32 GB of RAM

PCM Type	Approximate Time Required to Process 1000 PCM Files Simultaneously (Min : Sec)	Approximate Time Required to Process 1 PCM File (Sec)
Narrowband (NB)	02:01	0.12
Wideband (WB)	02:13	0.13
Super wideband (SWB)	02:26	0.14

- On average, when the application is required to analyze multiple PCM files with different sampling rates (300 NB, 300 WB, and 400 SWB files), the total time taken to analyze all the 1000 PCM files at the same time is approximately **02 minutes and 31 seconds**

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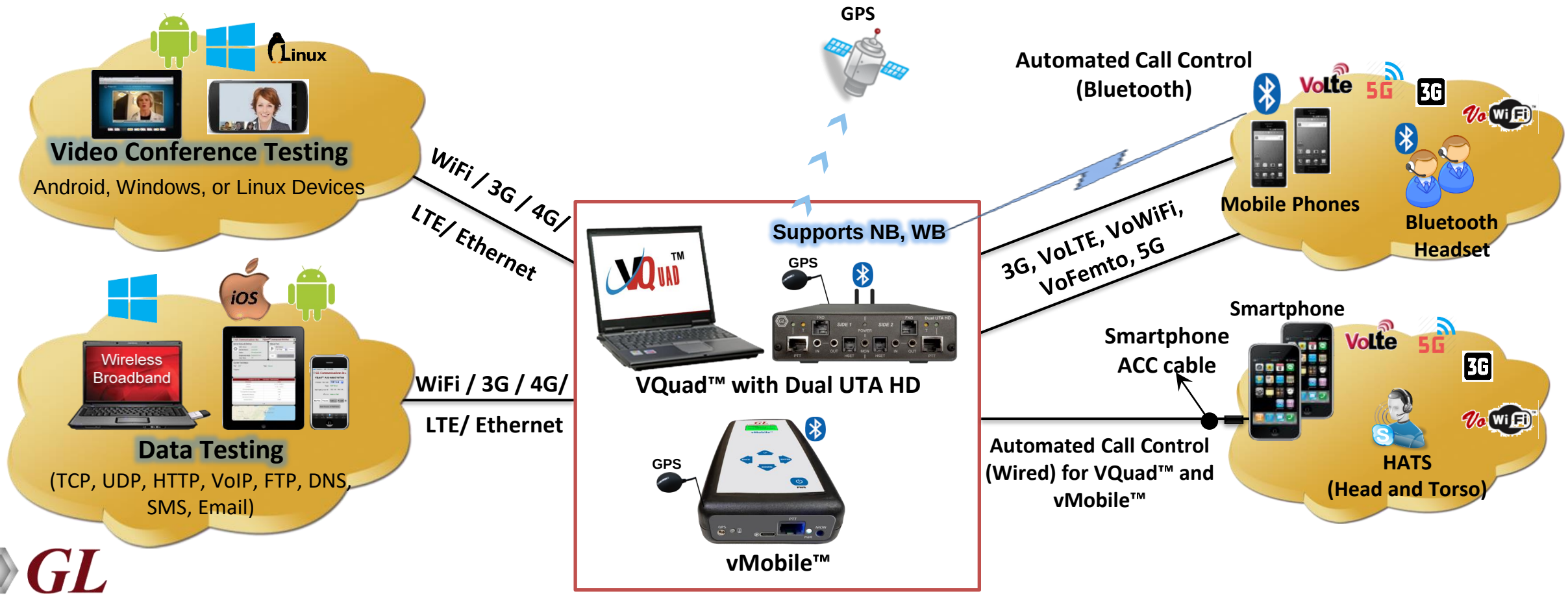
Testing Environments

Wireless Phone Network

- **Connectivity** - Bluetooth® NB & WB, PTT, GPS, Wired Headset Smartphone ACC, 4-wire Balanced I/O Interfaces on Dual UTA HD and vMobile™
- **Devices** – Military/Mobile Radios, 5G/4G/3G/WiFi Smartphones (all Mobile phones), Bluetooth® Headsets/Car Kits, Mobile devices with Smartphone ACC



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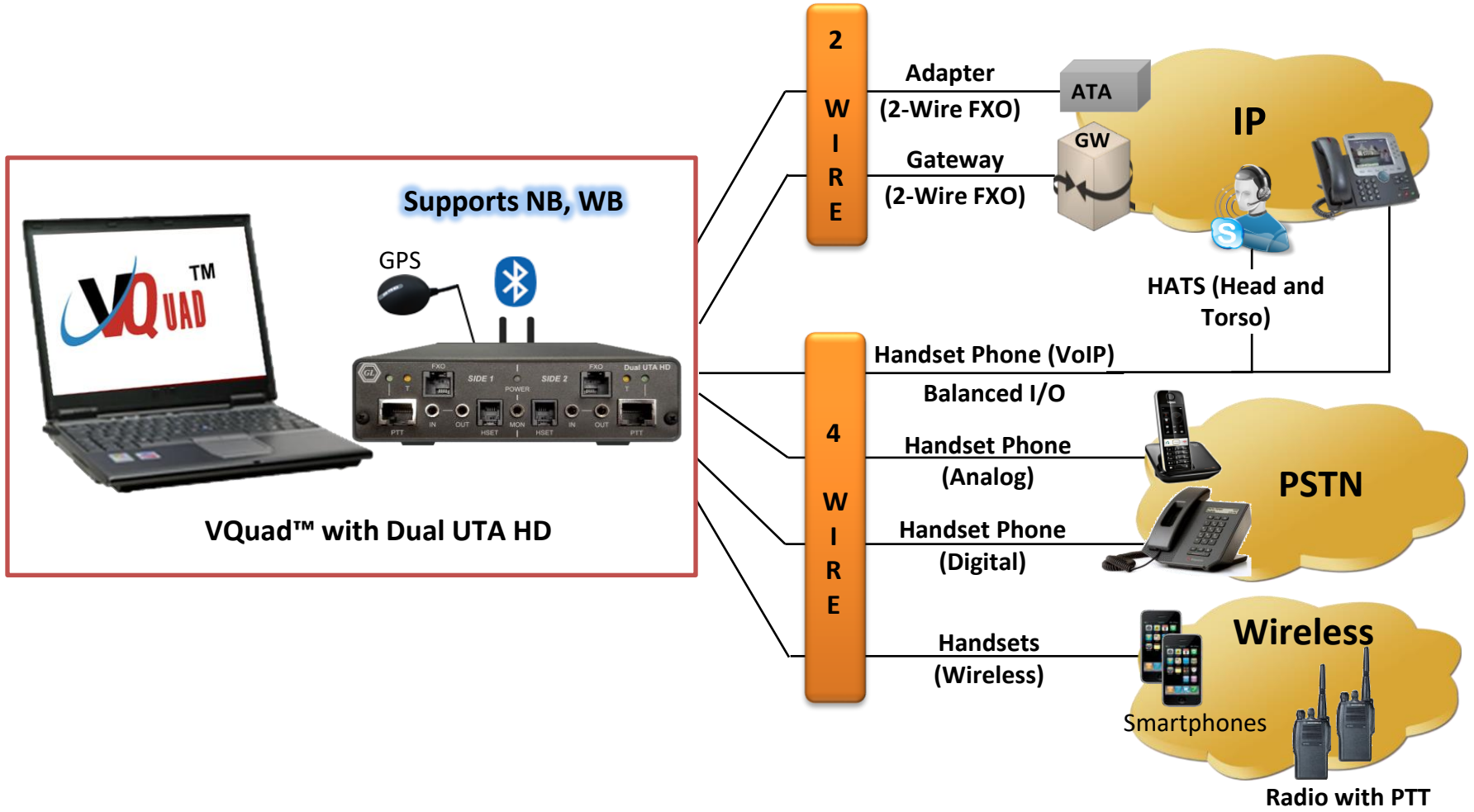
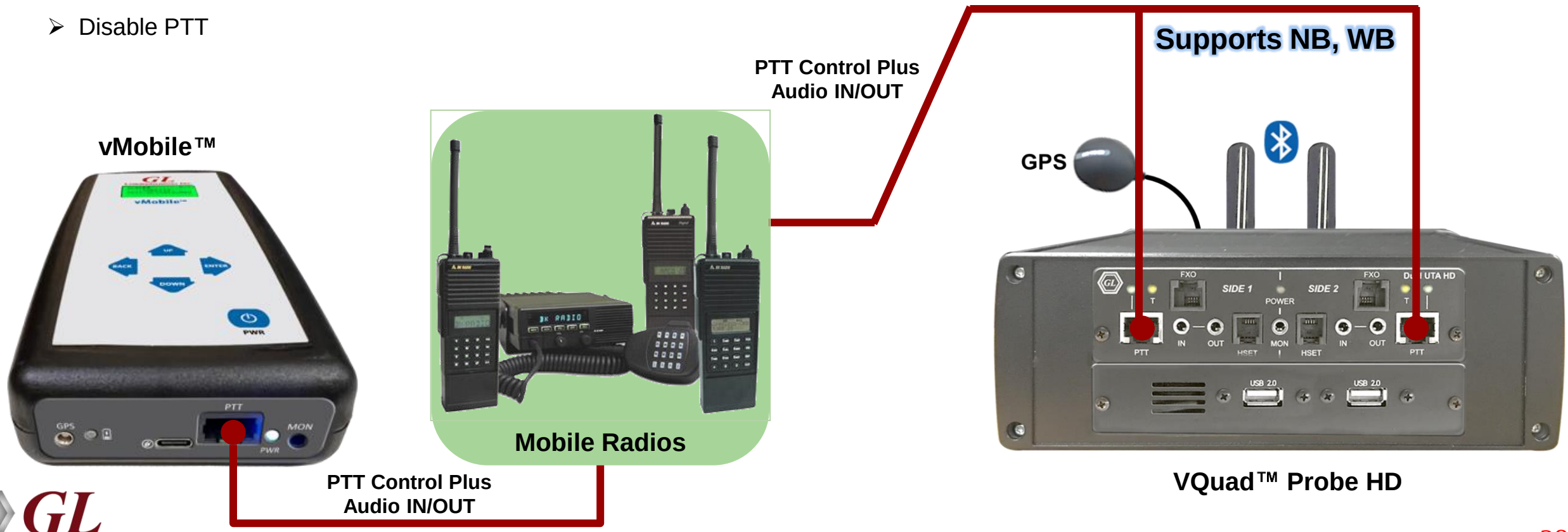
Analog Network (2-wire FXO and 4-wire)

- **Connectivity** – 2-Wire FXO, 4-Wire Balanced I/O, HSET Interfaces on Dual UTA HD
- **Devices** – Analog Phones, Next Generation Gateways, PBX, ATAs over PSTN network



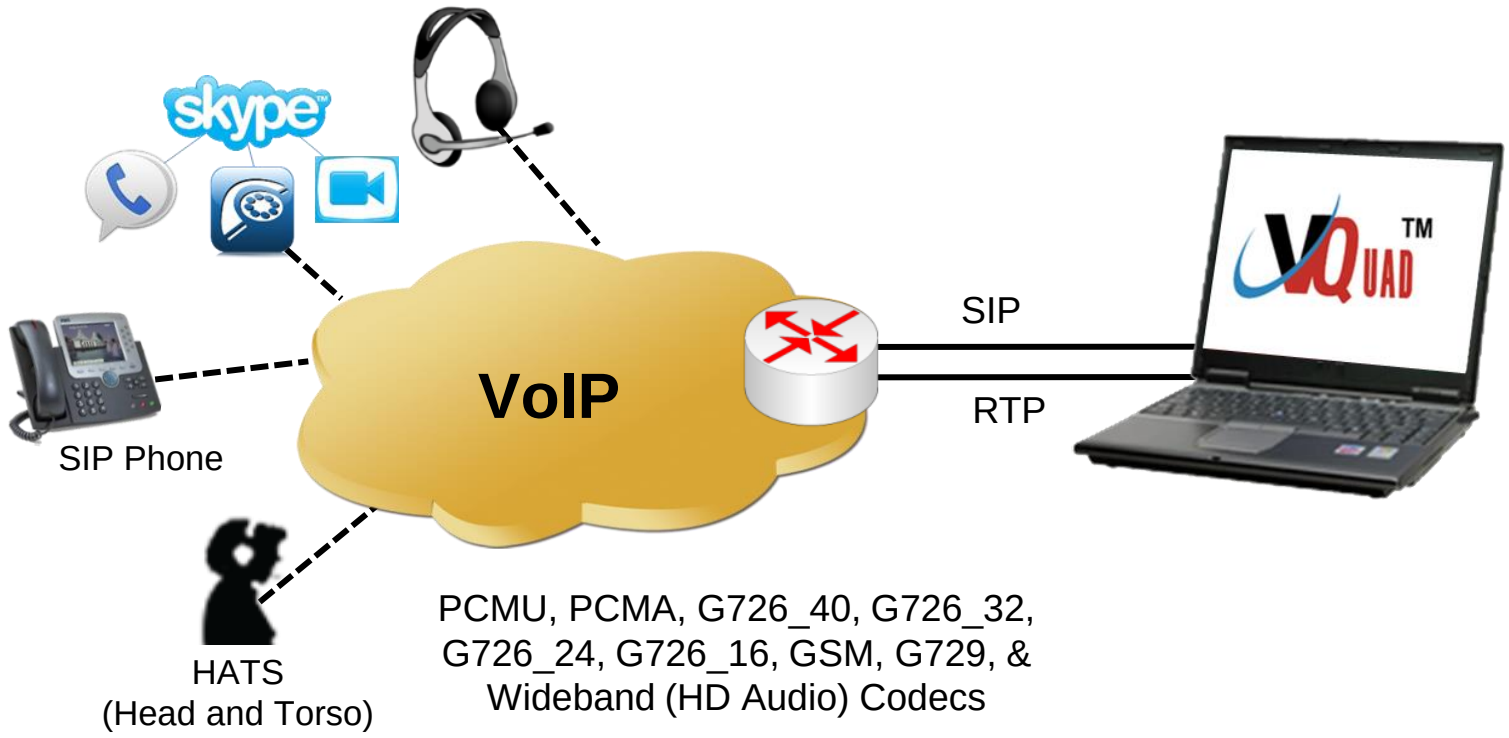
Mobile Radios (PTT)

- The vMobile™ and Dual UTA HD provides a contact-closure control to support the push-to-talk (PTT) function of a mobile radio
- Software (VQuad™/vMobile™) Script:
  - Enable PTT
  - Pause for User-Defined Period
  - Send Audio (VQT Reference) File
  - Pause for User-Defined Period
  - Disable PTT

