Professional wireless security systems

About company

The year of foundation

2011

Production and Development

Ukraine, Kyiv

Intellectual Property

5 patents

Deters burglars

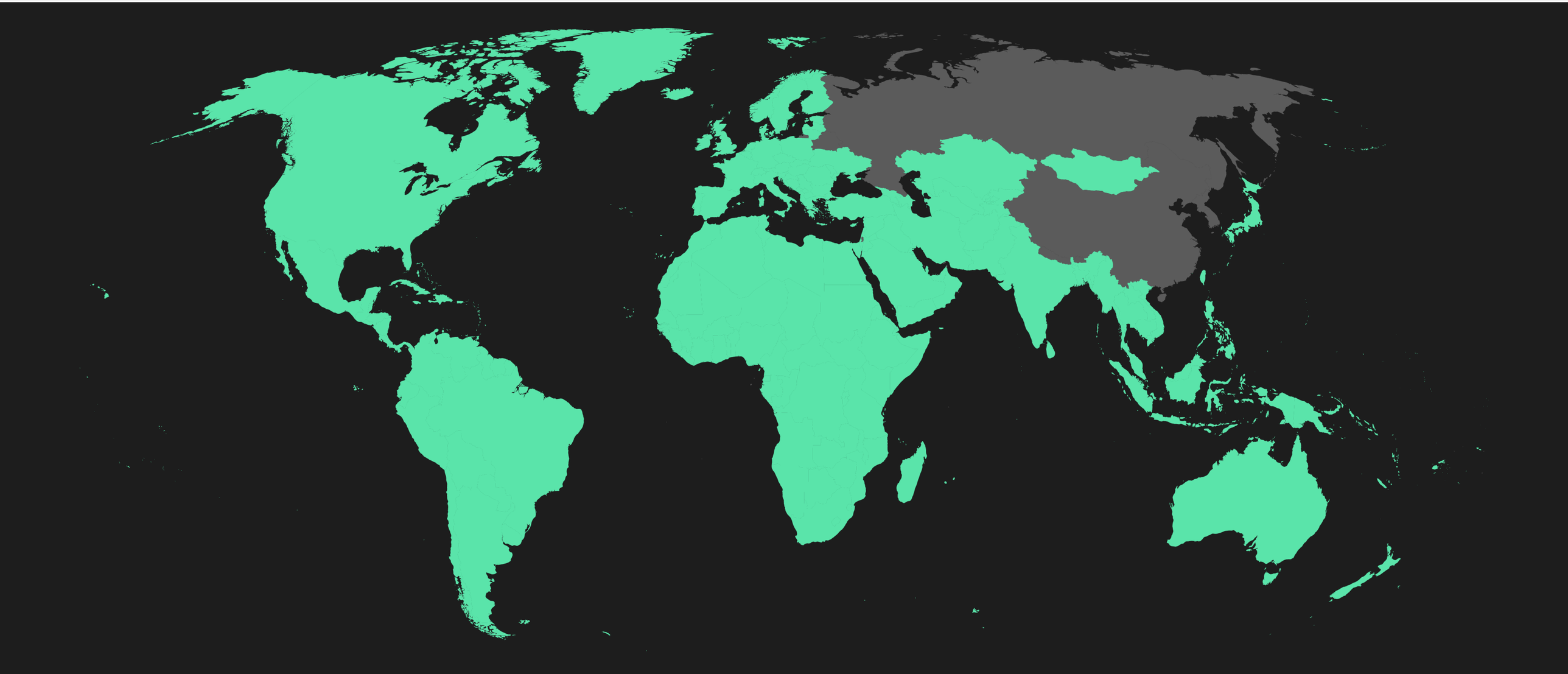
Recognizes fire

Detects flooding

Controls appliances

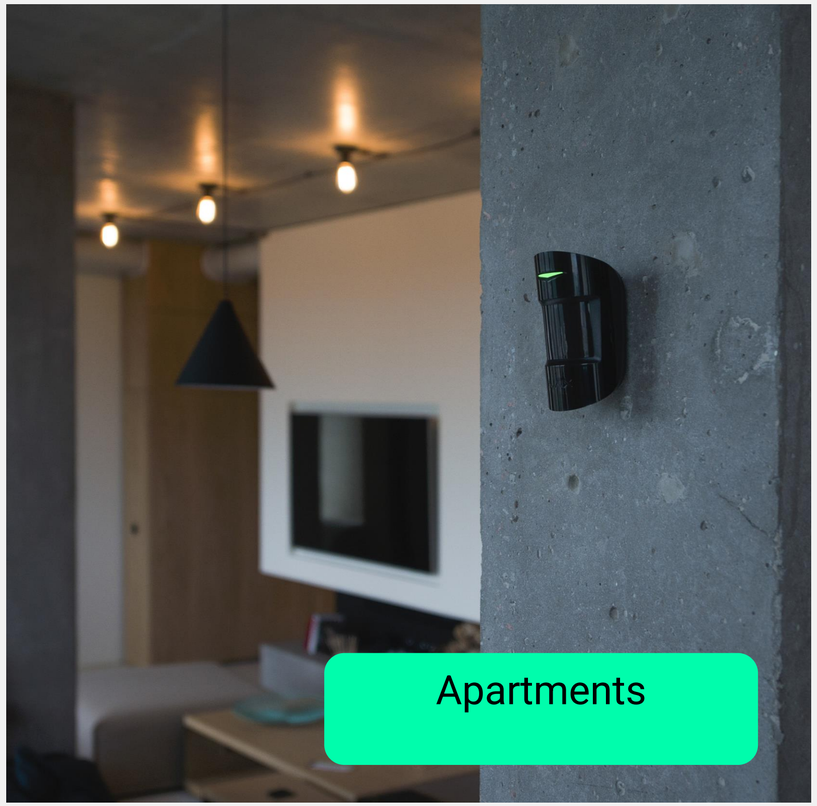
Streams security cameras

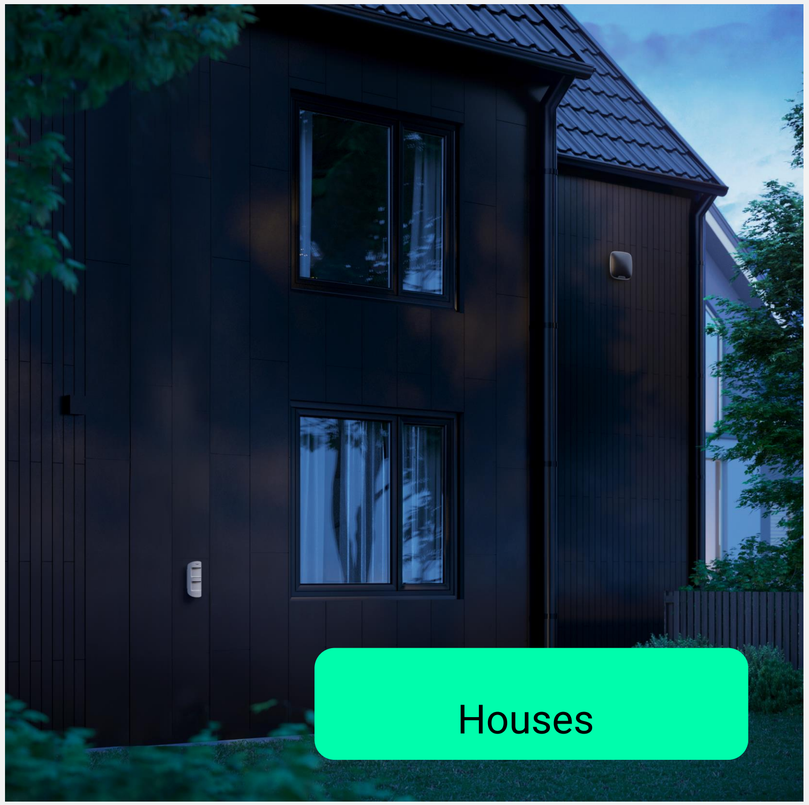
Ajax is trusted by security professionals in 130+ countries

