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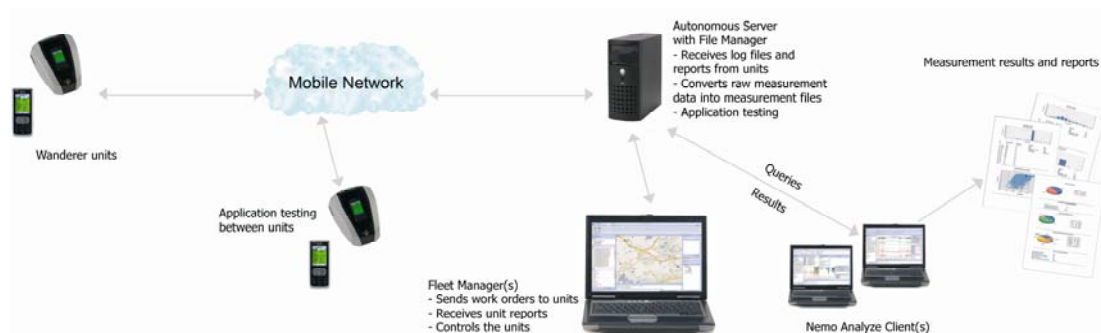


NEMO
AUTONOMOUS

PRODUCT DESCRIPTION

Nemo Autonomous™ combines *detailed and comprehensive air interface measurements with economy and proven, fully automated functionality*. It is the ideal solution for performing continuous, large-scale air interface measurements. Nemo Autonomous supports automated measurements of the air interface of EGSM/GPRS/EDGE/WCDMA/HSDPA wireless networks with a wide range of radio, application, and quality (MOS) metrics, and with the following application testing options: voice quality, video streaming quality, voice calls, FTP, HTTP, WAP, HTML, MMS, and SMS.

Nemo Autonomous provides centralized remote control of field measurement units for unattended walk and drive testing. The probes can be carried on belt or in backpack, or installed in fixed locations or in moving vehicles. A single user is able to monitor and control up to hundreds or even thousands of fixed and mobile probes from a centralized location. This enables operators to decrease the reaction time to network problems, and to improve network service levels faster than before. Also, as the most significant part of the total system costs is directly attributable to the purchase price of the probes, Nemo Autonomous will provide you with the best value for money in automated measurement solutions. Nemo Autonomous *streamlines your network measurement, troubleshooting, statistical reporting, and benchmarking processes, maximizes your awareness of what is happening in the network, and makes achieving all this considerably easier and more cost efficient*.



Automated data processing chain from raw measurement data to a generated report

The system is comprised of a data connection server (Nemo Autonomous Server), file conversion software operating on that server (Nemo File Manager), a database server (Nemo Analyze Database Server), remote control software (Nemo Fleet Manager) connected to the database server, and a number of Nokia N95/N95US/6120/6121 field measurement units (Nemo Wanderer).

Nemo Autonomous Server receives measurement configuration files from Nemo Fleet Manager. The Nemo Wanderer field measurement units retrieve these files and at the same time upload measurement reports and raw measurement data to the server. The server then reroutes the reports straight to Nemo Analyze Database Server and the raw measurement data to Nemo File Manager. Nemo File Manager converts the raw measurement data into measurement files and sends them to a folder on Nemo Analyze Database Server. From this folder, the measurements are auto-loaded into the Nemo Analyze database and, if such operation is scheduled, automatically generated into a workbook with analysis results.

NEMO AUTONOMOUS KEY BENEFITS

- **Continuous, large-scale network monitoring** – Enables continuous awareness of problems in your network
- **Automation** – Data processing chain from the field to an open workbook with analysis results completely automated
- **Streamlined processes** – Network measurement, troubleshooting, statistical reporting, analysis, and benchmarking processes made more streamlined
- **Cost-efficiency** – A single user is able to monitor and control up to hundreds of fixed and mobile probes, removing the need for test drives that require personnel and still produce data limited by the route and the length of the drive test session

NEMO AUTONOMOUS KEY FEATURES

- Nemo Wanderer is a Symbian-based application
- Supports Nokia 6120, 6121, N95, and N95 US terminals
- Nemo Wanderer's standard 1 GB MiniSD card can store up to 100 hours of measurement data
- Nemo Wanderer field measurement unit is extremely lightweight
- Nemo Wanderer collects geographical coordinates with a GPS receiver (Bluetooth or N95 integrated)
- Supports measurements on EGSM/GPRS/EDGE/WCDMA/HSDPA networks
- Voice and video streaming quality measurements based on Mean Opinion Score
- Automated service testing with scripts: voice quality, video streaming quality, voice calls, FTP, HTTP, WAP, HTML, MMS, and SMS
- Measurement sessions created and scheduled with Fleet Manager's easy-to-use calendar view
- Nemo Wanderer standalone mode; measurement sessions can be created and scheduled also using the field measurement unit's built-in calendar view.
- Measurement sessions can be restricted to a specific target area based on coordinates.
- Measurement file upload, report sending, and configuration file download can be prevented after measurement sessions
- Distinct tasks can be assigned for individual probes or groups of probes.
- The location and status of Nemo Wanderer field measurement units can be monitored using the Fleet Manager map view (by default updated every 15 minutes)
- Log file auto-upload to the server via FTP
- Forcing commands for channel lock, scrambling code lock, system lock, and band lock
- A field measurement unit that has ceased sending reports can be remotely detected and forced into maintenance mode via SMS
- Time synchronization based on GPS time

