

REPUBLIC OF KOREA

Republic of Korea Issue Paper # 01

INTELLIGENT GUARD AND SURVEILLANCE

1. ISSUE PAPER THEME

Major Equipment, Self-Sustainment

2. SUMMARY / BACKGROUND / PREVIOUS HISTORY

In modern peacekeeping operations, ensuring the security of contingent-owned camps is essential to safeguarding mission-critical assets and personnel from evolving threats. Traditional measures—such as perimeter patrols and static guard posts—may no longer be sufficient in today's dynamic security environment. In line with recommendations set forth in the Brahimi Report¹ and subsequent UN Department of Peace Operations policies, there is a clear directive to integrate advanced, intelligent surveillance systems that provide enhanced situational awareness and rapid response capabilities.

The proposal is to equip these camps with integrated surveillance systems—comprising CCTV cameras, video recording systems, motion detectors, and automated alert mechanisms—that continuously monitor camp perimeters and access points. This approach minimizes human error and enables real-time threat assessment through artificial intelligence analytics, thereby allowing for a more proactive security posture. Such measures are further reinforced by the guidance provided in recent UN Security Council Resolution 2589 (2021)² and UN DPO policies, which together underscore the importance of leveraging modern technology to protect UN personnel and assets while recognizing further that efforts to enhance safety and security need to be improved at all levels both at headquarters and in the field as a shared endeavour.

There are two key UN DPO documents that reinforce the proactive use of technology: the "Policy: The Protection of Civilians in United Nations Peacekeeping" (May 2023) and the "Strategy for the Digital Transformation of UN Peacekeeping" (2021).

The Protection of Civilians policy emphasizes that innovative tools—such as digital surveillance systems, unmanned aerial vehicles, and advanced data analytics—can enhance situational awareness and enable early warning, thus improving the safety of both peacekeepers and vulnerable populations. In parallel, the Digital Transformation Strategy provides a comprehensive roadmap for modernizing peacekeeping operations by integrating real-time data and intelligence to support faster, more effective decision-making. Together, these documents illustrate the UN DPO's commitment to using technology as a force multiplier to manage security risks in dynamic and complex operational environments.

3. DETAILED PROPOSAL

Proposal: Enhancing Security of Contingent-Owned Camps through Integrated Intelligent Surveillance and Digital Transformation Technologies

Introduction

In today's rapidly evolving security environment, innovative technology is essential to bolster peacekeeping operations and protect contingent-owned camps. This proposal outlines a plan to integrate digital surveillance systems, AI-driven analytics, and early-warning mechanisms, thereby providing a proactive security posture that safeguards both UN personnel and civilians.

The primary objectives for this proposal are

- To provide missions the flexibility to either use UNOE or COE
- Enhanced Situational Awareness: Deploy systems that continuously monitor camp perimeters using CCTV, motion sensors, and real-time video analytics.
- Rapid Threat Detection and Response: Establish an early-warning mechanism that triggers automated alerts and supports rapid intervention.
- Data-Driven Decision Making: Integrate collected data into a centralized platform for analysis, enabling informed decisions at the operational level.

The scope

The scope of this proposal applies to camps where the contingent is solely responsible for self-sustainment operations.

Contingents deploying intelligent guard and surveillance system(s) must adhere to the following:

- Major equipment used for self-sustainment must conform to UN operational standards and be maintained to minimize risk.
- Must conduct regular inspection and verification of equipment performance, ensuring that the systems remain operationally efficient and safe.

Proposed Solution

Modern Intelligent Video Surveillance (CCTV) System Configuration

Cameras

- Rotary (PTZ) Intelligent CCTV: For dynamic monitoring with pan, tilt, and zoom capabilities.
- Fixed Intelligent CCTV: For constant surveillance of specific areas.
- Mobile Intelligent CCTV: Portable cameras for flexible, on-the-go monitoring.
- Headset-Type Camera: Wearable cameras for security personnel, enabling real-time video capture.

Video Recording and Analysis

- Intelligent CCTV Video Analysis System: AI-powered software for motion detection, facial recognition, and behavioral analytics.
- Network Video Recorder (NVR): Centralized device for recording and managing video feeds from IP cameras.
- NVR Control PC: A computer to configure and manage the NVR system.

Monitoring and Control

- Control PC (Home Area): For local monitoring and management of the surveillance system.
- Control PC (Remote Area): For remote access and management of the system via secure connections.
- Display Monitors: High-resolution screens for real-time and recorded video playback.

Communication and Alerts

- Messaging Gateway System: For sending alerts and notifications (e.g., SMS, email) based on surveillance events.
- Messaging Gateway System Control PC: To configure and manage the messaging system.

Transmission and Connectivity

- Transmitter: For sending video and data signals from cameras to the central system.
- Receiving Set: For receiving transmitted signals from cameras.
- Repeater: To extend the range of wireless signals for large installations.

