NOX SYSTEMS ®

- **Burglar Alarm**
- **Access Control**
- **Building Management**
- **Smartphone App**
- **System Integration**
- **Camera Surveillance**
- **Freely definable input**

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In Short

NOX is installed and serviced all across the Nordic region by **500+** certified installation companies

NOX lets you **choose freely** between all peripheral equipment; card readers, detectors, cameras...

NOX is **open** to system integration

NOX is **free** of annual licenses

NOX is **produced** and developed in Europe

NOX is approved in the **highest** security class

NOXSYSTEMS®

Security System

NOX is a combined security system that unites access control, burglar alarm, video surveillance, climate control and building management in one single platform.

NOX is an open system, that easily integrates with existing IT systems, and is adjustable to your exact needs.

Modular design with scalability

NOX has no annual licenses, and is built through optional modules, which allows for individual scalability and flexibility.

You only buy the number of functions or inputs required, and are still ensured the possibility of expansion.

The open system of NOX allows for the use of third party modules, eg. card readers and detectors.

Managed from various platforms

It is completely up to the user to decide how the NOX system should be managed.

• Windows - PC control
• iOS app - iPhone or iPad
• Android - phone or tablet

All communications are of course encrypted to obtain the highest possible security.

100% Open Platform

In NOX there are many different ways of developing integrations.

You can let NOX interact with other systems, for example through Middleware servers.

NOX already communicates via SQL, WCF, SOAP, Modbus, ASCII, XML and KNX, and thereby exchanges information with other online systems.

New features can be developed both by ARAS Security and external programmers.

Logic programming

You can customize functions for specific users with the NOX system's built-in logic programming.

In NOX you can find programming examples, as inspirations to make your own solutions, e.g. special solutions for disabled people, presence detection and area divided control of alarms.

NOX has countless combination options - only your imagination sets the limit.

NOX is approved and registered as an **EN-50131 class 3** combined security system in:

Denmark (F&P):	10.212-12108
Norway (FG):	S-201/07
Sweden (SBSC):	14-376
Finland (FK):	EN-ST-000185
Germany (VdS):	EN-ST-000185

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NOX for all Sizes

Customized Solutions for every application

NOX can offer a solution for any project.
The system is tailored to the extent required by the project initially.
If the project grows and develops in the future, NOX is easily upgradeable with additional features, users and modules.

The NOX system is available in two different hardware versions.

NOX Corporate is the large central unit that opens up all available functions, both in software and hardware.

NOXONE gives the optimal capacity for small and medium-sized businesses, while also offering the flexibility to expand. In addition, **NOX**ONE uses the same modules, utilize most integrations and runs the same software as the NOX Corporate.

	NOXONE	NOX Corporate
Number of NOX buses	1	3
Number of users, max.	1000	100.000
Number of areas, max.	100	4000
Number of time profiles, max.	50	400
NOX TIO (-/+) comm.	✓	✓
Smartphone app (Android / iOS)	✓	✓
Smartphone graphical app*	✓	✓
Possibility of IP bus	✗	✓
Alerting via email	✓	✓
Stand-alone	✓	✓
Main / Secondary system	Secondary**	Main / Secondary
IP Modbus functionality	✓***	✓
Can connect to SIMS	✓	✓
SmartIntego integration	✓	✓
Paradox integration	✓	✓
Possibility of SDK	✓	✓
Bus conversion	✗	✓
Power supply	1,5A	5A

NOXONE	NOX Corporate
127 modules	200 modules (x3)
25 card readers	25 card readers (x3)
20 user profiles	999 user profiles
8 built-in inputs and outputs	0 built-in inputs and outputs
Total: 516 inputs and outputs	Total: 10.000 inputs and outputs
999 alarm types	
999 area states	
999 entrance profiles	
Built-in SIA IP transmitter	
Full tamper monitoring	
Possibility of climate sensors	
Possibility of Touchpanel PC	
Realtime logic programming	
Possibility of wireless object monitoring	
Possibility of 2-factor verification to the central	
Independent choice of resistance value for balancing	

* Requires license purchase

** When a **NOX**ONE is used in a system with main / secondary central units, it sets the limitations of the size of the entire system (number of users, user profiles, areas and time profiles).

