



GL Communications Inc.

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GL Core Products

...Global Leader in Telecom Test And Measurement Solutions



VoIP Simulation & Analysis

SIGTRAN, Ethernet, MGCP, MEGACO, RTP, H323



Wireless Voice & Protocol Analysis

CDMA2000, UMTS, ATM, GSM, TRAU, GPRS, LTE
Wireless Drive Testing, GPS Mapping



PSTN/TDM Analysis & Emulation

T1, E1, T3, E3,
OC-12/STM-4, OC-3/STM-1



Digital & Analog Call Simulation

ISDN, SS7, CAS, Analog



Voice Quality Testing

VoIP, Wireless, TDM, PSTN, and Bluetooth®



Echo Canceller Testing

G.168, G.160, G.167, VoIP, Wireless, and TDM

www.gl.com

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About GL Communications Inc.

Founded in 1986, GL Communications Inc. is a leading supplier of test, monitoring, and analysis equipments for TDM, Wireless, IP and VoIP networks. Unlike conventional test equipments, GL's test platforms provide visualization, capture, storage, and convenient features like portability, remotability, and scripting.

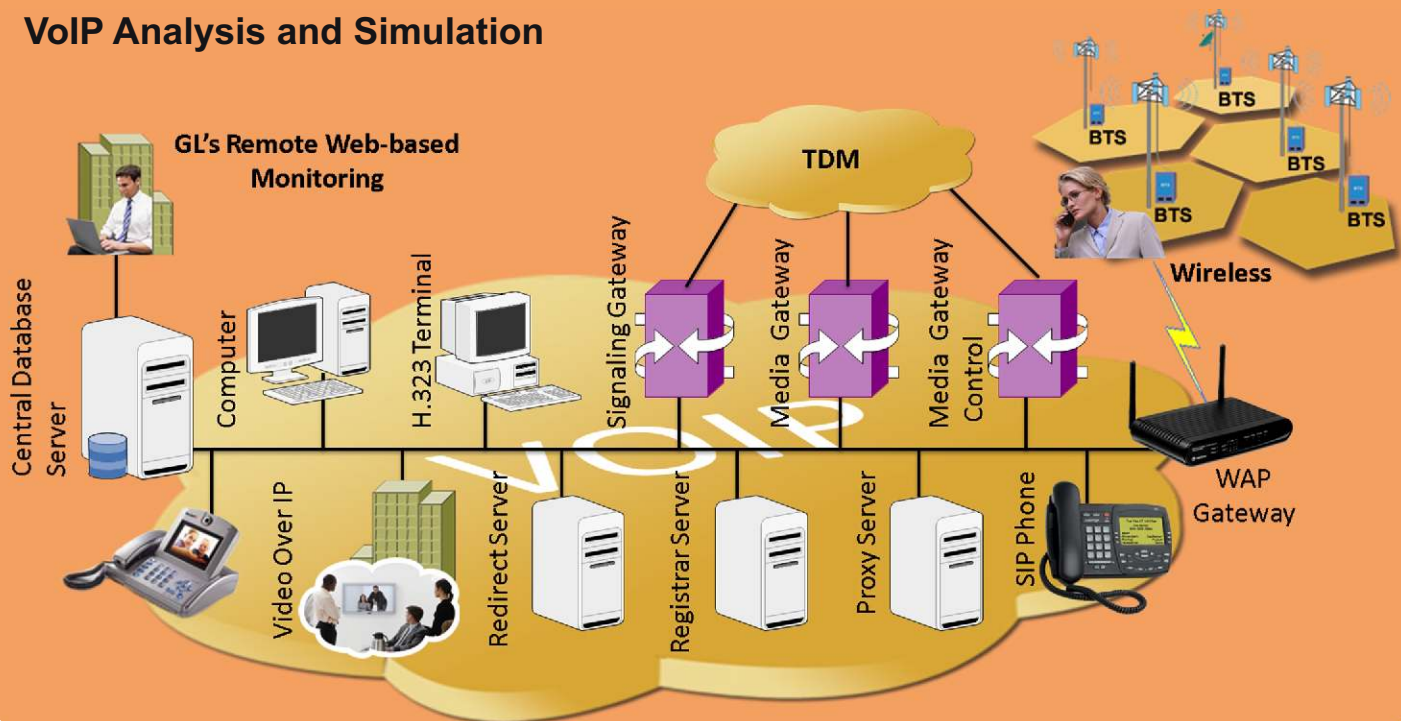
GL provides customers with a wide range of easily-adapted, cost-effective, and highly-reliable products and services designed to aid the telecommunications engineer.

