

NEMO ANALYZE

Nemo Analyze 5.06

Nemo Analyze™ is a front-line analysis tool for quick and easy data review. It can be used on the field or in the office for immediate troubleshooting, benchmarking and report generation. Nemo Analyze's troubleshooting capabilities, with quick drill-down to problem cause details and graphical user interface for designing custom KPIs, takes network troubleshooting to a whole new level. All major wireless technologies are supported: TDMA, AMPS, cdmaOne, GSM, HSCSD, GPRS, EDGE, WCDMA, HSDPA, HSUPA, CDMA2000, TD-SCDMA, TETRA, DVB-H, and UMA.

POWERFUL DATABASE ENGINE

In Nemo Analyze, measurement data is stored in an SQL database enabling large sets of data to be easily stored, managed and processed. File structure is maintained in the database. As a result, the performance of queries over measurement files is good regardless of the database size.

The only limit for the number of measurement files in the database is the amount of free hard disk space. However, as the measurement files are automatically packed to take only 10% of the space they would otherwise require, a free hard disk space of 20Gb can contain up to 200Gb of

measurement data. Measurement data (KPIs, signaling, etc.) are retrieved from the database using SQL queries. As there are predefined queries for all parameters in menus and custom queries can be created via GUI, no actual database knowledge is required.

The database has an open ODBC interface. This means that any third party SQL database tool can be used to retrieve data from the database.

Retrieving measurements from the Nemo Analyze database (e.g., from a certain week) and generating reports from them to analyze the current trends in the network is easy. The user can also select an area on a map with a polygon and search for measurements relevant to that area.



Custom KPI workbench

CUSTOMIZABLE USER INTERFACE

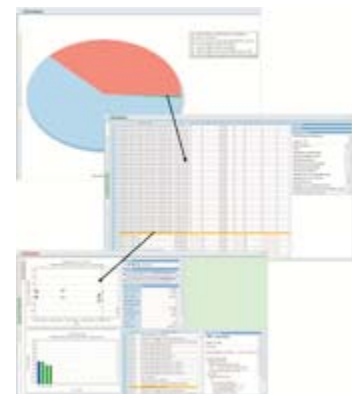
Nemo Analyze user interface is extremely flexible and versatile. The Ribbon bar as a combination of menu bar and toolbar is highly usable and intuitive for the user. Users can create separate workbooks (for example, for UMTS, GSM, and inter-system data) and schedule the running of workbooks on new measurement data

to occur automatically. Each workbook can still contain several pages and frames, such as, a map, layer 3 messages, decoded layer messages, idle mode data, connected mode data, etc. All workbooks and all pages inside the workbooks are synchronized.

Nemo Analyze offers a wide range of ready-made workbooks with pages for all relevant KPIs. The user can also manually create new custom layouts for workbook pages, each page consisting of any number of user-defined data views.

TROUBLESHOOTING

The troubleshooting toolkit option enables the user to perform root cause analysis and quick drill-down to problem details. Troubleshooting is fast, easy and scalable to handle vast amounts of data. The toolkit includes the root-cause analysis of voice calls, video calls, and UMTS RACH procedure. Failures, and the reasons of failures, are clearly pinpointed.



Drill-down from root cause to problem details

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It is possible to drill down to all various problems on network and application level. Drill-down utilizes the benefits of the database in full scale. Because the database does not process any irrelevant data in a drill-down, problems can be found and investigated quickly from vast amounts of data. Each individual failure can then be quickly investigated by drilling down to a user-defined time range of full event details around the problem event.

BENCHMARKING

Benchmarking with Nemo Analyze is easy and scalable to large data amounts, enhancing the cost and time efficiency of network operators. In Nemo Analyze it is possible to make data comparisons among different operators, technologies, cells, IMSIs, polygon areas and time frames, conveniently showing the results in a single graph. For instance, two measurements (e.g. of two different operators) from the same route can be delta plotted on map.



Benchmarking between operators and technologies

Benchmarking can be done over large data sets (gigabytes of data) for KPIs, such as Voice call setup time, Ec/No, Rx Quality, and many more. Benchmarking can be performed quickly in the UI for a single KPI. There are also predetermined benchmarking report templates, in which KPIs from different operators, technologies, and

time frames are conveniently compared and visualized in a single report.

GRAPHS

In Nemo Analyze, all graphs are stackable. Graph types include line, bar, scatter, pie, surface, and color scatter graphs. Color scatters can be used with any two parameters and for instance line graphs can have multiple layers, data from different measurements/queries, and user-definable x and y axes. Grid columns are also user-definable. Map features include route coloring based on any KPI or user-defined attribute (such as coverage of a selected base station), automatic route offset for overlapping routes, and delta plotting as discussed above.

Nemo Analyze's extensive search capabilities make it possible to search textual values, decoded messages, etc. from grid data and to limit searches to columns selected by the user.

STATISTICS

Statistics can be run over a single parameter directly from UI and retrieved either from a single file or from a folder containing multiple files. Benchmarking is made easy by the fact that statistics from different files or folders can be drag-and-dropped into the same graph.

REPORTS

Reporting in Nemo Analyze is based on Crystal Reports. The Crystal Report Viewer tool is embedded in Nemo Analyze. Reports include essential network and application performance KPIs as defined by standards specifications, such as, ETSI, ANSI, etc. Reports can be exported to PDF, Excel, etc., as in standard Crystal Reports. Nemo Analyze comes with default report templates. These reports include all

essential KPIs. With Crystal Reports, users can create their own advanced reports based on custom SQL queries. Anite can also offer tailor-made reports.

Reports can be run over single files or multiple files and the source data for the report can be selected based on different attributes: time frame (e.g. last week), system, cell, measurement file(s), MNC (Mobile Network Code), area, or any combination of the mentioned attributes. As with workbooks, the generation of reports from new measurement data can be scheduled to occur automatically. Reports can also be generated through the timeline view for samples of data.



Exporting reports

In addition to creating report templates, it is also possible to run statistics over a single parameter directly from the UI. Statistics can be retrieved from a single file or over a folder with multiple files.

IMPORTING AND EXPORTING DATA

CSV import enables the importing of any comma separated value data into Nemo Analyze. Reports can be exported to PDF, Excel, .txt, and many other common formats. Area binning results can be exported to Excel. Grid data can be saved as delimited text files, exported to MapInfo format, or exported directly to Excel. Also custom settings (e.g. custom workbooks, queries, color sets, KPIs) can be imported and exported to enable sharing between colleagues.

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