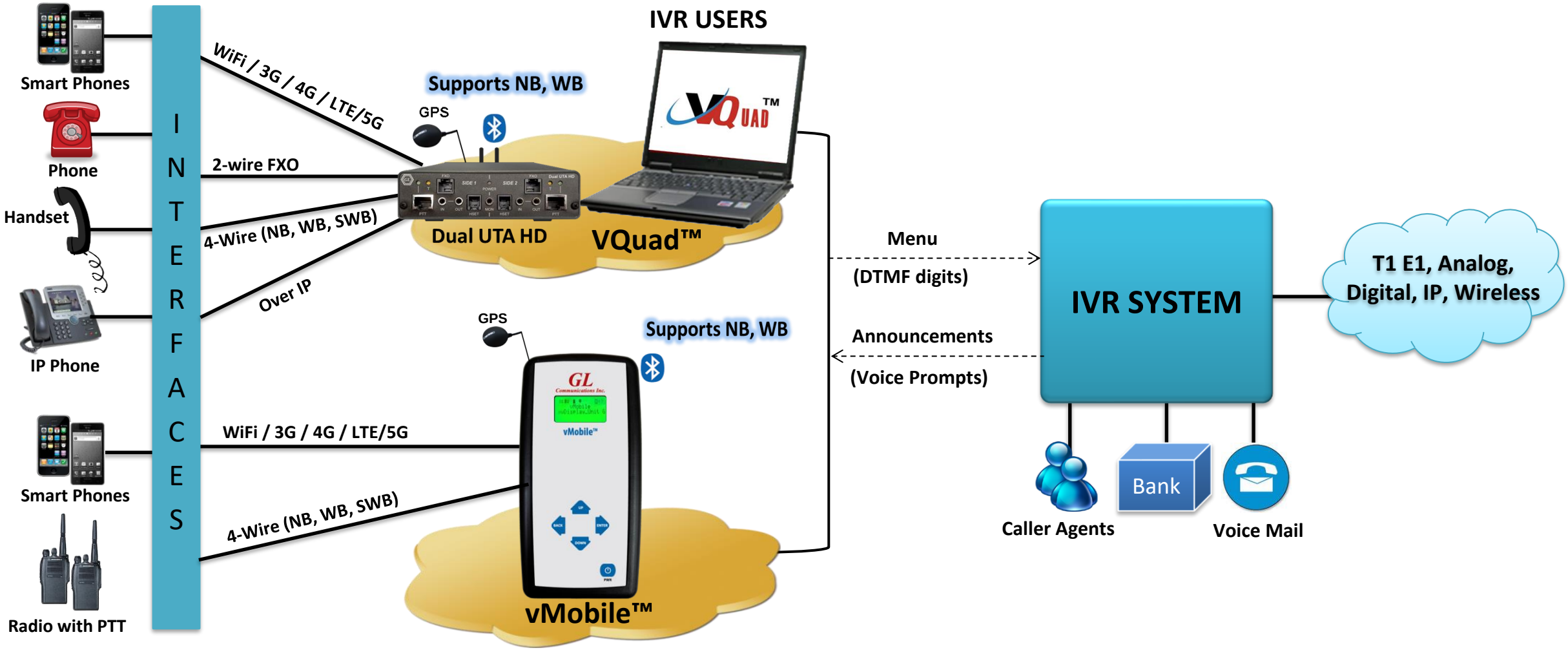


VoIP (SIP) Interface, Digital VoIP Phones, VoIP Softphones

- **Connectivity** – Internal SIP cores within VQuad™ (SIP Signaling - Does not require Dual UTA HD), 4-wire Balanced I/O, HSET Interfaces on Dual UTA HD
- **Devices** – VoIP Phones, Soft Phone, HATS



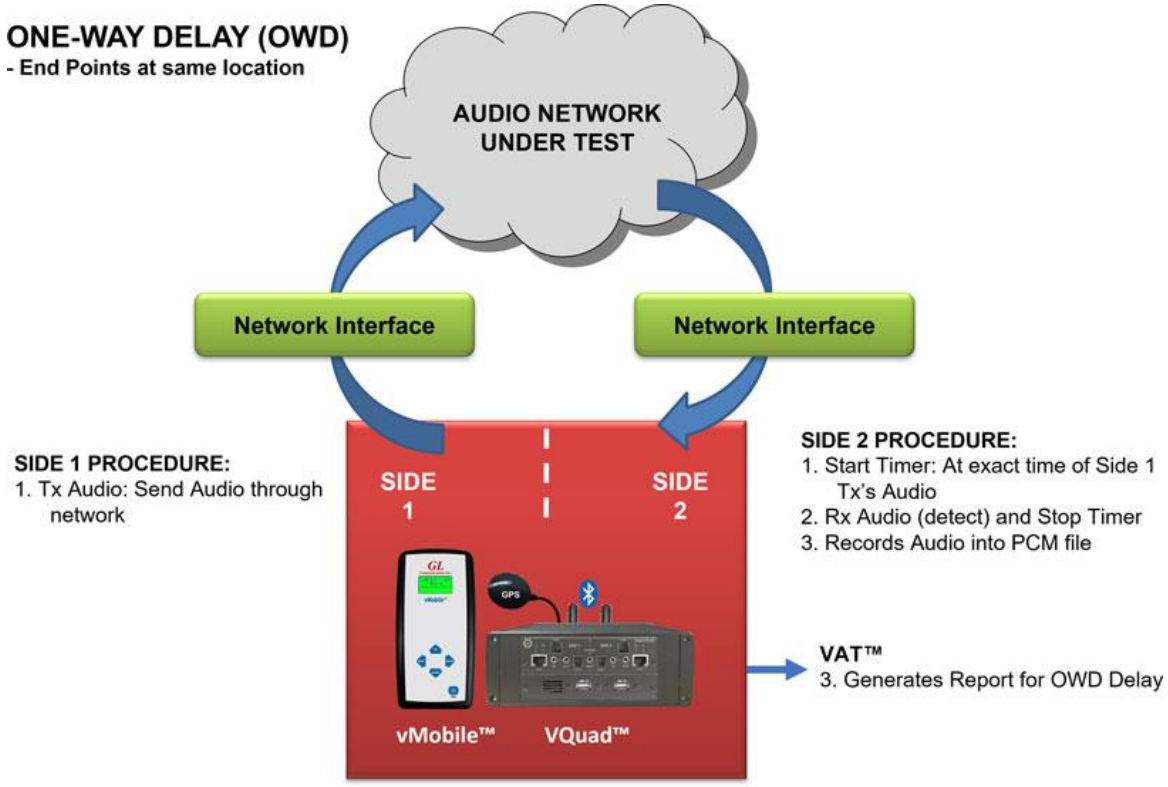
Interactive Voice Response (IVR) Systems



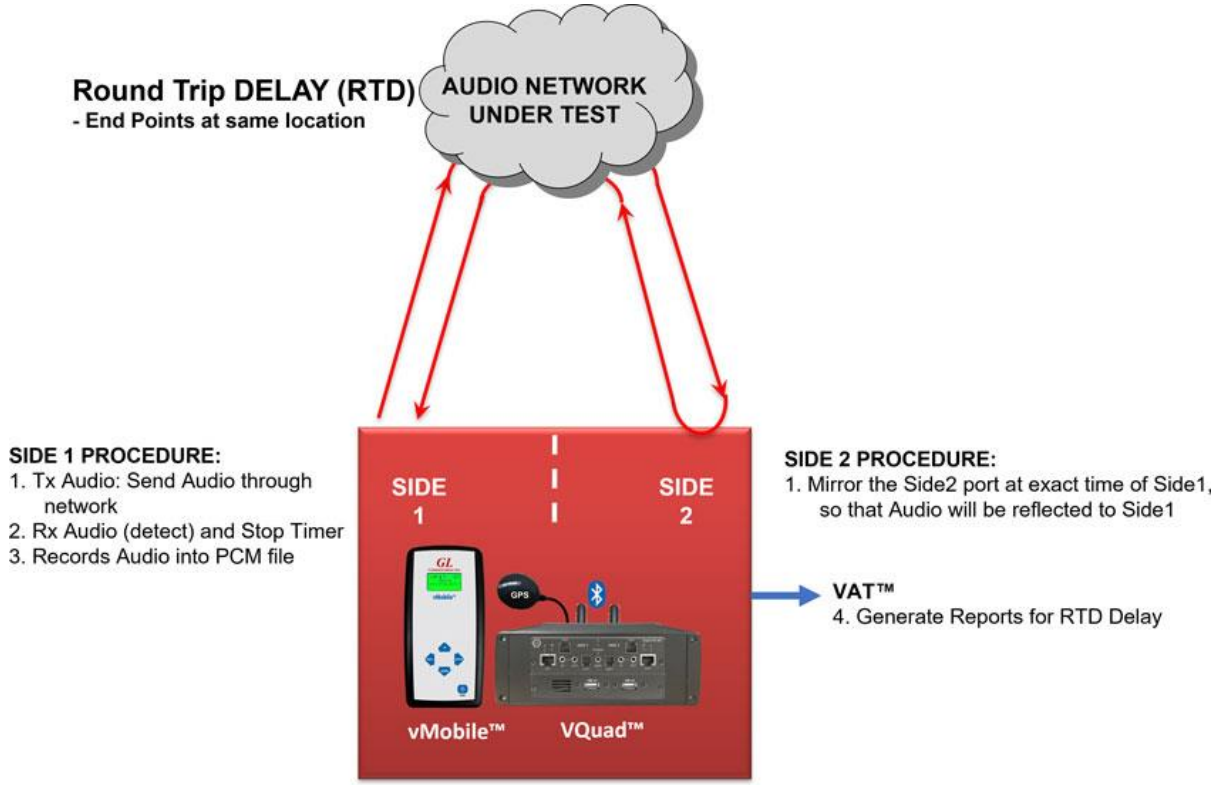
Available Metrics

Delay Measurements

OWD - End points at same Location



RTD - End points at same Location



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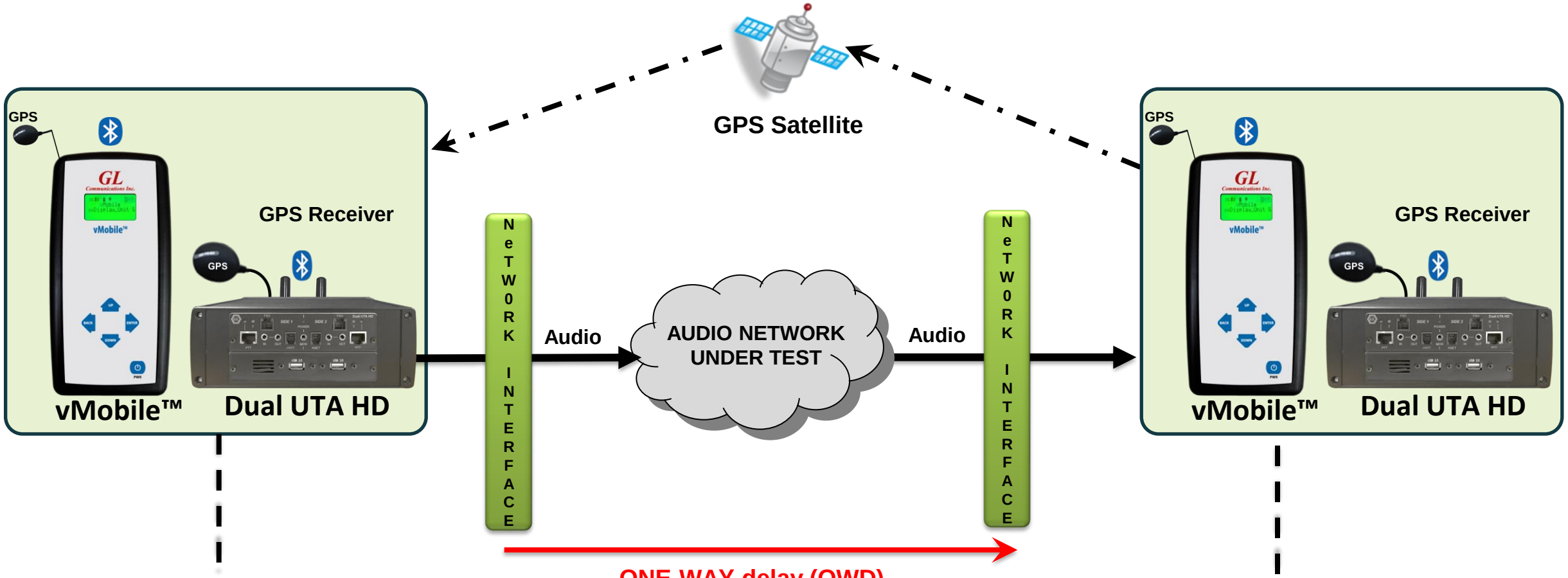
One Way Delay (OWD)

End points at two separate locations



1. Tx AUDIO
   At pre-determined time (12:00:00.000)
   Send pulse through network

1. Start Timer
   At pre-determined time (12:00:00.000)
2. Rx (detect) pulse and Stop Timer
   Report delay (12:00:00.000 delay)

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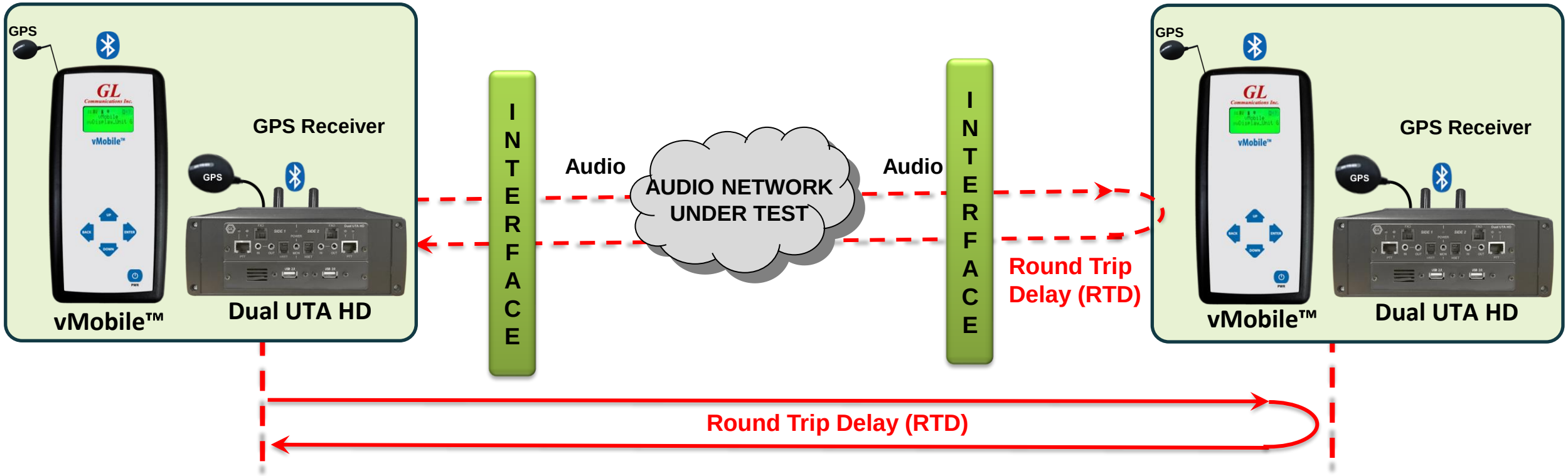
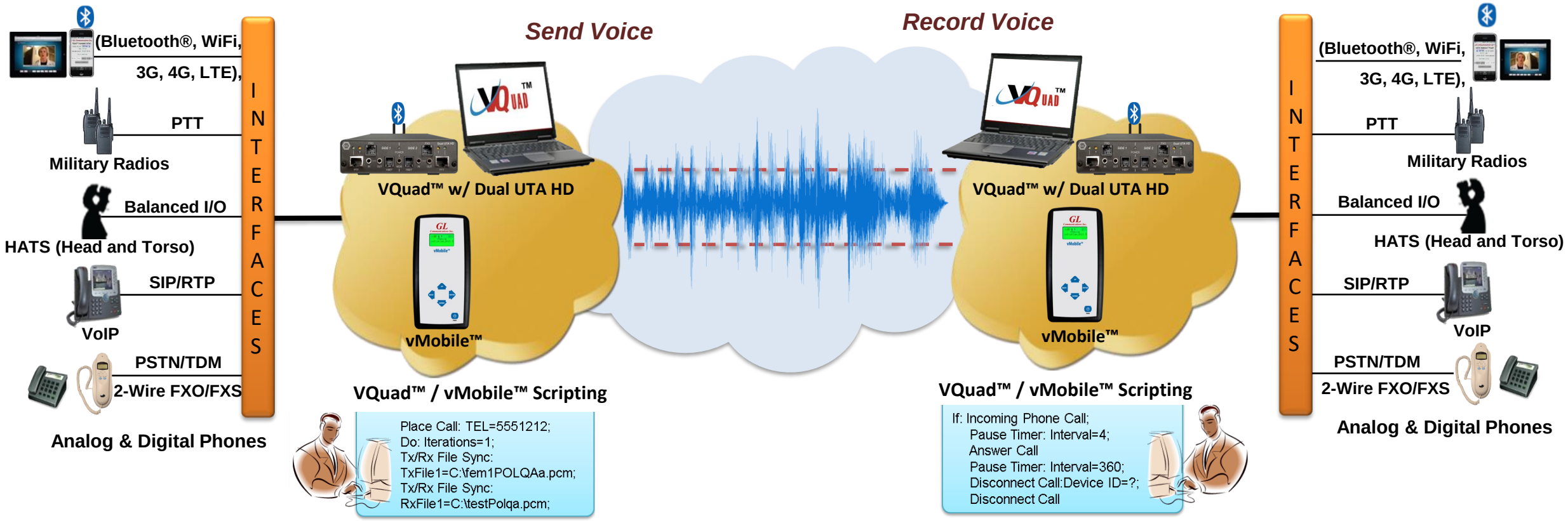
Round Trip Delay Functionality