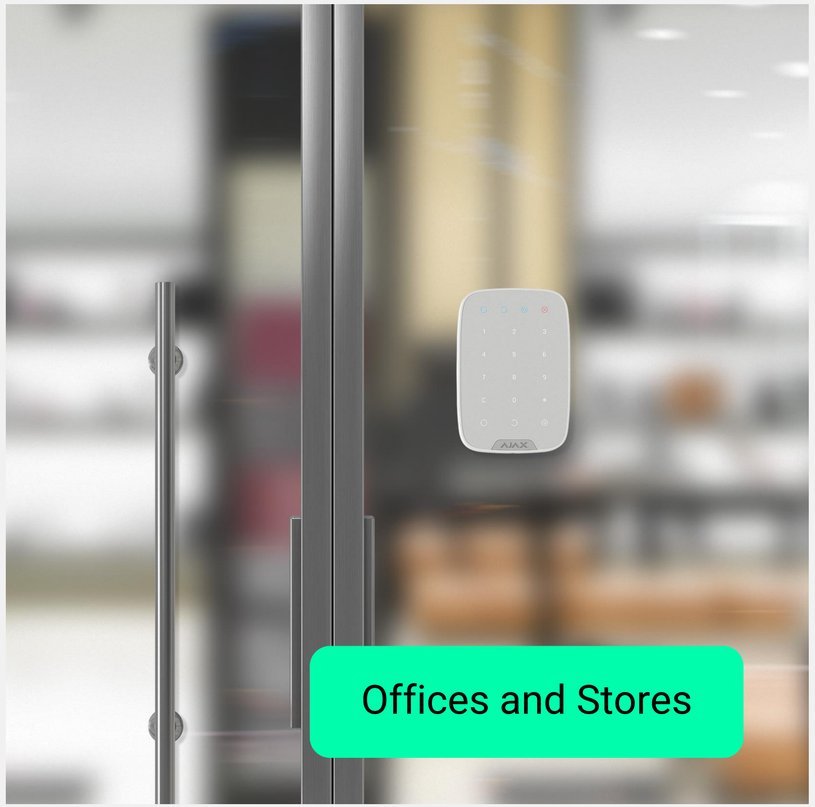


- **2** plants: Ukraine, Turkey
- **2,000** employees
- **500** RnD Team
- **600,000** monthly production output

Sites protected by Ajax







1,300,000 end-customers and industry professionals use Ajax products

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Ajax System Reliability

Adjustable polling interval

Ajax allows setting the hub—detector polling interval (12 - 300 seconds) and the number of undelivered data packages to identify the connection loss.

With the minimum settings value, the hub needs **only 36 seconds to detect a connection loss or device malfunction.**

Data encryption

Ajax encrypts data using its proprietary protocol with a dynamic key. This protocol is resistant to a hack: even with the supercomputer processing power, **it will take years to break the key by the guessing method**.

Communication channels reservation

Hub can be connected to four* internet providers — via Ethernet

cable, Wi-Fi, and 2G, 3G, and LTE

cellular networks.

Automatic switching between

channels takes seconds. **Detection of**

communication loss with a hub takes
* depending on the hub model
1 minute.

Event delivery control

Hub controls each device and sends an immediate alert in case of failure within 36 seconds

Authentication of each device

A secure communication channel is created between the detector and the hub, followed by an ID check.

Tampering alarm

If an intruder tries to open the body of any Ajax device, the tamper button triggers immediately. The alarm notification is sent to the security company and system users.

No worries about Sabotage

Jamming detection

If a high level of radio interference is detected, the system notifies the security company and users about the problem.

It takes 30 seconds to detect jamming.

Frequency hopping

The hub automatically changes frequency in case of radio interference and signal interception.

Autonomy

The devices operate from pre-installed batteries. The system monitors the battery status and charge level and notifies about the external power supply loss.

In case of power outage, the hub operates up to 16 hours from the built-in battery.

Break and short circuit detection

The system instantly detects a short circuit on the line and notifies a monitoring station and users.

The system resumes operation automatically.

Physical line break protection

Using the ring topology (soon to be released), the ring is divided into two working segments in case of a line break.