GL also provides consulting services to Cellular, Wireless, Microwave, Fiber-Optic, Leased T-1 Network, and Satellite Communications service providers. We have designed, and provided on-going support to, over 100 wireless telephony network systems nationwide over the past 20 years. GL is currently certified as a DBE/MBE with Maryland's Department of Transportation (MDOT), Philadelphia's South Eastern Pennsylvania Transportation Authority (SEPTA), and Washington Metropolitan Area Transit Authority (WMATA).

Web: <http://www.gl.com/about.html>

VoIP Analysis and Simulation

VoIP Analysis and Simulation



- **PacketScan™** – Captures live VoIP traffic, visual analysis, call QOS with E-model based MOS & R-factor scores
- **PacketScanWeb™** - Centralized report collection from PacketScan™ probes & remote monitoring using web-based clients
- **PacketGen™** - High-density VoIP call generation with traffic for load testing, stress testing
- **PacketCheck™** - Ethernet performance analysis for 10Mbps, 100Mbps and 1Gbps
- **IPNetSim™** - Simulates all real-time conditions in IP network; generates impairments (latency, packet loss, jitter) on a per call basis or throughout entire network
- **MAPS™ for VoIP** - Scripted protocol simulation and conformance test tool for MGCP, SIP, and MEGACO
- **Network VQT for VoIP** a portable solution for low-density networks

Features

Generate/analyze thousands of calls simultaneously

Traffic types include voice files, digits, tones, & fax; Codecs - G.711, G.729, G.726, AMR, EVRC, & GSM

