MOBOTIX 7
Changing Video Surveillance

Beyond**Human**Vision

MOBOTIX

Intelligent
System Platform

Modular
Design

Decentralized
Architecture

Anything is Possible with the MOBOTIX 7 Platform

Decentralized. Modular. Individual. MOBOTIX 7 sets new standards for intelligent edge video technology.

Infinity is impressive! Simply by mixing different combinations of the three primary colors—red, green and blue—you can create every conceivable color on your screen. We apply this principle of infinite possibility and flexibility in our new open video system platform: **MOBOTIX 7**. It signals a fundamental shift in our approach to video surveillance: With MOBOTIX 7, you can precisely map any requirements of different industry verticals. **Limitlessly scalable**, **intelligent** and **modular** thanks to the support **of tailormade apps**. With its decentralized **edge architecture**, MOBOTIX uses applications supported by **artificial intelligence** and **deep learning**

to open up potential that goes far beyond conventional video security applications. The state-of-the-art tool needed to implement such possibilities is our **M73 high-end camera**. The M73 sets completely new standards for intelligent edge video technology. **Finely crafted. Robust. Modular. Cyber-secure.** Tailored to your individual demands of today and tomorrow. **Welcome to your open MOBOTIX 7 universe! Be inspired.**

MOBOTIX

Decentralized
Architecture

A Focus on Cyber Security and Data Protection

The edge principle: What is difficult to grasp is also difficult to attack.

Our cameras are **high-performance computers with eyes**. They carry the MOBOTIX DNA inside them. All video analysis and recording take place in the camera, providing **brilliant picture quality** — in real-time and with intelligent self-organization. The self-sufficient IoT cameras transmit images to the network only when relevant events occur. The images are also securely encrypted to the highest standards. Transferring less data means fewer vulnerabilities for cyber attacks. **Edge computing** eliminates the need for a centralized computer and digital video recorder (DVR). This removes the risk of a "single point of failure." **MOBOTIX systems are extremely reliable and safe.** Constructed entirely from high-performance and high-quality electronic components. The same principle

is applied consistently throughout the digital environment. Cyber security is our highest priority and is implemented comprehensively through the **MOBOTIX Cactus Concept.** MOBOTIX certifications include best-practice for cyber security from internationally renowned French testing institute CNPP (Center National de Prévention et de Protection). This marks the first time ever that such a certification has been awarded to a European manufacturer. We also view data security in line with the **GDPR** as a fundamentally important issue. This means that both access rights and camera settings can be adjusted as precisely and sensitively as necessary.

MOBOTIX

Modular
Design

Customize Components for Fantastic Fitting

Modular and flexible with uncompromising quality down to the very last detail.

The expanded modular design of the new M73 camera generation offers you up to **three individual sensor or function modules in one camera** for the first time. This makes the M73 extremely versatile and more configurable than ever before. The number and type of optical sensors and additional modules, such as audio or IR illuminators, can be selected according to your preferences. **The mounting system is extremely simple.** This also saves you time and money. MOBOTIX cameras stand out thanks to **their excellent robustness and longevity**. All of the hardware and system software is **"Made in Germany."** The design and surfaces are optimized so that the compact cameras can be used indoors and outdoors, in any environment. All cameras have already been extensively tested under extreme heat and cold before delivery. All components are designed for superb performance, for example excellent image quality in **4K resolution at a frame rate of 30 frames per second**. And with minimum bandwidth requirements — even in the eight-megapixel range. That's what makes our cameras so effective and so easily scalable.