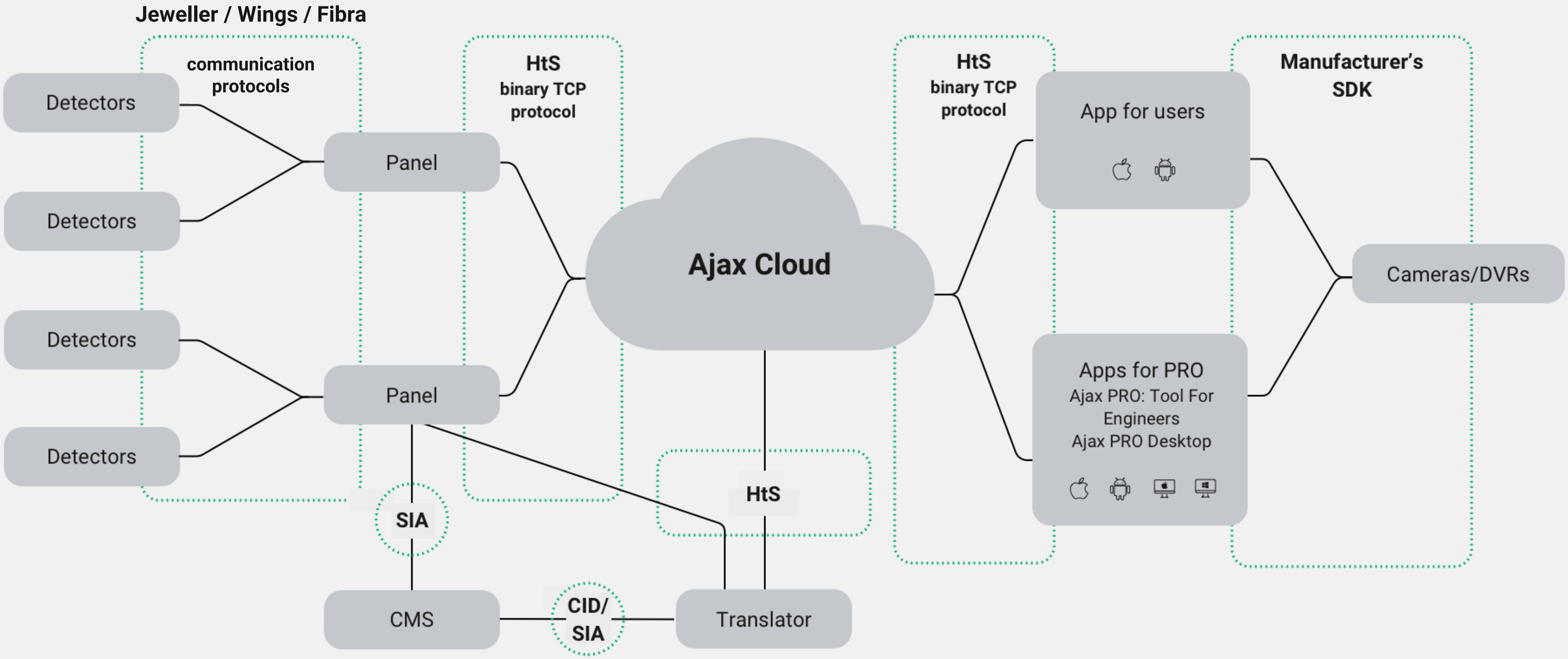
Autonomy

The devices consume very little — up to 50 μA.

In case of power failure, the hub notifies the security company and system users and can power 30 wired devices for 60 hours (using a 7 A·h battery).

Next level of trouble resistance

Ajax System Architecture



Data, transmitted from the detector to the user, is based on proprietary technologies, and securely encrypted to provide clients fast and reliable control on their premises

Ajax Cloud

Ajax Cloud

Cloud service with advanced load balancing for round-the-clock monitoring of the system from any location worldwide

- Monitors hub performance at least once every 10 seconds
- Allows users to configure and manage Ajax from anywhere in the world
- Delivers the status of system devices in real time
- Uses three independent data centers, which guarantees constant access to the system
- Sends notifications to end-users and CMS
- Keeps system configuration anonymous and encrypted

Proprietary HtS Protocol

HtS protocol

Hub-to-Server binary TCP protocol

«Hub ⇄ Ajax Cloud» communication

«Translator ⇄ Ajax Cloud» communication

«Ajax Apps ⇄ Ajax Cloud» communication

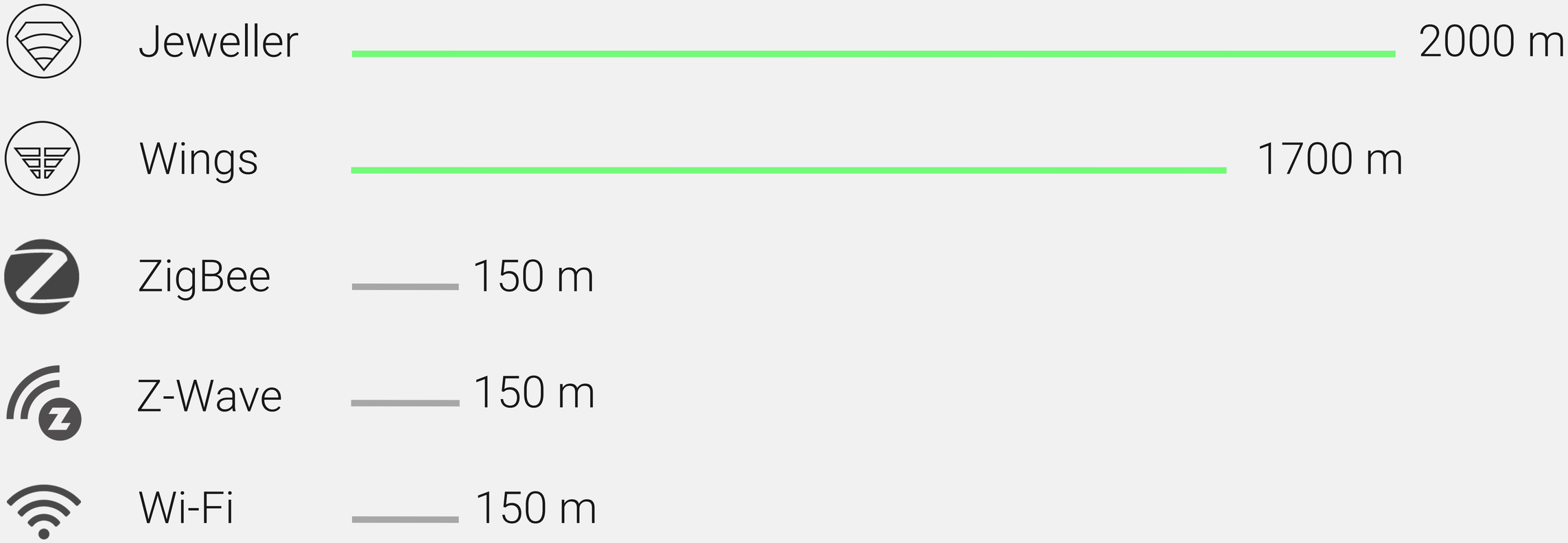
«Translator ⇄ hub» communication

*Ajax Translator - is an app to establish communication between Ajax and CMS software.

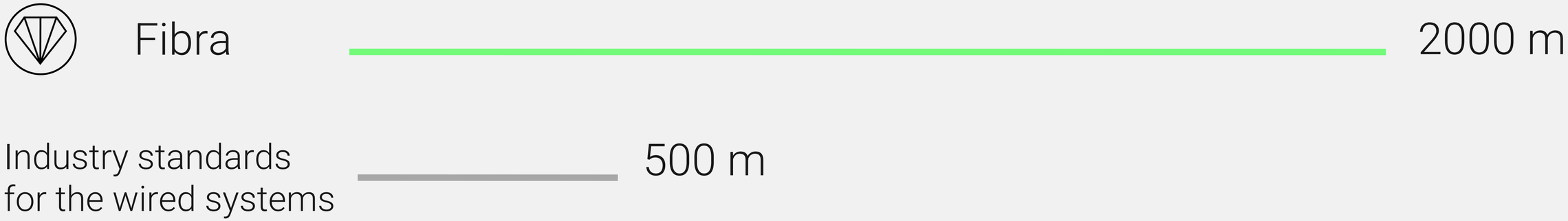
Encrypts data at every step with a floating key encryption algorithm

Unique Communication Technologies

Ajax radio technology replaces archaic wires



Ajax wired device connection length - x4 then the industry standard



Jeweller

Two-way radio technology transferring alarms and events within the system

- Connects devices up to 2,000 meters away
- Encrypts data with a modified AES algorithm
- Transmits alarms from detectors to the hub within 0.15 s
- Automatically changes radio frequencies for communication with devices in case of jamming attempt
- Protects against device forgery with authentication during each device—hub communication session
- Analyzes the signal strength of connected devices and adjusts the power of their radio transmitters to save the battery charge

Patented in the USA

Wings

High-speed radio technology transferring pictures from motion detectors with a camera

- Connects devices up to 1,700 meters away
- Delivers photos even with a weak signal
- Delivers the first photo in under 9 sec
- Encrypts photos at every stage of transmission
- Transmits the animated image series
- Stores photos in the detector's buffer and resends them if the transmission is interrupted