*** Limited functionality

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NOX modules

The system is created through modules

With NOX flexibility is paramount. You adapt the system by adding modules, that gives the functions you need.

General information about NOX modules:

- Modules are delivered in tamper monitored plastic housings.
- Modules come with a unique factory defined system address.
- All inputs and outputs are freely programmable via NOX.
- Data transmission on the NOX bus (RS485) is protected against eavesdropping.
- You can connect up to 127 modules per NOX bus.
- By using a repeater, up to 200 modules connects on a bus.*
- Modules can be connected anywhere on a bus.
- The NOX system can scan the bus for new modules.

NOX CMO
- For a full door environment
- In/Out reading in one module
- OSDP card reader interface
- Protocol-directed LED/buzzer
- Possibility of encryption
- 1 supervised input
- 1 relay (SS) and 1 O/C output
- 2 TTL input

NOX CMU
- For a full door environment
- Wiegand card reader interface
- 1 supervised input
- 1 relay (SS)
- 1 O/C output
- 2 TTL input / output

NOX IO4
- Connection of detectors
- Universal I/O4-module
- 4 supervised inputs
- 4 Open Collector outputs

NOX RPT
- Extension of a NOX bus beyond 1200m.
- Connection of additional modules.
- Branching of a NOX Bus
- Enables IP-bus

NOX RE4
- For use with eg sirens
- 4 solid state relay outputs
- Potential free

NOX AN1
- For optional 0-10 V sensor (e.g. measurement of pressure, CO2, CO density, wind speed, flow rate etc.)
- 1 analog 0-10Vdc input
- 1 programmable relay

NOX THSi
- Measures temperature and humidity (integrated sensor)
- External sensor can be connected
- 1 relay (e.g. for controlling a fan)

NOX TXO
- Wireless image sensor
- Non-contact optical distance sensor
- Temperature sensor
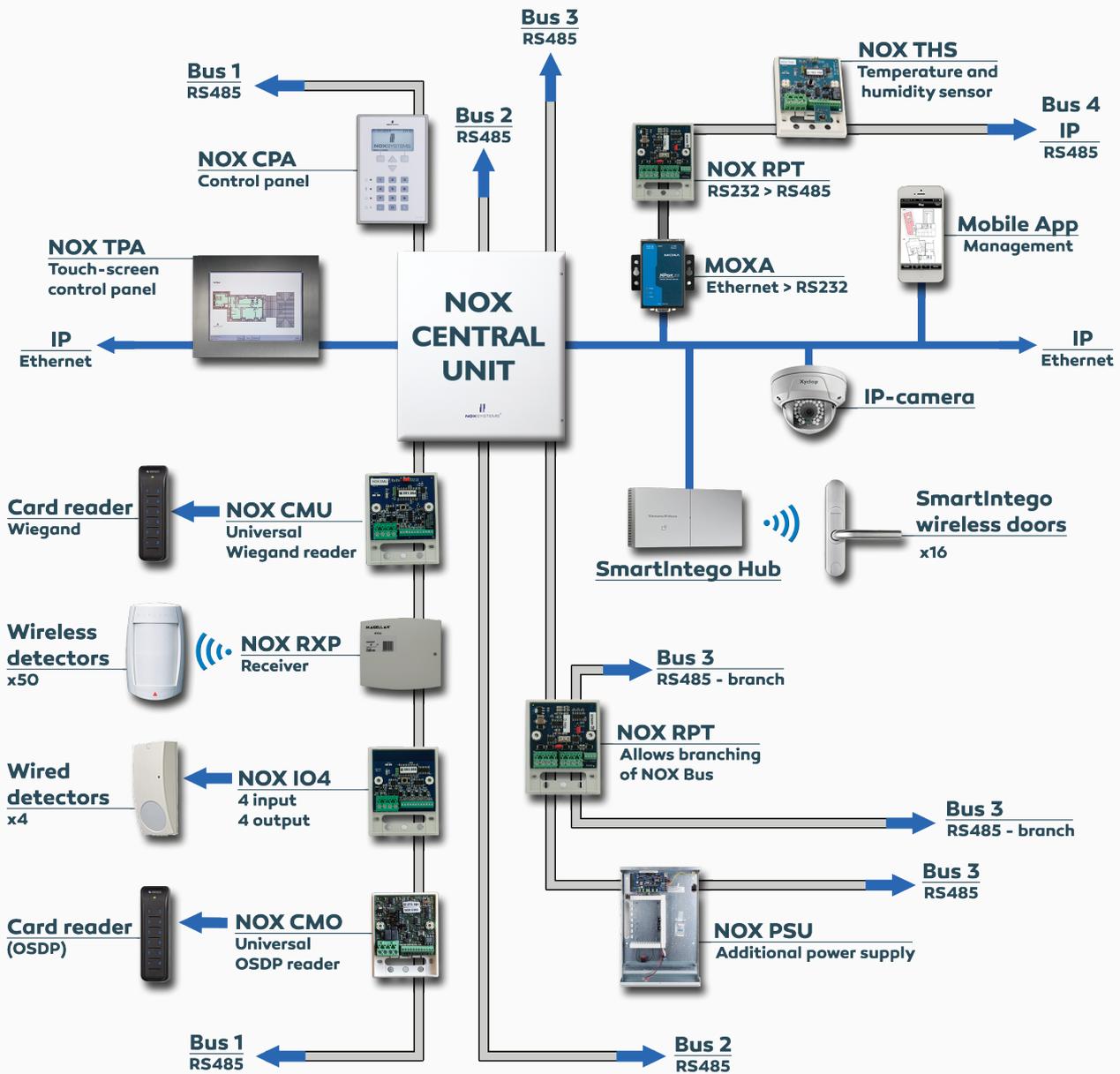- Humidity sensor
- 3-axis acceleration sensor