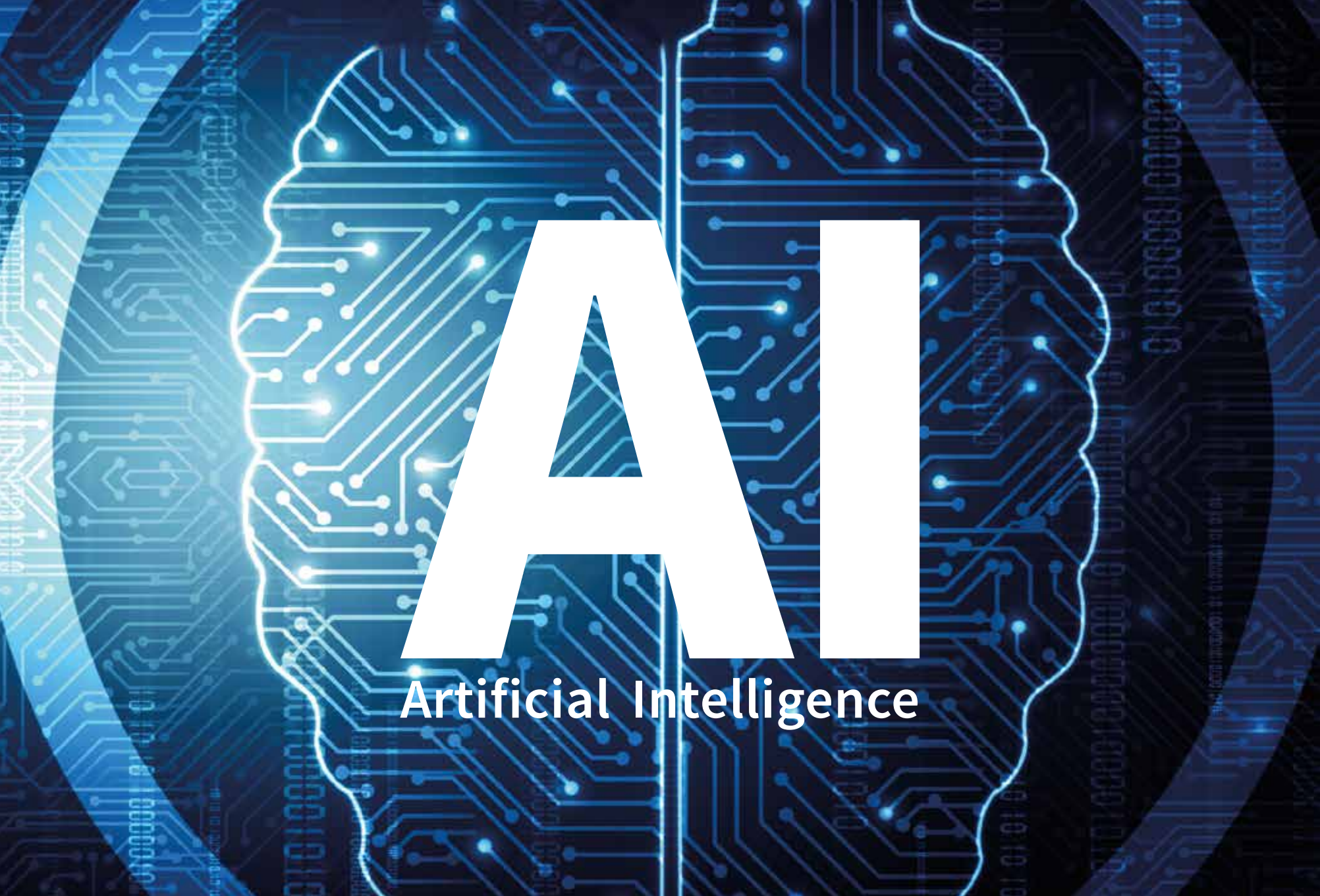**MOBOTIX**

Intelligent
System Platform

The MOBOTIX 7 Platform — Open to New Ideas

Infinite possibilities with AI-based apps — intelligent solutions for every requirement.

Each individual MOBOTIX camera is a complete video system. They are equipped at the factory with high-quality, **free video analysis tools**, meaning that they can be operated without licenses or video servers. The MOBOTIX 7 platform opens up this system to all user groups for the first time. It therefore provides an **infinite number of possibilities**. Infinite may sound exaggerated but let us show you why it´s appropriate in this case. The **MOBOTIX 7 system platform already includes special apps** that cover a significant number of industry-specific, individual requirements. In addition, the platform is open