Based on Jeweller technology

Fibra

Two-way wired communication technology allowing to built independent lines up to 2 km long

- Connects devices up to 2,000 meters away
- Transmits alarms, events and photos via a single cable, delivers an alarm in 0.15 sec, the first photo in up to 9 sec
- Provides versatility: different types of devices can be connected to the same line
- Enables physical protection of the line from being broken using a ring topology: in the event of a line break, the ring is divided into two working segments
- Encrypts data using a proprietary protocol with dynamic key
- Protects against device forgery with authentication during each device—hub communication session
- Detects line break and short circuit
- Energy efficiency: wired devices consume an average of 50 μA, which is 100 times less than the average of existing wired detectors from other manufacturers

87% of operational efficiency even with a completely broken line by means of Ring topology

Proprietary Malevich Operating System

OS Malevich

Secure real-time operating system for stable operation of Ajax

- Protects against viruses and bot attacks
- Over-the-air updates regularly provide new features
- Verifies device operation status and reports to the system owner
- Ensures the system does not get overloaded

The system gets new features several times a year via over-the-air software updates.

The process doesn’t involve engineers or users and takes minutes to implement — only when the security system is disarmed.

OS Malevich latest updates

New features of the latest updates

Malevich 2.9

- Over-the-air data import for hub replacing
- Remote temporary device deactivation
- Transmission of smartphone coordinates to CMS using the in-app panic button
- The second layer of protection from accidental pressing in SpaceControl

Malevich 2.10 - ultimate protection against false alarms

- Two-stage arming
- Alarm confirmation
- System restoration after alarm
- Alarm transmission delay when disarming
- Delay of Interconnected fire alarm
- More flexible scenarios by Button press

OS Malevich latest updates

New features of the latest updates

Malevich 2.11 - 2.12

- Modified operation algorithm of pulse detectors connected to MultiTransmitter.
- Silent mode for sirens. Flexible adjustment of sirens signalling in Night Mode.
- Chime. A sound that sirens connected to the system emit when a door opens.
- Restriction of rights to interconnected alarms muting.

Malevich 2.13

- Ethernet as an additional communication channel for the range extender of the second generation.
- New Privacy menu in hub settings and a Privacy Manager position for hub admins.

Product Lines

Wireless Product Line

Jeweller

Control panels

Hub

Hub Plus

Hub 2 (2G)
Hub 2 (4G)

Hub 2 Plus

Range Extender

ReX
ReX 2

Indoor security

MotionCam

MotionProtect

DoorProtect

DoorProtect Plus

MotionProtect Curtain

GlassProtect

CombiProtect

MotionProtect Plus

Fire prevention

FireProtect

FireProtect Plus

Outdoor security

MotionCam Outdoor

DualCurtain Outdoor

MotionProtect Outdoor

Automation

Relay

WallSwitch

Socket (type F)
Socket (type G)

Controls

KeyPad

KeyPad Plus

Tag
Pass

Button

DoubleButton

SpaceControl

Flood prevention

LeaksProtect

Power Supply Units

12V PSU for Hub 2

12V PSU for Hub/Hub Plus/ReX

6V PSU for Hub 2/Hub 2 Plus

Integration Modules

uartBridge
ocBridge Plus

Transmitter

MultiTransmitter

vhfBridge

Sirens

StreetSiren

HomeSiren

StreetSiren DoubleDeck

Wireless security system Control Panels

Hub (2G)

Ethernet

2G

Video streaming

Hub 2 (2G)

Ethernet

2G

Photo verification

Video streaming

Support of wireless (Jeweller) devices

Wireless security system Control Panels

Hub 2 Plus

Ethernet

LTE/3G/2G

Wi-Fi

Photo verification

Video streaming

Hub 2 (4G)

Ethernet

LTE/3G/2G

Photo verification

Video streaming

Support of wireless (Jeweller) devices

Control Panels Comparison

	Hub	Hub 2 (2G)	Hub 2 (4G)	Hub 2 Plus
Devices	100	100	100	200
Cameras & DVRs	10	25	25	100
Range Extenders	1	5	5	5
Users	50	50	50	200
Security Groups	9	9	9	25
Scenarios	5	32	32	64

AJAX

Indoor Detectors

MotionProtect

Wireless pet immune motion detector

MotionCam (PhOD)

Wireless motion detector with visual alarm verification and pet immunity.

Supports features "Photo on demand" and "Photo by scenario"

DoorProtect

Wireless magnetic opening detector

MotionProtect Plus

Wireless pet immune motion detector with additional microwave sensor

MotionCam

Wireless motion detector with visual alarm verification and pet immunity

DoorProtect Plus

Wireless magnetic opening detector with shock and tilt sensor

CombiProtect

Wireless motion and glass break detector with pet immunity

MotionProtect Curtain

Wireless indoor curtain motion detector

GlassProtect

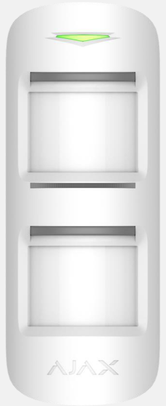
Wireless glass break detector

Outdoor Detectors

MotionCam Outdoor (PhOD)

Wireless outdoor motion detector with visual alarm verification, anti-masking, and pet immunity.

Supports features "Photo on demand" and "Photo by scenario»



MotionProtect Outdoor

Wireless outdoor motion detector with anti-masking and pet immunity

MotionCam Outdoor

Wireless outdoor motion detector with visual alarm verification, anti-masking, and pet immunity

DualCurtain Outdoor

Wireless outdoor dual-side curtain-type motion detector with anti-masking and pet immunity

Sirens

StreetSiren

Wireless street siren

HomeSiren

Wireless indoor siren

StreetSiren DoubleDeck

Wireless outdoor siren with a clip lock for a branded faceplate

Fire Detection

FireProtect

Wireless smoke and heat detector with sounder

FireProtect Plus

Wireless smoke, heat and carbon monoxide detector with sounder

Flood Protection

LeaksProtect

Wireless flood detector

Automation

Socket (Type G)

Wireless smart plug
with energy monitor

Relay

Wireless low-current dry
contact relay

Socket (Type F)

Wireless smart plug
with energy monitor

WallSwitch

Wireless power relay
with energy monitor

Controls and Panic Buttons

KeyPad

Wireless touch keypad

KeyPad Plus

Wireless touch keypad supporting encrypted contactless cards and key fobs

Pass

for KeyPad Plus

Tag

for KeyPad Plus

SpaceControl

Security system key fob with panic button

Button

Wireless panic button / remote control for smart home

DoubleButton

Wireless hold-up device with advanced protection against accidental presses

Integration Modules

MultiTransmitter

Module for integrating wired third-party devices into Ajax

vgfBridge

Module to connect Ajax security systems to third-party VHF transmitters

MultiTransmitter 2/3 EOL

Module for integrating wired third-party devices into Ajax

Transmitter

Module for integrating a wired third-party device into Ajax

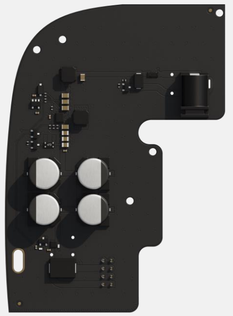
Power Supply Units

12V PSU for Hub/

Hub Plus/ReX
12 V Power Supply Unit for Hub/Hub Plus/ReX

12V PSU for Hub 2

12 V Power Supply Unit for Hub 2



6V PSU for Hub2/

Hub 2 Plus
6 V Power Supply Unit for Hub 2/Hub 2 Plus

Wired Product Line

Fibra

DoorProtect
Fibra

MotionProtect
Fibra

Hub Hybrid

HomeSiren
Fibra

GlassProtect
Fibra

DoorProtect
Plus Fibra

MotionProtect
Plus Fibra

KeyPad
Fibra

StreetSiren
Fibra

CombiProtect
Fibra

Hybrid security system Control Panels

Hub Hybrid (4G)