* Does not apply to **NOX**ONE

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NOX network

NOX Corporate

Bus 3
RS485

Bus 1
RS485

NOX CPA
Control panel

Bus 2
RS485

NOX THS
Temperature and
humidity sensor

Bus 4
IP
RS485

NOX RPT
RS232 > RS485

Mobile App
Management

NOX TPA
Touch-screen
control panel

MOXA
Ethernet > RS232

**NOX
CENTRAL
UNIT**

IP
Ethernet

IP
Ethernet

IP-camera

Card reader
Wiegand

NOX CMU
Universal
Wiegand reader

SmartIntego Hub

**SmartIntego
wireless doors**
x16

**Wireless
detectors**
x50

NOX RXP
Receiver

Bus 3
RS485 - branch

**Wired
detectors**
x4

NOX IO4
4 input
4 output

NOX RPT
Allows branching
of NOX Bus

Bus 3
RS485 - branch

Card reader
(OSDP)

NOX CMO
Universal
OSDP reader

NOX PSU
Additional power supply

Bus 3
RS485

Bus 1
RS485

Bus 2
RS485

- NOX Corporate:
  - have 3 physical NOX buses.
  - can create IP-buses.

- A NOX Bus can:
  - connect 200 modules (127 without NOX RPT).
  - contain max. 25 door environments
    (NOX CMO and/or NOX CMU)

- A NOX Central unit can control 30 SmartIntego Hubs.

- A SmartIntego Hub can support up to 16 wireless doors.

- A NOX RXP receives signals from Paradox wireless detectors.

- A NOX RPT on the NOX Bus allows:
  (A) extension beyond 1200 meter. (B) branching.

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NOX Management

## You decide how to manage the NOX System

With NOX, users decide for themselves how they manage their security system.

Many users prefer to manage the NOX system directly from a Smartphone, while others prefer to install a touch screen, use a PC or manage through a control panel.

The many options offer additional flexibility and mobility in the use and control of the security system.

Most solutions include a graphical user interface where the customer can see his property's floor plan, to easily control and get an overview of the system.