for **apps developed** by our partners and customers. You can integrate them directly into the firmware of any M73 camera you like, or arrange for your apps to be programmed by MOBOTIX. This is how new solutions are created all the time. Completely open and dynamic. Customized to your needs. The possibilities now grow with the customer's needs.
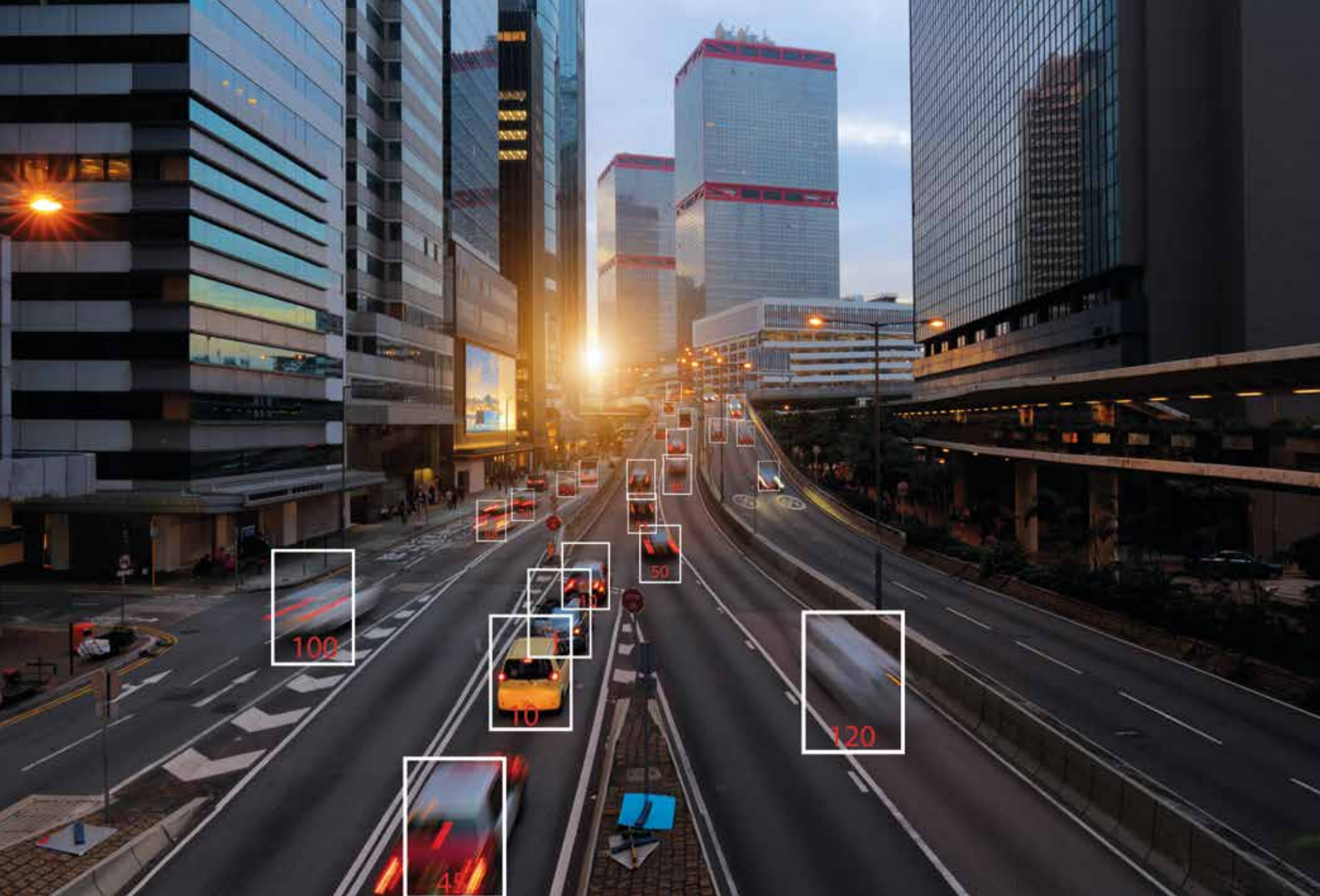
MOBOTIX

AI
Artificial Intelligence

Artificial Intelligence and Deep Learning

Demystify the buzzwords and learn to effectively make algorithms work for you.

Rumors persist that computers act and decide alone. That's not quite true. An artificial neural network is a computer system that is modeled after the human brain. But first, it requires a lot of data that has been categorized by humans. The artificial neural network uses imitation learning to understand what people are doing. It makes it possible to assign input data to output data. This is done with the help of algorithms, e.g., calculation methods or instructions for action. This results in complex networks that create new and fascinating solutions, over and over again — including in the MOBOTIX apps: Applications supported by **artificial intelligence and deep learning** open up new solutions, e.g. **more precise counting of people, differentiated by gender and age if necessary.**

Thanks to **real-time object and person detection**, action can be taken rapidly, for example if someone is behaving suspiciously at an airport. Deep learning and AI are not just meaningless jargon — they are an incredible source of support. Together with our partners, we will continue to develop this great potential. Responsible, ambitious and full of enthusiasm.