NEMO AUTONOMOUS IMPLEMENTATION EXAMPLES

SMALL-SCALE IMPLEMENTATION

- Autonomous Server SW and HW, including File Manager SW
- Nemo Analyze 5 Standalone post-processing tool (up to 3G + TSTK + Fleet Manager option)
- 5 x Nemo Wanderer field measurement unit N95/N95US/6120/6121
- Installation service 2 days
- HW recommendations: Standard PC requirements for Nemo Analyze Standalone, 1Mbit/s recommended for Ethernet network connection

MEDIUM-SCALE IMPLEMENTATION

- Autonomous Server SW and HW, including File Manager SW
- Nemo Analyze 5 server SW and HW, up to 3G
- 2 x Fleet Manager SW for Windows (Client)
- 5 x Nemo Analyze Clients + Troubleshooting Toolkit
- 50 x Nemo Wanderer field measurement unit N95/N95US/6120/6121
- Installation service 4 days
- HW recommendations: Nemo Analyze 5 Database Server HW (Sun Solaris Server with SPARC processor architecture), 1TB storage capacity, Minimum network connection 100Mbit/s

LARGE-SCALE IMPLEMENTATION

- 5 x Autonomous Server SW and HW, including 5 x File manager SW
- 2 x Nemo Analyze 5 server SW and HW, up to 3G
- 10 x Fleet management SW for Windows (Client)
- 30 x Nemo Analyze Clients + Troubleshooting Toolkit
- 500 x Nemo Wanderer field measurement unit N95/N95US/6120/6121
- Installation service 30 days
- HW recommendations: Nemo Analyze 5 Database Server HW per server (Sun Solaris Server with SPARC processor architecture), 5TB storage capacity, Recommended network connection 100Mbit/s

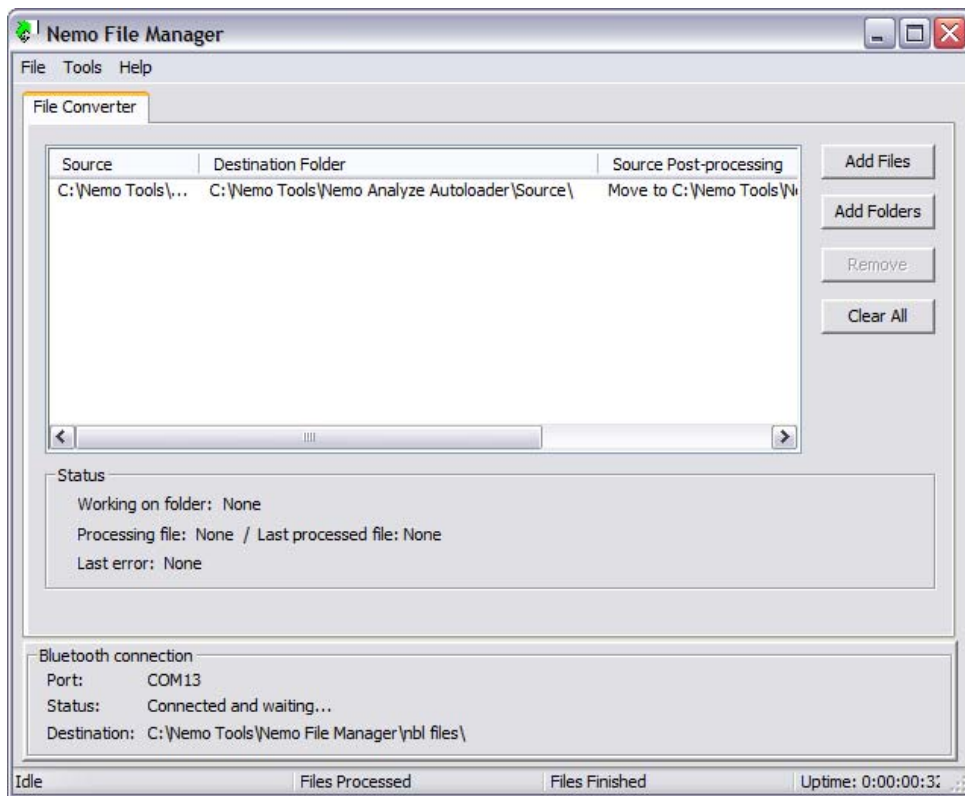
See page 14 for the details of each Nemo Autonomous component.

NEMO AUTONOMOUS SERVER

Nemo Autonomous Server acts as a gateway between the different parts of the Nemo Autonomous system: Nemo Wanderer field measurement units, Nemo Fleet Manager, and Nemo Analyze. A portion of the server runs Nemo File Manager, software that is responsible for converting incoming raw measurement data into Nemo Analyze compatible measurement files.

Nemo Autonomous server receives measurement configuration files from Nemo Fleet Manager. The Nemo Wanderer field measurement units retrieve these files and at the same time upload measurement reports and raw measurement data to the server. The server then reroutes the reports straight to Nemo Analyze Database Server and the raw measurement data to Nemo File Manager. Nemo File Manager converts the raw measurement data into measurement files and sends them to a folder on Nemo Analyze Database Server. From this folder, the measurements are auto-loaded into the Nemo Analyze database and, if such operation is scheduled, automatically generated into a workbook with analysis results.

Nemo Autonomous Server can also be used as the second party in performing voice quality, http, and FTP application testing measurements. However, a separate test server or virtual server can be utilized for this purpose as well, and is in fact recommended due to the vast bandwidth requirements of data testing.



Nemo File Manager converts binary files to Nemo file format

NEMO WANDERER FIELD MEASUREMENT UNITS

The Nemo Wanderer field measurement unit comprises a Nokia Symbian-based smart phone with a tracing capability and a custom box that can be securely wall-mounted or used as a standalone holder. Nemo Wanderer uses DC 12-24 volt car power supply on mobile vehicles and AC 100-240 volt mains power supply in fixed locations.



