# Messenger@Net
## Open messaging platform





## Key features

- Messaging platform suitable for numerous industries
- Management of critical events
- Send alarm messages to individuals and groups
- Message delivery to DECT handsets or fixed telephone sets
- Message delivery ensured through repeat sending or transfer to alternative destinations
- Confirmation of message receipt
- Phone-call alarm generation, confirmation, cancellation, and escalation
- SMS and paging support
- Calendar functions
- Easy access through web interface
- Connection to external applications
- Multi-protocol support
- Secure and reliable system
- Message scripting (evacuation)
- User-friendly configuration assistant
- Advanced logging features
- Ad hoc voice recording
- Location indication
- No-movement feature

Messenger@Net offers a wide range of possibilities for capturing critical events, processing them in a sophisticated way and instantly sending related alarm messages to various destinations.

The system benefits all users by reducing response times, ensuring accurate communications, increasing productivity and improving safety and satisfaction levels.

Messenger@Net is suitable for hospitals and care facilities, hotels and holiday villages, industrial complexes, utility providers, emergency services and many other sectors. System safeguards include: the ability to back-up and log data, secure communications with external systems, a Watchdog functionality for all active programs and the possibility to send alarms in cases of failure.

To capture and dispatch alarms, Messenger@Net interfaces with a variety of external applications – such as on-site paging systems, nurse-call systems, building management systems, Short Message Service (SMS) and electronic mail – which can be connected to Messenger@Net due to its support of numerous protocols, such as ESPA 4.4.4 and SNMP.

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# General & industry specific benefits

- **Single platform for all your messaging needs** – Thanks to its scalability, modularity and flexibility, Messenger@Net addresses both current and future messaging needs within your specific business environment.
- **Enhanced response to critical events** – Instant delivery of alarm messages to the correct recipients reduces reaction times in critical situations.
- **Increased productivity** – Human error is minimised by automating alarm monitoring functions, allowing staff to be deployed on more productive tasks instead of waiting for alarms to occur on an event console.
- **Ensured notification** – Thanks to the Persistent Escalation feature, alarm messages are forwarded to alternative destinations until the appropriate personnel are assigned to an emergency call.
- **Robust solution** – Messenger@Net calls upon the full capacity and reliability of the underlying communications infrastructure.
- **Superior coverage and reach** – Fixed phones and e-mail, mobile and DECT terminals: these are just few of the end-points to which alarm messages can be delivered, in the form (voice or text) that best suits the critical event.
- **Simple to use** – Messenger@Net offers a straightforward, user-friendly, web-based interface that allows profiles and configurations to be modified and adapted to the constantly changing business environment.
- **Investment protection** – Thanks to its openness, Messenger @Net can easily be integrated in your existing management system or in other solutions, such as Management@Net or Contact@Net.
- **Save money with speedy implementation and ROI** – Messenger@Net can be easily deployed on your network, allowing fast recovery of investment, typically within a few notifications.
- **Remote problem resolution** – With terminals that allow two-way messaging, such as our range of business telephones, staff can remotely control the management system, reducing the risk of disruption to your business processes.
- **Reliable and instant execution of emergency plans** – Messenger@Net enables evacuation procedures, such as fire alarms, to be set instantly and clearly into motion.
- **Provide better services** – Guarantee patient assistance in hospitals or guest satisfaction in hotels.
- **Ensure operational efficiency** – In a manufacturing or utility environment, the continuity of operations can be improved thanks to the timely dispatch of alarm messages, reducing to a minimum any downtime in the production process.
- **Improve personnel communications and co-operation between staff** – In wide areas such as retail complexes and holiday villages.
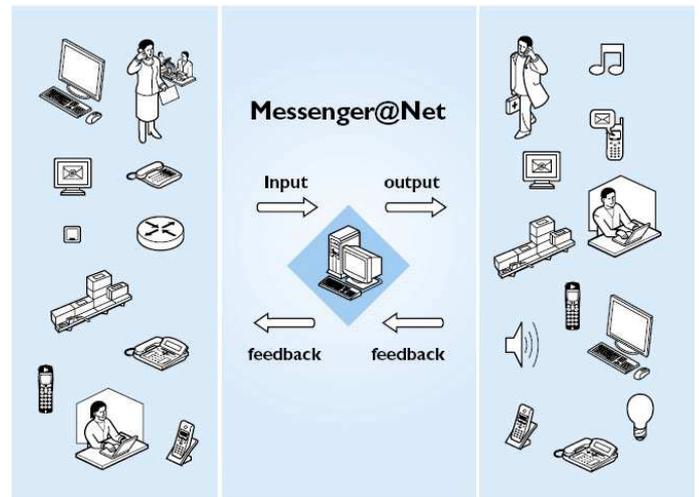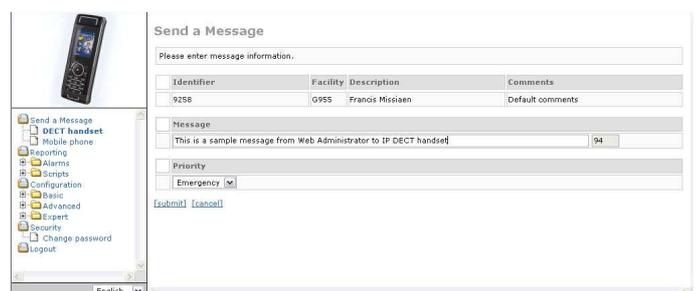


