

MOBOTIX

Beyond Human Vision



c71 NurseAssist

powered by Kepler Vision Technologies

Balancing Innovation and Privacy

Navigating Video Technology in Healthcare and Elderly Care

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Introduction

Potential of video technology in elderly care / healthcare

In the realms of healthcare and elderly care, the adoption of video technology has become increasingly prevalent, driven by its potential to enhance patient safety, improve care delivery and facilitate remote monitoring while at the same time relieving the nursing staff. Video plays a critical role in monitoring patient well-being, ensuring the safety of vulnerable populations, and assisting healthcare providers in offering prompt and effective care. The utility of such technology spans a broad spectrum, from fall detection and prevention to the management of patients with various medical conditions, offering a layer of security and operational efficiency that was previously unattainable.



Yet, the integration of video technology into healthcare settings introduces significant privacy and data protection challenges. Patients, including the elderly, entrust healthcare providers with their most sensitive information, expecting that their privacy will be respected and protected. The task of leveraging video technology while safeguarding personal data requires a nuanced approach, one that balances technological advantages with the imperative to protect individual privacy. This balance necessitates adherence to legal standards, ethical practices, and a commitment to transparency and security, ensuring that the benefits of video are realized without compromising the dignity or privacy of patients.

The need for data protection and privacy

As healthcare and elderly care facilities increasingly integrate video technology into their operations, the imperative for stringent data protection and privacy measures becomes ever more critical. The use of video as a supportive tool, while invaluable for monitoring and safety purposes, raises substantial privacy concerns. Patients and elderly residents in these settings often find themselves in vulnerable situations, and the assurance of their privacy and the protection of their personal data are fundamental to their dignity and trust in the care provided.

The sensitivity of the healthcare and elderly care sectors cannot be overstated. These environments are privy to some of the most intimate moments in an individual's life, as well as their most personal data. The ethical handling of such information is not only a legal obligation—under regulations such as the General Data Protection Regulation (GDPR) in the European Union and the Health Insurance Portability and Accountability Act (HIPAA) in the United States—but also a cornerstone of patient and resident trust. Without trust, the effectiveness of care can be severely compromised.

Furthermore, the potential for misuse or unauthorized access to video data underscores the necessity for robust data protection frameworks. This includes implementing technical and organizational measures that ensure data is handled securely, access is strictly controlled, and the principles of data minimization and transparency are adhered to. Protecting the privacy of individuals in these settings is not merely about compliance; it's about upholding the values of respect, dignity, and care that are at the heart of the healthcare and elderly care professions.

Legal framework and basic principles

Brief overview of legal requirements (e.g. GDPR and HIPAA)

Incorporating video technology into healthcare and elderly care settings necessitates compliance with stringent legal frameworks designed to protect personal data and ensure privacy. Two paramount examples of such regulations are the General Data Protection Regulation (GDPR) in the European Union and the Health Insurance Portability and Accountability Act (HIPAA) in the United States, which also have a major influence on countries that are geographically not within their legal scope.

GDPR (General Data Protection Regulation):

Enacted in May 2018, the GDPR represents a comprehensive data protection law that imposes strict rules on collecting, storing, and processing personal data of individuals within the EU. Key principles include consent, where individuals must explicitly agree to the processing of their personal data; data minimization, ensuring that only necessary data for a specific purpose is collected; and the right to access, allowing individuals to obtain a copy of their stored data and information about how it is used. The GDPR also mandates robust security measures to protect data against breaches and unauthorized access, significantly impacting how video data in healthcare settings is managed.

HIPAA (Health Insurance Portability and Accountability Act):

Established in the United States in 1996, HIPAA sets the standard for protecting sensitive patient data. Entities covered by HIPAA, such as healthcare providers, must ensure the confidentiality, integrity, and availability of all electronically protected health information (ePHI) they handle. This includes implementing safeguards to prevent unauthorized access to ePHI, which extends to video recordings and monitoring within healthcare and elderly care facilities. HIPAA's Privacy Rule also addresses the use and disclosure of individuals' health information, providing patients with rights over their health information while guiding healthcare providers in its proper use and protection.



Both GDPR and HIPAA exemplify the global recognition of the critical need for data protection and privacy in healthcare and beyond. These regulations demand that care providers not only implement strong data security measures but also adhere to principles of transparency and accountability when using video technology.