RTD on two systems (geographically separated)



Automated Voice Quality Testing



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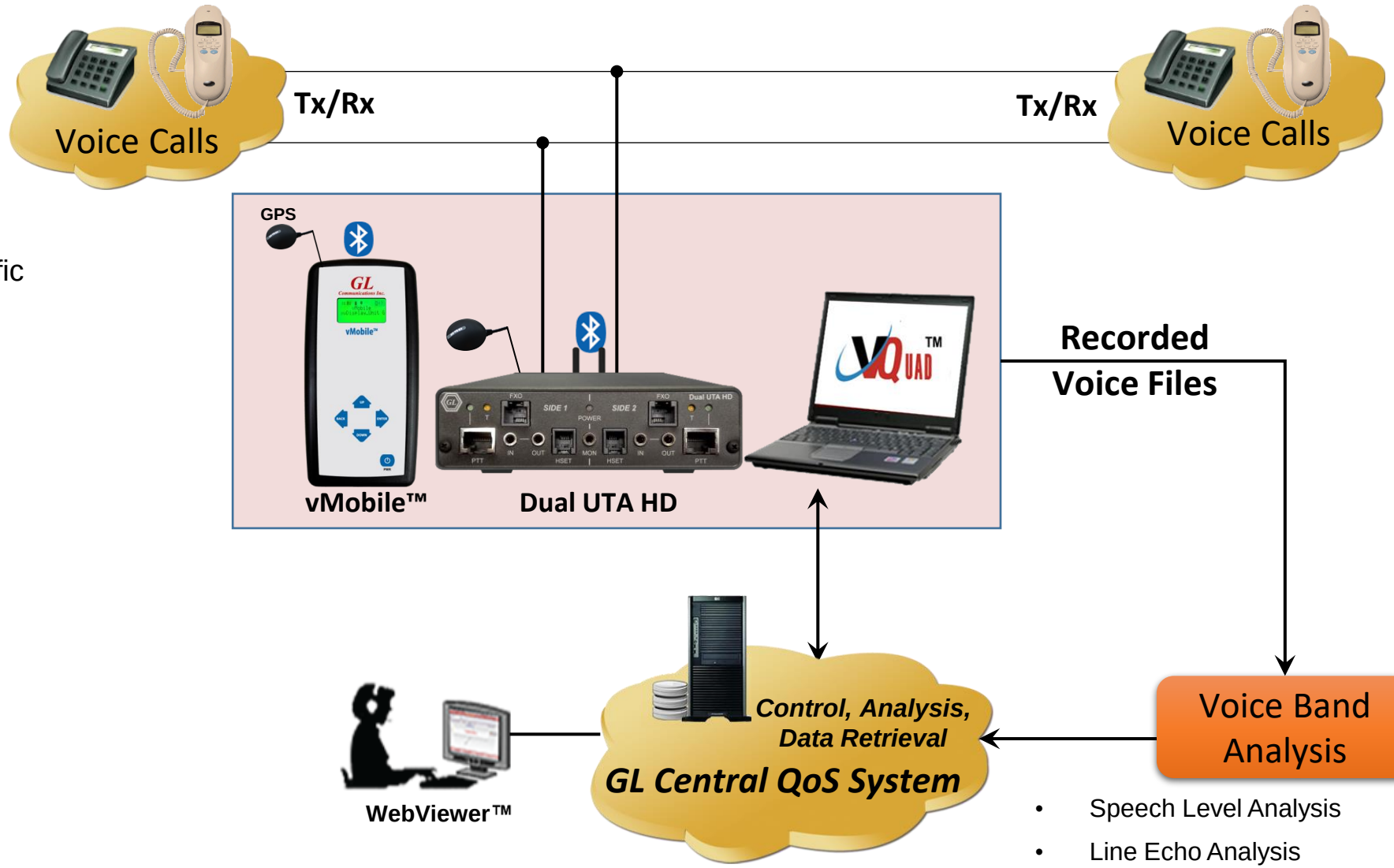
Voice Band Analysis

- Monitor voice band traffic
- Active Speech Level
- Noise Level
- Power & Frequency
- Audio Dropout analysis
- RMS Factor
- DC Level



- Speech Level Analysis
- Line Echo Analysis
- Traffic Classification
- FaxScan™ Analysis
- Tone Decoder

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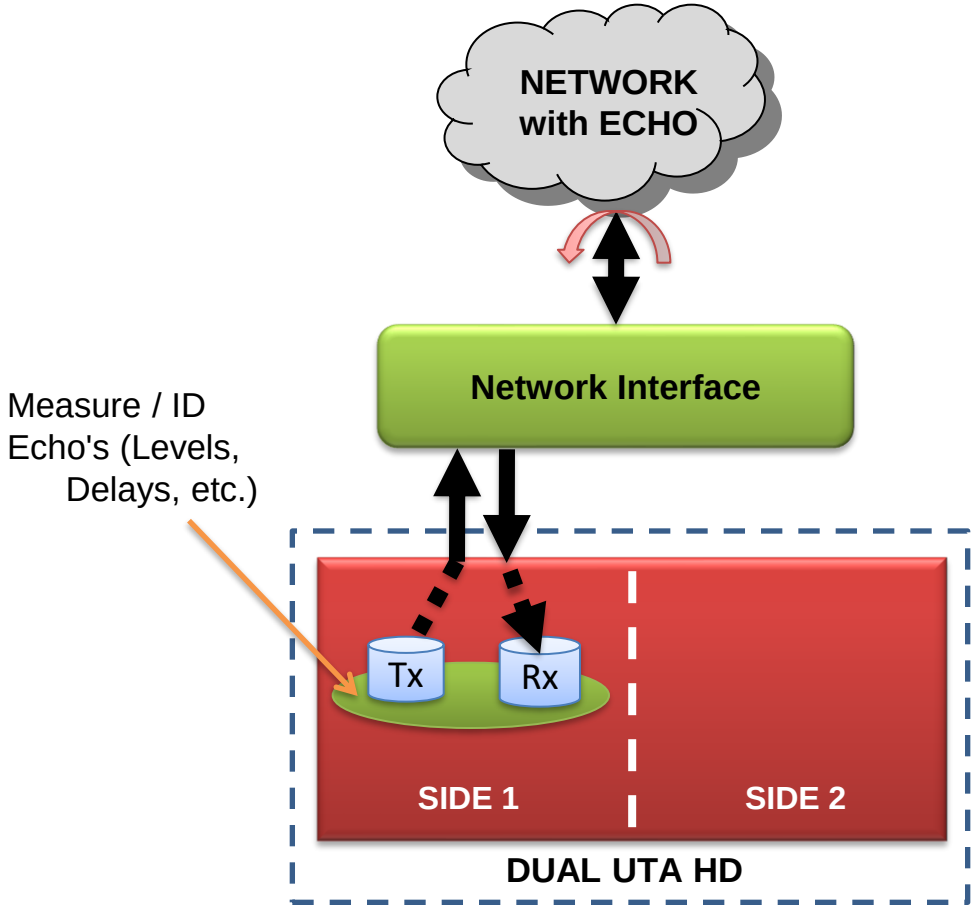
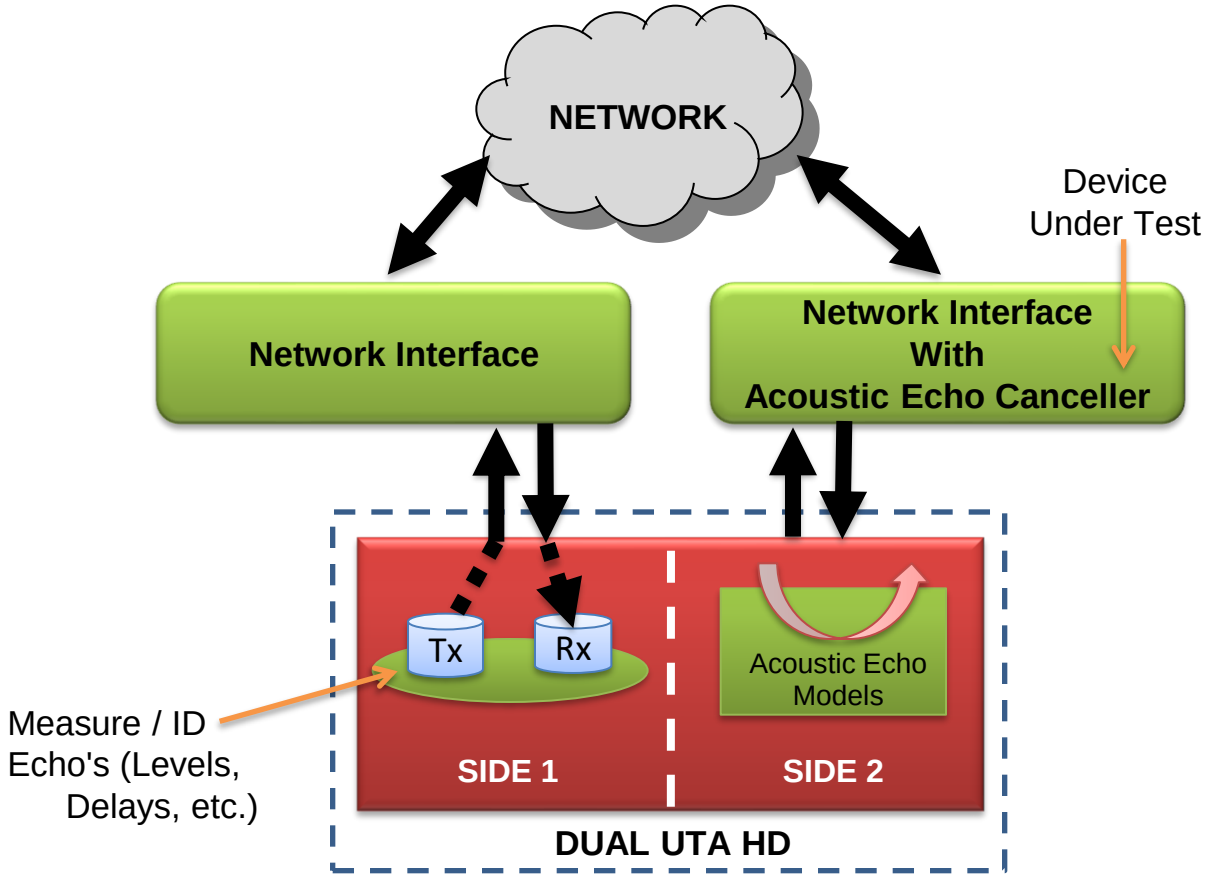
Echo Measurements

Echo Identification



Acoustic Echo Canceller Testing



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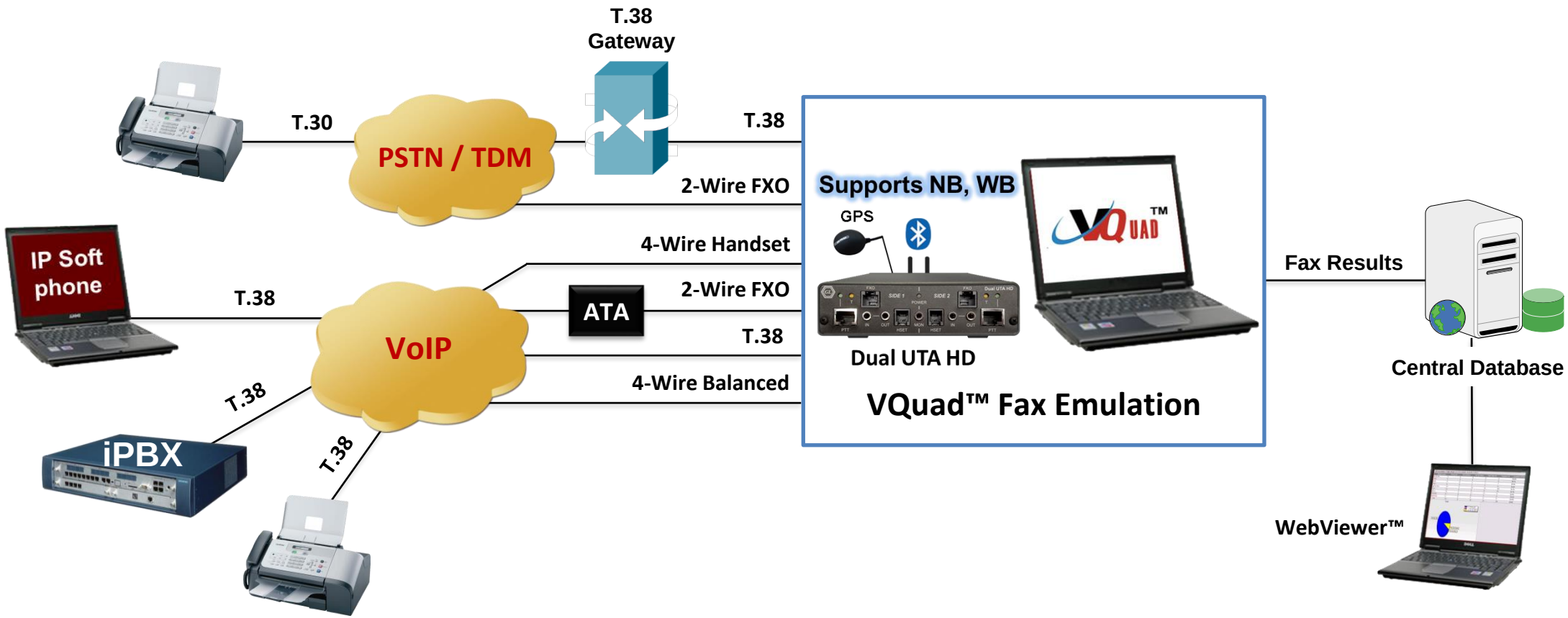
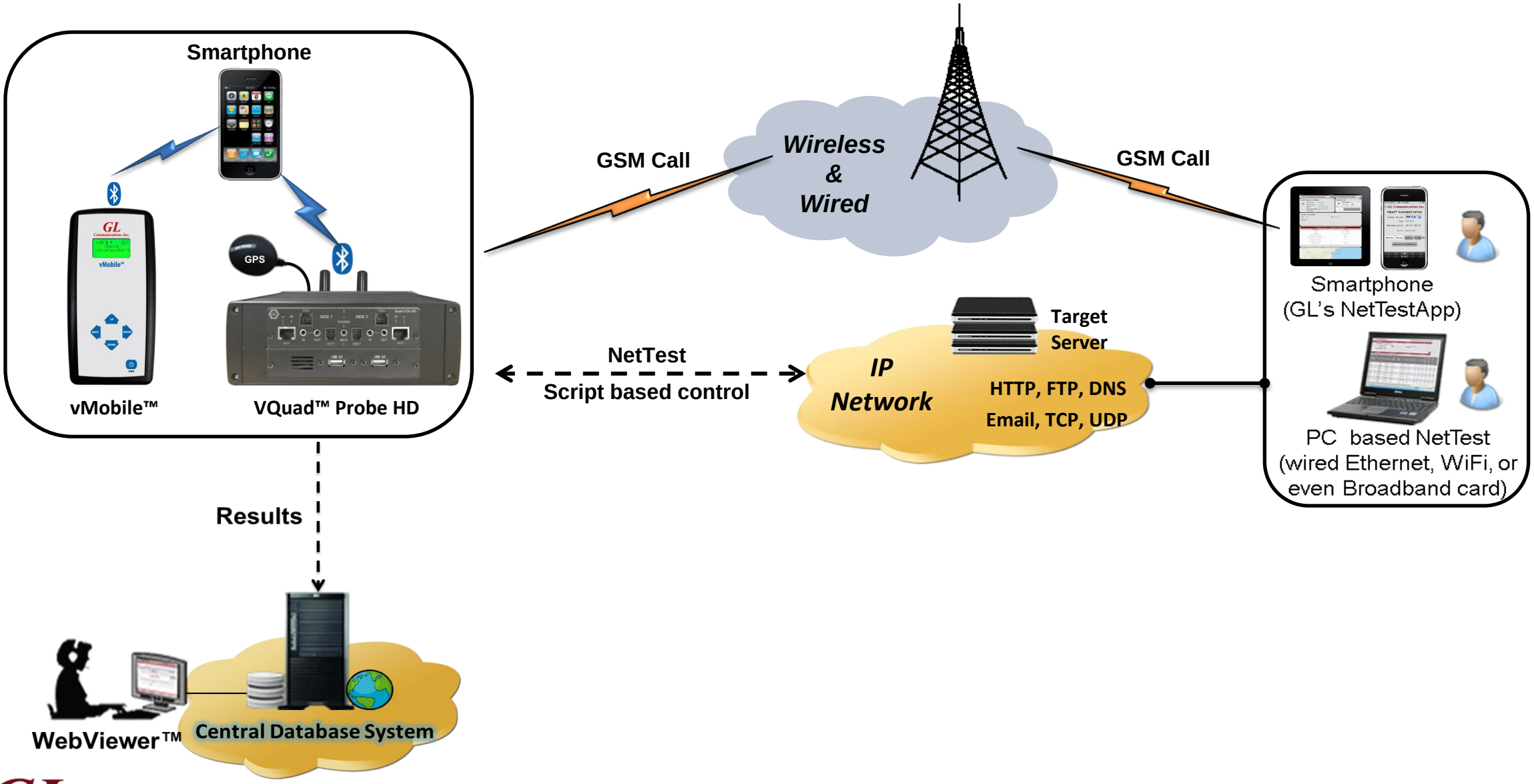
Automated FAX Testing