## Architecture

Messenger@Net is a client/server application with dynamic, real-time updating of all database modifications from any PC on the network. By utilising TCP/IP, clients can connect to the server via LAN,WAN or remotely via the internet. As each client makes modifications to the centralised database, these changes are reflected instantly to all the other clients. This approach enables any PC (with the appropriate security clearance) to make modifications to any aspect of the system, regardless of whether it concerns adding pagers, booking reminder messages or performing maintenance.

By accessing Messenger@Net via the web, users can send messages, verify messaging status and even change configurations, at any time and from anywhere.

In addition, Messenger@Net has a highly scalable and modular architecture. Different modules can be obtained for each important function, such as dispatching messages via e-mail or a nurse call system, or sending messages to DECT or GSM handsets.

## Message dispatching

Messages can be dispatched directly from PCs, either locally via Messenger@Net client software or remotely via the Web Access module. Users simply select the person they wish to contact from a list of recipients or groups, type in the message (or select one from a predefined list) and click the send button. Messenger@Net then determines how to reach the destination, depending on whether it is an on-site pager, city-wide pager, DECT handset, mobile phone or a fixed telephone set.

# Alarm monitoring

Messenger@Net determines the priority and urgency of messages and makes sure that no call goes unanswered or is lost.

Sending a message to a DECT handset means that, even if the recipient is engaged on a call, the message will still be received. Receipt of urgent messages can also be confirmed during the voice call. Different melodies (or vibrations) can be used to identify different call types and messages are stored in the handset for later deletion or forwarding.
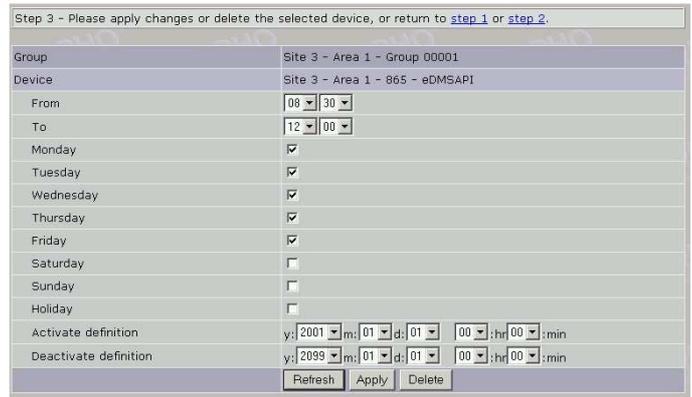
Moreover, the system's roster facility enables different staff to be contacted depending on the day and time a call is received. The presence or absence of individual group members is determined based on calendar and holiday information, while the intuitive user interface provides a quick overview of staff scheduled for a particular shift.