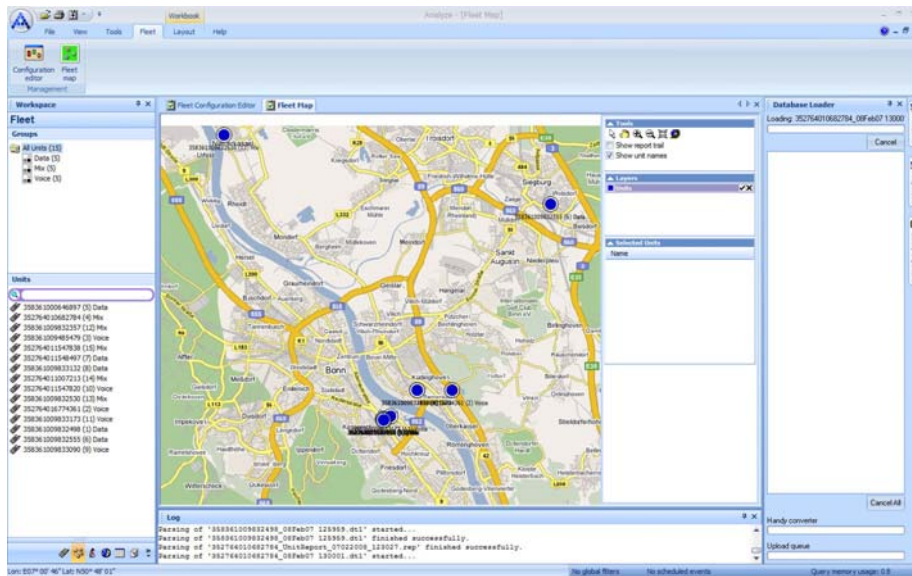
Nemo Wanderer field measurement unit with Nokia N95

Nemo Wanderer measures RF data, signaling, and service level information along with GPS location information. After mounting the probe in a stationary location or a mobile vehicle, it will run unattended, but may require local user attention occasionally. If for some reason a field measurement unit has ceased sending reports, it can be automatically detected by the Fleet Manager and forced into maintenance mode via SMS. Nemo Wanderer will perform measurements according to the configurations it receives over cellular packet data connection from Nemo Fleet Manager. Nemo Wanderer enables the testing of uplink (PESQ) and downlink (PSM) voice quality, video streaming quality, voice calls, FTP/HTTP data transfers, HTML/WAP browsing, email sending/receiving, and SMS/MMS messaging. Automated test connections can be established between individual probes, between a probe and a test number provided by the service provider or between a probe and a test server that can be implemented using either the Nemo Autonomous Server solution or as a separate server assigned specifically for this purpose. The raw measurement is sent by the probes periodically to the Nemo Autonomous Server that converts the data and reroutes it to the Nemo Analyze database for storage and post-processing.

The Nemo Autonomous fleet can include hundreds of measurement units, controlled individually or in groups, performing set tasks. An entire fleet of probes can be monitored and controlled by a single user at a central remote location. Nemo Wanderer's built-in calendar view allows measurement and maintenance sessions to be created and scheduled through the unit's UI, enabling the probe to be used also in standalone mode.

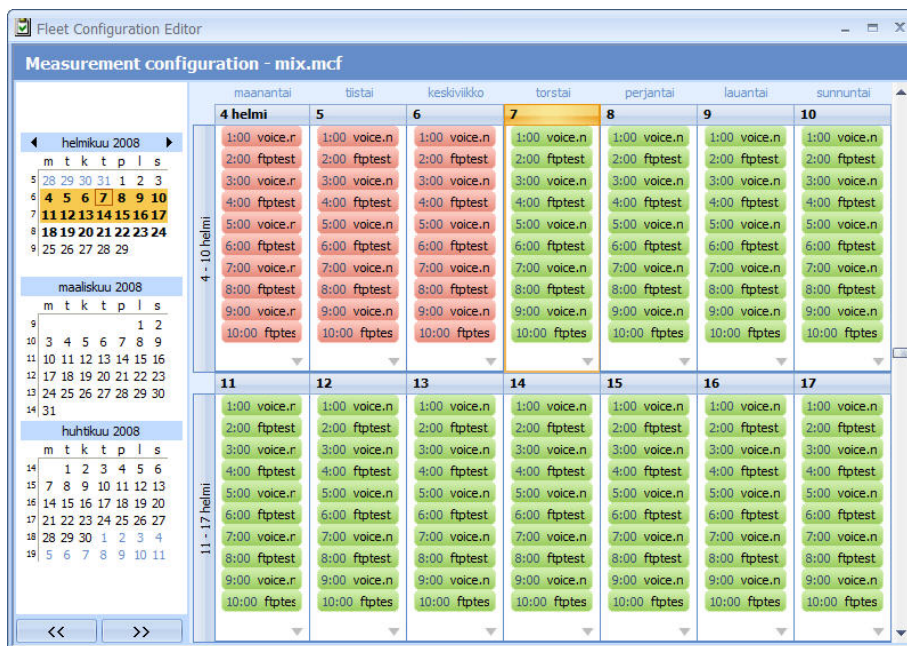
FLEET MANAGER

Nemo Fleet Manager is responsible for the centralized remote management and control of Nemo Wanderer field measurement units. The location and status of all deployed Nemo Wanderers can be displayed and monitored simultaneously on the screen.