Visual analysis, real-time listening, recording, statistics

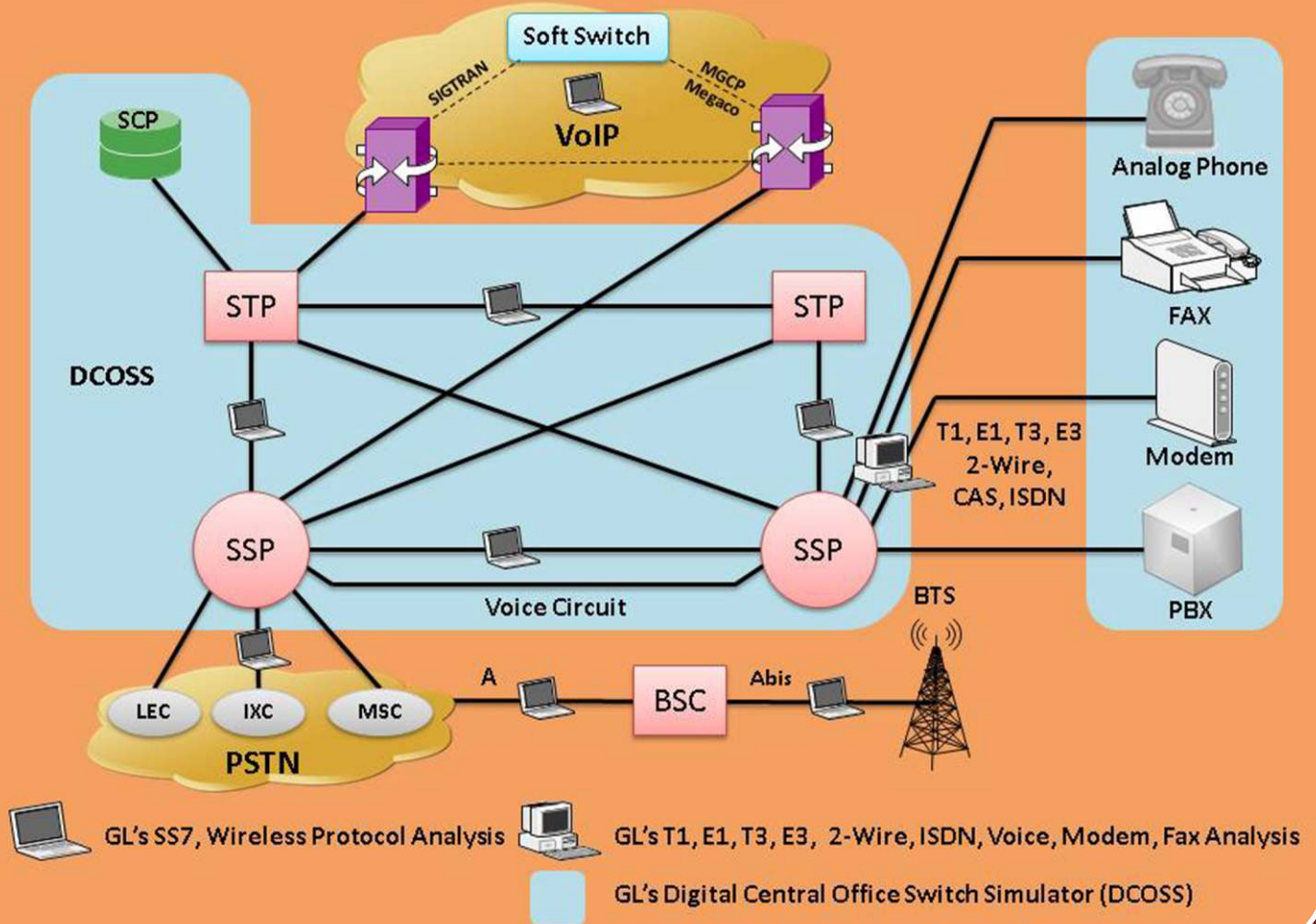
R-Factor based MOS using E-Model

Network-wide intrusive and non-intrusive test/monitoring solutions

Web: http://www.gl.com/voipanalysis_simulation.html

PSTN / TDM Analysis and Simulation

PSTN / TDM Analysis and Simulation



- Portable / Handheld / PC-based T1/E1 and T3/E3 Solutions
- Portable/ PC-based OC-12/STM-4, OC-3/STM-1 Solutions
- Digital & Analog Call Simulation – using DCOSS, APS, BPS
- SS7 and ISDN Solutions - using DCOSS, T1E1, MAPS™

Features

All traffic types (Voice, Digits, Tones, Fax, Modem)

All protocols (HDLC, SS7, ATM, MLPPP, PRI/BRI ISDN and CAS)

All interfaces (Analog, T1, E1, T3, E3, OC- 3/12-STM-1/4)