- Ethernet
- LTE
- 8 lines
- Photo verification
- Video streaming

Hub Hybrid (2G)

- Ethernet
- 2G
- 8 lines
- Photo verification
- Video streaming

Compatible with wired (Fibra) and wireless (Jeweller) devices

Indoor Detectors

MotionProtect

Wired pet immune
motion detector

DoorProtect

Wired opening detector

MotionProtect Plus

Wired pet immune motion detector
with additional microwave sensor

DoorProtect Plus

Wired magnetic opening
detector with shock and tilt
sensor

CombiProtect

Wired motion and glass break
detector with pet immunity

GlassProtect

Wired glass break
detector

Sirens

StreetSiren

Wired outdoor siren

HomeSiren

Wired indoor siren

Controls

KeyPad Plus

Wired touch keypad

Ajax Apps

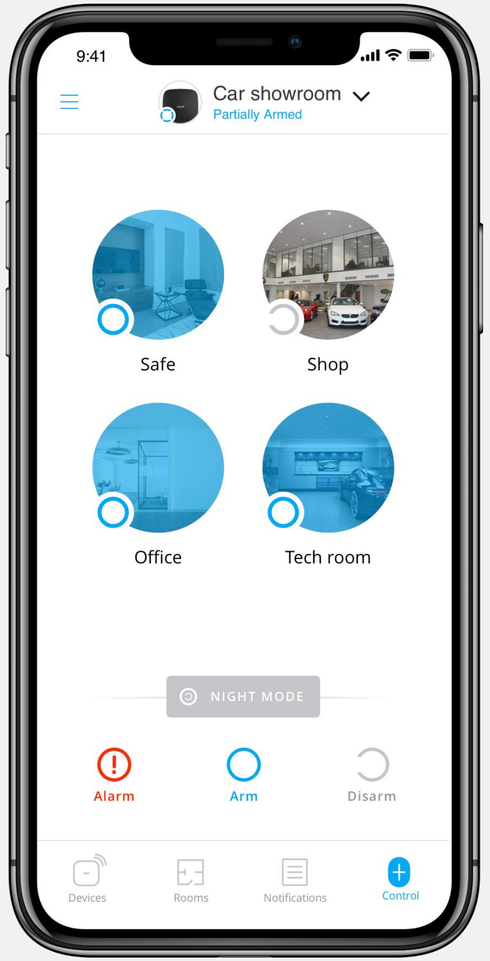
Free Mobile App for Users

Ajax Security System

A free app for users

Available on the AppStore

Get it on Google Play



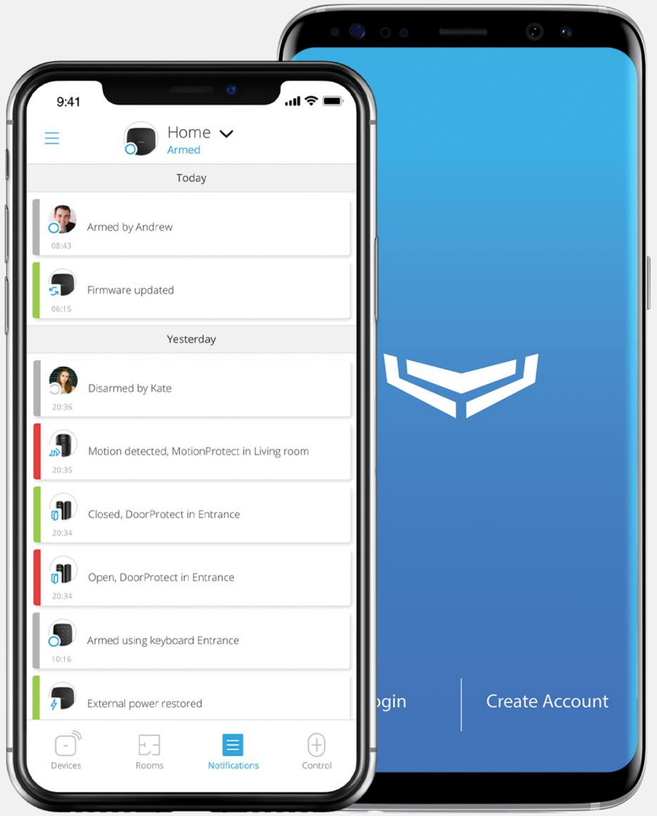
App for End Users

Designed to help users to stay in touch with their property from anywhere in the world

- Arm/disarm the system
- Get instant notifications
- Follow the events feed
- Get detailed device status
- Test devices
- Create scenarios
- Use virtual panic button
- Watch security cameras
- Keep account protected with 2FA