- Sending and receiving 4 independent and simultaneous T.30 faxes (selectable up to V.34)
- Configurable Tx Rx fax rate from 2400 bps up to 33600 bps (V.34 fully supported)
- Fax Testing using the Dual UTA HD 2-wire FXO or 4-wire analog interfaces
- VQuad™ Fax events includes messages, summary, and errors log
- Ability to auto save fax (both East and West directions) to PCM file for enhanced analysis using GL Insight™ and GL Fax Demodulator/Decoder



End-to-End SMS Testing



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WebViewer™
(Web Based Client for Voice and Data Quality Testing)

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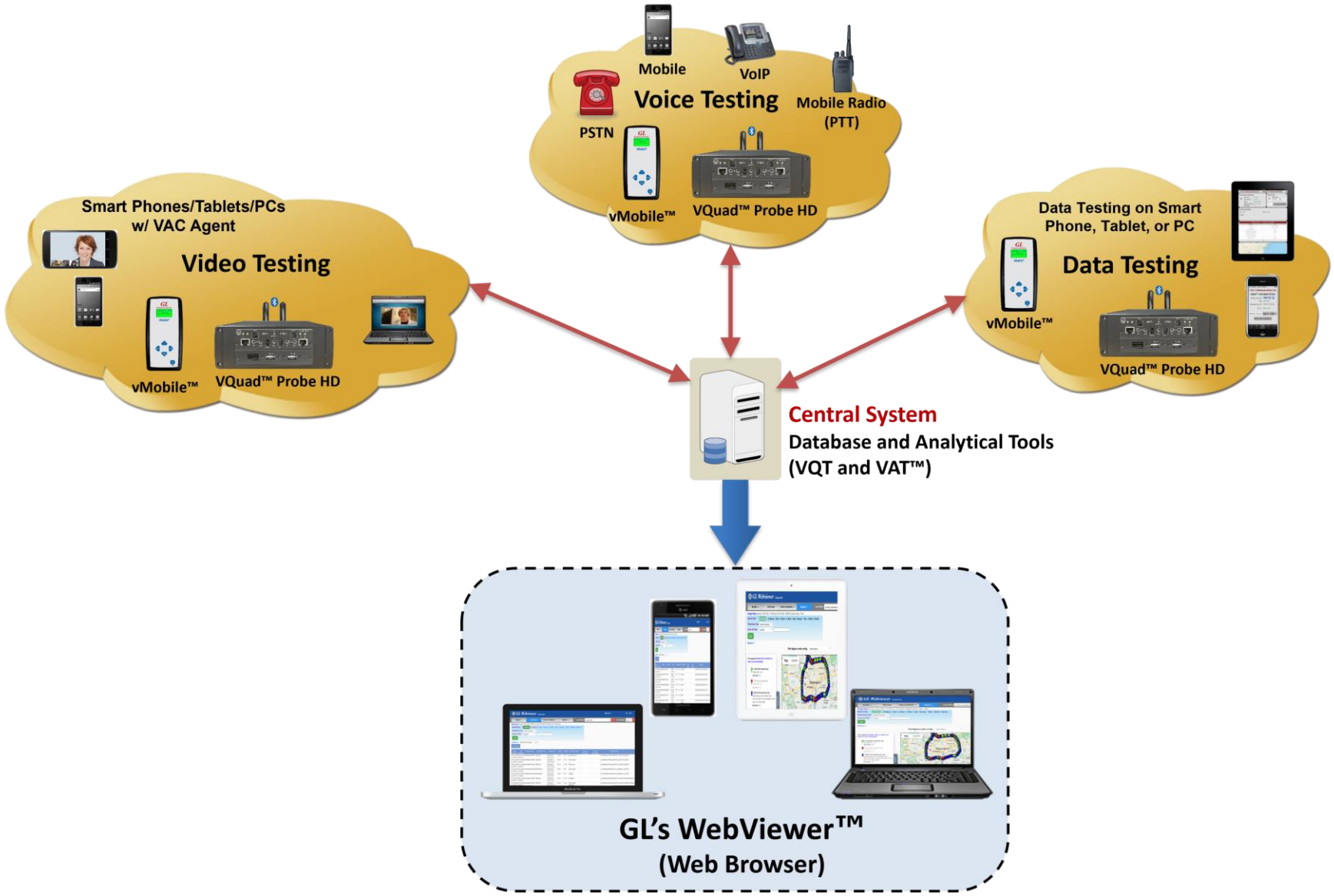
GL WebViewer™



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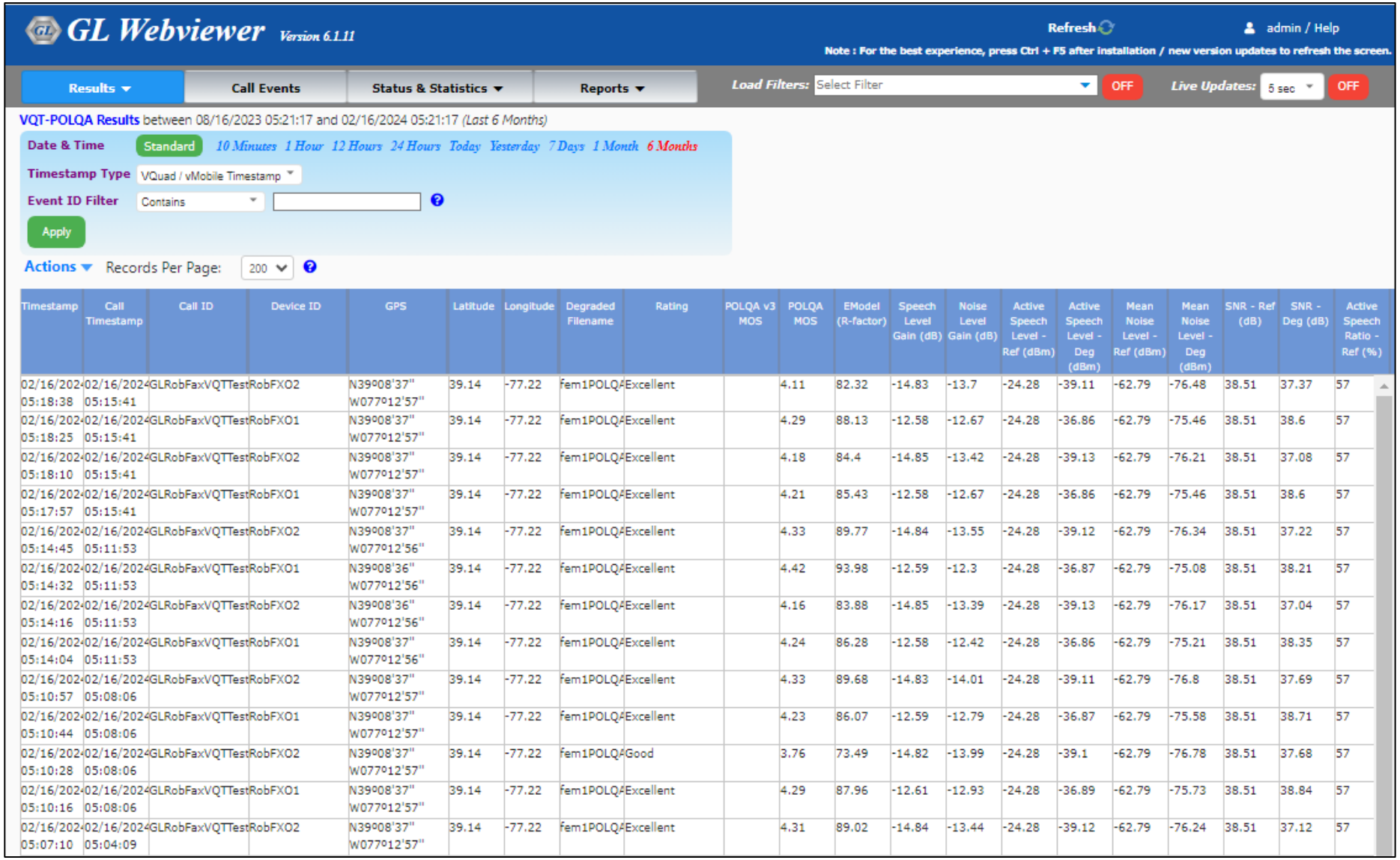
GL WebViewer™ Records

- Accessible remotely via any browser-based clients
- Database (MySQL or Oracle) stores the real-time and historic data