MOBOTIX

App-solutely Flexible and Intelligent. App-solutely Cyber-secure.

How the MOBOTIX apps will enhance and open up systems.

The **openness of the MOBOTIX 7** platform delivers ultimate individuality. Thanks to its combinability and expandability, users can use exactly the apps they need in their video system to meet their requirements. Some apps are pre-installed as **"Certified Apps"** on the MOBOTIX M73. These in-house apps and solutions from our prestigious partners, such as AI-Tech and Visage Technologies, can be trialed free of charge for 30 days. All **"Certified Apps"** are explicitly **verified and certified by MOBOTIX**. They therefore also meet the highest cyber security requirements. The selection of apps will continue to grow. All "Certified Apps" can be obtained from MOBOTIX partners. It is also possible for partners, customers or users to develop and program their own solutions based on the **MOBOTIX Software Development Kit (SDK)** and to use them as **"Custom Apps"** for special requirements. If they are certified by MOBOTIX, other customers can also purchase them too as "Certified Apps." Developers can therefore open up additional sources of income with attractive "Custom Apps".

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Appsolutely versatile! A list of MOBOTIX Apps:

MxAnalytics AI
Reliable, object-based counting and behavior detection

MxActivitySensor AI (from Q2/2020)
Reliable object-based motion detection independent of weather and brightness interference

AI-People
Counts people crossing a virtual line (e.g., door/corridor) in a specific direction.

AI-Intrusion-PRO
Shows intruders crossing a sequence of virtual lines. Setting multiple lines increases the reliability of anti-intrusion systems.

AI-Heat
Classifies most visited areas (hot spots) and the less crowded ones (dead areas) depending on the time spent by people inside.

AI-Bio
Biometric analysis of gender, age and length of stay of customers/visitors as a basis for customer and stock management in the retail sector.

AI-Fire
Early detection of flames indoors and outdoors (e.g., vehicles, containers). No thermal sensor required.

AI-Smoke
Smoke detection inside and outside. No thermal sensor required.

AI-Lost
Detects stray luggage and other objects (e.g., garbage) as well as the removal of objects (e.g., paintings in museums).

AI-Loitering
Detects suspicious behavior of people who stay in certain areas for a longer period of time.

AI-Crowd
Appraises the number of people in busy areas, recognizes queue situations, among other things.

AI-Overcrowd
Identifies crowded areas based on user-defined thresholds (number of people).

AI-Occupancy
Detects "Hot Spots" and "Dead Areas" in defined areas.

AI-Overoccupancy
Identifies the occupancy rate in defined areas and detects overoccupied zones.

AI-Parking
Classification of vehicles. Detects whether and how many parking spaces are free or occupied.

AI-Road3D
Traffic monitoring: Detection, tracking and counting of vehicles (behavior, traffic density, type [trucks, cars, cycles]). Identifies vehicles that are too fast.

AI-Incident
Traffic monitoring: Presence of pedestrians, vehicles stopping, queues or vehicles in the wrong direction.

AI-Spill
Detects situations when people fall and remain on the ground.

Visage Technologies FaceRecognition
Facial recognition of "living" people (Liveness Detection) by means of deposited image data. Witht 97% accuracy for access control applications.

MOBOTIX

Designed by **Eskild Hansen**

MOBOTIX

M73 — Brilliance. Intelligence. Excellence.

Developed and built to care about the very specific needs of users.

The M73 is simply the **best and most innovative IP video system** that MOBOTIX has ever built. All in the tradition of the original. And yet completely new and unique. **Intelligent, flexible and versatile** — the M73 combines all these features. It impresses with the latest high-performance system technology and modular MOBOTIX App support. The M73 is not just a camera. It is much more than that. Based on the intelligent MOBOTIX 7 system platform, it can meet the individual needs of every user. Finely crafted and tailor-made. The M73 is a camera that is second-to-none in terms of **performance**, **functionality**, **cyber** security and **edge computing**. This also applies to the **innovative mounting system for rapid wall and pole installation that saves time and money**. All in all, an uncompromisingly compact camera with brilliant vision and a great look — designed **by Eskild Hansen**.

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M73 — The First MOBOTIX Camera with 3 Modules

Extremely flexible. High-performance quad-core processor. Brilliant image resolution.