All communications, regardless your choice of managing, are of course encrypted for maximum security.
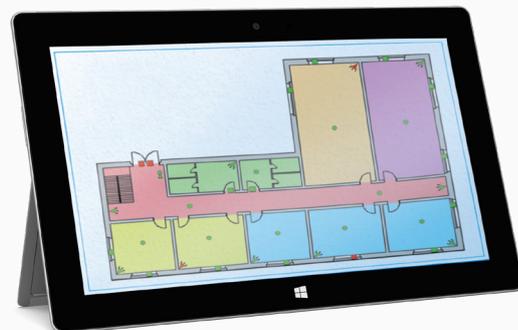
NOX TPA

- Touch-screen
- View and control all states
- Maps and floor plans
- 19 "inch

NOX CPA

- Control panel with display
- Alarm buzzer and keyboard (card reader optional)
- Graphic logo in the display
- Control all system functions
- E.g. user management, logs and alarm

PC-management

- Control all system functions
- E.g. user management, logs and alarm
- Runs on Microsoft Windows

NOX App • iOS and Android

- For smartphones and tablets
- Maps and floor plans
- Live-stream from IP-camera
- Push notifications
- View and control all states
- Open and close doors
- Process alarms
- Monitor sensors
- Graphic display requires one license (Unlimited number of simultaneous clients)

SIMS

- Overarching management system
- Handles up to 999 NOX networks
- Maps and floor plans
- Control all system functions
- E.g. user management, logs and alarm

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SIMS

## (Security Information Management System)

Control multiple sites at once with SIMS

A network of NOX centrals can be connected in SIMS, an advanced management system, which also gives you further advantages. In SIMS you can setup graphical display of floor plans and manage intelligent building installations (IBI). SIMS is also suited for user management, alarm handling and can associate with third-party databases. It is also possible to make CCTV integrations (Milestone, Avigilon, Eocortex, Panasonic, INEX).

SIMS can handle up to 200 main central units, and up to 32 clients simultaneously. Data capture is done in Microsoft SQL Server.

SIMS provides the full overview of a company's AIA, AC, AFA, IBI and CCTV in one single platform.

SIMS can be installed in a Microsoft Virtual Azure environment, and has the ability to integrate with both traditional Active Directory and Azure AD.
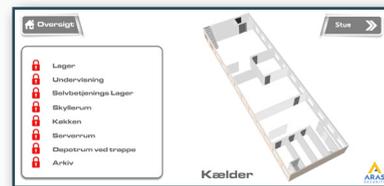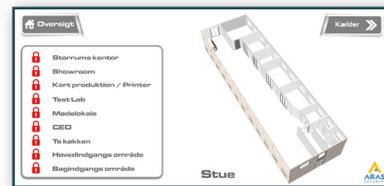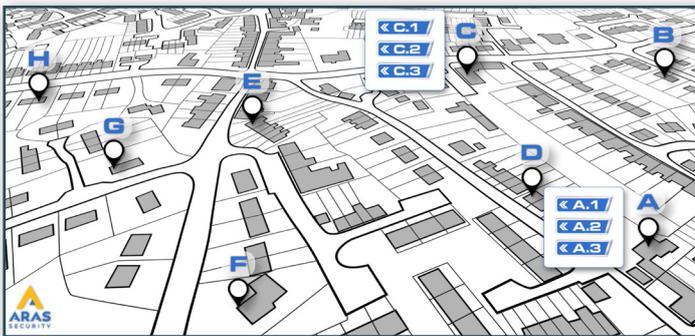
NOX SIMS

- AIA, AC, AFA, IBI and CCTV systems can connect
- 32 clients can operate the system simultaneously
- Possibility of centralized user management
- Area management in all NOX centrals
- Automatic arming / disarming
- Controls up to 999 centrals
- Alarm processing
- Access control
- Reporting
- Over 10.000.000 logs (SQL Express)
- Can be run as a service (front-end status display)
- Uses the latest SQL Server connectors
- Uses AES 128/256 encryption standard
- Possibility of TLS 1.2 certificate installation
- Full multi-threading support

Create the graphical appearance

- Create your own design and management flow
- Choose which colors and floor plans are displayed
- Choose your own buttons and icons
- Determine their functions and shortcuts yourself
- SIMS has built-in templates to help

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Card Readers

NOX lets you choose freely on the market

With NOX access control you are not tied to a small selection of card readers.

