

Artwork Protection at Kunstmuseum Stuttgart with Isarsoft



The challenge: Displaying art while protecting it

Making art open, transparent, and accessible to everyone is the central mission of Kunstmuseum Stuttgart. Barriers, display cases, and similar measures interrupt the aesthetic experience, the character of the room, and the museum's role as a living space for exchange. Yet museum life regularly produces risky situations nonetheless:

- **Unintentional over-approach:**
Visitors lean in closer to paintings to study brushwork or fine detail, often without realizing how close they've gotten.
- **Interaction:**
Children, or simply inattentive visitors, try to touch a canvas or sculpture to feel its texture.
- **Reaction latency:**
Human security staff cannot watch every corner of every gallery at all times. By the time an incident is noticed, the reaction window has often already closed.

The challenge was to establish a precise, contactless, and invisible form of monitoring that triggers instantly and automatically, before any damage occurs, without visually compromising the museum's atmosphere.



Conventional approaches to artwork protection

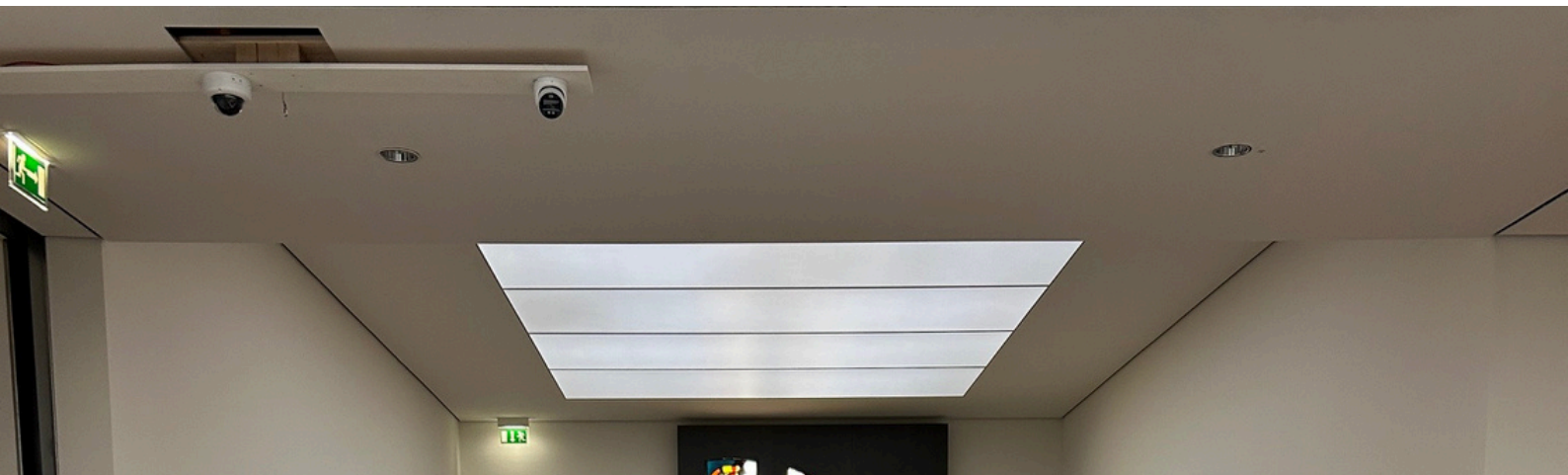
In many museums and galleries, manual surveillance of sensitive exhibits by security staff — either directly in the gallery or via monitor — remains the default. In practice, this means for operators:

- **High staffing requirements:**
Securing critical zones means posting staff rigidly at fixed positions. Covering an entire exhibition floor this way requires a large security workforce, driving up operating costs significantly.
- **False alarms:**
Traditional light barriers, laser-based systems, or fixed sensors are inflexible, expensive to install, and prone to triggering on ordinary foot traffic. Frequent false alarms desensitize security staff over time, leading to "alarm fatigue," where real threats risk being missed because staff have learned to discount the system.
- **Risk to the artwork:**
Any physical contact with an exhibit can trigger extensive, costly conservation work and, in the worst case, cause permanent damage to irreplaceable pieces.

The Solution: Artwork protection with Isarsoft Perception

To protect valuable exhibits efficiently and invisibly, Kunstmuseum Stuttgart's technical department set out to find a reliable, automated solution. In a successful pilot project, Isarsoft impressed with the software's performance and its seamless integration into the museum's infrastructure.

Across multiple test series, the software reliably detects approach and touch attempts on paintings and exhibits. This gives the museum an effective form of exhibit protection that is invisible to visitors. By using the museum's existing camera infrastructure, resources are conserved and pressure is taken off staffing plans.



Implementation

Exhibit protection via video analytics becomes effective through these points:

- **Virtual protection zones:**
Using Isarsoft Perception's interface, the team defined digital, invisible restricted zones directly over plus just a few centimeters in front of each painting.
- **Real-time precision with AI:**
Isarsoft's deep-learning algorithms distinguish precisely between a visitor moving normally through the

room and a hand reaching deliberately toward a painting. This distinction is the difference between a system that's actually usable day-to-day and one that cries wolf so often that staff learn to ignore it.

- **Alarm**

- Stage 1 — Warning: If a person crosses the invisible boundary, a subtle audio cue prompts them to step back.
- Stage 2 — Alarm: If someone reaches directly for the artwork, an alarm — including a live image of the situation — is immediately sent to security staff.