Every day, we work with enthusiasm on the further development of our ideas. The M73 is **extremely compact** yet delivers a **stand-out performance**, thanks in particular to the **powerful Quad-Core-ARM Cortex-A53 processor**. With new technology and a sophisticated mounting concept, the camera offers space for three sensor or function modules for the very first time. This makes the M73 more versatile and flexible than any other MOBOTIX camera before it. Of course, the M73 fulfills **current ONVIF profiles** and offers flexible codec support with **H.264** and **H.265** (from Q2/2020), **MxPEG+** and **MJPEG.** Thanks to **4K UHD resolution**, it delivers the brilliant images you rightly expect from MOBOTIX cameras. And it also stands out in terms of robustness thanks to its extremely stable performance: The camera has an **integrated shock detector** and a **temperature resistance of -40° to +65°C**, without any maintenance-intensive additional heating or ventilation — making it exceptionally strong.

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RAL 7039 **Quartz grey**

RAL 9003 **Signal white**

Ingenious Engineering

Simple assembly. Robust materials. Sophisticated concept. The motherboard of the M73 is accommodated in a high-tech housing made from powder-coated aluminum, available in two different colors. The heat generated is dissipated to the outside via the metal, so that no active cooling is required.

Module equipment: **Day, Night, Audio**

Module equipment: **Day, Night, IR-Light**

Module equipment: **Day&Night, Audio, IR-Light**

Module equipment: **Day (Wide), Day (Tele), Audio**

Configure your M73 to Your Needs

All components are made for maximum performance.

Our goal is to meet your individual requirements in a precise, reliable and reasonably priced way — over the long term. Combine MOBOTIX system technology with the modules of your choice.

- Up to **3 function and optical modules** for easy self-assembly
- Image sensor: **4K/8MP** (Tele, Standard and Wide Lens): Color (day), B+W (night) or color with a moving IR cut filter (day + night)
- Horizontal image angle from **95° to 15°** (depending on module)
- **IR Light module** (850 nm, variants for Tele, Standard and Wide Lens)

- **MultiSense module** (PIR, temperature, brightness, noise), from Q2/2020
- **Audio module** (microphone & speaker)
- **MOBOTIX App SDK** (free software development kit for programming individual custom apps for the M 73)
- All currently available apps pre-installed and **free to use for 30 days**
- **Wall or pole mounting**, inside and outside
- **Plug & play:** Optical modules already in focus ex works and interchangeable without camera mounting

MOBOTIX

Powerful
Performance

Performance & Efficiency

- **Quad-Core ARM Cortex-A53** (up to 1,300 Mhz)
- Max. power consumption: **25 W**
- Power supply via network cable **PoE Class 4** (IEEE 802.3at)
- **Internal DVR** (8 GB microSD, optionally expandable)

Robustness

- Ambient temperature: **- 40 to + 65°C**
- Protection classes: **IP66** and **IK07**
- Housing: **Aluminum** and **PBT-30GF**
- MTBF (Mean Time Between Failures): **more than 80,000 hours**
- **3-year warranty** (optionally extendable to 8 years)

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Image Quality

- Maximum image size: **4K UHD** (3840 x 2160 px)
- WDR: **120 dB** Triple Shutter
- Max. frame rate (H.264): **30fps@4K**
- Max. frame rate (MxPEG+): **20fps@4K**

Standards & Video Formats

- **ONVIF Profile S** (Profile T from Q2/2020)
- **H.264** Triple Streaming
- **H.265** (from Q2/2020)
- **MxPEG+** (for license-free use of the M 73 in MxMC from version 2.2)
- **MJPEG**

MOBOTIX

Wide Vertical Variety – Solutions on Point

Solutions precisely made for the requirements of different industries.

Together with our partners, we develop intelligent solutions for a range of verticals. MOBOTIX video systems are designed to meet our customers' very particular and individual challenges in specific areas. In the industry reports, we show you how our customers use state-of-the-art video technology thanks to the flexible MOBOTIX 7 platform and its network-independent apps that are integrated directly into the camera firmware; even in remote locations. See how you can **protect and optimize production processes** with MOBOTIX 7 and the M73. Experience how **safety** is **increased** in many areas and accidents and incidents are avoided. The MOBOTIX systems can even initiate complex countermeasures autonomously, e.g., locking doors. Make your company **more efficient**, **more secure** and **more successful** with the MOBOTIX 7 platform and the flexible M73 video system.