The location and status of each deployed Nemo Wanderer unit is updated to the Fleet Manager map view by default every 15 minutes

Fleet Manager enables you to assign distinct tasks for both individual probes and groups of probes. The new measurement configuration files will then be uploaded to Nemo Autonomous Server and retrieved from there by the individual field measurement units during their next maintenance session.



Nemo Fleet Manager's calendar view is an easy-to-use graphical interface for scheduling measurements and creating measurement configuration scripts

NEMO ANALYZE DATABASE SOLUTION

Designing and optimizing the database specifically for drive test data has enabled us to create a solution that not only manages to combine the benefits of both SQL databases and file-based solutions, but also avoids the common database bottlenecks that are all too often accepted as necessary tradeoffs.

With Nemo Analyze...

...the user does not need to know any SQL or anything about the database solution.

The entire functionality of the database is accessible to the user by means of Nemo Analyze's intuitive and easy-to-use graphical user interface.

...the required amount of database administration is little to none. Database installation and maintenance is easy. The innovative structure of the database and its built-in optimization for drive test data make tasks such as indexing and de-fragmenting unnecessary.

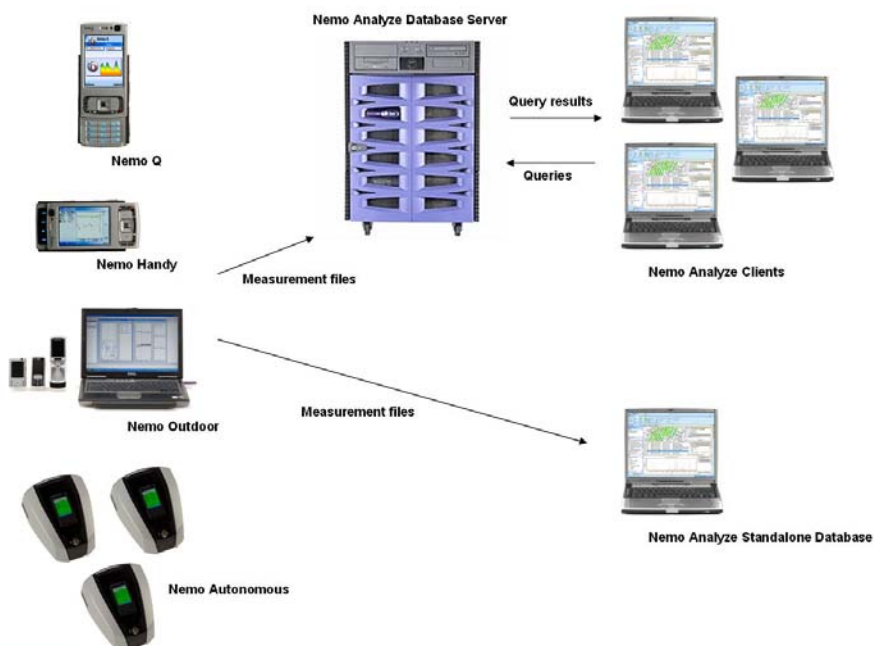
...the entire measurement file is stored in the database instead of just aggregates. It is never necessary to revert to the original measurement files.

...measurement files are automatically packed to take only 10% of the space they would otherwise require. A free hard disk space of 100 Gigabytes can contain up to 1 Terabyte of measurement data.

...the speed and performance of your database is outstanding compared to generic database solutions. The performance of queries over measurement files is good regardless of the database size because file structure is maintained in the database.

...your database size is limited only by the amount of free space you have on your hard disk. Hardware upgrades enable unlimited database size.

...you still get the benefits of using an SQL database. Large sets of data can be easily stored, managed, and processed. The open ODBC interface of the database ensures that the stored data remains accessible also to any third party SQL database tool. Custom KPIs can also be created using SQL.



NEMO ANALYZE CLIENT/SERVER SOLUTION

With the database server solution, all measurement data in an organization can be centralized on a single server. This makes it possible to ***ensure that your organization's entire body of measurement data is always securely stored, backed up and accessible to multiple simultaneous users.***

The database server makes the distribution of measurement data within your organization more efficient. All client users upload their measurement data into the same database. When a new file is added to the database, it is immediately available for analysis for all users in the system. This way each user does not have to search and load the same data into the post-processing tool.

The user interface and functionality of the client is identical with the standalone version. The only difference is that instead of querying a standalone database, the client sends its queries to the database server over IP network. The server processes these queries and sends the results to the client that performs the visualizing of the data.

The database server is based on 64bit Sun Solaris SPARC server. The server supports multiple simultaneous users. There are three hardware configurations of different performance levels available, ranging from an entry level configuration intended for relatively small user groups to a professional level configuration intended for large organizations.

POST-PROCESSING WITH NEMO ANALYZE

Nemo Analyze™ is a powerful and versatile, cutting-edge analysis tool for performing benchmarking, troubleshooting and statistical reporting based on drive test data. The system *scales from a standalone tool to an enterprise-level client/server solution and incorporates an innovative, low-maintenance database engine that has been designed and optimized specifically for high-performance post-processing of drive test data.* The system also helps you to streamline your processes by enabling you to automate the entire data processing chain from a drive test to an open workbook with analysis results.

