

MOBOTIX
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Technologies

ENERGY, UTILITIES & MINING

Great Responsibility Needs
Great Solutions

BeyondHumanVision

MOBOTIX



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How MOBOTIX Technology Can Make Your Life Easier

High-End Video Systems – Made For Extreme Environments

Beyond**HumanVision** is more than just our motto; this way of thinking comes with genuine added value for you! High-end video surveillance offers you comprehensive solutions for smooth operations and maximum security at all levels. As a person in charge of an energy, utility or mining company, you need highly professional support that can withstand the toughest conditions. Because if something happens, it becomes big, dangerous and expensive. We want to avoid this together with you.

MOBOTIX does much more than just provide surveillance cameras. Instead, we provide you with **perfectly tailored package solutions** that are customized for your company and your industry. Individually and to the point. Because every project is unique and incomparable. Let's have a talk.



YOUR BENEFITS

- Ensure compressive security at all levels
- Save and earn cash
- Protect the environment
- Reinforce your quality and your image
- Simplify your life and that of your employees

You Wouldn't Grill Your Steak on a Tea Light, Either

Big Responsibilities Need Professional Solutions

The energy, utilities and mining industry is complex. Yet energy supply companies, power plants, sewage treatment plants, waste and recycling industries, mining, oil and gas production have one thing in common: Nowhere else packs quite such a punch. "Pussyfooting" simply has no place. A **sophisticated, hands-on, all-inclusive video system** is called for that reliably masters major challenges, because:

- When something happens, it's "big".
- Accidents can cost lives
- Repairs can quickly run into the millions
- Seconds can be critical
- High risk of consequential damage (e.g. blackout, supply shortage, etc.)

MOBOTIX is ready for these challenges. With **robust, high-end video technology** and **intelligent, artificial intelligence (AI)-based apps** that we develop with our partners. We're here for you!



SECURITY

- Intrusion prevention (prevent theft & sabotage)
- Cybersecurity (digital protection)
- Access control to sensitive areas
- Early fire detection and protection

Prevent Unauthorized Access and Fundamental Damage

Smooth Processes for Safe Supply

Central and critical infrastructures must be specifically secured. Not just in emergencies. **High follow-up costs due to damage, repairs and power outages** can be avoided by means of intelligent preventive measures.

No intruders may enter the premises, whether real or digital. **Security** and **cybersecurity** are fundamental. Access to highly sensitive areas is reserved for certain persons. This must be controlled without exception. Of course, expensive equipment must be protected from fire. Especially when flammable or dangerous substances are being used. MOBOTIX surveillance systems reliably meet this criteria.

"MOBOTIX solutions ensure security and smooth operation on the premises. Systems are robust and low maintenance, despite the constant presence of dust and dirt."

Michael Hentz, Central Waste Management (ZAK)

A photograph of an industrial setting, likely a steel mill. In the foreground, a large, dark, mechanical arm or crane structure is visible, with a bright green light emanating from it. In the background, a worker wearing a red hard hat and safety gear is standing on a metal platform or walkway. The scene is filled with complex machinery, pipes, and structural elements, all bathed in a warm, orange-red light, possibly from molten metal or industrial lighting. A large, dark, curved object, possibly a ladle or a part of a machine, is in the lower right, with a shower of bright orange sparks falling from it.

OCCUPATIONAL SAFETY

- Safe handling of hazardous materials
- Correct use of equipment and machinery
- Maintenance in dangerous or inaccessible locations

Rough Environment – Careful Handling

Avoid Errors and Make Processes Transparent and Secure

Intelligent MOBOTIX video systems help you to **monitor internal security processes effectively**. Whether machine or human: It is important to consistently avoid mistakes. The consequences can quickly become fatal in the "energy, utilities and mining industry". The safety of employees is paramount. For example, intelligent MOBOTIX video systems immediately trigger an alarm if somebody who is handling hazardous substances falls down. In addition, areas that are invisible or too dangerous for humans can be monitored – such as zones with very high temperatures or the inside of piping systems.

"When moving from ship to offshore platform, reliable video surveillance supports the safety of our employees. Despite the wet conditions, the video systems are low maintenance. This saves us significant operating costs."

Johan Holster, Ampelmann



PROCESS OPTIMIZATION

- Monitoring of production steps
- Remote maintenance of machines
- Protection of the environment
- Image management – trust as a currency

Increase Yields and Trust

Intelligent Video Analysis Improves Processes

What can be said of dangers in the industry is also true of savings: They get really BIG very quickly! Monitoring production processes with MOBOTIX video technology enables their targeted improvement. Machine downtimes can be reduced or avoided. Many inspections can be performed using remote maintenance on the monitor. This eliminates unnecessary routes. This saves you money in many areas.