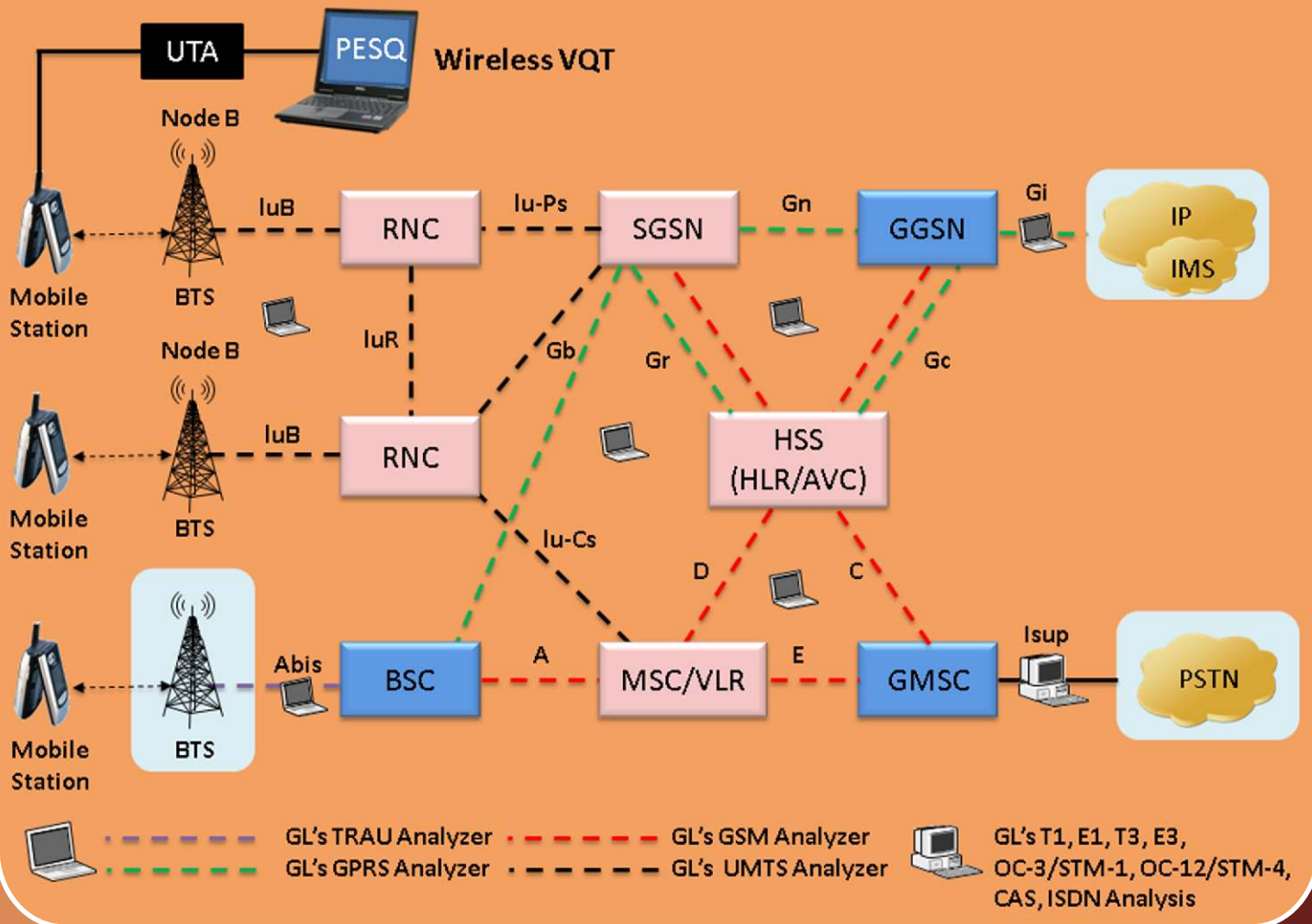
Analyze/Simulate thousands of channels

Network-wide intrusive and non-intrusive test/monitoring solutions

Web: http://www.gl.com/hardware_platforms.html

Wireless Protocol Analysis/Emulation & Voice Quality

3G / GSM Analysis and Simulation



- Emulation of TRAU / GSM – using Portable T1/E1 Solutions & MAPS™
- Analysis of GSM, GPRS, TRAU, CDMA2000, LTE
- Compact and portable solution for testing mobile end-to-end voice quality

Features

Automated Testing of Mobile Radio (PTT) and Wireless Phones (Wi-Fi, WiMax, Bluetooth)