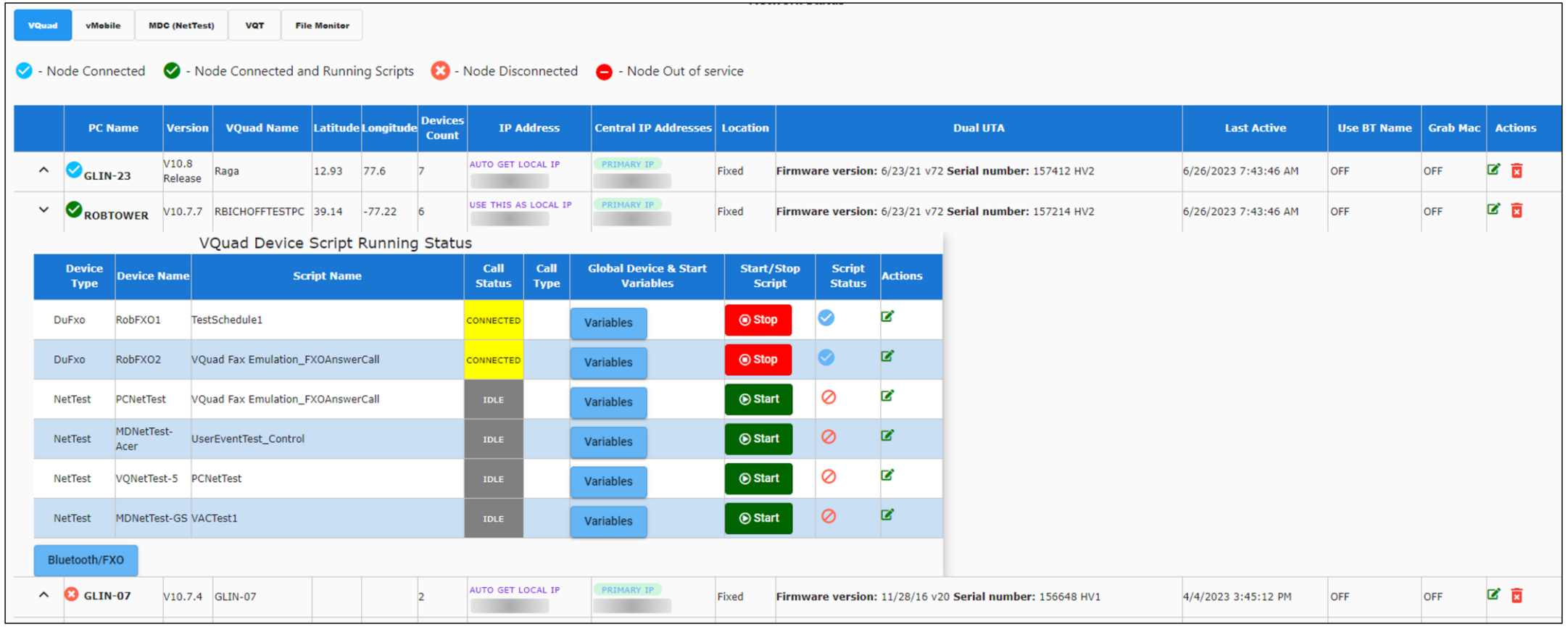


Timestamp	Call Timestamp	Call ID	Device ID	GPS	Latitude	Longitude	Degraded Filename	Rating	POLQA v3 MOS	POLQA MOS	EModel (R-factor)	Speech Level Gain (dB)	Noise Level Gain (dB)	Active Speech Level - Ref (dBm)	Active Speech Level - Deg (dBm)	Mean Noise Level - Ref (dBm)	Mean Noise Level - Deg (dBm)	SNR - Ref (dB)	SNR - Deg (dB)	Active Speech Ratio - Ref (%)
02/16/2024 05:18:38	02/16/2024 05:15:41	GLRobFaxVQTTest	RobFXO2	N39°08'37" W077°12'57"	39.14	-77.22	fem1POLQA	Excellent		4.11	82.32	-14.83	-13.7	-24.28	-39.11	-62.79	-76.48	38.51	37.37	57
02/16/2024 05:18:25	02/16/2024 05:15:41	GLRobFaxVQTTest	RobFXO1	N39°08'37" W077°12'57"	39.14	-77.22	fem1POLQA	Excellent		4.29	88.13	-12.58	-12.67	-24.28	-36.86	-62.79	-75.46	38.51	38.6	57
02/16/2024 05:18:10	02/16/2024 05:15:41	GLRobFaxVQTTest	RobFXO2	N39°08'37" W077°12'57"	39.14	-77.22	fem1POLQA	Excellent		4.18	84.4	-14.85	-13.42	-24.28	-39.13	-62.79	-76.21	38.51	37.08	57
02/16/2024 05:17:57	02/16/2024 05:15:41	GLRobFaxVQTTest	RobFXO1	N39°08'37" W077°12'57"	39.14	-77.22	fem1POLQA	Excellent		4.21	85.43	-12.58	-12.67	-24.28	-36.86	-62.79	-75.46	38.51	38.6	57
02/16/2024 05:14:45	02/16/2024 05:11:53	GLRobFaxVQTTest	RobFXO2	N39°08'37" W077°12'56"	39.14	-77.22	fem1POLQA	Excellent		4.33	89.77	-14.84	-13.55	-24.28	-39.12	-62.79	-76.34	38.51	37.22	57
02/16/2024 05:14:32	02/16/2024 05:11:53	GLRobFaxVQTTest	RobFXO1	N39°08'36" W077°12'56"	39.14	-77.22	fem1POLQA	Excellent		4.42	93.98	-12.59	-12.3	-24.28	-36.87	-62.79	-75.08	38.51	38.21	57
02/16/2024 05:14:16	02/16/2024 05:11:53	GLRobFaxVQTTest	RobFXO2	N39°08'36" W077°12'56"	39.14	-77.22	fem1POLQA	Excellent		4.16	83.88	-14.85	-13.39	-24.28	-39.13	-62.79	-76.17	38.51	37.04	57
02/16/2024 05:14:04	02/16/2024 05:11:53	GLRobFaxVQTTest	RobFXO1	N39°08'37" W077°12'56"	39.14	-77.22	fem1POLQA	Excellent		4.24	86.28	-12.58	-12.42	-24.28	-36.86	-62.79	-75.21	38.51	38.35	57
02/16/2024 05:10:57	02/16/2024 05:08:06	GLRobFaxVQTTest	RobFXO2	N39°08'37" W077°12'57"	39.14	-77.22	fem1POLQA	Excellent		4.33	89.68	-14.83	-14.01	-24.28	-39.11	-62.79	-76.8	38.51	37.69	57
02/16/2024 05:10:44	02/16/2024 05:08:06	GLRobFaxVQTTest	RobFXO1	N39°08'37" W077°12'57"	39.14	-77.22	fem1POLQA	Excellent		4.23	86.07	-12.59	-12.79	-24.28	-36.87	-62.79	-75.58	38.51	38.71	57
02/16/2024 05:10:28	02/16/2024 05:08:06	GLRobFaxVQTTest	RobFXO2	N39°08'37" W077°12'57"	39.14	-77.22	fem1POLQA	Good		3.76	73.49	-14.82	-13.99	-24.28	-39.1	-62.79	-76.78	38.51	37.68	57
02/16/2024 05:10:16	02/16/2024 05:08:06	GLRobFaxVQTTest	RobFXO1	N39°08'37" W077°12'57"	39.14	-77.22	fem1POLQA	Excellent		4.29	87.96	-12.61	-12.93	-24.28	-36.89	-62.79	-75.73	38.51	38.84	57
02/16/2024 05:07:10	02/16/2024 05:04:09	GLRobFaxVQTTest	RobFXO2	N39°08'37" W077°12'57"	39.14	-77.22	fem1POLQA	Excellent		4.31	89.02	-14.84	-13.44	-24.28	-39.12	-62.79	-76.24	38.51	37.12	57

GL Communications

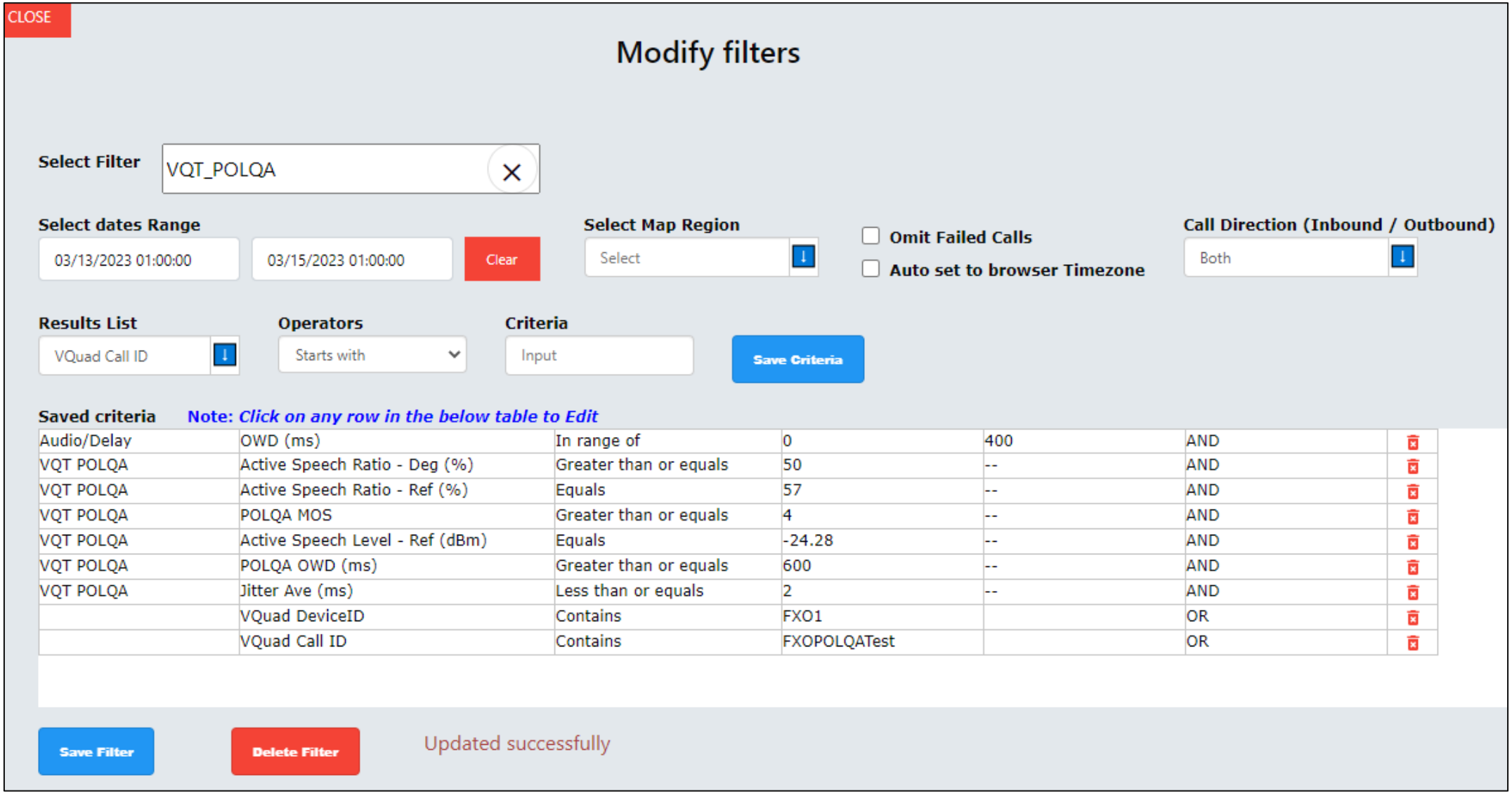
Network Status and Remote Access

- Displays status of all the VQuad™ probes (along with script running status), vMobile™, MDC, VQT, and File Monitor application status
- The VQuad™ and vMobile™ connected to the WebViewer™ can be accessed or controlled remotely through the web interface
- Various options are available to operate and control the systems remotely such as Load desired scripts along with script parameters, Start/Stop the scripts, and make configuration changes to the VQuad™ systems



GL Communications

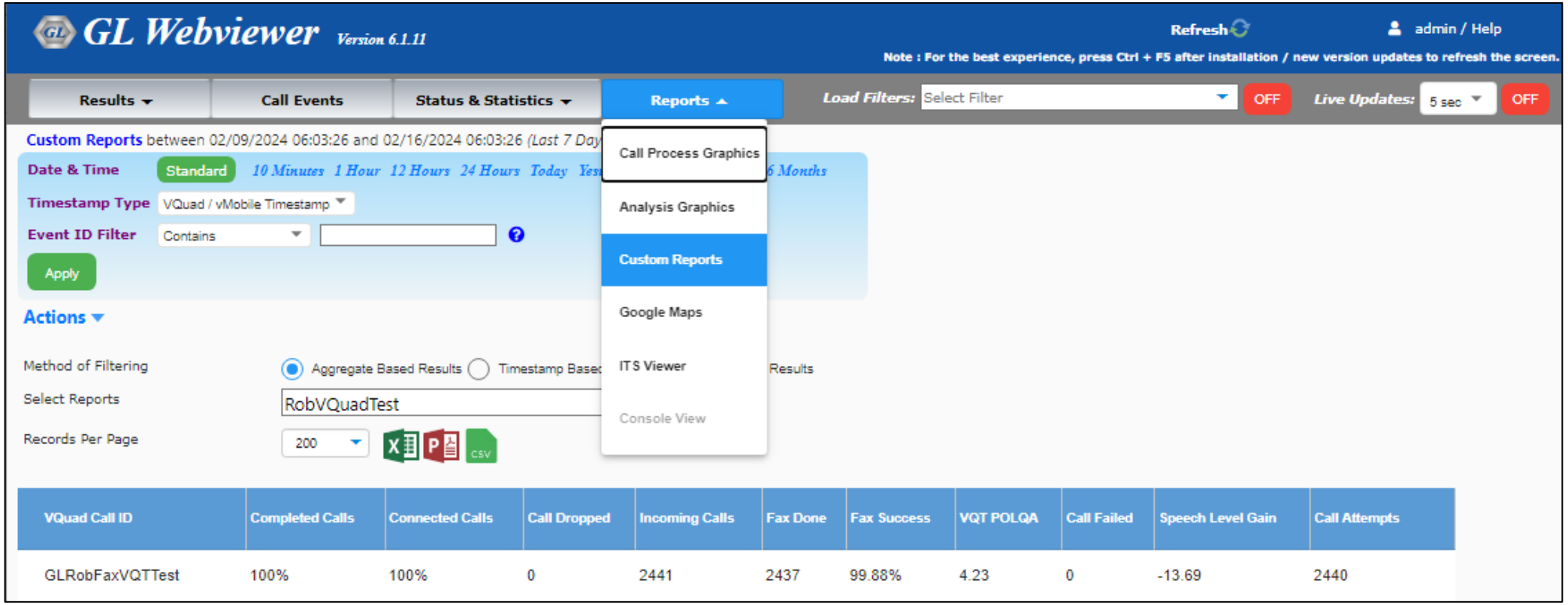
Filters



GL Communications

Report Generation

- The user can save the search results to a local PC in *.xls / *.csv / *.pdf formats. Custom reports are generated using DataImport for Events and Statistics, which can be saved to text or Excel output files via WebViewer™
- Google Maps plotting of various test results (VQT, VBA, VAC, EMU, NetTest, FAX, Call Control)
- Console View - customizing the threshold values for the test result parameters to populate the consolidated Average, Min, Max results in tabular format and plot corresponding graphics statistics



Call Events and Scheduling the Reports

WebView
VQuad WebViewer - Real Time Monitoring System

Custom Reports - Dynamic Report
Report Name : RobGroup1 (RobVQuadTest, RobDelayTest, RobNetTest, RobPOLQAResults)

Start Datetime : 2021-10-13 00:27:02
End Datetime : 2021-10-20 00:30:02

User : Administrator

GL Communications Inc.

Custom Reports

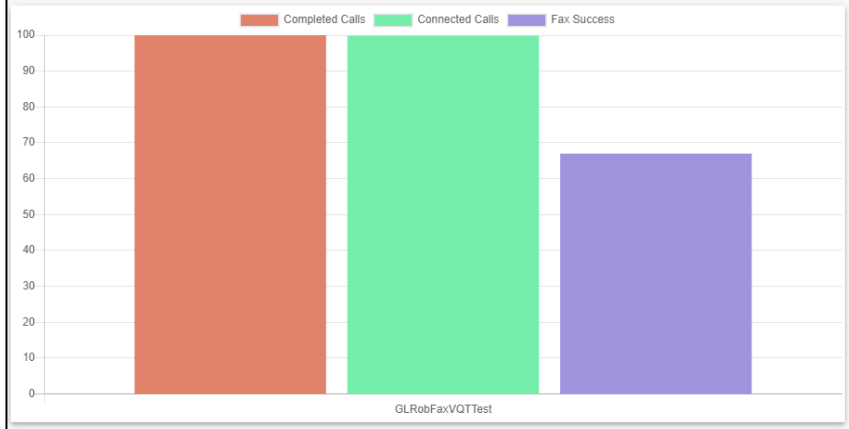
Filters

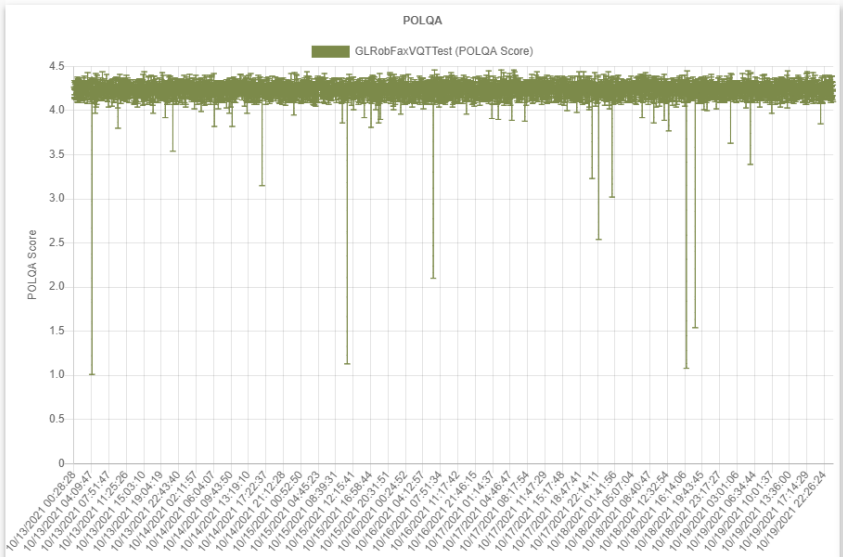
Timestamp Search : VQuad Timestamp Load Filter : Off