The confidence of people in their work is especially important for companies in the energy, utilities and mining industry. Sustainability, responsibility and environmental awareness have long been actively demanded in the market. With MOBOTIX systems, you ensure smooth processes and help shape your good image for the better.

"A picture paints a thousand words. Thanks to the high resolution, I can see every detail on screen and, if necessary, intervene directly to optimize the process chain."

Klaus Timmann, PowerPlant Lohbrügge



SPECIAL ENVIRONMENT

- Dust & dirt
- Moisture & humidity
- Heat & cold
- Wind & weather
- Poor lighting & darkness
- Inaccessibility

Formidable Fortresses

Ropbust & Cyber-safe, Even Under Extreme Conditions

Hardly anywhere are external influences more demanding than in the energy, utilities and mining industry. Robust MOBOTIX video systems - made in Germany - are designed to reliably master them: They can withstand the most extreme environmental conditions over a long period.

- The "**mean time between failures (MTBF)**" of our cameras is on average **80,000 hours** (> 9 years). This saves maintenance costs and reduces outlay for replacement equipment.
- **No additional air-conditioning measures** are required for installation indoors and outdoors.
- **The maintenance-free housing** protects against moisture, corrosion and pollutants. **Special protective housings** are used in particularly demanding environments.
- Highly sensitive optics, thermal sensors, infrared lamps and intelligent apps **overcome the most difficult optical conditions**, such as darkness or unfavorable weather conditions.

Hold tight. That goes for digital too: top cybersecurity included

CYBERSECURITY is a top priority at MOBOTIX and is a sensitive subject in every industrial company. After all, your business relies on preserving trade secrets and ideas and protecting them from the competition. MOBOTIX solutions are widely recognized for excellent cybersecurity. The **MOBOTIX Cactus Concept** sets standards in the video surveillance industry that you can rely on.



Discover the MOBOTIX Cactus Concept:
mobotix.com/en/cactus-concept-cyber-security

MOBOTIX

Proven in Practice

Successful Worldwide in the Energy, Utilities & Mining Industry

AMPELMANN, NETHERLANDS

The innovative Ampelmann platforms compensate for sea movements. They enable **safe transfer** from ships to offshore facilities on the high seas, even in the roughest wave conditions. The distance between the platform and ship is about twenty meters when transferring **Visual control** during transfer is mandatory. For this purpose, MOBOTIX systems are mounted on a traffic signal mast. Monitoring is then carried out safely from a distance. Requirements around dust and waterprooffness are considerable. The M15D with day and night lens used **cope dependably and durably with adverse weather conditions**.

High-resolution MOBOTIX technology is also used in cargo transfer and lifting systems from Ampelmann. This allows the lifting of loads to be tracked accurately. Thanks to the ATEX special housing, the technology is also ideal for **explosive environments** in industry and in the **offshore market**.



- Day & night security in a demanding environment
- Extremely resistant to water and dust
- Freedom from maintenance saves operating costs

ZAK - CENTRAL WASTE MANAGEMENT, GERMANY

This state-of-the-art waste management center recycles the waste of more than 250,000 people. ZAK 65 MOBOTIX Video-IP systems are used to ensure smooth processes and to secure the 88-hectare site. M15D thermal cameras **monitor the temperature** in the fuel's wood bunker, where fermentation processes can quickly ignite fire. Thermal sensors and thermal radiometry **trigger automatic events or alarms** at -40 up to +550 degrees Celsius.

MOBOTIX M25 video systems for process monitoring are installed throughout the site. The compact all-round systems excel in outdoor use. They are extremely **robust, low maintenance and weatherproof**. Dirt and dust are quite the norm at the recycling center. Drivers of trucks use the cameras' images via a tablet to maneuver in narrow spaces. Secure access and access control is also handled via MOBOTIX technology.



- Fire protection: Alarms at -40 up to +550°C.
- Resistant to weather, dirt and dust
- Process optimization

RENO-NORTH, DENMARK

The waste management company operates one of the most efficient waste incineration plants in Denmark. Approximately 250 shipments of waste are delivered daily. MOBOTIX video systems **defy the hot, humid, dusty and vibratory environment of the plant as well as the salt-containing oceanic climate of the Lomfjord.**

Operating procedures are monitored centrally by video.

The entire process is designed to protect the environment. Harmful components, such as hazardous waste, batteries or chemical waste must not be incinerated. Recyclable waste such as metal, paper and glass is eliminated beforehand. Further cameras are used to control access and prevent non-compliance with workplace regulations. In addition, video surveillance and documentation simplifies regulatory controls. The process is now fully documented from A to Z. This saves effort, time and ultimately money.