MOBOTIX is committed to not only adhering to these regulations but also to fostering a culture of privacy and security that transcends basic compliance. To this end, we have prepared detailed and transparent documentation that outlines the technical and organizational measures we have taken to secure video technology and protect personal data. This documentation, among others a holistic Data Protection Whitepaper and a Camera Cyber Protection Guide, is designed to offer comprehensive guidance to our sales partners and end-users, ensuring they are well-informed about the ways in which MOBOTIX technology supports their compliance efforts, essential for maintaining the trust and confidence of patients and residents in care settings.

Measures to safeguard privacy

Technical measures

Recognizing the critical need of personal data and privacy protection, MOBOTIX has implemented a comprehensive suite of technical measures designed to safeguard sensitive information and uphold the privacy of patients and residents. This section delves into the specifics of these technical safeguards, which form the backbone of our commitment to data protection and privacy.

MOBOTIX Cactus Concept

As a manufacturer of decentralized video technology, MOBOTIX conceptually meets the highest security requirements, follows the principles of the aforementioned international data protection regulations and is also fully NDAA-compliant*.



All MOBOTIX systems follow the principle of secure by default and offer a variety of additional, customizable protective measures that allow users to adapt the security of the video systems to their own requirements and environmental characteristics. The *c71 NurseAssist* software is subjected at regular intervals to comprehensive vulnerability assessments by the renowned Syss GmbH. Within these detailed penetration tests, experienced security specialists target potential entry points and misconfigurations to uncover and remediate risks at an early stage. In addition, MOBOTIX holds an IT security certification in accordance with the CNPP France standards, further validating its adherence to internationally recognized security best practices and ensuring that *c71 NurseAssist* consistently meets the highest security standards.



To sensitize our users to the use of IT security measures and to make it easier for them to master the functions implemented in the systems, MOBOTIX has created a Cyber Security Guide, which aims to simplify the correct use of protective measures such as the following:

- Strong password protection
- Digest Authentication
- IP Access Control
- Webserver Intrusion Detection
- Error notification in the event of failure of process-critical services
- Custom X.509 certificates
- OpenVPN connection
- IEEE 802.1X port-based network access control
- *and many more*

To learn more about the MOBOTIX Cactus Concept and the use of the implemented protection measures for our systems, please visit our homepage: <https://www.mobotix.com/en/cactus-concept-cyber-security>

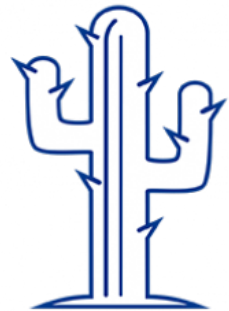
ISO 27001-Certified AI Development

Data security is baked into every phase of our c71 *NurseAssist* lifecycle, not an afterthought once the product is “done.” From initial design and model training through iterative updates, we integrate robust privacy and protection measures at each step. Our development partner, Kepler Vision Technologies, is ISO 27001 certified, demonstrating the responsible and transparent approach we take throughout the entire life cycle of our joint product development.



Specially designed for use with c71 NurseAssist

For the use of c71 *NurseAssist* solutions, we particularly emphasize the issue of privacy. In the following, we discuss special protective measures and their use in order to provide users of the systems with a better understanding and easier handling:

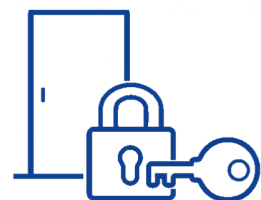


A video system with no need to transmit image data

You have read correctly. *MOBOTIX c71 NurseAssist* makes an essential contribution to improving patient safety and the general quality of care with cutting-edge fall detection and many other functions, and all this without having to transmit or store a single video image.

As part of our **IoT video family**, the c71 *NurseAssist* operates completely **decentralized** and processes the data required for analysis without the need for any data to be stored and without further interaction or monitoring by the staff on site. The user alone decides which alarms and which data leave the sensor to add value to the nurse call or video management system that further processes them.

The **user management and access control** outlined in our Cyber Security Guide can also be used to ensure that **only authorized and trained personnel** have access to the sensor software. Logged with an appropriate protocol these accesses can be properly supervised and limited to adjust the configuration and an initial check that the system is installed and functioning correctly.



*NDAA compliance for MOBOTIX refers to adherence to the National Defense Authorization Act (NDAA).

NDAA compliance means ensuring that products, components, and software do not originate from or are not associated with the restricted companies listed in the NDAA.