Nemo Analyze *offers a comprehensive set of technology-specific Key Performance Indicators for the latest wireless technologies and a wide range of data views that are known to offer the best visualization of drive test data on the market - and yet it is highly cost effective, easy to install and use, and it scales to meet the needs of organizations of any size.*

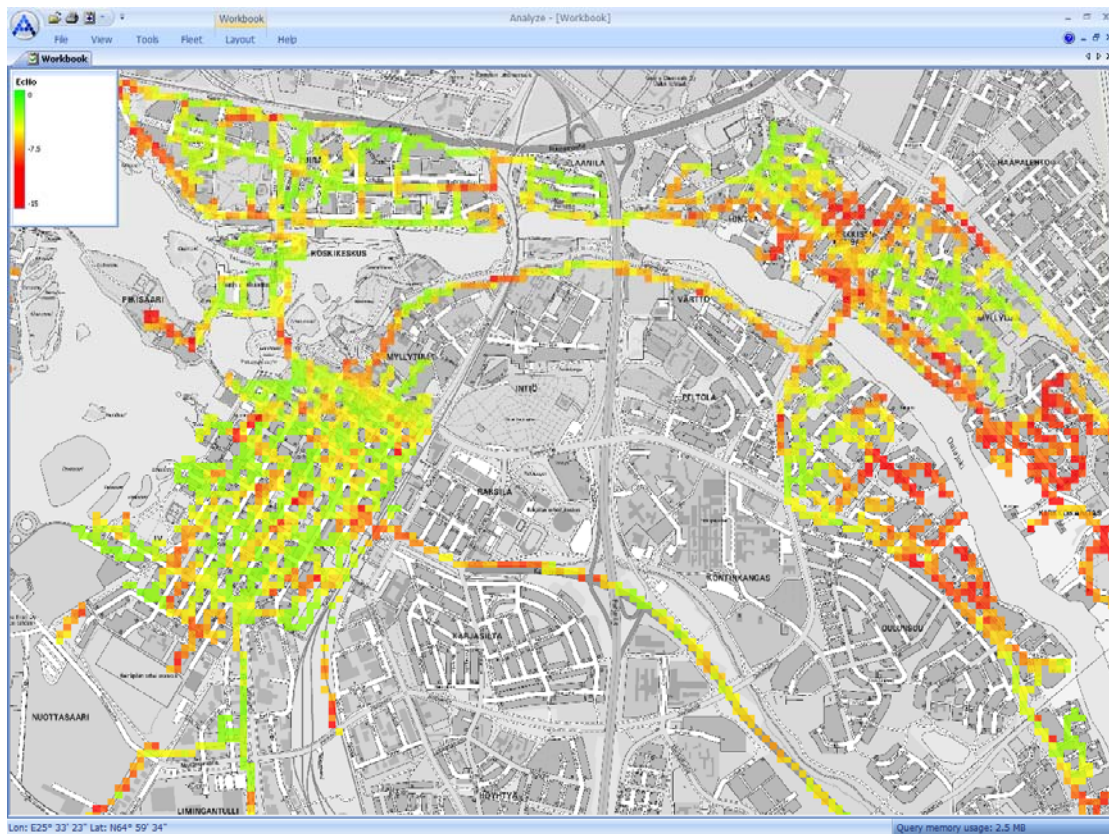
All major wireless technologies, namely TDMA, AMPS, cdmaOne, GSM, HSCSD, GPRS, EDGE, WCDMA, HSDPA, CDMA2000, TETRA, DVB-H, UMA, HSUPA, TD-SCDMA, and WIMAX, *are supported.*



Drilling down from root-cause analysis to full event details

Nemo Analyze enables you to perform operations, such as troubleshooting, map plotting, and report and workbook generation, based on hundreds of hours of measurement data fast and efficiently. It is also easy to automate these routine operations: measurement data upload into the database and its generation into a report or a workbook can be scheduled to occur at any desired time on recurring intervals.

Each Nemo Analyze workbook can contain several pages and frames, such as a map, various graphs, layer 3 messages, decoded layer messages, idle mode data, connected mode data, etc. All workbooks, all pages within the workbooks, and data views on each workbook page, are all synchronized. Multiple layers in the same graph window offer a convenient way to compare two or more RF parameters simultaneously. Measurement data can be plotted on MapInfo® compatible maps. With the troubleshooting toolkit, you can perform root cause analysis and quick drill-down to problem details. Reports can be used to make reports quickly and easily by simply following the instructions given in the windows. Reports display important overall statistics, such as, Call Success Rate, Handover Success Rate, and Frame Error Rate.



Nemo Analyze provides you with the best visualization of drive test data on the market

Nemo Analyze supports the measurement data produced by the Nemo measurement tools (i.e. Nemo Outdoor, Nemo Handy, Nemo Q and Nemo Autonomous) and the EADS TETRA/Tetrapol REMS file format.

APPLICATION TESTING

Nemo Autonomous supports several application testing options based on scheduled scripts sent by Fleet Manager. It is possible to test UL and DL voice quality, video streaming quality, voice calls, FTP/HTTP data transfers, WAP/HTML browsing, email sending/receiving, and SMS/MMS messaging. The QoS/QoE KPIs logged by Nemo Autonomous include connection setup delay, download time, time-to-content delay, throughput, etc.

VOICE QUALITY OPTION

Nemo Autonomous supports scripted voice quality measurements. Nemo Wanderer Voice Quality enables the evaluation of both up and downlink voice quality of a live network based on the 'average' listener's perception of voice quality represented as a Mean Opinion Score (MOS). Downlink voice quality is measured using Psytechnics' PSM Mobile module and uplink using Perceptual Evaluation of Speech Quality (PESQ).

Speech quality can be measured via two complementary means: subjective and objective tests. In subjective testing of voice quality, a panel of users rates a given quality on a limited scale of 1-5, after which a MOS is calculated by averaging the votes of all the subjects. To improve time and cost efficiency, objective testing techniques have been developed through extensive work to replace a large amount of subjective testing to provide an automated prediction of speech quality. PSM Mobile by Psytechnics is an objective, non-intrusive (passive) testing technique, and this model has made use of the Psytechnics database which contains over 220,000 subjective votes.

