



Echo Analyzer – Technical Overview

Advanced mobile network measurement solution

Enhancell Echo mobile network measuring tools run directly on your PC and handsets.

With Echo you do not need custom test devices and firmware. This means that you can be assured to see the network exactly as your customers see it.

Having Echo run on commercial PCs and phones not only saves you from spending on expensive custom hardware but also allows you to easily transfer licenses from one device to another.

Automatic software updates guarantee that you are always running the latest software.



Echo Analyzer

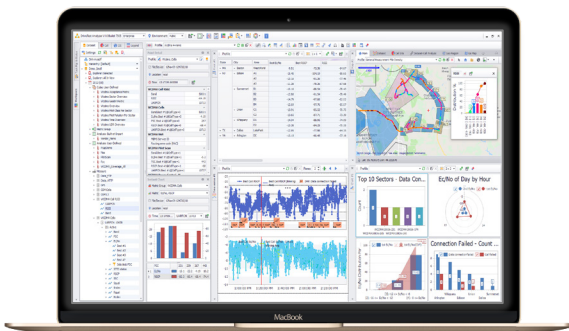
Echo Analyzer is a versatile network testing post-processing solution that can process and manage a large amount of log data, offering powerful optimization and troubleshooting capabilities and super flexible auto-reporting functions that enable the user to design and generate reports with easy drag & drop.

Technologies

Echo Analyzer supports measurement and analysis for technologies including GSM, WCDMA, HSDPA, HSUPA, HSPA+, LTE/LTE-A, 5G SA and NSA (FR1 and FR2), Wi-Fi, and Bluetooth.

Log file support

Enhancell, Qualcomm, Rohde & Schwarz, PCTel, Nemo, Meritech, AZENQOS, PCAP, Plain Text.



Support terabyte data

Echo Analyzer can process large numbers of log files and store the terabyte's data in a cost-free open-source database. The customizable data hierarchy management enables the user to freely organize data by data attributes such as timestamp, device label, operator, test iteration, and/or user-defined attributes. The user can analyze the data at any hierarchy level as a composite dataset and generate reports. Combined with the powerful data filtering functions, Echo Analyzer's data management can also help to quickly narrow down specific data and make it easy to post-process the cluster or crowdsourced data.

Echo Analyzer's private cloud platform can even handle bigger data by configuring a computer cluster with multiple databases, allowing multi-location data parallel processing, centralized data storage, and cloud access.

Rich data presentation

Echo Analyzer is packed with various data visualization features, including time-sequence views like Message View, Map View, Table View, and Time-series Chart, and statistical views like Multi-dimensional View, Cell Coverage View, Aggregation Chart, and Correlation Chart.

Analysis and troubleshooting

Echo Analyzer can automatically detect the most typical network problems and display them on the map, table, or charts, allowing drilling down to the detail with relevant information.

The user can define their own analysis profile and apply it to other datasets with one click operation.

Customized KPIs and diagnosis

The embedded development tool enables the advanced user to derive new KPIs and diagnostic results by implementing their own logic. The tool requires only basic programming skills and allows the user to manipulate any measurement data including any information element in Layer 3 messages, IP packets, and core trace.