You are free to choose between all kinds of card readers, as long as they are running either Wiegand or OSDP v2.

This means that NOX may take over a system, in which the card readers are already installed, without the need to replace them, as NOX often can re-use them.

A card reader can be programmed with fix-codes to provide additional functionality. Let a code act as a door bell, delay the alarm arming for selectable period etc. You create the functionality you need.

Readers with Wiegand interface connects to the CMU module, and readers with OSDP interface connects to the CMO module.

NOX CMO

NOX CMO is a card reader module for OSDP card readers.

With NOX CMO, both in- and out reading is handled by the same module.

With NOX CMO it takes less time to install a door environment, as only 4 wires need to be connected.

NOX CMO support up to 3 LEDs, with up to 4 different colors on card readers.

NOX CMO controls the LEDs and buzzer at the protocol level (instead of cabling).

NOX CMO is prepared for the control of additional in- and output in a card reader.

NOX CMO communicates with the card reader via a duplex data connection that allows two-way communication.

NOX CMO supports readers with a display, and can send dynamic texts directly from the NOX central.

What is OSDP?

OSDP (Open Supervised Device Protocol) is an international communications protocol.

OSDP allows encrypted communication between the reader and the card reader module.

OSDP is a modern protocol that is prepared for extension of functions, for example, in connection with the display on a card reader or biometric solutions.

More and more card reader manufacturers develop products with OSDP interface.

We expect that OSDP v2 will become the new international standard for communication in card readers.

Programming

## Easy programming of Access control and Intruder Alarm

NOX is essentially a combined burglar alarm and access control system.
This makes for a logical procedure when programming doors and sensors.

NOX contains not least a logic formula programming, wherein all the states of the system are easily combined in a visual programming interface.

A formula can enable or restrict a function (or e.g. a user right) depending on the situation.

In NOX it is also possible to "build" your own:

- Area states
- Area types
- Access profiles
- Alarm types
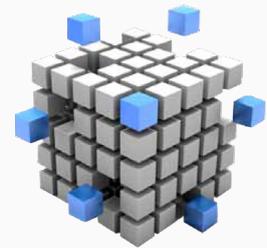
This allows you to simply change the behavior of the system, to suit every need.

A popular feature for the retail sector is a visitation formula, where a random number generator randomly selects employees for visitation when they leave the workplace.

In the example below, the system administrator can choose from different percentages, controlled by an area state, so that employees are selected for visitation either 20%, 50% or 100% of the time.
The different percentages may also be assigned to specific days, times, user profiles, and all other states in the system - as required.

The formula becomes true when an employee must be checked, which in turn leads to the required output. For example doors being blocked, lamps turning on, emails being sent etc.

Logic Programming

In the NOX configuration software you can determine how and when the various functions should work.

The programming is visualized graphically, and the formulas are built with simple "drag and drop".

All configurations are built through the options "*and*", "*or*", "*not*" and "*delay*".

In NOX you will find multiple examples of programming for various solutions, for example for lift control and a visitation module to randomly select card holders for check.

The flexibility to program and control individual actions and functions, ensures that NOX is completely adaptable to the individual customers needs.

Example of a visitation formula
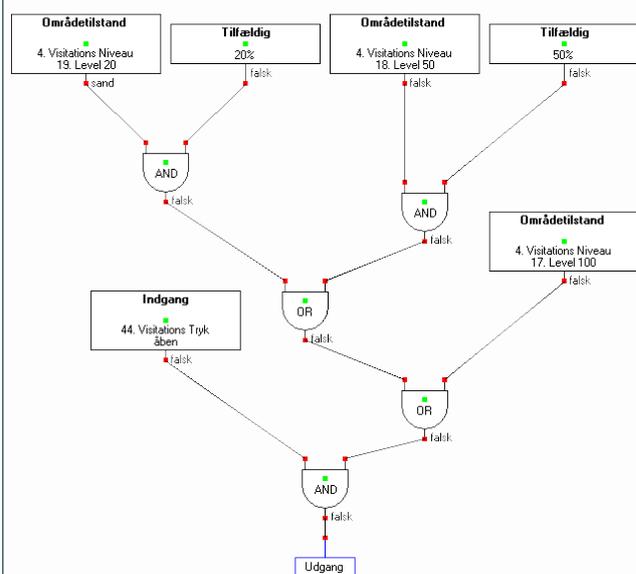
Wireless Integration