Once an alarm is triggered, a message describing the alarm, its location and any other required information is instantly sent to the appropriate staff members.

In addition, all alarms are logged on hard disk for future reference. Should an alarm remain unresolved, Messenger@Net escalates it to an alternative recipient.

It is also possible to send messages to ErgoLine terminals and DECT handsets that do not support LRMS/E2 messaging. In such cases, messages can be displayed while the telephone set is ringing or off the hook.

It is often necessary to contact more than one person at a time, during a fire alarm, for example. To this end, group facilities are incorporated within Messenger@Net. Groups may consist of any combination of pagers, DECT handsets, mobile phones, city-wide pagers or e-mail users. Adding a member to a group is a simple matter of clicking on the new recipient's tag and dragging it into the desired group. The number of groups that can be set up is unlimited, while the maximum group size is 100 destinations.
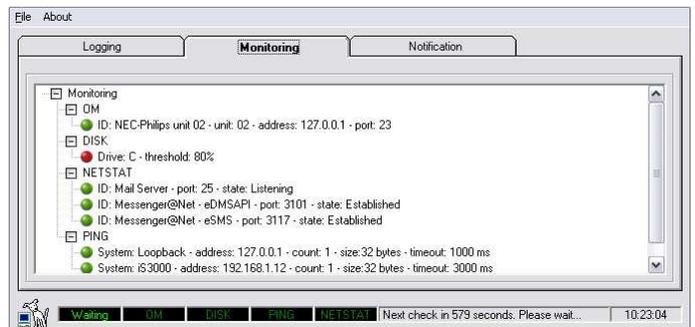
# E-mail integration

While e-mail has become the communications medium of choice for the business community, around 40 per cent of the average work force is mobile and virtually all professionals make use of a mobile phone or pager. Messenger@Net embraces these media, enabling messages to be sent both to wireless recipients and to e-mail accounts. When an alarm is activated, for instance, Messenger@Net can send a message to a DECT handset and a copy to the e-mail address of the same user.

Moreover, Messenger@Net is both an e-mail client (able to send e-mails) and an e-mail server (able to receive e-mails for dispatching to mobile recipients).

# PBX interface

Messenger@Net is connected to the communications infrastructure through an Ethernet connection. DECT handset users and users of any other telephone set connected to the communication infrastructure qualify as destinations (and sources) for alarm messages. DECT handsets can be connected to both Business Mobility DECT and IP-DECT environments. If DECT handsets cannot be reached, messages are forwarded to alternative destinations. If DECT handsets users do not confirm urgent messages, alternative actions are taken by the messaging system.

If messaging functionality is required at several locations, a Messenger@Net system must be connected to each PBX unit. All Messenger@Net systems are connected to the LAN or WAN, forming a client/server network. This set-up is ideally suited for organisations with multiple sites (e.g. campuses) enabling staff roaming between sites to be contacted.



# Third party interfaces

Messenger@Net can interface with numerous third-party alarm systems, enabling virtually any aspect of your premises and/or alarm systems to be monitored. Examples include building control (such as machine monitors, AC control or security), remote contacts (door switches, proximity devices) and nurse call systems.

Alarm information can be fed directly from 'intelligent' serial or TCP/IP connections, or via low-level alarm inputs. A list of interface protocols is available for various third-party application suppliers. The most common – based on ESPA 4.4.4 – is supported as a bi-directional interface. The SNMP interface is also supported.

Should Messenger@Net require a connection to a relay or analogue/discrete contact then a National Instruments contact device is required for the connection to the Messenger@Net interface (RS232 or LAN).

# Alarming for voice and data

Messenger@Net is also capable of handling all your voice and data platform alarms, using an API or SNMP interface.