MOBOTIX

Flip the Switch to Full Power Safety

Utilities, Energy & Mining — Sensitive infrastructures require sensitive tools.

Energy generation and supply infrastructures need special **security and preventative measures**. This is the only way to ensure long-term reliable operation and occupational safety and to **prevent disruptions** to work processes, **damage and power failures**. Anti-intrusion systems must function reliably without triggering false alarms. This requirement can be specifically supported with the **help of the MOBOTIX Apps**. An alarm is only triggered when a person crosses a certain sequence of virtual lines. MOBOTIX App technology also makes it possible to detect suspicious behavior. For example, if someone

is in a sensitive area for a long period of time. This makes it possible to prevent incidents in advance. Of course, applications for the **timely detection of fire and smoke development** also play a central role in the industry.

Relevant apps: **MxAnalytics AI, MxActivitySensor AI, AI-Intrusion PRO, AI-Heat, AI-Loitering, AI-Fire, AI-Smoke, Visage Technologies Face Recognition**

MOBOTIX

Produce Efficiency, Proactivity, Safety & Security

Industrial & Manufacturing — Preventing intrusions, avoiding fires, monitoring processes.

Fire, **accidents in the production process** and **intrusions** are the main risks for companies in manufacturing and industrial. The aim is to reliably prevent economic damage and, in particular, personal injury. With the **MOBOTIX Apps**, smoke and flames can be **detected reliably and at an early stage** outdoors, e.g., on vehicles and containers, as well as indoors. This enables the fastest possible intervention. There are also efficient ways of reliably monitoring indoor and outdoor areas for anti-intrusion purposes. Prevention in the production process is fascinating: **Apps support eye tracking, for example.**

This ensures that employees in sensitive and dangerous areas always work with the appropriate attention. In case of doubt, this can save lives!

Relevant apps: **MxAnalytics AI, MxActivitySensor AI, AI-People, AI-Intrusion PRO, AI-Heat, AI-Loitering, AI-Fire, AI-Smoke, AI-Bio, Visage Technologies Face Recognition**

MOBOTIX

Perfect Protection of People & Public Places

Government — A lot of people means a lot of security considerations.

Local government and municipal buildings are busy hubs, as are museums and concert halls. Increased public traffic calls for various security and control measures. Performance of the authorities' infrastructural and organizational tasks must also be guaranteed at all times. The innovative video system from MOBOTIX can use camera-integrated apps based on **deep learning and artificial intelligence** to **count the number of people** using certain entrances or paths. **Queues** can also be determined. The system can use the apps to reliably define **abandoned or forgotten objects** such as bags or backpacks and trigger alarms. **Early fire detection** can also be ensured by targeted camera use.

Equally it is fundamentally important for administrations to locate, detect and trace accidental fires or cases of arson, for example in urban forests and parks.

Relevant apps: **MxAnalytics AI, MxActivitySensor AI, AI-People, AI-Heat, AI-Crowd, AI-Overcrowd, AI-Intrusion PRO, AI-Loitering, AI-Lost, AI-Fire, AI-Smoke, AI-Bio, Visage Technologies Face Recognition**

MOBOTIX

Making Ways Way Better with Video Technology

Traffic & Transportation — Ensuring safety, directing traffic, preventing disturbances.

Well-functioning transport infrastructure is the lifeline of everyday life. Public and private transport operators must **protect** themselves against **vandalism**, **theft and violence**. But security is only one aspect. **Traffic flows**, especially on busy roads, must be **directed** in a targeted and **intelligent way** to avoid congestion and emissions. Today, MOBOTIX' decentralized, intelligent video security technology can do much more than just clearly identify violent criminals or graffiti artists at railway stations. With the MOBOTIX Apps, **overfilling situations** can be **avoided** in advance. **Unattended luggage is reliably detected**. Counting procedures and vehicle recognition can also be used to measure and control traffic on the roads separately according to vehicle type (cars, trucks, cycles). **Evaluations of traffic flows**, **traffic density and the behavior** of road users enable targeted measures to be taken to transform cities into smart cities.