SMART INTEGO

Wireless online door handles with card readers

SmartIntego, like normal card readers, is fully integrated in NOX. For example this means that you can control alarm areas and create automatic disarming of an alarm with authorized access.

SmartIntego connects to NOX via a router which can be installed in an existing ethernet network.

A router can control up to 16 doors, and you can have up to 30 routers on a NOX central.

You can program up to 100 Emergency card per. unit, which ensures access even in offline mode.

SmartHandle AX

SmartIntego Escutcheon

SmartIntego Door Knob

SmartIntego Padlock

SmartIntego router

Wireless sensors - Paradox

PARADOX® SECURITY SYSTEMS

Paradox sensors communicate with NOX via a receiver module connected directly to the NOX Bus.

The selection is large, and the various wireless detectors can be combined in many ways.

PIR motion sensors, smoke alarms, magnetic switches, acoustic glass break detectors and many others are all directly compatible with NOX.

2-way Line Detector
• Motion detectors
• 8 detection light beams

Magnetic Switch
• For doors and windows
• 35 m. range

PIR Detector
• 11x11 m. viewing angle
• 35 m. range

Smoke Sensor
• Sensitive photoelectric
• Built-in alarm siren

Remote Control
1-4 buttons (channels)
• 8 different controls

Glass Break Detector
• 360° coverage
• 6 m. radius

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CCTV Integration

NOX also handles Camera Surveillance

NOX is integrated with several of the worlds leading CCTV systems.

The possibilities are enormous, as you can set a camera to react to events registered by a NOX module, and thus get live images when it makes a difference.

For example you can let the camera turn to the front door when someone rings the doorbell, or turn towards the area where an alarm is detected, for instance in case of a burglary or fire.

With Eocortex you can integrate NOX with other modern access technologies, such as license plate recognition and face recognition.

The integrations are based on SDK development, and are developed in collaboration with the manufacturer of the individual system.

In SIMS it is also possible to browse the history and make entries in the recordings - when using the integrated camera systems.

With Milestone there has been developed a 'videowall' feature, allowing different camera images to be displayes simultaneously on various PC clients.

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Extensions

ARAS In-House software development gives the NOX system even more flexibility

Our team are co-developers of the NOX system, and create solutions to the customer's needs.

Below are a few examples of programs developed by ARAS.

Guest Registration

Stand-alone program for SIMS that simply lets you register and give access to guests for a specified period of time.
Can automatically send the guest a QR code for use on a QR reader.

License Plate as ID

Enter a license plate, which is then converted to a card number in this stand-alone program. Useful when using a license plate camera set up as a card reader in NOX via a NOX CMU.

Pop-up Alarm

NOX Alert is an additional popup alert on your PC's desktop. Set the program to display only the alarms you need to be aware of.
Ideal for, for example, assault notifications on employees' computers, or technical alarms for operating technicians.

Does not require any other software installed!

Active Directory for SIMS

SIMS AD integration is a very comprehensive integration with the company's Active Directory. Whether on-premise or online in the Microsoft Azure environment, it is possible to download users from here and transfer to SIMS and NOX.

It is possible to create a 100% AD control of users in NOX by adding card numbers to users directly in AD, or adding them later, for example through the CardExchange Card Manufacturing Software.

With integration with AD, the most efficient user management is achieved, since users only have to be managed in one place.

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System Integration

How does NOX integrate?

NOX can be integrated with third-party systems either directly through SIMS and SQL or via a middleware solution.

Both Open Source and Closed Source development are possible.