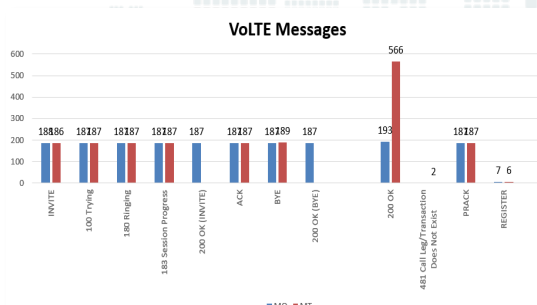
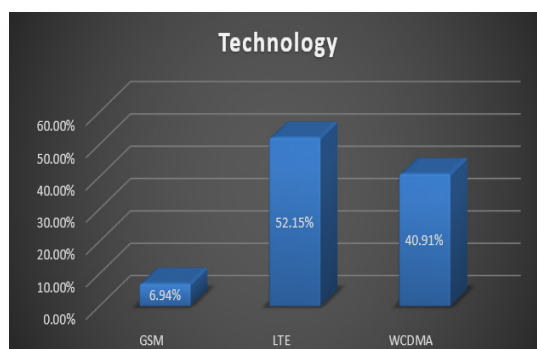
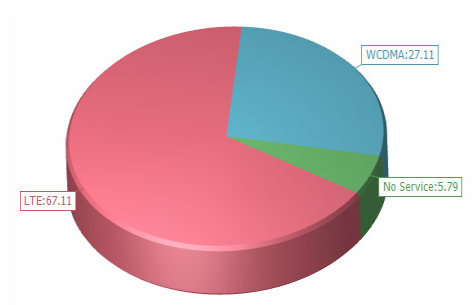
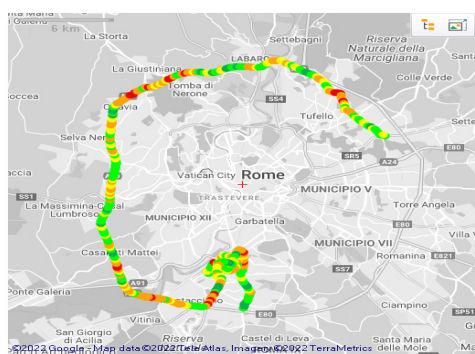
With the tool, the user can automate customized root cause analysis, issue detection, and remedy suggestion.

Auto-reporting

With easy drag & drop, the report template builder enables the user to create unlimited report templates that can be used to generate comprehensive acceptance reports, management reports, benchmark and rollout reports, Layer 3-based parameter audits, and interference detection reports.

From a selected dataset, Echo Analyzer can automatically split the data by attributes like timestamp, operator, test iteration, user-defined regions, user-defined attributes, technology, band, channel, cell ID, etc., and generate reports respectively, or generate comparison report side-by-side.

The report output can be saved in different file formats: Excel, Word, PDF, HTML, and PowerPoint. The user can even select an existing PowerPoint file and insert report output into a specific slide.



Benchmarking and scoring

Derived from ETSI scoring recommendations or defined by your own score equations and weighting using the KPIs of your choice, Echo Analyzer can compute the score and output the result in tables or charts. The top score can be displayed and indicated on Map View.

Indoor and outdoor maps

Echo Analyzer includes support for indoor and outdoor mapping and an offline mode map data caching for outdoor maps.

