Why IEC 62676-4 Is the New Gold Standard in Video Surveillance Design

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At MOBOTIX, we know the challenges security professionals face when designing surveillance systems for today's complex environments. Legacy standards no longer suffice. Increasing cyber threats, stringent regulations, and mission-critical infrastructure demand a new benchmark — one that covers not only image quality, but operational resilience and security from the ground up.

That's why we've embraced **IEC 62676-4**, the emerging international standard that defines what modern video surveillance systems must deliver: **comprehensive cybersecurity, fault tolerance, secure software lifecycle management, and integration with enterprise security architectures**.

IEC 62676-4 isn't just a guideline for compliance — it's a blueprint for building future-ready, trusted surveillance solutions. And at MOBOTIX, we've built that blueprint into every product we design.

Overview of IEC 62676-4

IEC 62676 is a multi-part international standard for video surveillance systems. Part 4, specifically, focuses on **system reliability, cybersecurity, and operational performance** — topics that are increasingly critical as cameras evolve from passive recorders to intelligent edge devices.

Unlike older standards that primarily addressed image quality or basic functionality, IEC 62676-4 covers:

1. Cybersecurity and Secure Design

The standard requires surveillance systems to have cybersecurity "baked in" at every layer — from hardware and firmware to communication protocols and user access. This means:

• Secure boot mechanisms that prevent unauthorized firmware

• Encrypted video streams and control channels

• Role-based access controls to limit who can configure or view the system

• Monitoring capabilities for anomalous activities or attempted intrusions

2. Fault Tolerance and Operational Reliability

Surveillance systems must operate continuously, even in adverse conditions like network outages or physical tampering. This requires:

• Failover and redundancy features to prevent data loss

• Local edge processing to maintain analytics and recording when connectivity drops

• Tamper detection and alerting

3. Software Lifecycle Management

To maintain security over time, systems need:

• Transparent documentation of firmware and software update policies

• Regular and timely security patches

• Secure update mechanisms to prevent malicious code injection

4. Integration and Interoperability

IEC 62676-4 recognizes that video surveillance doesn't operate in isolation. It should seamlessly integrate with:

• Video management systems (VMS)

• Physical security information management (PSIM)

• IT and OT systems, including SCADA

This makes it the first truly comprehensive standard for video surveillance as a **mission-critical security component**.

MOBOTIX cameras and solutions are engineered specifically to meet these demands. Our hardened Linux-based OS, secure boot process, encrypted data channels, and failover capabilities embody the IEC 62676-4 principles in action.

Download our Free Guide

How MOBOTIX Implements IEC 62676-4 Principles in Practice

We don't just claim compliance — we demonstrate it through:

Cybersecurity by Design

Our cameras run on a hardened, Linux-based operating system with **secure boot** that guarantees only authorized software runs. Communications are encrypted end-to-end, and access control is enforced via strong authentication and granular user roles.

Resilience and Edge Analytics

Even if your network goes down, MOBOTIX cameras keep working. They perform real-time analytics locally — detecting intrusion, motion, or tampering — and store video securely on internal storage until connection is restored. This means no gaps in critical footage or alerts.

Transparent Firmware Lifecycle

MOBOTIX provides long-term support with regular firmware updates and patches. Our transparent vulnerability disclosures and clear update procedures help you stay ahead of emerging threats without disrupting operations.

Open Architecture for Seamless Integration

We design our systems to plug effortlessly into existing security and IT infrastructures — whether it's integrating with your VMS, SCADA, or PSIM platforms — ensuring video is a core part of your security ecosystem.

This means MOBOTIX customers get more than a camera — they get a **mission-critical security node designed for real-world challenges**.

Your IEC 62676-4 Vendor Evaluation Checklist

When selecting or upgrading your video surveillance system, here are key questions to ask your vendors:

1. Can you provide **documentation** demonstrating IEC 62676-4 compliance?
2. Does your hardware support **secure boot and encrypted communication**?
3. How is **firmware lifecycle** managed? Are **patches** timely and well-documented?
4. What **failover and redundancy features** ensure continuous operation?
5. How do you enable **role-based access control** and monitor user activity?
6. Can your solution **integrate with existing VMS, PSIM, or SCADA systems**?
7. Do you offer **edge analytics** to reduce bandwidth and improve resilience?

At MOBOTIX, we're transparent about all of these points and welcome your due diligence.

Security isn't static. Threats evolve, regulations tighten, and infrastructures become more complex. IEC 62676-4 represents the new foundation for video surveillance that can keep pace.

When you choose MOBOTIX, you're choosing a partner who builds that foundation into every camera, every software update, and every integration.

Ready to align your video surveillance with the IEC 62676-4 gold standard?

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About MOBOTIX AG

MOBOTIX is a leading manufacturer of intelligent IP video systems in premium quality and sets standards in innovative camera technologies and decentralized security solutions with the highest level of cyber security. MOBOTIX was founded in 1999 and is headquartered in Langmeil, Germany. The company relies on its own research and development as well as its own production "Made in Germany". Customers around the world

trust in the durability and reliability of MOBOTIX hardware and software. The flexibility of the solutions, the integrated intelligence and the highest level of data security are appreciated in many industries. MOBOTIX products and solutions support customers in areas such as industrial manufacturing, retail, logistics and healthcare. With strong and international technology partnerships, the company is using artificial intelligence and deep learning modules to expand its universal platform and new applications in a wide range of sectors.

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