Available on the AppStore

Get it on Google Play



Ajax Security System

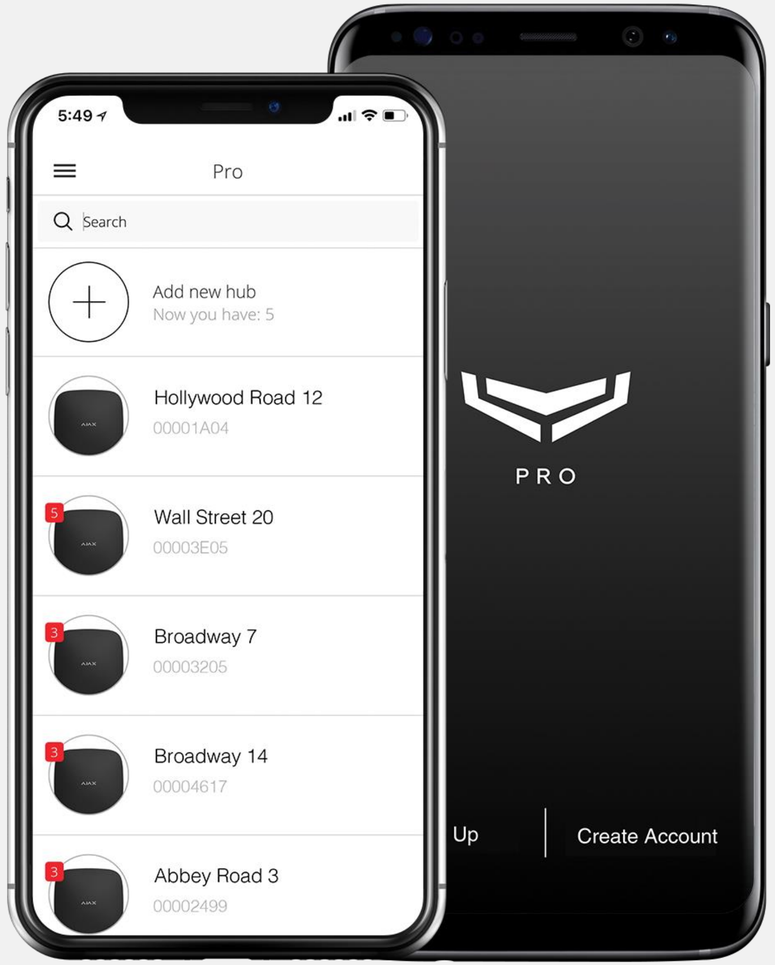
Free Mobile App for PROs

Ajax PRO:
Tool for Engineers

App for installers to configure security systems on the fly

Available on the AppStore

Get it on Google Play



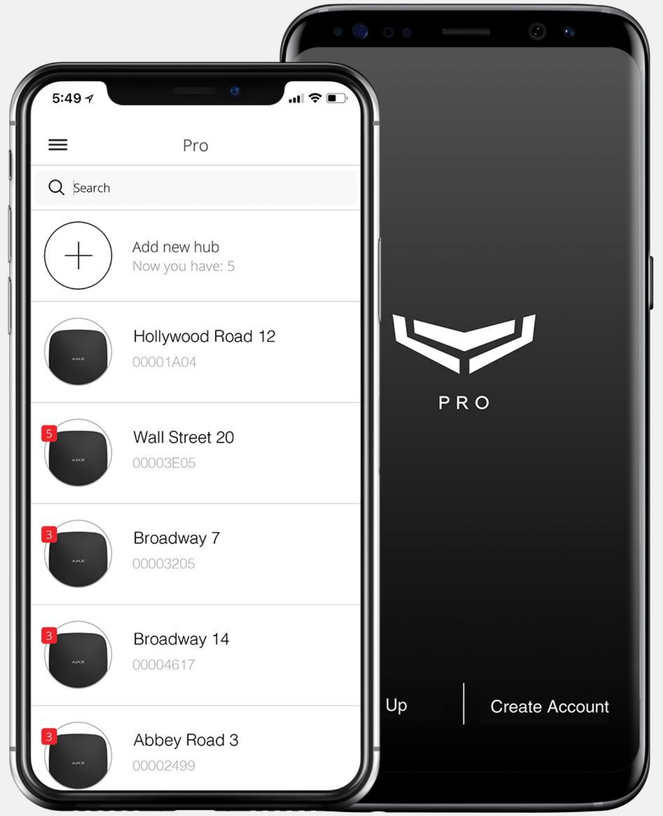
Apps for PROs

Everything to administer, configure and monitor alarms of an unlimited amount of hubs

- Centralized monitoring of thousands of protected facilities
- Instant notifications about the incidents on site
- Detailed log of events
- Remote configuration and detectors testing
- Flexible access
- Visual alarm verifications with MotionCam detectors
- Scenarios configuring
- Video cameras and DVRs connection
- 2FA account protection

Available on the AppStore

Get it on Google Play



Ajax PRO

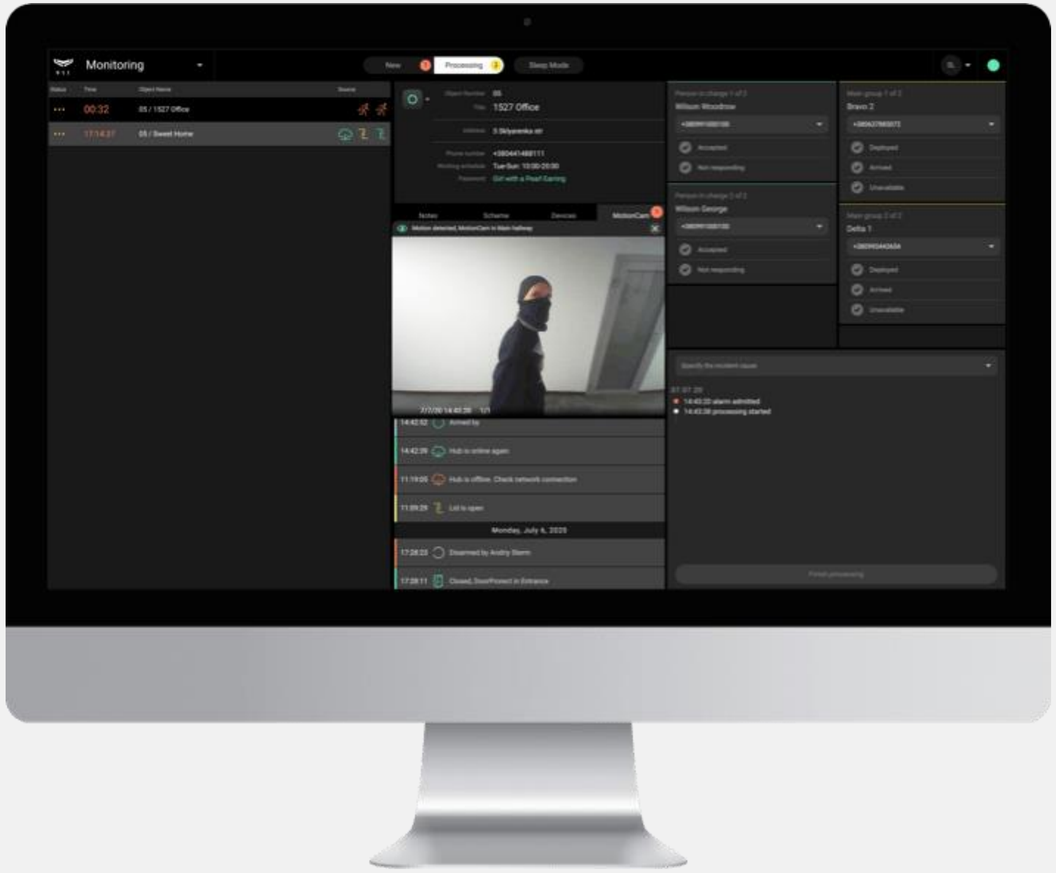
Desktop App for PROs

Ajax PRO Desktop

App for administration and monitoring alarms of Ajax security systems

macOS

Windows



Ajax PRO Desktop

Integrated app for the installation and monitoring business

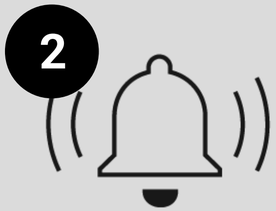
- Event and alarm monitoring
- Ajax security systems remote configuration and connection
- Log of systems events and in-app activities of employees
- Unlimited number of connected employees PRO accounts
- Administering Ajax security systems
- Instant synchronization of system settings with Ajax apps
- Built-in support for photo verification and mobile panic button service
- Unlimited number of connected hubs

Visual Alarm Verification

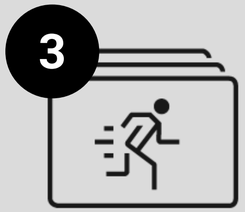
Motion detectors with a photo camera to verify alarms