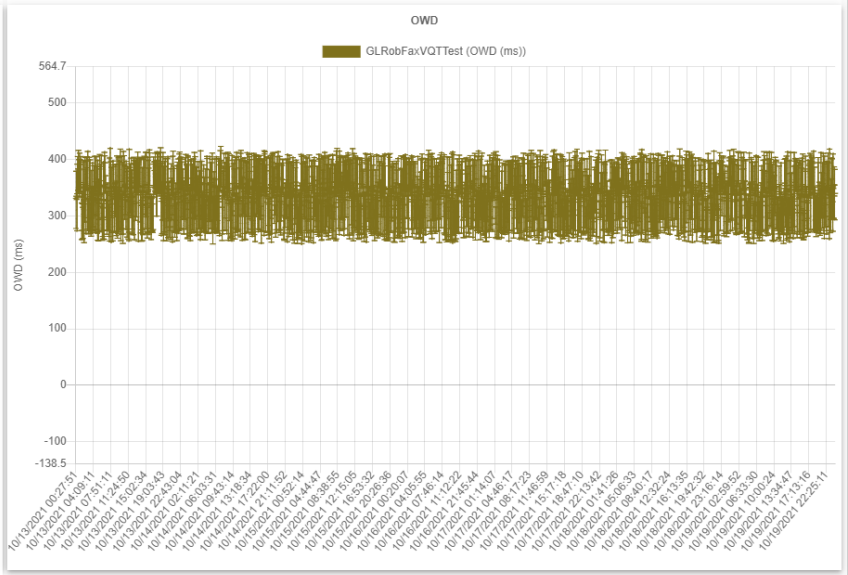
Event ID / Device ID Filter : GLROBFAXVQTTEST

VQuad Call ID	Completed Calls	Connected Calls	Call Dropped	Incoming Calls	Fax Done	Fax Success	VQT POLQA	Call Failed	Speech Level Gain	Call Attempts
GLRobFaxVQTTest	100%	99.87%	3	1965	1565	66.99%	4.24	0	-13.79	2336

0 of 0

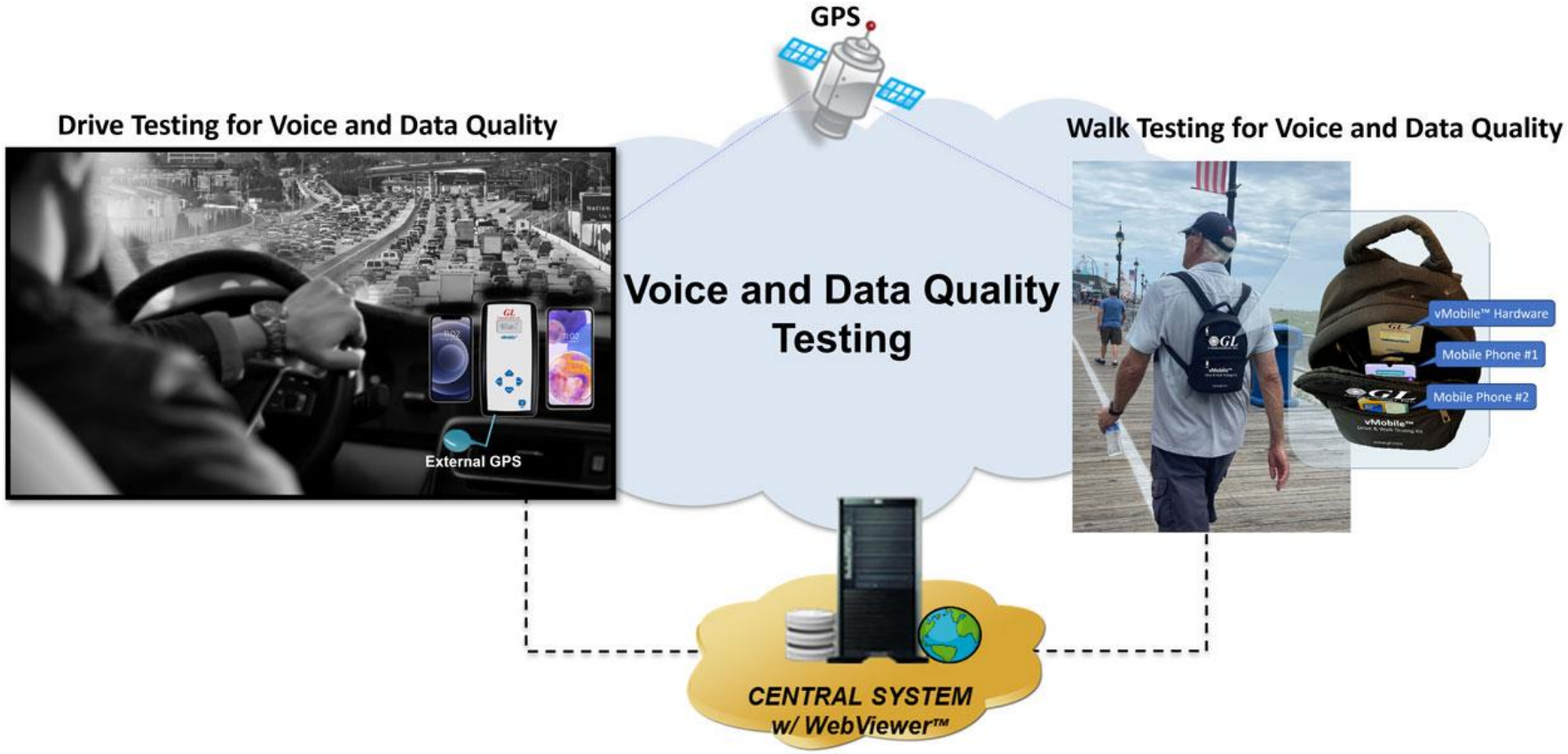






GL Communications

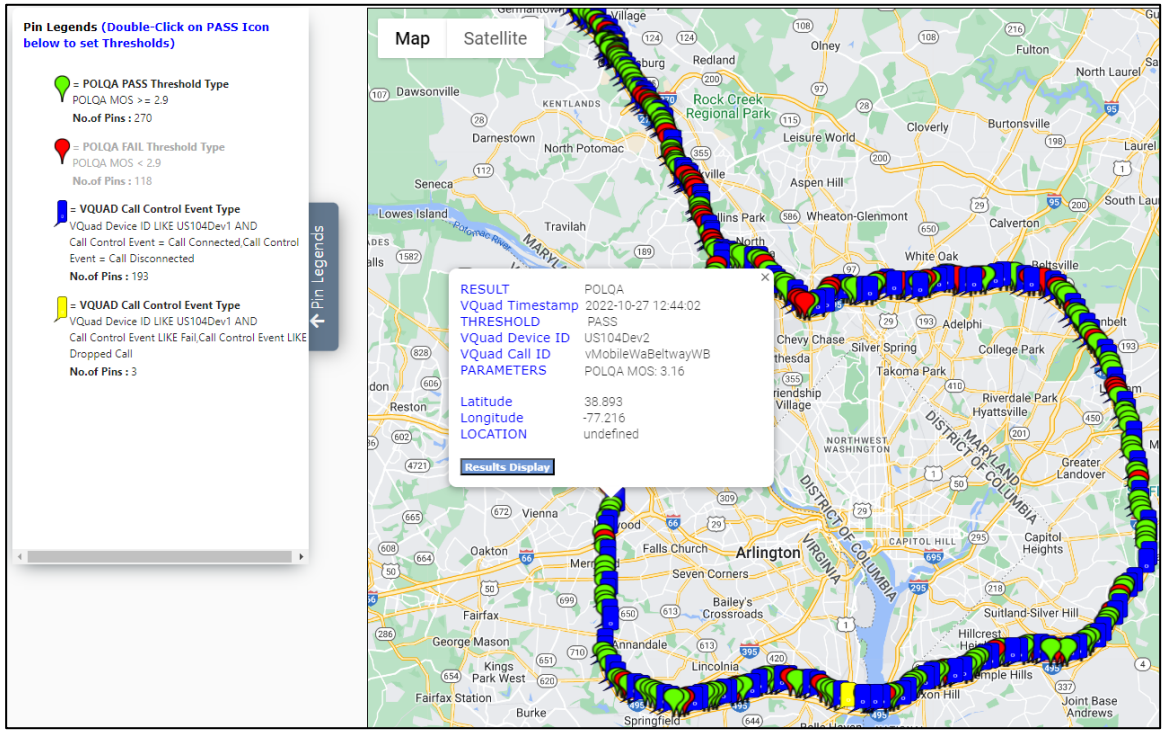
Drive and Walk Testing for Wireless Networks



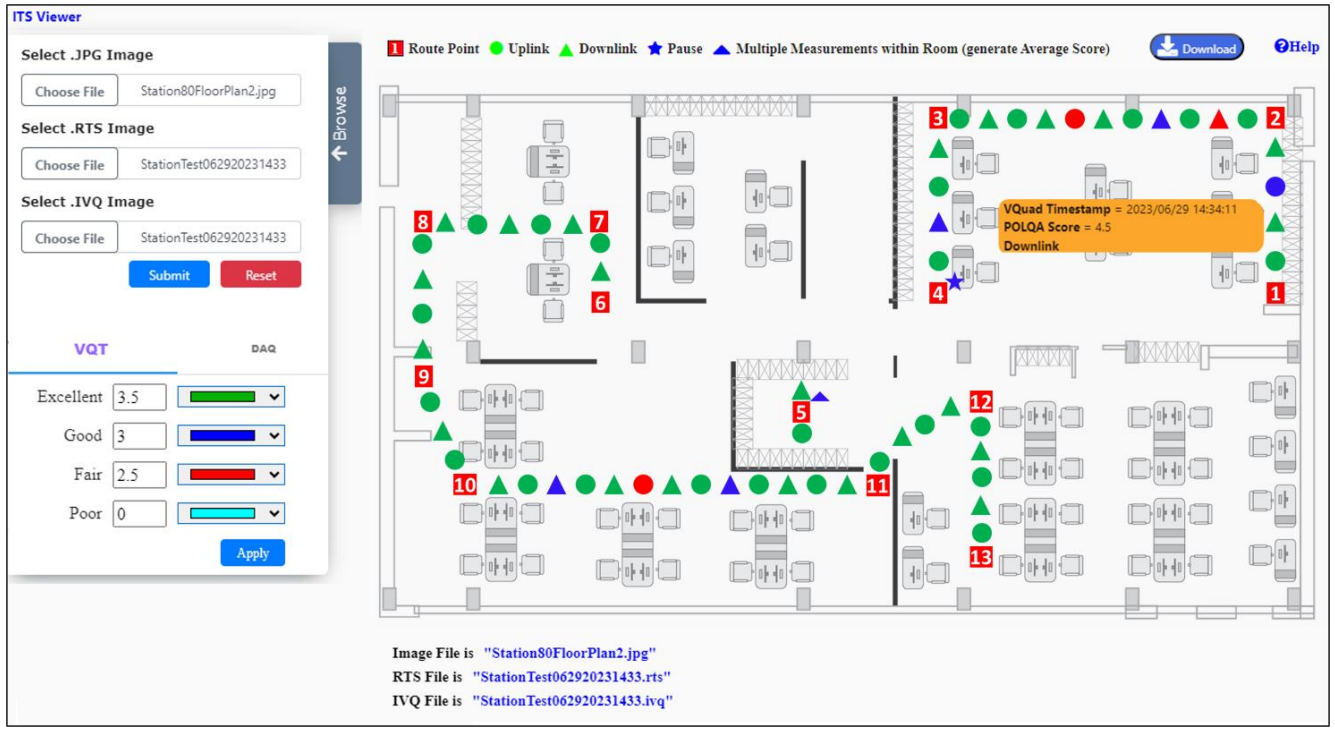
- Drive test with any Wireless device with real-time GPS mapping
- GPS connectivity for recording timing and location of tests performed
- The GPS mapping records and adds the real-time GPS information to all test results and vMobile™ call control
- GPS Location includes stamping each result with Latitude, Longitude, and GPS Time Stamp
- GPS information is automatically sent to central database and accessed via Google Maps feature in WebViewer™