Continuous project optimization and fine-tuning

Throughout the project, the Isarsoft team continuously optimized the system setup in close coordination with Kunstmuseum Stuttgart's stakeholders. The goal was to maximize the detection rate for touch attempts. The system evolved from an initial classic model based on "bounding boxes" to a "pose model" that recognizes a person's skeletal structure. A touch attempt is now only triggered once a hand specifically approaches the painting.

Results

With the successful implementation of Isarsoft Perception, Kunstmuseum Stuttgart has established a precise and reliable safeguard for the preventive protection of its exhibits. For museum management, this results in operational relief and cost savings:

- Security staff are relieved from monotonous static watch duty, allowing for more optimized deployment.
- Art stays the focus, protected by technology that works quietly in the background.

Rudi Schweizer, Technical Project Coordination at Kunstmuseum Stuttgart, was primarily responsible for the strategic procurement and successful operational rollout of Isarsoft Perception.

He draws an entirely positive conclusion about the project's success:



With Isarsoft, we can preserve the inviting, open atmosphere for our visitors while increasing preventive security for our masterpieces. Thanks to the accuracy of the detection and the resulting reduction in false alarms, we're able to relieve the burden on our security staff.

Rudi Schweizer, Technical Project Coordination



Rudi Schweizer, along with Sandro Nerz, Technical Lead, and Michael Brandt, Technician at partner company Jans Group, particularly value the collaborative, professional partnership with the Isarsoft team.



How museums worldwide protect exhibits with video analytics

The successful implementation at Kunstmuseum Stuttgart is a prime example of how innovative video analytics software turns the operational challenges of exhibit protection into measurable advantages. The core benefits of Isarsoft Perception can be summarized as follows:

- 1. Maximum cost efficiency through existing infrastructure:**

The software runs directly on the museum's already-installed camera infrastructure. This drastically reduces investment costs and guarantees an extremely fast time-to-market.

- 2. Automation instead of manual effort:**

Error-prone, staff-intensive manual observation is replaced by seamless, fully automated, continuous exhibition monitoring.

- 3. Reaction time:**

Approach attempts and unusual behavior are detected by the software in real time. Visitors are alerted via a discreet acoustic signal, or security staff are notified immediately.

- 4. Invisible protection:**

Virtual rather than physical barriers guarantee an unrestricted experience for museum visitors.

- 5. Data privacy:**

100% GDPR-compliant, since the system processes metadata only, without any personal identification. Privacy is fully preserved at every stage.

Technology comparison: Video analytics vs. sensor-based solutions

A direct technology comparison based on the Kunstmuseum Stuttgart project illustrates the significant advantages of AI-based video analytics over classic hardware sensors.

While video analytics flexibly taps into the existing security camera infrastructure, sensor-based approaches typically require costly acquisition of new hardware, more elaborate installation processes, and additional cabling.

The direct comparison at Kunstmuseum Stuttgart — based on an assumption of 4 sensors required per exhibition room — breaks down as follows:

	Sensors	Isarsoft Perception
Costs	High Substantial investment for acquiring new sensors, mounting, and additional cabling.	Low (approx. 1/6 the cost) Uses existing camera infrastructure; supplemented with additional cameras only where needed.
Time Required	Lengthy (> 6 months) Extensive construction work, IT integration, and physical on-site installation.	Very fast (< 1 month) Pure software integration enables deployment in record time; additional hardware requires corresponding installation effort.
Detection	Static Reacts to actual physical breach of the defined virtual zone.	Intelligent detection AI distinguishes between deliberate touch attempts and accidental proximity.
False Alarms	Medium Shadow changes or passing visitors can trigger false alarms.	Low Disturbances such as lighting conditions, overlapping figures, or accidental brushing o. Ä. near the zone are automatically recognized and don't trigger an alarm.

Future developments at Kunstmuseum Stuttgart

Looking ahead, Kunstmuseum Stuttgart is undergoing the largest modernization in its history. After more than two decades of continuous operation, the museum closed its doors in April 2026 for a comprehensive renovation, bringing its entire building technology and hazard detection systems up to current standards by early 2027. As of this writing, the museum is in the midst of that renovation. The overhaul was unavoidable, as the aging infrastructure could no longer keep pace with modern security and technical standards for exhibition operations. That the museum was already prepared for this next step was demonstrated by its earlier, successful exhibit protection project with Isarsoft Perception. For the modernized museum, AI-powered video analytics remains a key digital cornerstone for keeping the site securely positioned for rising visitor numbers over the long term.

More about Kunstmuseum Stuttgart

Kunstmuseum Stuttgart is a living space for cultural exchange — open and transparent for everyone, and dedicated to fostering creativity and aesthetic experience. The museum's goal is to remain open and

accessible to all, now and in the future.

Contact: [Kunstmuseum Stuttgart](#)

More about Isarsoft

Based in Munich, Isarsoft has built its reputation as a reliable partner in video analytics since 2019. Its mission: to unlock the potential of existing security camera systems using artificial intelligence.

Known for reliability, flexibility, user-friendliness, and versatile integration options, Isarsoft helps organizations optimize operational processes, increase safety, and strengthen customer satisfaction. Starting with people counting, its portfolio today spans more than 10 use cases, including queue management, object detection, path analysis, demographics, and more. For Isarsoft, every camera counts — in retail, at airports, in public transit, in urban planning, in logistics, and in cultural institutions.

Contact: [Isarsoft](#)

Images courtesy of Kunstmuseum Stuttgart