MotionCam and MotionCam Outdoor

Motion detected

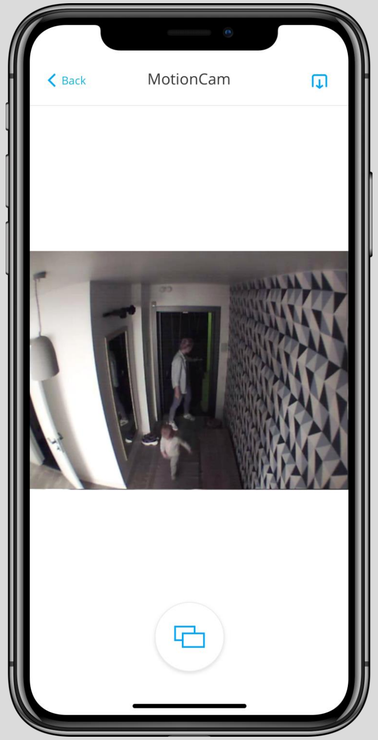


Alarm raised



Situation captured

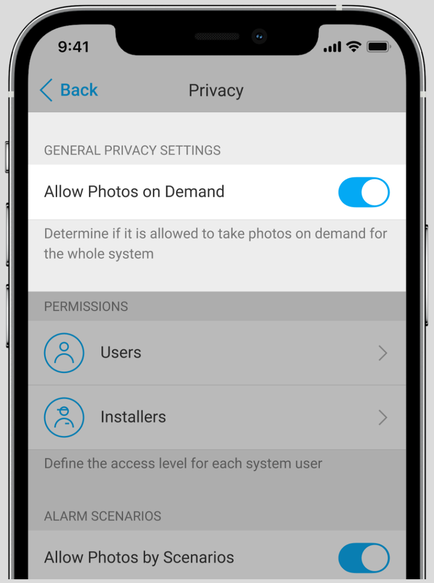
Photo capture only when alarmed

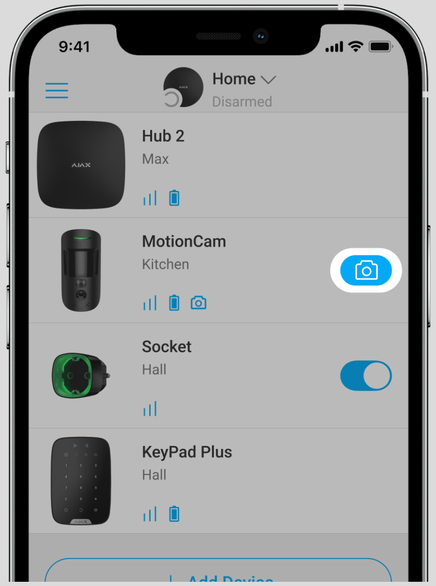


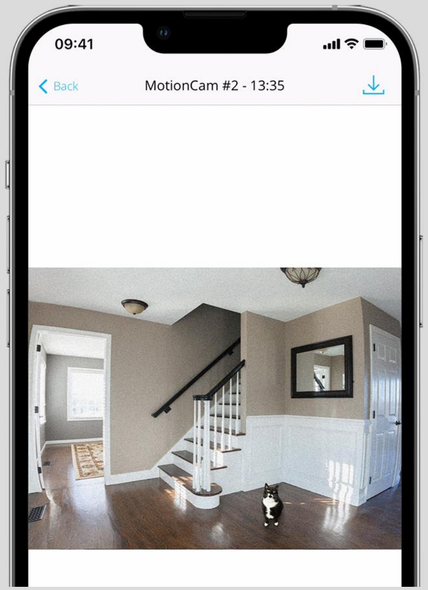
Operates only with **Hub 2 (2G)**, **Hub 2 (4G)**, **Hub 2 Plus**, **Hub Hybrid (2G)**, and **Hub Hybrid (4G)**

Motion detectors with a photo-on-demand feature

MotionCam (PhOD) and MotionCam Outdoor (PhOD)







Separate menu in the hub settings to control the photo-on-demand feature and define users who have access to photos

Operates only with **Hub 2 (2G)**, **Hub 2 (4G)**, **Hub 2 Plus**, **Hub Hybrid (2G)**, and **Hub Hybrid (4G)**

Motion detectors with with a photo-on-demand feature to verify fire alarms

MotionCam (PhOD) and MotionCam Outdoor (PhOD)

Photo capture by scenario

Automatic camera activation of a nearby motion detectors in case of alarm triggering by FireProtect or FireProtect Plus

Operates only with **Hub 2 (2G)**, **Hub 2 (4G)**, **Hub 2 Plus**, **Hub Hybrid (2G)**, and **Hub Hybrid (4G)**

Video Surveillance

The security system and video surveillance in one app

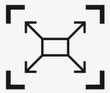
- Dahua, Hikvision, Safire, **Uniview, Ezviz** integration
- Connect up to 100 cameras and DVRs
- Support for RTSP

Cameras connect to the system in a few clicks

The security system and video surveillance in one app

Streaming video and sound

Saving snapshots

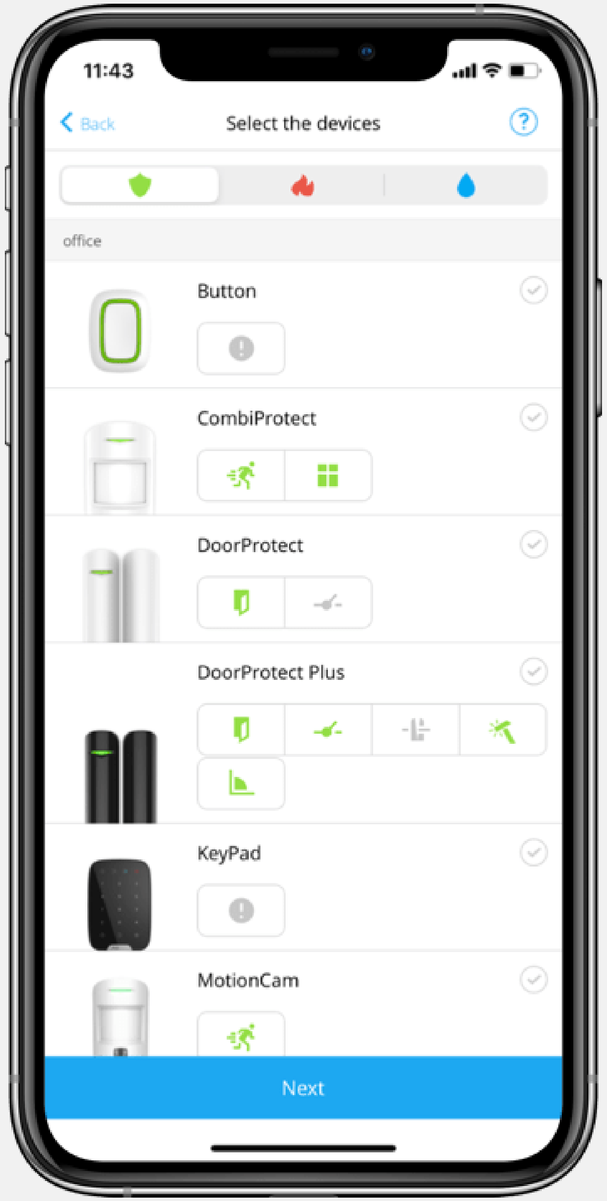


Zooming video in*

* Depends on camera model

Cameras and DVRs support

Automation



Scenarios

Hub Hybrid (2G)
Hub Hybrid (4G)