GL Communications

Real-time GPS and ITS Plotting



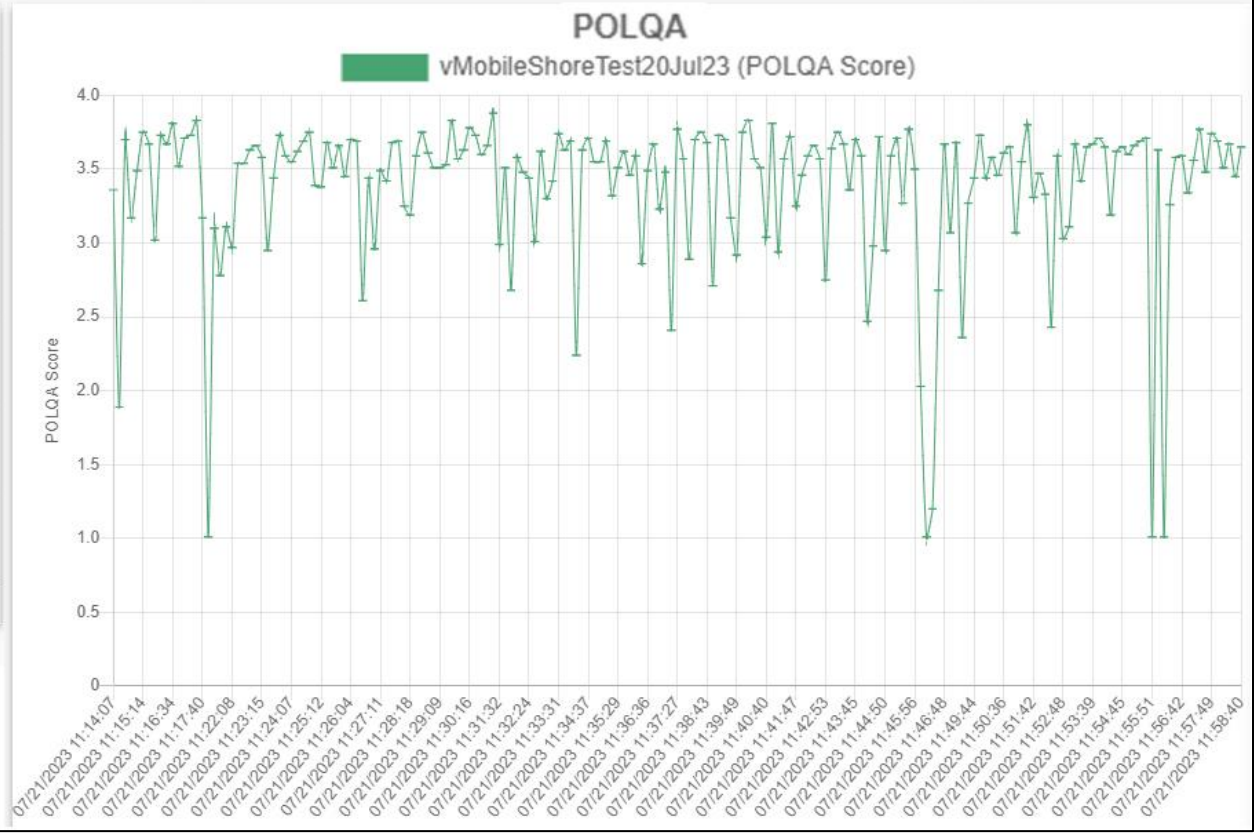
Real-time GPS Plotting



Real-time ITS Plotting

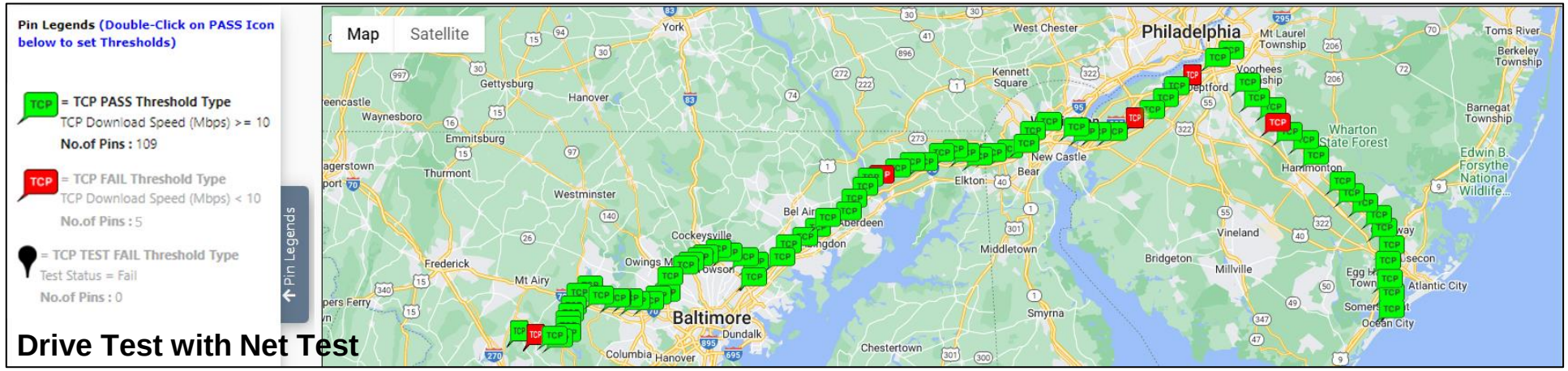
Results in WebViewer™ - Custom Reports

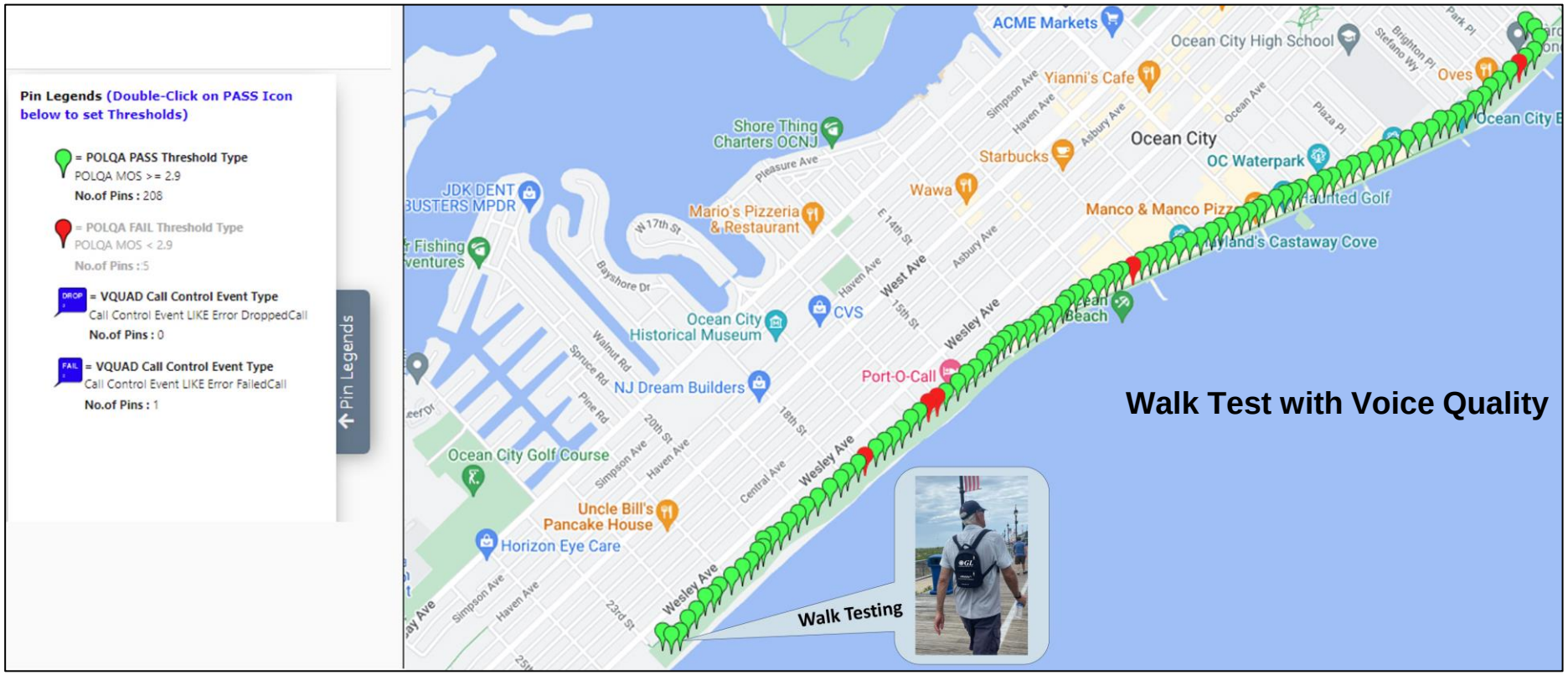
VQuad Call ID	Call Attempts	Call Completed %	Call Dropped %	Call Failed %	VQT POLQA Ave	Speech Level Gain Ave	Noise Level Gain Ave	Call Failed	Call Dropped
vMobileShoreTest20Jul23	28	100%	0%	0%	3.33	8.35	5.69	0	0



GL Communications

Results in WebViewer™ - From Drive and Walk Test

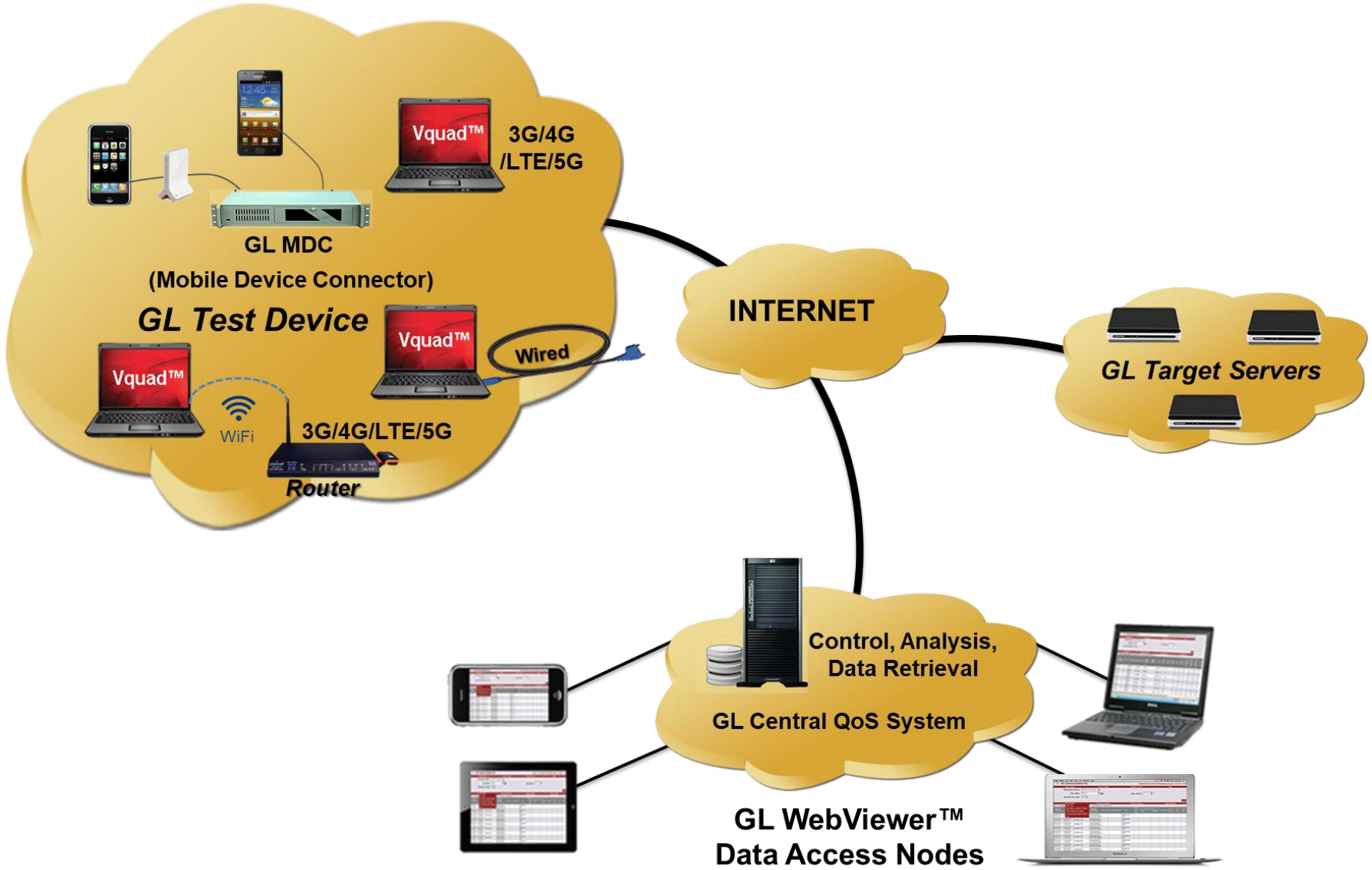




GL Communications

GL NetTest - Data Testing

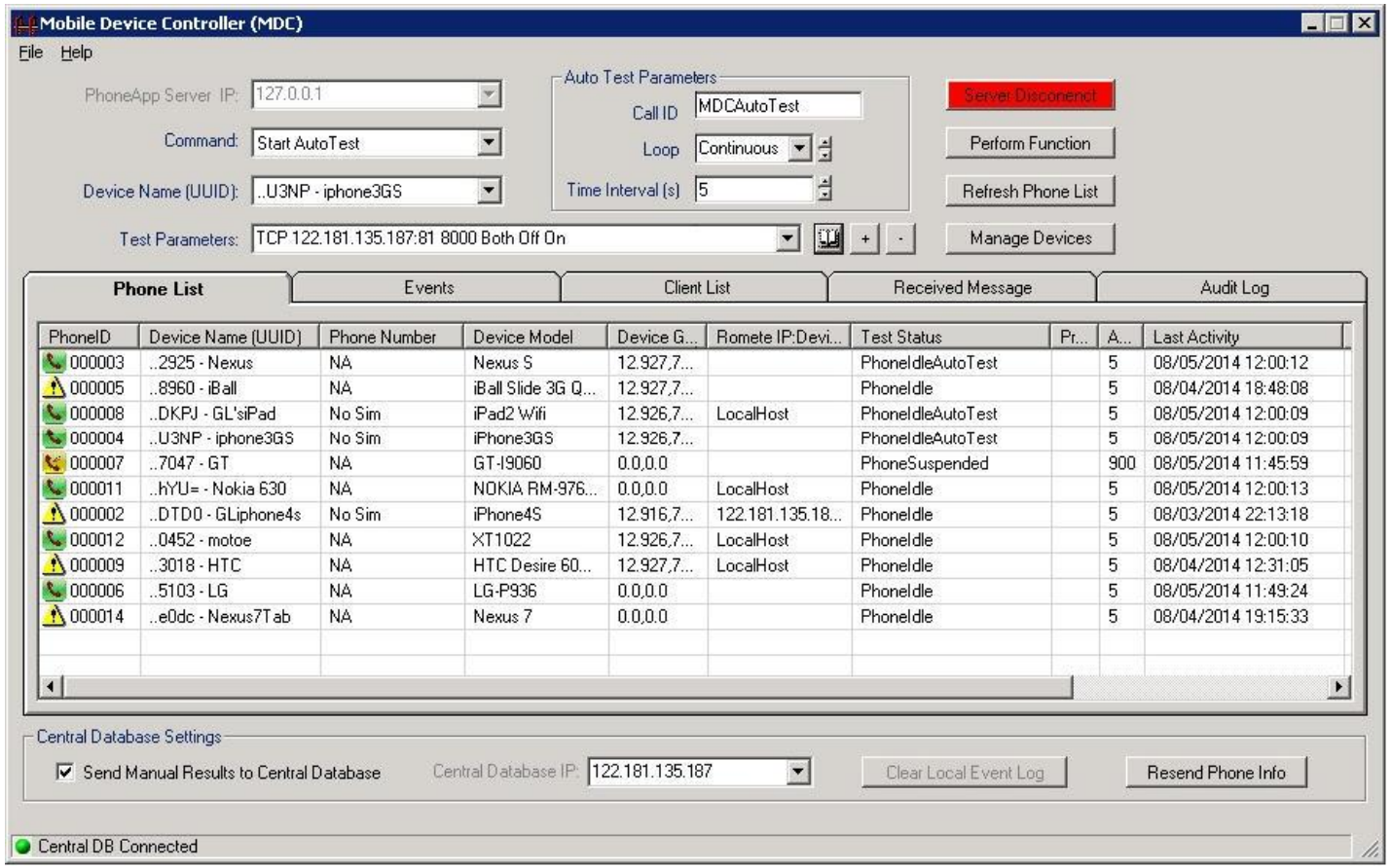
Automated Data Testing over Wired & Wireless (Bluetooth®, WiFi, 3G, LTE, 5G) Networks



GL Communications

Mobile Device Controller (MDC) GUI

- GL's Mobile Device Controller application and the supporting downloadable apps on the Smartphones (iPhone, Android), can remotely perform the data tests when the phone is within a voice call or outside a voice call