- Environmental protection through identification of hazardous waste
- Defying humidity, heat, dust and vibrations
- Stringent process documentation

WOOD-FIRED POWER PLANT LOHBRÜGGE, GERMANY

As the world's leading reference plant, the Hamburg-Lohbrügge power plant converts 30,000 tons of wood into 9,000 kW of heat energy and 1,900 kW of electricity each year. This saves 23,000 tons of CO₂ per annum. Seven MOBOTIX video systems document the process chain, from weighing and unloading, the combustion chamber, the ash container and ultimately the smoke cloud. With the MOBOTIX system, **employees monitor the status and intervene remotely** if the image from the combustion chamber indicates a discrepancy in the fuel.

Cameras are subject to particularly harsh conditions. A highly **temperature-resistant solution with fan cooling for combustion monitoring was developed with a MOBOTIX partner.** The cameras run smoothly even after 18 months of continuous operation in dust. If the images become unclear, a compressed air nozzle cleans the lens. MOBOTIX technology on the chimney stack monitors the color and amount of smoke.



- Heat-resistant housing with automatic cooling and cleaning
- Continuous operation since 18 month now
- Remote maintenance optimized processes

Outdoor



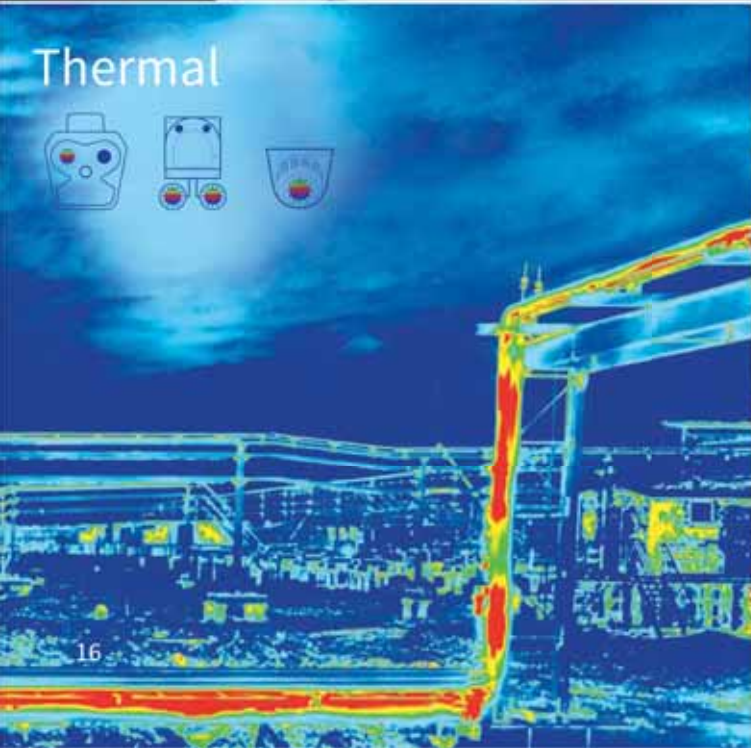
Indoor



MOBOTIX MOVE



Thermal



Access control



When Potential Becomes Perfection!

Extensive Portfolio for Your Tailor-Made Solution

There is no such thing as a MOBOTIX blanket approach. In cooperation with your MOBOTIX partner, your **solution** is **configured to suit your needs** from the comprehensive MOBOTIX portfolio. We discuss your processes with you in considerable detail to define the relevant tasks and how we can provide an effective and dependable solution. This ensures our **solution suits your needs perfectly**, leaves nothing to be desired yet provides some leeway.

Outdoor

MOBOTIX outdoor cameras are able to withstand ambient temperatures ranging from -40 to 65°C. The maintenance-free housing protects them from moisture, corrosion and dirt. High-quality image sensors produce high-quality video recordings even in low light.

Indoor

Indoors, the hemispheric video system with 360° all-round view or 180° panoramic image can monitor an entire room discreetly and without any gaps – with intelligent video analysis tools for object and person statistics, heat maps and behavior detection.

MOBOTIX MOVE

The weather-resistant, mobile IP cameras are equipped with the latest standard features of central video systems. MOBOTIX MOVE is the ideal supplement to the premium IoT video systems in the MOBOTIX 7 and Mx6 series.

Thermal

MOBOTIX thermal cameras register objects and people using a thermal signature, even in total darkness at distances of several 100 meters. They are also used with great success for early fire detection and can issue alarms automatically.

Access control

With its 360° lens, the technology captures the entire entrance area without any gaps. The system enables keyless opening of doors securely using an access code, RFID transponder or smartphone, and is even scalable for larger connected systems.