# Location indication

Messenger@Net can also send alarm messages with an indication of the location from which the alarm was initiated. An alarm call is made from a DECT handset to an emergency DNR. The alarm could, for example, be initiated by pressing the SOS button on top of the I600 handset. Within seconds, the appropriate staff (as pre-configured) will receive an alarm message on their handsets. This message contains the alarm text and a rough indication (based on the last RFP used) of where the emergency is located.

# Ad hoc voice recording

For specific purposes, such as re-animation alarms, Messenger@ Net can be used for the ad hoc recording of speech messages. Anyone who wants to initiate an alarm can dial a specific DNR. Dialling this DNR initiates a small (pre-recorded) announcement inviting the caller to record a short voice message. After terminating the call, the voice message is sent to the appropriate individual or group and its receipt confirmed by simply pressing a key.

Depending on the number of channels available on the Dialogic board, several of these alarms can be managed in parallel. If a handset or fixed phone is busy, Messenger@Net will keep trying to call the destination, at programmable intervals, to make sure the message is received.

# No-movement alarm

As an alternative to the dedicated and expensive no-movement (dead-man) features on certain handsets, customers can instead use Messenger@Net's no-movement function. The no-movement function for a specific DECT handset is activated by dialling a certain number in the PBX. Messenger@Net then monitors the DECT handset's location



every X seconds/minutes. If the handset remains at the same location (RFP) for a certain length of time, a message is sent, to which the handset's owner must respond (confirm). If no confirmation is received, an alarm message is sent to an emergency response group. The alarm message includes the user's last confirmed RFP location and the procedure continues until the handset's no-movement detection is cancelled.

# Public networks

Messenger@Net has been designed to communicate with commercial paging and SMS carriers, in order to send messages directly to city-wide pagers and mobile phones. By employing intelligent queuing techniques, Messenger@Net can 'batch' calls together, thus reducing outbound call costs.

# Escalation management

In very urgent situations, it is necessary for calls to receive an immediate response. In these circumstances, Messenger@Net initiates escalation management and priority queuing. Escalation management enables a predetermined selection of staff to be contacted sequentially, at varying time intervals, until the call is answered. In addition, the priority process ensures that the call is sent immediately, by moving it to the front of the queue.



# Configuration assistant

Assistance in dealing with Messenger@Net's many functions and options is provided by a user-friendly configuration assistant, which is available for use during installation, set-up and maintenance. Its modular structure provides a step-by-step guide to Messenger@Net's various applications.

# Administrator functions

Several of Messenger@Net's functions have a high impact on the way the system deals with incoming alarms. A number of these features are, therefore, accessible only by the administrator, such as:

- Granting access to new users
- Determining access levels for individual users
- Script messaging
- Back-up facilities
- Guarding and Watchdog facilities
- Holiday information
- Management of announcements
- Configuration management: for creating groups, changing interfaces to external systems, GSM network, e-mail handling, etc.

# Open Application Programming Interface

Messenger@Net offers an open Application Programming Interface (API) for third-party developers that wish to communicate with Messenger@Net. Messenger@Net monitors a specified port and receives TCP socket packages containing messages requesting specific data. Third-party applications act as a TCP client and establish a socket connection to Messenger@Net, which in turn acts as a TCP server.

# Security/reliability

Messaging applications are often used in mission-critical environments, such as hospitals, or in emergency situations, such as fire alarms. This imposes stringent requirements on Messenger@ Net's reliability. The application is delivered with all basic security and guarding features as standard. Further improvements are possible by duplicating the system in a hot stand-by mode, for example.