32 scenarios

Hub 2 Plus
Hub Plus

64 scenarios

Hub 2 (2G)
Hub 2 (4G)

32 scenarios

Hub

5 scenarios

Automation Devices

WallSwitch

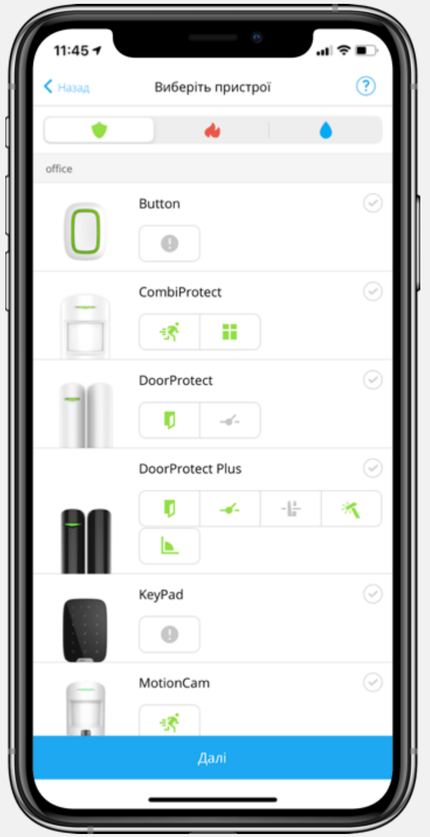
Socket

Relay

Automation Control

Button

Scenarios



Free App

Types of Scenarios

Alarm reactions

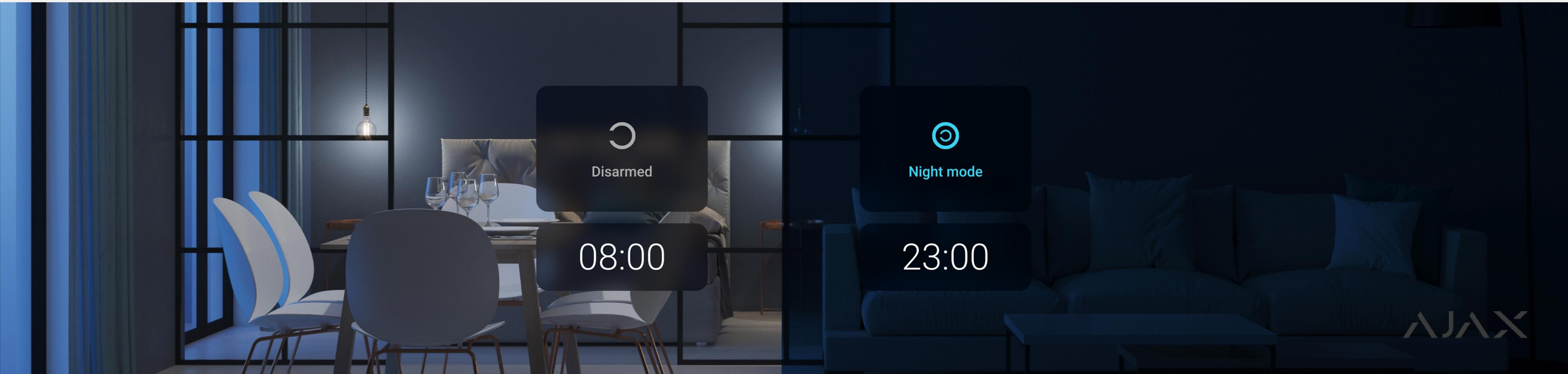
- Flood prevention system
- Switch off the potential cause of ignition
- Spotlighting the trespassers

Scheduled actions

- Scheduled Night Mode
- Home activity simulation
- Heating on schedule

Security mode change reactions

- Turning off lighting and certain sockets when arming the system
- Automatic doors and roller shutters



Security of any Scale

Security of any Scale

ReX 2

Radio signal range extender supporting photo verification

Ethernet

Photo verification

ReX

Radio signal range extender

Hub Hybrid (2G) \ Hub Hybrid (4G)
Hub Plus \ Hub 2 (2G) \ Hub 2 (4G) \ Hub 2 Plus

5 × Range Extenders

up to 35 km²

Hub

1 × Range Extender

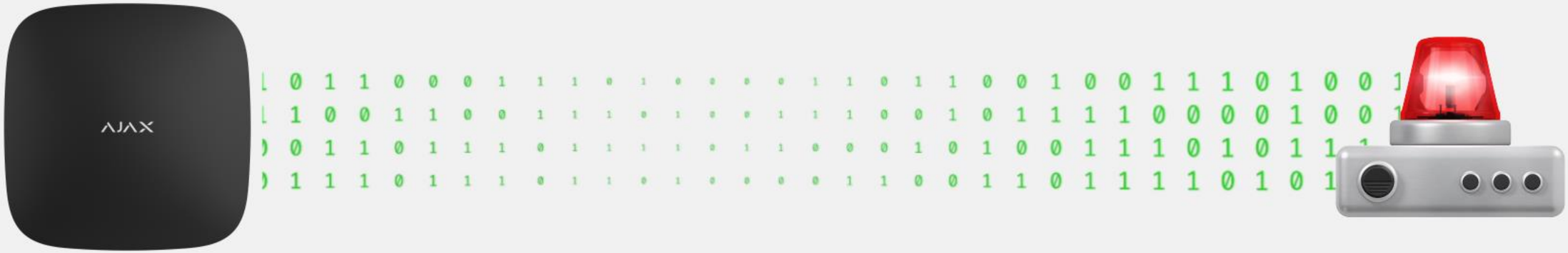
up to 16 km²

Connection to CMS

Connection to CMS

The system can be connected to most of the Central monitoring stations (CMS) directly or/and via Ajax Cloud

- SIA and Contact ID support
- Direct connection or/and via Ajax Cloud
- Integration with companies’s proprietary protocols
- Visual alarm confirmations
- Transmission of user's coordinates when pressing the Ajax mobile app's panic button
- vhfBridge as one more communication channel with CMS to send alarms via a third-party VHF transmitter



CMS software with integrated Ajax features

With proprietary protocol integration, the system also sends alarm photo verifications and coordinates of the user when pressing the Ajax mobile app's panic button

ABsistemDC(NG)v2 by Alarm Automatika	WBB by T2i
Horus by Azur Soft	Patriot by Patriot Systems
Manitou by Bold Group	V1 and F1 by ESI
SBN by Innovative Business Software	Sentinel by Monitor Computer Systems

Kronos by Next! s.c.
eLipse by Logetel
Stages by Bold Group
MASterMind by A Carrier Company

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PD 6662:2017 Security standard

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