PSM Mobile is a port of Psytechnics NiQA-DSP-LQ algorithm. At its core, NiQA-DSP-LQ has a sophisticated identification system which has been designed to cover a wide variety of speech distortion and degradation classes, and to predict their impact on the subjective quality of the speech stream as perceived by human perception. PSM Mobile is a lighter and faster version of ITU P.563, predicting a Listening Quality MOS in a similar way to P.563. PSM Mobile is embedded in Nemo Wanderer Voice Quality, and it is activated whenever a signal is received. Nemo Wanderer Voice Quality measures the MOS of the Listening Quality of a received signal based on human perception. The Nemo Wanderer field measurement unit obtains the signal by calling a test server (i.e. Nemo Autonomous Server) that automatically starts sending an audio sample (provided by Anite Finland Ltd) to the caller. The first MOS score is delivered to the field measurement unit after a 20 second delay from the outset of the scripted phone call, and after that the samples will be delivered every 6 seconds. To facilitate uplink voice quality PESQ measurements, audio sample sending is also possible from the field measurement units.

As regards accuracy, NiQA-DSP-LQ has been tested over a wide range of network architectures, conditions and languages in accordance with current ITU practice. The model has a good correlation with subjective material with 20, 000 speech files. It is worth noting here that although the passive testing of voice quality is highly reliable due to its correlation to a host of subjective test sessions, the accuracy and reliability of single point MOS measures are still improving as more calls are being analyzed and averaged over time. Consequently, it is not advisable to make any decisions on network routing or configuration based on a single call MOS.

VIDEO STREAMING QUALITY OPTION

Nemo Autonomous supports scripted video streaming quality measurements. The Nemo Wanderer video quality measurement system assesses the quality of the video stream and returns a Mean Opinion Score (MOS) prediction reflecting the 'average' customer's perception of quality. IP and network level diagnostics are also recorded to pinpoint reasons and problems behind the MOS score.

Nemo Autonomous video streaming quality measurements are based on PVI (Psytechnics Video IP Monitor). PVI is a non-intrusive, non-reference method for measuring video quality by analyzing the video stream IP packet flow. The characteristics of the IP stream, such as packet loss and jitter, and the behavior of the jitter buffer and the error concealment algorithm in the terminal are used to assess the MOS score. Properties of the stream, such as video format and bandwidth, are also taken into account. With 120kbps bandwidth .3gp stream in the Nokia N95 phone, the best achievable MOS score is typically around 3.9. The lowest possible MOS score is always 1, regardless of the stream type. If the stream freezes, a 0 MOS score is reported.

Video streaming quality measurement is activated whenever a video stream download is started from Nemo Wanderer. RealPlayer for s60 is used as a streaming client and thus all video formats supported by RealPlayer can be used in measurements. Video content from any accessible public, commercial, or private test server can be used in the tests. Access point name and URL of the video stream are the only required parameters in the test setup. Tests can be performed manually or automatically with user-configurable scripts. In addition to the MOS score, Nemo Wanderer records jitter and packet error rate on the IP level, and a full set of RF and network level KPIs (RSCP, Ec/No, BLER, L3 signaling, etc.) During the measurement, instantaneous MOS, IP and key network level diagnostics are all displayed with the actual video stream. The average MOS score is displayed at the end of the stream.

VOICE CALLS

The Nemo Autonomous system offers support for scripted voice call testing. Voice call related measurement events stored in the Nemo Wanderer log file include call attempt, call connect success, call disconnect, and call failed

HTTP/FTP CONNECTIONS

The Nemo Autonomous system offers support for scripted testing of HTTP/FTP downloads. HTTP/FTP transfer related measurement events stored in the Nemo Wanderer log file include data connection attempt, data connection success, data disconnect, and data connection failed.

HTML/WAP BROWSING

The Nemo Autonomous system offers support for testing HTML/WAP browsing using scripts. HTML/WAP browsing related measurement events stored in the Nemo Wanderer log file include HTML/WAP browsing attempt, HTML/WAP browsing success, and HTML/WAP browsing failed.

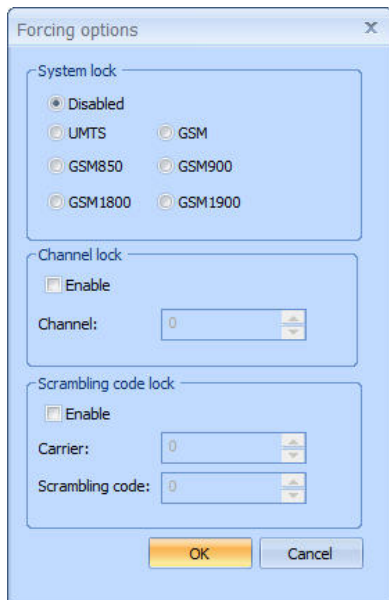
SMS/MMS MESSAGES

The Nemo Autonomous system offers support for scripted testing of SMS/MMS sending. SMS/MMS related measurement events stored in the Nemo Wanderer log file include SMS/MMS send attempts, SMS/MMS send succeeded/failed, and SMS/MMS success rate.

FORCING FEATURES

The Nemo Wanderer field measurement unit supports the following forcing features:

- Channel lock
- Scrambling code lock
- System lock
- Band lock



Creating a forcing configuration for Nemo Wanderer units in Nemo Fleet Manager

Note that the selection depends on the technology that the mobile is connected to. With Channel Lock the Nemo Wanderer unit can be locked on a GSM channel. With the Scrambling Code Lock the mobile can be locked on a carrier and a scrambling code. With the System Lock feature, the mobile can be locked on one of the systems and bands: UMTS, GSM, GSM 850, GSM 900, GSM 1800, and GSM 1900. The Status view will display the status for each forcing feature.