Responsible usage of the advantages of video

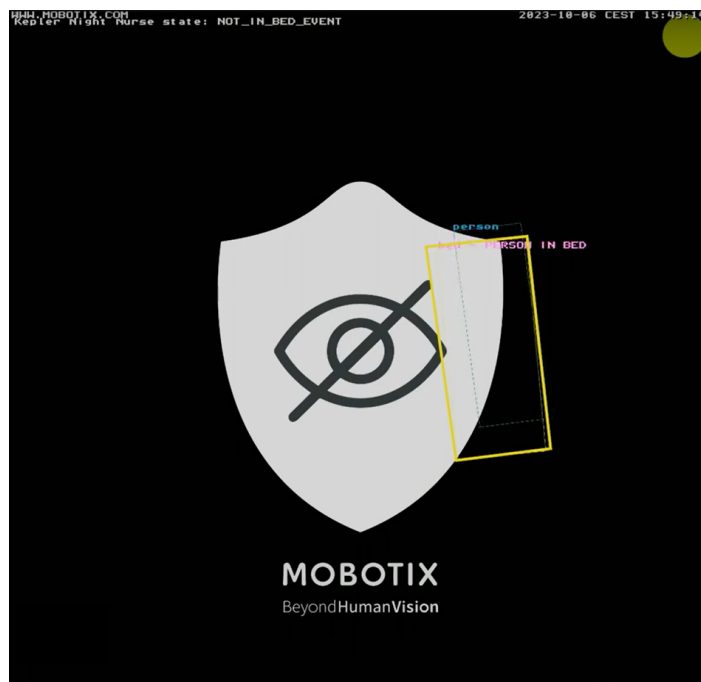
Major benefits of video over traditional sensor technology (e.g. radar, push buttons, pressure mats, etc.) include the ability to prevent incidents or minimize response times, and the visual verification and assessment of alarm notifications.

Dangerous situations can be assessed immediately and comprehensively from any location, and the available resources can be allocated optimally.

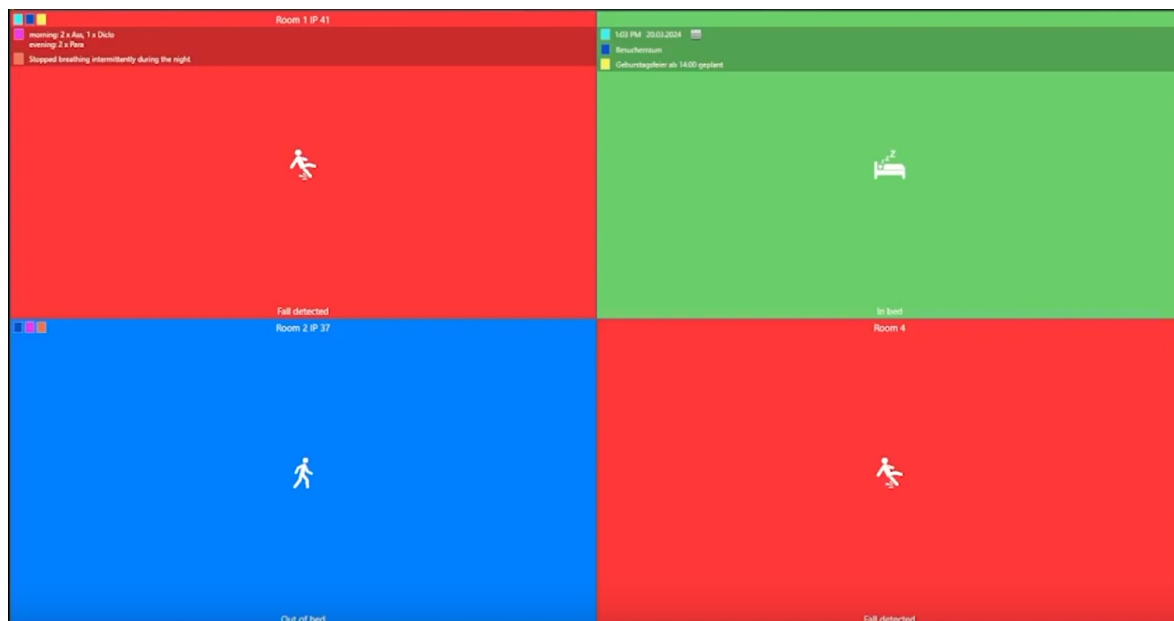
To ensure the best possible privacy for this application, MOBOTIX video images can be completely covered with a privacy mask for the duration of use, so that it is already ensured at the sensor that a patient room can only be viewed in the event of danger or not at all. The factory configuration of the sensor has been optimized so that this state can be achieved with just a few clicks, with the goal of minimizing the risk of unwanted deviations by authorized users.