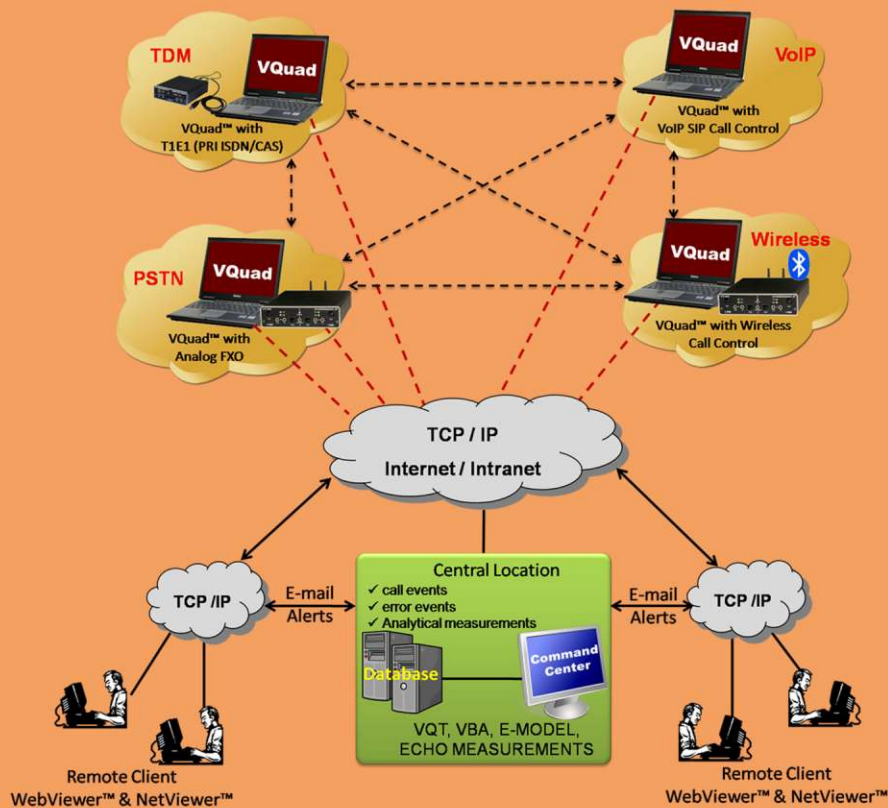
GPS and ITS location tracking with results overlay

Built-in Round Trip Delay, One Way Delay, and variety of Echo measurement capabilities

Web: http://www.gl.com/protocol_analysis.html
<http://www.gl.com/wirelessvqt.html>

Voice Quality Testing

Voice Quality Testing



- Intrusive VQud™ with Dual UTA probes - portable hardware that interfaces Wireless, VoIP, PSTN, and TDM networks to send and receive speech signals
- Non-Intrusive Probes - T1/E1 Analyzer for TDM, PacketScan™ for VoIP, 2-Wire Voice/Data Capture for PSTN
- Voice Quality Test (VQT) software - analyzes the transmissions using ITU standard algorithms, PESQ LQ/LQO/WB, PSQM, and PAMS
- Voice Band Analyzer (VBA) - analysis tool for monitoring the quality of voice band traffic over VoIP, TDM and Wireless networks
- Network VQT Monitoring - solution consists of Distributed VQud™ Nodes, VQud Command Center, array of analysis applications, central location database, and remote client web-browsers to provide a complete solution for Voice Quality Testing and Analysis

Features

Supported Interface - VoIP, T1/E1, Wireless (Mobile Phone w/ Bluetooth®, Radios, Wi-Fi, Wi-Max)