# Expert Services

Our Expert Services portfolio provides a wide range of value added services to support any Messenger@Net configuration: before, during and after deployment. They comprise:

- Consulting Services
- Integration Services
- Training Services
- Operation Services
- Managing Services

# Messenger@Net features

## Messenger@Net general functions

- Administrator function
- Calendar function
- Configuration assistant
- Event logging
- GSM box integration for inbound and outbound SMS messaging with any provider
- Guarding facilities
- Hardware/software failure alarm
- Limited inclusion of source identity
- Multi-areas per site
- Multi-PBX support (IMP, DPNSS, QSIG)
- Multiple user interface languages:
  - English
  - Dutch (partly)
  - French (partly)
  - German (partly)
  - Spanish (partly)
  - Others (on request)

- Open Application Programming Interface for third parties to create their own modules
- Remote maintenance support
- Scheduled input
- Scheduled output (batch job)
- Scheduler
- Supported protocols: numerous hospital specific (including Aritech, Argina, Bemac, Eldad, Gent, Nira,Televic, Tyco, VSK and Wormald), as well as ESPA 4.4.4, SNMP and ETS 300 757 (DECT LRMS)
- Support of Business Mobility DECT and IP-DECT environments
- Ten access levels
- Multiple simultaneous languages
- Watchdog
- Web interface to manage alarms and administrate the system

## Messenger@Net security functions

- Fully detailed event logging
- Guarded links to external systems
- 99 access levels
- Back-up facilities
- Password protection (10 digits)
- Hot stand-by
- Monitoring of all interfaces
- Escalation management
- PC and application monitoring
- Remote support

## Messenger@Net message-handling functions

- Conditional messages
- Flexible call-cycle definition
- Free message input
- Group nesting
- Individual calendar function
- Manual messages from operator
- Manual messaging
- Message chopping (for very long messages)
- Message confirmation (LRMS, urgent)
- Message destinations based on working hours and holidays
- Message diversion
- Message overflow on non-receipt
- Message urgency levels: normal, urgent and emergency
- Messaging to groups
- Messaging to individuals
- Messaging via web access
- Outstanding alarm confirmation, by dialling the PBX (CLI or PIN
- Pre-programmed messages
- Priority queuing
- Repeat message sending
- Script messages for emergency situations
- Timed messages
- Week calendar function

## Messenger@Net alarm-sending functions

- Connect external alarm systems as output
- Dynamic destination (depending on message length)
- GSM or WAN paging
- Location indication in alarm messages
- Message division over several display lines
- Message scroll on display
- Messages in outgoing e-mails
- Message queuing for SMS
- Protocol support (on request)
- Provider access
- Short messages linked in groups
- SMS confirmation via CLID
- SMS confirmation via DTMF/PIN
- To external GSM phones
- To internal analogue and digital sets (user-to-user)
- To LRMS/DECT handsets
- To Messenger@Net application from DECT LRMS handset
- To non-LRMS/DECT handsets (user-to-user)
- To third-party applications using ESPA 4.4.4

## Messenger@Net alarm-capture functions

- Alarms generated by calling a predefined extension number.
- Alarms initiated based on incoming e-mails
- Alarms initiated based on incoming voice calls (CLID)
- Alarms set, reset and confirmed based on inbound calls
- Connections to contacts: physical contacts (NO, NC, pulse), voltage and current sensor inputs, or digital mail confirmation of acceptance or rejection
- Play pre-recorded voice messages
- Reset alarms based on input from hardware contacts
- Set up a call to a device and play a wav file linked to a specific alarm
- Various protocols supported on a serial interface (refer to detailed protocol list)
- Via ESPA 4.4.4 interface
- Via Ethernet TCP/IP
- Via serial interface
- Via SNMP

# Technical data

## Minimal hardware requirements

Messenger@Net operates on Windows 2000 Professional, Windows XP or server PCs. Server PCs must meet the following minimum requirements:

- Intel® Pentium® 4 processor, 2.4 GHz, 512K cache
- 1GB SDRAM
- 10/100 MB network interface card
- 3.5" floppy drive
- 80 GB hard disk
- CD-Rom player
- Analogue modem for remote maintenance/support
- Windows 2000 Professional SP2 or XP.