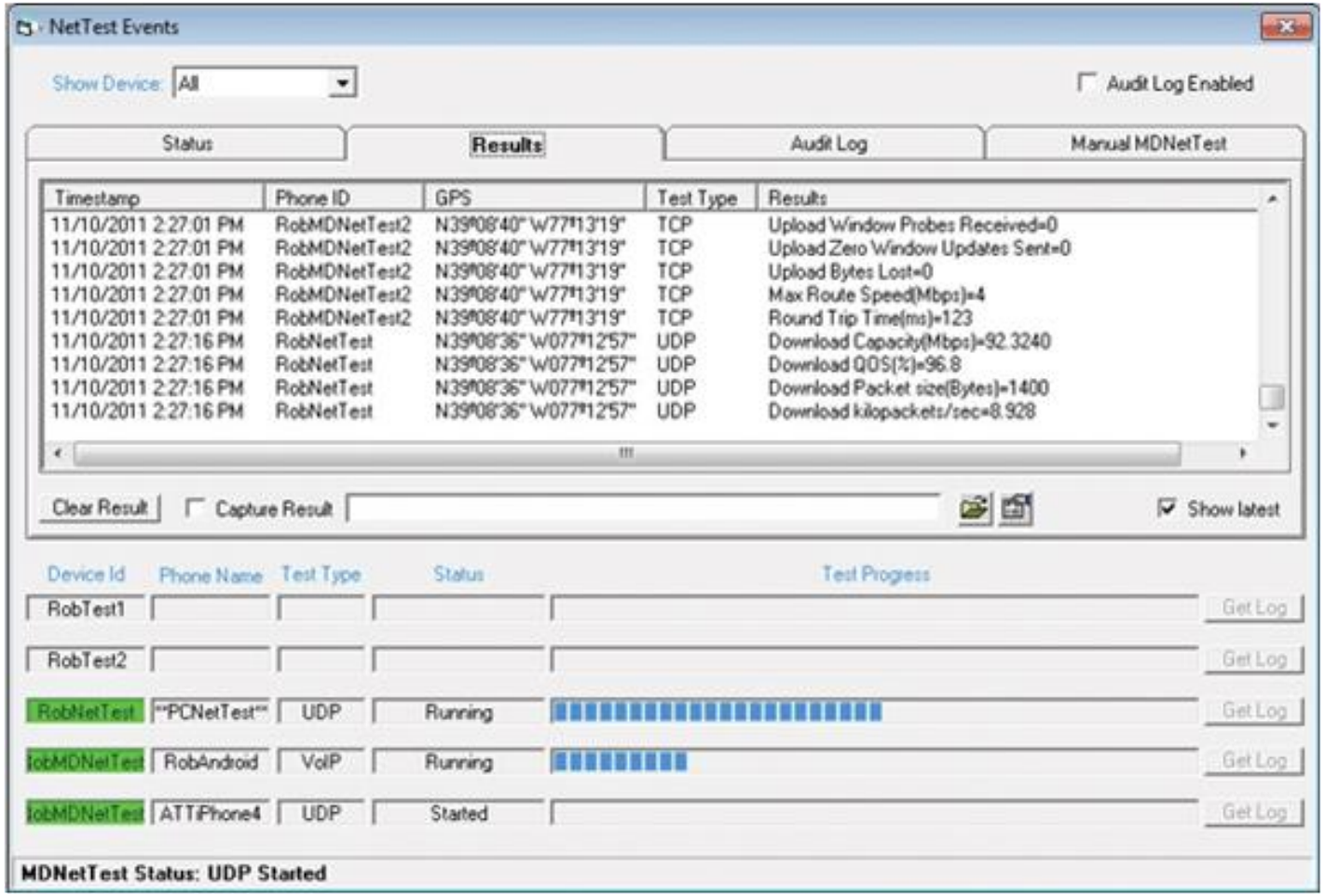


GL Communications

VQuad™ NetTest Events Log

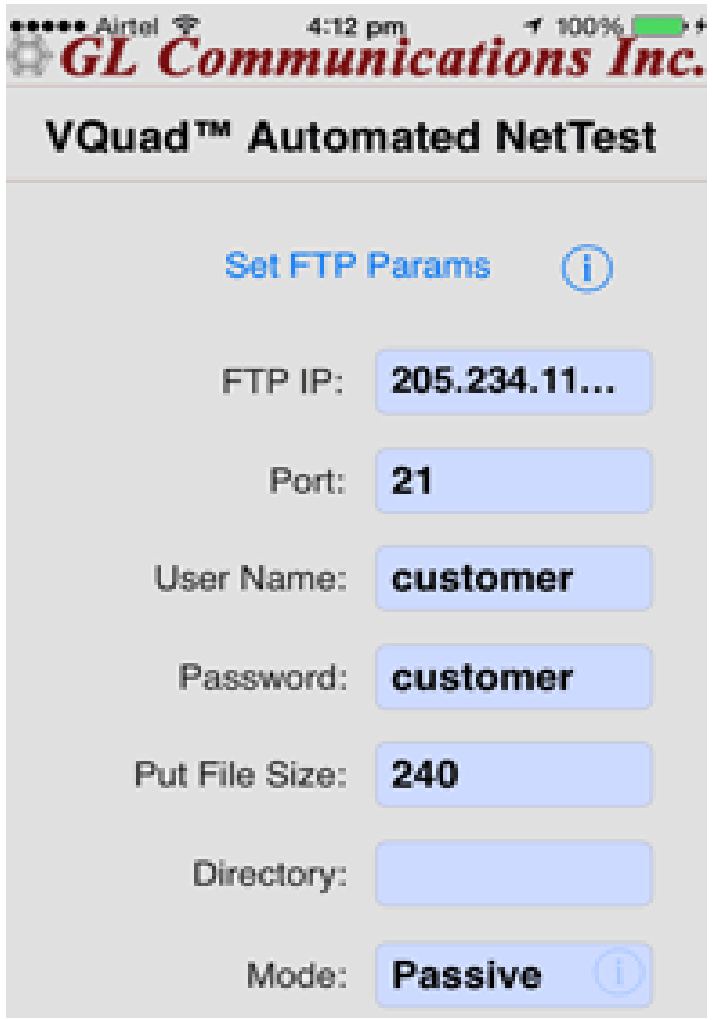
- Mobile Device NetTest and PC based NetTest Statistics and complete results are relayed back to VQuad™, which can be access via WebViewer™

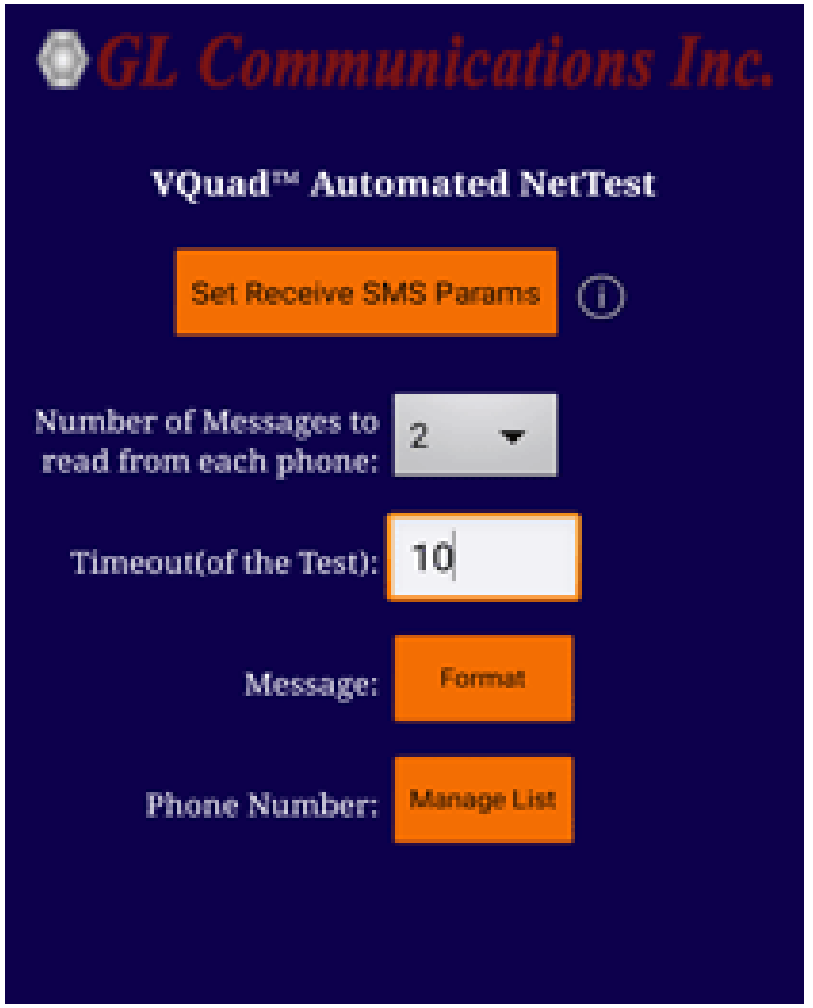
Note: NetTest requires a GL Data Server at each target location, and the mobile device requires a GL deployed app (Apple or Android based) for operation



GL Communications

Data Tests running on Android and Apple Devices using GLNetTest App

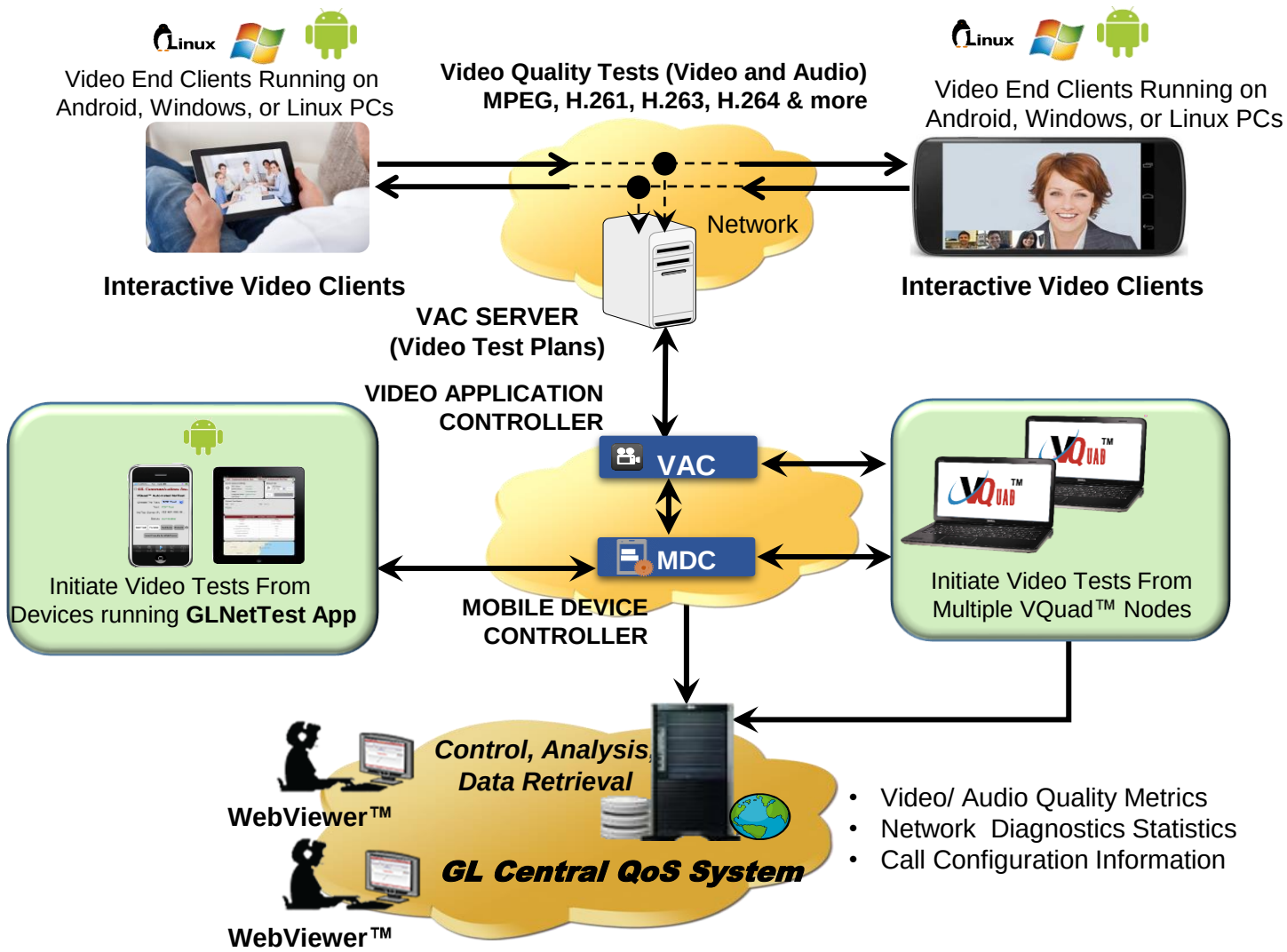




GL Communications

Video Testing

Automated and Manual Video Quality Testing (Android, Windows® and Linux Interface)



GL Communications

Video Test Results in WebViewer™

VIDEO QUALITY							AUDIO QUALITY					AUDIO-VIDEO QUALITY		IP NETWORK HEALTH							CALL CONFIG INFO					
Absolute MOS-V	Relative MOS-V	Video Frame Rate (Frames per Second)	Impaired I Frames (%)	Impaired B/P Frames (%)	Loss Rate within B/P Frames (%)	EPSNR	Relative MOS-A	Audio Bitrate (kbps)	Audio Bandwidth (kHz)	Signal Level (dBm0)	Noise Level (dBm0)	Relative MOS-AV	End System Delay (ms)	Network Packet Loss Rate (%)	Network Packet Discard Rate (%)	Mean Burst Loss Rate (%)	Mean Burst Length (Packets)	Mean Gap Loss Rate (%)	Mean Gap Length (Packets)	Jitter (PPDV) (ms)	Image Resolution (Pixels)	GoP Length	Audio Codec Type	Audio Sample Rate	Video Codec PLC Type	Audio Codec PLC Type
4.38	4.5	30	0	0	0	36.9	3.84	5	3.5	-23	-61	3.69	166	0	0	0	0	0	8886	0.75	1280 X 720	15	AMR-NB 5.9Kbps	8000	standard	AMR-NB 5.9Kbp
4.38	4.5	30	0	0	0	36.06	3.84	5	3.5	-23	-61	3.66	166	0	0	0	0	0	8893	0.5	1280 X 720	15	AMR-NB 5.9Kbps	8000	standard	AMR-NB 5.9Kbp
4.37	4.49	30	0	0	0	36.8	3.84	5	3.5	-23	-61	3.69	166	0	0	0	0	0	8847	0.81	1280 X 720	15	AMR-NB 5.9Kbps	8000	standard	AMR-NB 5.9Kbp
4.31	4.43	30	0	0	0	35.94	3.84	5	3.5	-23	-61	3.64	166	0	0	0	0	0	8840	0.75	1280 X 720	15	AMR-NB 5.9Kbps	8000	standard	AMR-NB 5.9Kbp
3.86	4.16	30	0	0	0	34.02	4.2	64	3.5	-23	-61	3.46	113	0	0	0	0	0	83088	0.06	704 X 480	15	G.711 μ-law PLC 64Kbps	8000	standard	G.711 º-law PL(64Kbps
3.86	4.16	30	0	0	0	34.02	4.2	64	3.5	-23	-61	3.46	113	0	0	0	0	0	82549	0.06	704 X 480	15	G.711 μ-law PLC 64Kbps	8000	standard	G.711 º-law PL(64Kbps
4.3	4.3	30	0	0	0	34.95	4.2	64	3.5	-23	-61	3.77	166	0	0	0	0	0	38439	0.62	1920 X 1080	15	G.711 μ-law PLC 64Kbps	8000	standard	G.711 º-law PL(64Kbps
4.27	4.27	30	0	0	0	35.05	4.2	64	3.5	-23	-61	3.81	166	0	0	0	0	0	38389	0.56	1920 X 1080	15	G.711 μ-law PLC 64Kbps	8000	standard	G.711 º-law PL(64Kbps
4.34	4.46	30	0	0	0	36.45	3.84	5	3.5	-23	-61	3.66	166	0	0	0	0	0	8783	0.56	1280 X 720	15	AMR-NB 5.9Kbps	8000	standard	AMR-NB 5.9Kbp
4.31	4.43	30	0	0	0	36.45	3.84	5	3.5	-23	-61	3.64	166	0	0	0	0	0	8735	0.56	1280 X 720	15	AMR-NB 5.9Kbps	8000	standard	AMR-NB 5.9Kbp
4.32	4.44	30	0	0	0	36.45	3.84	5	3.5	-23	-61	3.64	166	0	0	0	0	0	8792	0.5	1280 X 720	15	AMR-NB 5.9Kbps	8000	standard	AMR-NB 5.9Kbp
4.37	4.49	30	0	0	0	36.45	3.84	5	3.5	-23	-61	3.66	166	0	0	0	0	0	8849	0.63	1280 X 720	15	AMR-NB 5.9Kbps	8000	standard	AMR-NB 5.9Kbp
4.34	4.46	30	0	0	0	36.38	3.84	5	3.5	-23	-61	3.65	166	0	0	0	0	0	8902	0	1280 X 720	15	AMR-NB 5.9Kbps	8000	standard	AMR-NB 5.9Kbp
4.37	4.48	30	0	0	0	36.45	3.84	5	3.5	-23	-61	3.66	166	0	0	0	0	0	8941	0.31	1280 X 720	15	AMR-NB 5.9Kbps	8000	standard	AMR-NB 5.9Kbp
4.65	4.65	30	0	0	0	39.06	4.2	64	3.5	-23	-61	4.16	146	0	0	0	0	0	76238	0.25	1920 X 1080	15	G.711 μ-law PLC 64Kbps	8000	standard	G.711 º-law PL(64Kbps

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Thank you!

For more information contact us at info@gl.com

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