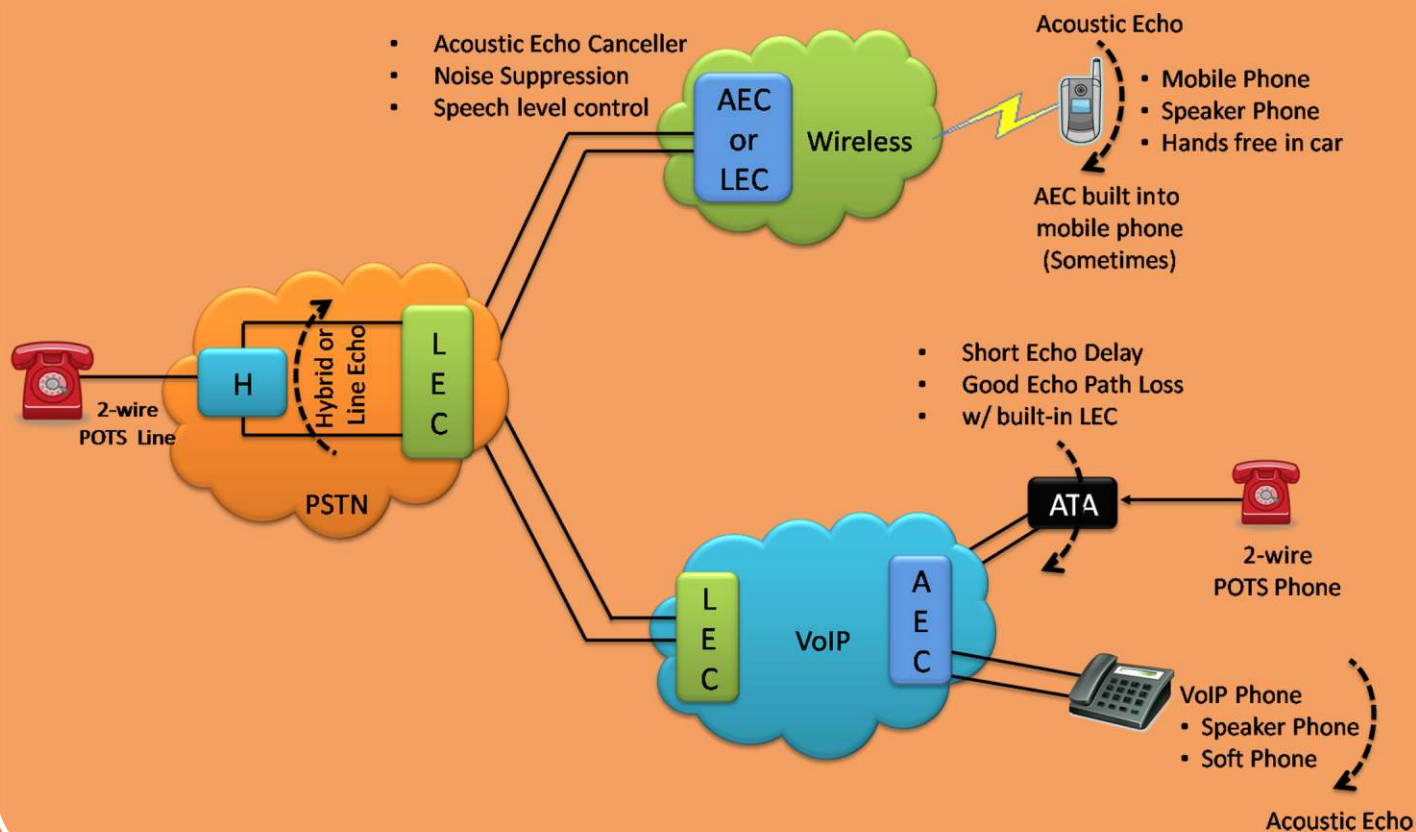
Intrusive and Non-Intrusive Probes

Solutions support low-density and high-density networks

Web: <http://www.gl.com/automated-network-vqt.html>

Echo Cancellor & Network Monitoring Test Solutions

Echo Possibilities



- Voice Band Analyzer (VBA) - analysis tool for monitoring the quality of voice band traffic over VoIP, TDM, and Wireless networks
- Echo Path Delay/Loss Simulation Software - simulates delay, loss, double-talk, noise, and other impairments over T1/E1 lines
- Echo Path Delay / Loss Measurement Software - allows intrusive and non-intrusive measurement of Echo Return Loss (ERL) and Echo Path Delay (EPD)
- EC Compliance Test Suite per G.168 for automated and manual testing

Features

Network Monitoring of Hybrid and Acoustic Echo and Voice Quality

Simulate a real network with echo paths at one or both ends

Compliance testing w/ hybrid simulation, application of stimulus, capture of response, and graphical analysis of response.

Test cases for all possible variations of echo path loss, delay, hybrid filters, etc

Web: <http://www.gl.com/echocan.html>

Contacts

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GL Communications Inc. Provides unique, targeted PC-based test, analysis and simulation products and consulting services to the worldwide telecommunications industry. A privately held company, founded in 1986, GL offers customers a team of seasoned experts with a broad understanding of the specific challenges they face and the technical creativity to meet complex requirements.

GL provides customers with a wide range of easily-adapted, cost-effective, and highly-reliable products and services designed to aid the telecommunications engineer.

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Note: Specifications, Terms & Conditions are subject to change without notice.