Depending on the number of selected modules/users, additional PCs and/or hardware may be required. Additional hardware can include: a second modem (e.g. for remote maintenance or SMS), National Instruments hardware, Multi-IO board, Ethernet network interface card, Watchdog board or a Dialogic Board D/120 JCT-LS.

The Kernel module (the core engine of Messenger@Net) can manage a maximum of 21 modules (input and/or output) and is responsible for database management.

## National instruments modules

The I/O module requires Field Point devices from National Instruments, which are available worldwide and for a wide
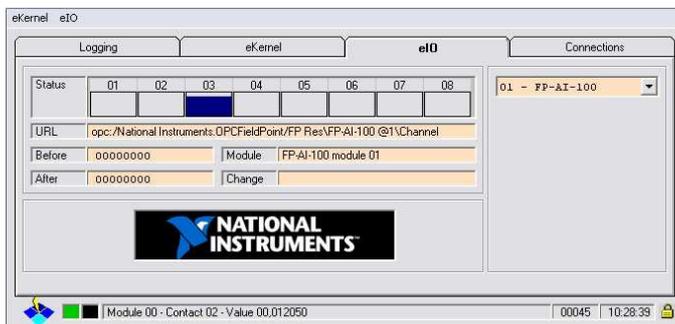


variety of functions.

At present, the following modules have been selected for use with Messenger@Net:

- FP-TB-1 terminal base
- FP-DO-401 discrete outputs (8 or 16)
- FP-DI-300 discrete inputs (8)
- FP-DI-301 discrete inputs (16)
- FP-DI-330 discrete inputs (8)
- FP-AI-100 analogue voltage or current input channels (8)
- FP-1601 TCP/IP interface: 100BaseTX (100 Mb/s) or 10BaseTX (10 Mb/s)
- FP-1000 for a maximum of eight FP-XX-XXX units. The RS232 interface is connected to Messenger@Net
- DIN rail
- PS-2 power supply
- Bus extender cable, to extend the local backplane bus of the first bank to the second

On a project-by-project basis, more National Instrument devices can be supported, including Digital Output and Input, and RS485 interfaces.

The maximum number of contact points that can be connected is 512.

Further details can be found on the National Instruments website: www.ni.com

## Message display

An important feature of Messenger@Net is that it allows messages to be displayed on telephone devices. The maximum length of a message differs per device and per message type:

—LRMS (E2) messaging:
  - C944 and I600:
    - o 48 characters (iS3000 combined with SSW 805)
    - o 48 characters (iS3000 combined with SSW 810 or higher and Business Mobility DECT)
    - o 160 characters (Business Mobility IP DECT)
  - C933: 48 characters
  - C922: 48 characters
  - D500 and D500 ATEX: 48 characters
—User-to-user messaging:
  - C311/C322: 10 characters
  - C911/Zenia: 20 characters
  - D325/D330/D340: 20 characters.

For exact details on DECT handset capabilities, please refer to the appropriate handset documentation or your local NEC Unified Solutions contact person.

## Voice management

A VoiceManager 110 (IAS-A) module is required in the PBX for some functions to operate in combination with CSTA functions. If the PBX already has VoiceManager 110, the number of free ports and available memory must be checked. Extra IAS-A boards and/or memory modules should be added if necessary.

The VBVoice module requires a Dialogic interface board. VBVoice offer users a menu with alarm functions. After dialling an alarm DNR, a menu offers users options to initiate, confirm and cancel alarms. If necessary, users must enter a PIN code before options can be activated.

## SMS support

To send SMS messages, Messenger@Net requires an SMS terminal to connect to the SMS service centre.

## Performance

The performance of the application depends on following aspects:

—Type of converged network
—Type of messaging (user-to-user, LRMS or mixed)
—PC type
—Number of simultaneous channels

—Any other external applications on the PBX CPU
—Types of message (normal or urgent/emergency)

The main parameter referred to is normally the number of simultaneous messages that can be handled.

A well-configured application can handle and deliver at least 10 normal DECT LRMS messages per second.