NOX has already integrated to 3rd party systems through XML, JSON, WCF, SOAP, LDAP and in several cases, self-developed C# and .NET applications.

Via Modbus, NOX communicates over TCP / IP for integration with, for example, CTS systems, climate control and fire alarms.

NOX runs the ASCII protocol for integration with among others KNX, and camera integration for PTZ control.

NOX can receive SNMP traps from external systems for these to be processed in NOX.

The TIO-module (text-input-output) allows for two-way communication to and from NOX, which can e.g. be used for integration with CCTV systems such as Milestone, Avigilon, Inex, Eocortex etc.
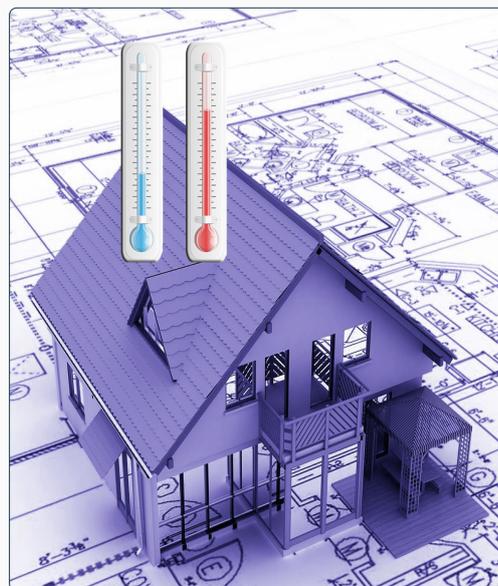
If you want to develop your own Apps or integrations, this is also possible. Contact ARAS to hear about the options.

Intelligent Building Installations (IBI)

Integration with intelligent building management can effectively reduce companies' energy costs.

The integrated access control allows the system to adapt areas energy consumption through lighting, ventilation, temperature and humidity based on co-worker presence.

IT Systems

Integration med virksomheders eksisterende IT-systemer, kan give utroligt mange fordele.
Below are some of the most widely used.

Active Directory
• Collects all user management in one database
• Automatic exchange with access control
• Enables fully automatic user management

Raspberry Pi
• Allows integration with many software programs
• Can e.g. be used for voice alerting

proNestor
• Record and categorize visitors and their hosts
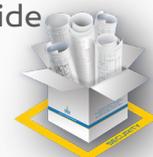• Meeting booking e.g. via outlook
• Full overview of all visitors

InterBook
• Municipal booking system
• Lets users (e.g. coaches) reserve hall times and the like
• Provides access to certain areas in certain times

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Solutions

With NOX there is always a solution

NOX in all sectors

NOX is already in use in all types of buildings, organizations and businesses!

Municipalities, banks, museums, production companies, housing associations, hospitals, supermarkets, fire departments, laboratories, airports, universities, offices, military, police and so on.

For endusers
We do not sell NOX directly to you, but we would love to advise and guide you throughout the process.

For Installers
At ARAS, we would love to help with your sales of NOX to the customer, and you are always welcome to contact us.

We can also help with different marketing material, or for example a visit to a company with an active NOX system in use.

In addition, ARAS Security offers NOX and SIMS courses to interested technicians, so you will be successful from your first installation.

Tel: +45 70 27 40 90   **info@aras.dk**

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ARAS has the solutions

SUPPORT   ACCESS CONTROL

VIDEO SURVEILLANCE   DISTRIBUTION

COUNSELING   COMMISSIONING

ID CARD PRODUCTION   BIOMETRICS

PROJECT GUIDANCE

INTEGRATED SECURITY SYSTEMS

SHOWROOM   INTEGRATION

WIRELESS LOCKING SYSTEMS

ARAS Security is a recognized specialist and partner with a full range of products and a range of services within access control, alarms, camera surveillance and ID card production.

With more than 30 years in the industry, we are able to advise and guide in the design and implementation of projects of all sizes.

Feel free to contact us!

Sales	**Support**	**Orders**	**Sjælland (DK)**	**Jylland (DK)**
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info@aras.dk	support@aras.dk	ordre@aras.dk	2610 Rødovre	9000 Aalborg

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