CONFIGURATIONS

The Nemo Autonomous system is highly configurable. You can choose the components of your Nemo Autonomous system from the following categories:

- Nemo Autonomous Server Configurations
- Field Measurement Unit Platforms/Nemo Wanderer
- Supported Quality Measurement Features/Nemo Wanderer
- Nemo Analyze Platforms
- Nemo Analyze Editions
- Supported Technologies/Nemo Analyze
- Nemo Analyze Database Server Implementation Levels

NEMO AUTONOMOUS SERVER CONFIGURATIONS

- **Nemo Autonomous Server** with File Manager
- **Nemo Autonomous Server** with Voice Quality Server and File Manager
- **Nemo Autonomous Server** with Data Test Server and File Manager
- **Nemo Autonomous Server** with Voice Quality Server, Data Test Server, and Fleet Manager

FIELD MEASUREMENT UNIT PLATFORM/NEMO WANDERER NOKIA 6120

- WCDMA/HSDPA 850/2100
- GSM/EGSM/GPRS/EGPRS 850/900/1800/1900
- HSDPA (Category 6: PS UL/DL=384/3.6 Mbits, CS 64 (video calls))
- GPRS/EGPRS (Class B, Multislot class 32): DL/UL=296/177.6 kbps, Timeslots 5+3, max 6
- GSM/EDGE (Simple class A, Multislot class 11, DL/UL: 177.6/ 118.4 kbps)
- DTM (Multislot class 11: DL/UL 118.4/118.4 kbps)
- HR/FR/EFR(GSM)/ AMR(GSM and WCDMA) speech codecs

FIELD MEASUREMENT UNIT PLATFORM/NEMO WANDERER NOKIA 6121

- WCDMA/HSDPA 900/2100
- GSM/EGSM/ GPRS/EGPRS 850/900/1800/1900
- HSDPA (Category 6: PS UL/DL=384/3.6 Mbits, CS 64 (video calls))
- GPRS/EGPRS (Class B, Multislot class 32): DL/UL=296/177.6 kbps, Timeslots 5+3, max 6
- GSM/EDGE (Simple class A, Multislot class 11, DL/UL: 177.6/ 118.4 kbps)
- DTM (Multislot class 11: DL/UL 118.4/118.4 kbps)
- HR/FR/EFR(GSM)/ AMR(GSM and WCDMA) speech codecs

FIELD MEASUREMENT UNIT PLATFORM/NEMO WANDERER NOKIA N95

- HSDPA/WCDMA 2100
- GSM/ EGSM/GPRS/EGPRS 850/900/1800/1900
- Wi-Fi 802.11b/g
- HSDPA (Category 6: PS UL/DL=384/3.6 Mbits, CS 64 (video calls)),
- EGPRS (Class B, Multislot class 32): DL/UL=296/177.6 kbps, Timeslots 5+3, max 6
- GSM/EDGE (Simple class A, Multislot class 11, DL/UL: 177.6/ 118.4 kbps)
- DTM (Multislot class 11: DL/UL 118.4/118.4 kbps)
- HR/FR/EFR(GSM)/ AMR(GSM) speech codecs,
- Integrated GPS receiver

FIELD MEASUREMENT UNIT/NEMO WANDERER NOKIA N95 US

- HSDPA/WCDMA 850/1900
- GSM/EGSM/ GPRS/EGPRS 850/900/1800/ 1900
- Wi-Fi 802.11b/g
- HSDPA (Category 6: PS UL/DL=384/3.6 Mbits, CS 64 (video calls)),
- EGPRS (Class B, Multislot class 32): DL/UL=296/177.6 kbps, Timeslots 5+3, max 6
- GSM/EDGE (Simple class A, Multislot class 11, DL/UL: 177.6/ 118.4 kbps)
- DTM (Multislot class 11: DL/UL 118.4/118.4 kbps)
- HR/FR/EFR(GSM)/ AMR(GSM) speech codecs,
- Integrated GPS receiver
- EGPRS/GPRS (Class B, Multislot class 10): Timeslots 4+3 (DL+UL)
- WCDMA 850/1900 (PS 384/384, CS 64, Multi RAB)

SUPPORTED QUALITY MEASUREMENT FEATURES/NEMO WANDERER

- *Voice Quality*
- *Video Streaming Quality*

NEMO ANALYZE PLATFORMS

Nemo Analyze can be implemented as Nemo Analyze Standalone or Nemo Analyze Client/Server. You can build the post-processing solution you need by adding the relevant technologies and features on one of these platforms.

- ***Nemo Analyze Standalone Platform*** (standalone database) for Windows® XP Professional/Windows Vista™
- ***Nemo Analyze Client Platform*** (requires database server) for Windows® XP Professional/Windows Vista™

NEMO ANALYZE EDITIONS

Nemo Analyze comes in four editions:

- ***Nemo Fleet Manager*** – Fleet Manager only, no post-processing functionality
- ***Nemo Analyze Lite with Nemo Fleet Manager*** – Limited report generation edition
- ***Nemo Analyze Standard with Nemo Fleet Manager*** – Perfect solution for all post-processing and statistical reporting tasks
- ***Nemo Analyze Professional with Nemo Fleet Manager*** – Specialist edition for advanced troubleshooting and custom KPI creation