Subsequently, images processed under these conditions can no longer be reverse engineered, thus this protection measure cannot be bypassed.

The intended use therefore ensures that even in the case of system integration into third-party systems, no personal image data leaves the sensor without the user having explicitly authorized this. The analysis functions of the sensor continue to work independently without restriction, which can be visualized to the user through the image overlays created by the application even when the privacy mask is active. The alarms are thus reliably generated, and the associated anonymized application data is properly transferred to the management system.



*Example 1 - The use of c71 NurseAssist with Privacy Mask:
Reliable detection of the patient's position without generating usable image data.*



Example 2 - Utilization of the anonymized c71 NurseAssist application data in a patient overview for the nursing staff without having to rely on image data.

We believe that when used in an informed and responsible manner, video represents a technological advancement for the care sector, enhancing safety, patient engagement and even telemedicine initiatives, providing a multifaceted tool that complements traditional nurse call system components.

Organizational measures

Even the best technical measures taken by manufacturers will always need to be complemented by the appropriate organizational measures taken by the end user. To follow the principles of the previously mentioned guidelines, measures such as those listed below should be considered independently of the usage of *MOBOTIX c71 NurseAssist*:

- **Data processing agreements** to ensure compliant processing of patient data and other data
- **Access control policies** to control the access to sensitive data (e.g. *c71 NurseAssist* access)
- Frequent **Data protection trainings** for employees
- Implementation of **Incident response plans** to quickly address any data breaches or security incidents
- **Regular audits and compliance checks** to ensure compliance with legal requirements and internal policies
- And others

Specially prepared documents and training courses are designed to assist our partners and end users in implementing appropriate measures to best comply with the relevant legal requirements.

Please visit our homepage or register for one of our data protection seminars to gain access to best practices or contact our team of experienced project engineers to benefit from their **professional service offering** and secure valuable support for the implementation of your *c71 NurseAssist* solution.

Consent and patient communication

Facilitating Informed Consent

Key to harnessing the benefits of video responsibly is the practice of facilitating informed consent. This involves engaging with patients or residents in a clear, positive dialogue about how video technology is used to enhance their care, detailing the specific purposes, benefits, and safeguards in place. Consent is obtained through transparent communication, ensuring individuals are fully aware and agreeable to the use of video monitoring in their care environment. Organizations are encouraged to maintain flexible consent practices, allowing individuals to revisit and adjust their consent as they wish, reinforcing the principle of patient autonomy and respect.

Empowering Patients with Information Rights

Empowering patients with knowledge about their information rights is a cornerstone of using video technology ethically in care settings. Patients have the right to access information about the data collected from them, including how it is used, stored, and protected. They should be made aware of their broad spectrum of rights under applicable data protection laws, such as the ability to request corrections to their data or even its deletion under certain circumstances. By establishing clear, accessible channels through which patients can exercise these rights, care facilities underscore their commitment to transparency and build stronger, more trusting relationships with those they serve. In addition to complying with regulatory standards, this approach places patient dignity and privacy at the forefront of care practices and demonstrates a proactive attitude toward the responsible use of technology.

References

- MOBOTIX Cactus Concept including the downloads for the **Cyber Protection Guide, White Paper Data Protection** and **Cyber Certificates**:
<https://www.mobotix.com/en/cactus-concept-cyber-security>
- *MOBOTIX c71 NurseAssist powered by Kepler Vision Technologies* Landing Page:
<https://www.mobotix.com/en/mobotix-c71-nurseassist>
- MOBOTIX Healthcare Solutions: <https://www.mobotix.com/en/solutions/healthcare>
- MOBOTIX Professional Service: <https://www.mobotix.com/en/professional-services>
- MOBOTIX Community: <https://www.mobotix.com/en/support/mobotix-community>



*MOBOTIX on YouTube -
Quick insight into the functions of
c71 NurseAssist and Privacy Mode
in action*

Legal disclaimer

This whitepaper is designed to serve as a proactive guide, offering valuable insights into the effective integration of video technology within healthcare and elderly care settings, with a strong emphasis on safeguarding data protection and privacy. While we strive to provide thorough and up-to-date information, it's important to note that this document is intended for general informational purposes and should not be seen as legal advice. MOBOTIX is committed to promoting best practices in privacy and data protection and encourages the application of this guide within the framework of existing legal obligations, such as GDPR and HIPAA. Entities implementing video technology are advised to engage with legal professionals to ensure compliance with all (locally) applicable laws. MOBOTIX looks forward to supporting our partners and users in enhancing care through technology, responsibly and securely.

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