Discover the full potential:
www.mobotix.com/en/products

MOBOTIX



Digital is Pivotal - Start Your Future

MOBOTIX Apps Enable New Applications

The MOBOTIX 7 platform includes **special certified apps** for the M73 high-end camera. The applications take advantage of **artificial intelligence** and **deep learning**. In other words, the software is specifically tailored to individual applications using calculation methods and operating instructions.

The MOBOTIX 7 platform can already cover a significant number of industry-specific applications with its special apps. It is also open for **custom apps developed by our partners and customers** themselves. This means that practically every conceivable application can be mapped. **The possibilities are virtually endless!**

These MOBOTIX apps are designed for use in ENERGY, UTILITIES & MINING:



MxAnalytics AI

Reliable, object-based counting and behavior detection.



AI-Fire

Early detection of flames indoors and outdoors (e.g. vehicles, containers).
For all optical image sensors.



MxActivitySensor AI

Reliable object-based motion detection independent of weather and brightness interference.



AI-Smoke

Smoke detection inside and outside. For all optical image sensors.



AI-Intrusion PRO

Shows intruders crossing one or a sequence of virtual lines. Multiple lines increase system reliability.



AI-Loitering

Detects suspicious behavior of people who remain in certain areas for an extended period of time.



AI-Heat

Identifies frequently visited areas (hot spots) and less frequented areas (dead areas) based on the length of time people spend there.



Visage Face Recognition

Face recognition using stored image data. With 97% success probability with access control applications.

'Appsolutely' fascinating and everything at a glance:
seven.mobotix.com

MOBOTIX



MOBOTIX
SOLUTION Partner

MOBOTIX
TECHNOLOGY Partner

Outstanding Expertise: Impossible Just Isn't Our Vocabulary

MOBOTIX Partners Develop Specific Solutions

We closely monitor developments and trends in the industry on an ongoing basis. At the same time, we are aware that we cannot maintain a worldwide overview of the many requirements on our own. That's why working with experienced experts is extremely important. These are our qualified MOBOTIX partners.

Together we meet particular challenges and continuously develop new complete industry-specific solutions. MOBOTIX solution partners provide their own intelligent application solutions for MOBOTIX technology, such as waterproof special housings or authentication systems. MOBOTIX technology partners are innovative manufacturers of add-on solutions that MOBOTIX has integrated into its own product. This means that we can offer you the best available market solutions with our premium camera technology.



Secure Scenarios – Engaging Partner Projects

Intrusion prevention – keep an absolute overview with a drone

An autonomous safety drone performs an automatic reconnaissance mission in the event of an alarm. The MOBOTIX S16 on board with its special thermal-sensitive optics can detect intruders at 200 m in all weather conditions and distinguish between humans, animals and objects, even at night.

Process monitoring – see precisely from protected housing

Equipped with two lenses, the special solutions are used in hazard zones. Where an explosive atmosphere consisting of air and gases or combustible dust is present in regular operation. Special 2Wire cabling can be used to reach even remote equipment. Too dangerous for humans, possible for MOBOTIX.

Process monitoring – hot insights into flammable processes

The bespoke solution allows the monitoring of flare stacks in exhaust gas combustion, in terms of volume (viewed from below) and the condition of the flame. In addition, reactors (steam outlets on a flange) and material flows in pipes (sight glass monitoring) can be reliably monitored.

TALK TO US

- energy.mobotix.com
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The Way to Your Customized MOBOTIX Solution

Short Step, Long-Term Impact: Let's talk!

MOBOTIX solutions are sold by qualified distributors, dealers and partners around the world.

Professional MOBOTIX installers and service providers for video surveillance and sector applications have proven expertise. Our partners will work with you to design and implement your intelligent MOBOTIX solution to meet your specific requirements.

MOBOTIX – there for you every step of the way... that includes online too!

Of course, we will be happy to help you directly with any questions you may have about your requirements.

- Explicit video system solutions for energy, utilities & mining
- Complete overview of the powerful MOBOTIX portfolio
- Free download of brochures and documentation
- Practical examples of MOBOTIX solutions



Find out more at:
energy.mobotix.com

MOBOTIX

Intelligent Video Security Solutions Made in Germany

MOBOTIX offers a comprehensive range of solutions for all aspects of video-based security systems. We develop high-quality, decentralized, energy-efficient systems that mean our customers save money on every MOBOTIX system installed.

Our motto **BeyondHumanVision** is also our mission: MOBOTIX is fully committed to making itself the most reliable company it can be, one that protects people and property by using intelligent, cyber-secure video technology to go beyond human vision.

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BeyondHumanVision

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