Relevant apps: **MxAnalytics AI, MxActivitySensor AI, AI-Heat, AI-Occupancy, AI-Overoccupancy, AI-Loitering, AI-Lost, AI-Fire, AI-Smoke, AI-Road 3D, AI-Incident, AI-Parking, AI-Bio, AI-Spill, Visage Technologies Face Recognition**

MOBOTIX

How Cameras Boost Customer Service and Sales

Retail — Not only preventing theft, but actively promoting sales.

For many, the most obvious retail application is preventing theft. But this is only part of the spectrum. In fact, MOBOTIX video technology can help retailers **increase sales** and **customer satisfaction**. For example, waiting times and overcrowded areas can be detected and then optimized. Biometric analysis opens up completely new sales potential. Knowledge of gender, age and length of stay in the store enables valuable analysis of the customer structure. Heatmaps can **reliably measure and show customer flows** in the medium and long term. This provides the retailer with information on hot spots and low-traffic areas. On this basis, **product positioning can be targeted** in such

a way as to increase business success. **Anti-theft protection and prevention** are naturally still issues that can be tackled extremely reliably using MOBOTIX cameras and their intelligent multisensor technology.

Relevant apps: **MxAnalytics AI, MxActivitySensor AI, AI-People, AI-Heat, AI-Crowd, AI-Overcrowd, AI-Occupancy, AI-Overoccupancy, AI-Loitering, AI-Lost, AI-Fire, AI-Smoke, AI-Parking, AI-Bio, Visage Technologies Face Recognition**

MOBOTIX

Advancing Care through Relief and Targeted Monitoring

Healthcare — Supporting clinic staff, optimizing processes and helping people.

The increased burden on nursing staff and the lack of skilled nursing staff is a central issue in the healthcare sector. Modern MOBOTIX technology can provide targeted support. In nursing homes and hospitals, rooms can be equipped with intelligent systems. **A message is sent automatically as soon as a patient or resident gets out of bed or leaves the room**. It is also possible to reliably detect if **a person falls and remains on the floor**. This allows the nursing staff to intervene immediately in the event of an incident. At the same time, this bundled monitoring cuts down on unnecessary rounds and ensures peace and quiet at night. **Access control** is also an important topic: There are sensitive

areas in all healthcare facilities that can only be entered by authorized persons. In conjunction with their apps, MOBOTIX video systems can implement clear access regulations with multi-factor identification with a particularly high level of reliability.

Relevant apps: **MxAnalytics AI, MxActivitySensor AI, AI-People, AI-Intrusion PRO, AI-Lost, AI-Fire, AI-Smoke, AI-Bio, AI-Spill, Visage Technologies Face Recognition**

MOBOTIX

Artificial Intelligence Supports Human Intelligence

Education & Science — Full focus on learning.

Qualified and talented young people are the future of our society. Effective learning requires calm and a focus on the essentials. In this respect, MOBOTIX fulfills the important task of **protecting pupils and students from distraction**. In the past, schools have repeatedly been the target of external attacks. Other dangerous situations include **vandalism and violence** among the students themselves. With the help of MOBOTIX solutions, **people behaving suspiciously can be identified in good time**, for example if they remain for an unusually long time in critical areas. And all entrances can be effectively monitored, even without personnel. By **recognizing and assigning age, gender or clothing**,

movements of specific persons can be tracked in a targeted fashion. And, of course, **early smoke and fire detection** are important instruments for a safe learning environment, especially in schools.

Relevant apps: **MxAnalytics AI, MxActivitySensor AI, AI-People, AI-Crowd, AI-Overcrowd, AI-Occupancy, AI-Overoccupancy, AI-Intrusion PRO, AI-Loitering, AI-Lost, AI-Fire, AI-Smoke, AI-Parking, Visage Technologies Face Recognition**

MOBOTIX

MADE IN

The arrival of the very first MOBOTIX IP camera with long-term flash memory and recording management integrated in the firmware in 1999 was an absolute world first. Its decentralized edge approach was so revolutionary that it completely changed the video surveillance industry. Continuing in this German tradition of engineering excellence, we develop, produce and program high-end solutions in IP video technology. Always at the forefront of innovation. Focused on the highest quality. MOBOTIX is a pioneer. Thanks to extremely reliable, cyber-secure and intelligent solutions that can be extended without limits. The explicit focus of all of our developments is the benefit to the customer. Solution-oriented, unique and unfailingly reliable. BeyondHuman**Vision** and always a step ahead of the times.

GERMANY

MOBOTIX

Beyond**Human**Vision

MOBOTIX