	Nemo Analyze		
	Lite	Standard	Professional
Database engine	✓	✓	✓
Organizing measurement data into subsets	✓	✓	✓
Statistical reporting with Crystal Reports	✓	✓	✓
Benchmarking reports	✓	✓	✓
Measurement data visualization with complete set of data views		✓	✓
Playback of individual log files		✓	✓
Cell reference data with base station map overlay		✓	✓
Data export to MapInfo, Excel, txt, and Google Earth		✓	✓
Database filtering based on technology, time, operator, etc.		✓	✓
Parameter statistics		✓	✓
Automatable file upload and report/workbook execution		✓	✓
Area binning		✓	✓
Custom SQL queries		✓	✓
KPI Workbench with an easy-to-use GUI for creating custom KPIs			✓
Statistical reporting with MS Excel			✓
Advanced cell reference information incl. drift from antenna main lobe			✓
Advanced data filtering and global filters			✓
ODBC connectivity to 3rd party databases			✓
Automated problem survey with drill-down			✓
Automated detection/analysis of common GSM/UMTS problems			✓

SUPPORTED TECHNOLOGIES/NEMO ANALYZE

Nemo Analyze Standard and Nemo Analyze Professional can be equipped with support for the following technologies. Nemo Analyze Lite always comes with and is strictly limited to the support for GSM, GPRS, EDGE, UMTS, HSDPA, and HSUPA.

- GSM
- GPRS
- EDGE
- AMPS
- TDMA
- CDMA2000
- WCDMA
- HSDPA
- HSUPA
- WiMAX mobile
- TD-SCDMA
- DVB-H
- TETRA

SUPPORTED FILE FORMATS

Nemo Analyze Standard and Nemo Analyze Professional can be equipped with support for the following file formats.

- CSV Import for importing ASCII data in CSV (Character-Separated Value) format into the database
- Ericsson TEMS Investigation (versions 6.0 – 9.0)
- Ericsson TEMS Investigation GSM (versions 5.0 onwards)
- Ericsson TEMS Investigation WCDMA (versions 3.0 onwards)
- Ericsson TEMS Automatic (versions up to 7.0)
- Ericsson TEMS Pocket (versions up to 6.0/Z750i)
- Ericsson TEMS technology options (GSM, GPRS, EDGE, WCDMA, HSDPA, and HSUPA)
- EADS REMS TETRAPOL file format

SYSTEM REQUIREMENTS FOR FLEET MANAGER/NEMO ANALYZE STANDALONE/NEMO ANALYZE CLIENT

- PC with Windows® XP Professional/Windows Vista™
- Pentium III processor or better, minimum 1 GHz, preferably 2 GHz
- 1 GB RAM minimum
- 1 GB of free hard disk space for installation and use; 20 GB recommended
- Nemo Analyze copy protection module
- One parallel port or USB port for copy protection module
- Display resolution 1024x768 min, 1280x1024 or better recommended
- Minimum Crystal Reports version requirement is Crystal Reports Professional edition

SYSTEM REQUIREMENTS FOR NEMO ANALYZE DATABASE SERVER

Hardware examples are subject to change as more optimal server platforms become available.

- Hardware: 64-bit Windows Server or 64-bit Sun Solaris Server (SPARC Processor Architecture)
- Software: Analyze 5 database engine, ObjectStore DB Server

NEMO TOOLS

In addition to Nemo Autonomous, Anite Finland Ltd. offers a comprehensive range of tools and software for measuring and analyzing wireless networks.

- Nemo Analyze™** Nemo Analyze™ is a powerful and versatile, cutting-edge analysis tool for performing benchmarking, troubleshooting and statistical reporting based on drive test data. The system scales from a standalone tool to an enterprise-level client/server solution and incorporates an innovative, low-maintenance database engine that has been designed and optimized specifically for high-performance post-processing of drive test data.
- Nemo Outdoor™** A portable engineering tool for measuring and monitoring the air interface of TETRA, GSM (HSCSD, GPRS, EDGE), WCDMA (UMTS), TDMA (IS-136), AMPS, cdmaOne, CDMA 2000, UMA, HSDPA, HSDPA 16QAM, HSUPA, TD-SCDMA and WiMAX wireless networks.
- with Indoor Option** Nemo Outdoor is ideal for indoor measurements. Lightweight Tablet PC makes it is easy to carry and allows the user to plot the measurement route on a floor plan with a click of a pen.
- with Multi Option** Nemo Outdoor Multi enables benchmarking measurements on multiple networks and even on multiple technologies at the same time. Possibility to establish up to five simultaneous packet/circuit-switched data connections from test terminals.
- Nemo Compact-i™** Nemo Compact-i, the first Ultra Mobile PC-type measurement device on the market, broadens the Nemo handheld measurement tool palette to support the CDMA/EV-DO and HSDPA networks. Intelligent and compact computing performance introduced in a package that fits in your pocket.
- Nemo Handy™** Nemo Handy is a state-of-the-art handheld tool for testing mobile application QoS/QoE and measuring the air interface of EGSM/GPRS/EDGE/WCDMA/HSDPA/Wi-Fi 802b/g wireless networks. Nemo Handy not only provides you with the best real-time measurement visualization on the handheld market, it also enables you to build your own custom real-time views for all the relevant network parameters supported by the terminal's mobile trace interface.
- Nemo Q™** Nemo Q is an easy-to-use troubleshooting tool for customer-assisted network problem solving. Nemo Q supports GSM, GPRS, EDGE, WCDMA, and HSDPA wireless networks and is available for Nokia N75, N80, N95, N95 US, 6120, and 6121 terminals. The unique concept of Nemo Q, where the end-customer is able to send a log file to the service provider each time a network problem is encountered, represents the future of the service provider business.

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