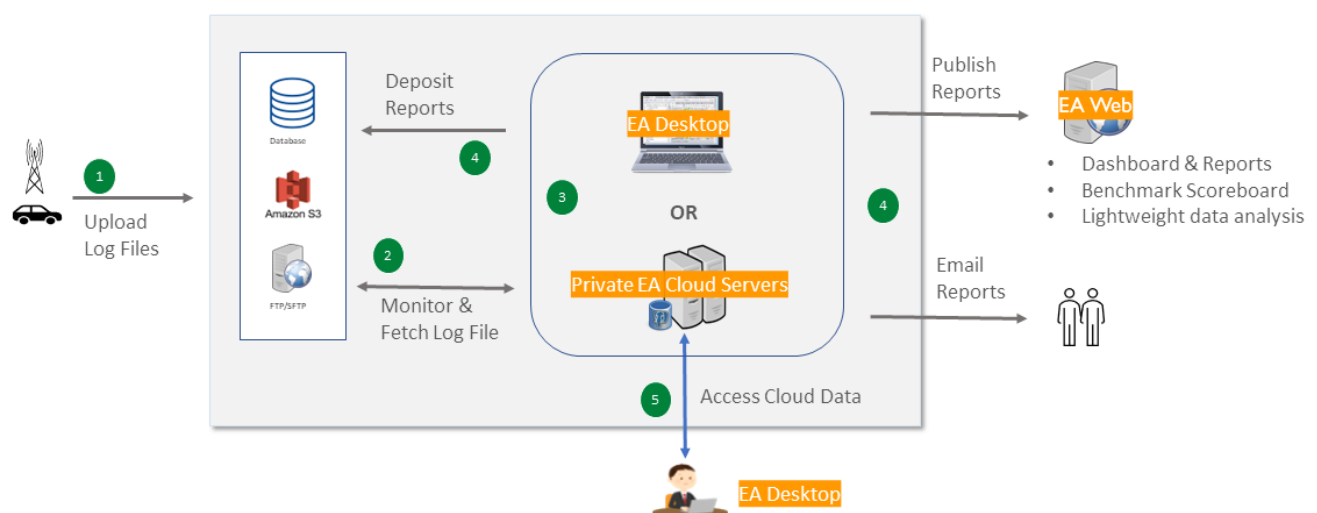
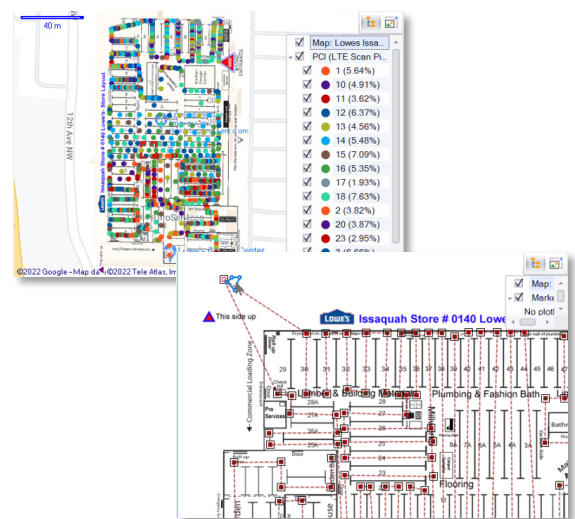
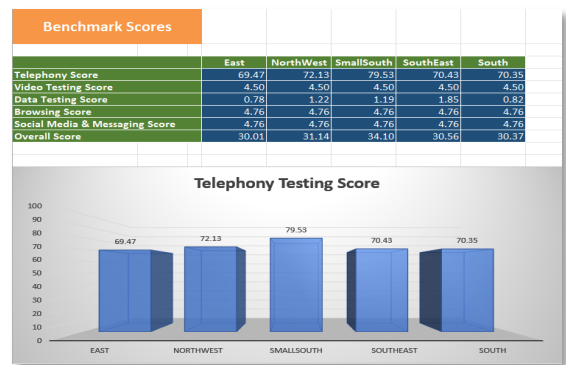
Echo Analyzer supports digital images and photos of the floor plan. The built-in images rectifier can add geocoding to the floor plans with drag & drop on the online outdoor map view, enabling the display of indoor floor plans not only in indoor mode but also on top of outdoor Maps.

Echo Analyzer supports multiple outdoor map types from the online source of Google Maps, Bing Maps, and OpenStreetMap.

Automation

The workflow from monitoring new log data, processing the data, and generating reports according to a schedule, to the delivery of the reports can be fully customized and automated.

Once an automation task is created and set to run, it runs unattended and 24/7 while reporting status via email or text message according to a schedule.



Private cloud and web

The tool can run standalone on a Windows desktop or as a private cloud for centralized data processing and storage and for remote access. A web browser-based solution is also provided for online dashboards and reporting, and lightweight data analysis.

Low deployment cost

Echo Analyzer uses a cost-free open-source PostgreSQL database. It can run on a commodity Windows machine like a regular laptop without an expensive hardware setup.

Flexible licensing

We provide perpetual licensing and annual or monthly subscriptions with competitive pricing.



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