Network and Security

- Firewall: To protect the system from unauthorized access and cyber threats.
- Networking Equipment: Includes routers, PoE switches, and Ethernet cables for seamless data transmission.

Power and Backup

- Uninterruptible Power Supply (UPS): To ensure continuous operation during power outages.

Optional Advanced Features:

- Cloud Storage Integration: For scalable and secure video storage.
- AI-Powered Analytics Platforms: For advanced object detection, crowd analysis, and anomaly detection.

4. FINANCIAL IMPLICATIONS

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Based on the breakdown of components for the Modern Intelligent Video Surveillance (CCTV) System and current market trends, here is an estimated price range, estimated life expectancy for each component, and estimated annual maintenance cost. These prices are based on typical market offerings in 2025 and may vary depending on the brand, features, and region. Life expectancy is based on typical usage, maintenance, and environmental factors, as derived from online search results and general industry standards.

Cameras

- Rotary (PTZ) Intelligent CCTV: \$300 - \$2,500, 5 - 7 years
 - Entry-level PTZ cameras cost around \$300-\$500, while high-end models with advanced AI features and 4K resolution can go up to \$2,500.
 - Life Expectancy: 5 - 7 years (due to moving parts that may wear out faster).
 - Annual Maintenance Cost: \$50 - \$150 (includes cleaning, testing, and minor repairs for moving parts).
- Fixed Intelligent CCTV: \$100 - \$800, 7 - 10 years
 - Basic fixed cameras with HD resolution start at \$100, while advanced models with AI analytics and night vision can cost up to \$800.
 - Life Expectancy: 7 - 10 years (longer lifespan due to fewer moving parts).
 - Annual Maintenance Cost: \$30 - \$100 (cleaning lenses, testing, and firmware updates).
- Mobile Intelligent CCTV: \$500 - \$3,000, 4 - 6 years
 - Portable cameras for vehicles or drones range from \$500 for basic models to \$3,000 for rugged, high-performance options.
 - Life Expectancy: 4 - 6 years (shorter lifespan due to exposure to environmental conditions and frequent movement).
 - Annual Maintenance Cost: \$100 - \$200 (includes testing, cleaning, and repairs due to frequent movement).
- Headset-Type Camera: \$200 - \$1,000, 3 - 5 years
 - Wearable cameras for security personnel typically range from \$200 for basic models to \$1,000 for advanced versions with live streaming and HD recording.
 - Life Expectancy: 3 - 5 years (wearable devices tend to have shorter lifespans due to frequent handling and potential physical damage).
 - Annual Maintenance Cost: \$30 - \$80 (cleaning and testing for wear and tear).

Video Recording and Analysis

- Intelligent CCTV Video Analysis System: \$1,000 - \$10,000, 5 - 7 years
 - Software-only solutions start at \$1,000, while enterprise-grade systems with AI-powered analytics can cost up to \$10,000.
 - Life Expectancy: 5 - 7 years (software updates may extend functionality, but hardware may need replacement).
 - Annual Maintenance Cost: \$200 - \$500 (software updates, system optimization, and troubleshooting).
- Network Video Recorder (NVR): \$200 - \$2,000, 5 - 7 years
 - Basic NVRs with limited channels cost around \$200, while high-capacity models supporting 4K and multiple channels can go up to \$2,000.
 - Life Expectancy: 5 - 7 years (hard drives may need replacement sooner, typically every 3 - 5 years).
 - Annual Maintenance Cost: \$50 - \$150 (hard drive checks, firmware updates, and cleaning).
- NVR Control PC: \$500 - \$2,500, 5 - 7 years
 - A standard PC for managing NVRs costs \$500-\$1,000, while high-performance systems for large-scale operations can cost up to \$2,500.
 - Life Expectancy: 5 - 7 years (depends on hardware quality and maintenance).
 - Annual Maintenance Cost: \$100 - \$200 (hardware checks, software updates, and cleaning).

Monitoring and Control

- Control PC (Home Area): \$500 - \$2,500, 5 - 7 years
 - Similar to the NVR control PC, depending on the scale and performance requirements.
 - Life Expectancy: 5 - 7 years (similar to the NVR Control PC).
 - Annual Maintenance Cost: \$100 - \$200 (similar to the NVR Control PC).
- Control PC (Remote Area): \$500 - \$2,500, 5 - 7 years
 - Same price range as the home area control PC.
 - Life Expectancy: 5 - 7 years (same as above).
 - Annual Maintenance Cost: \$100 - \$200 (same as above).

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- Display Monitors: \$150 - \$1,000, 5 - 8 years
 - Basic HD monitors start at \$150, while larger 4K displays for control rooms can cost up to \$1,000.
 - Life Expectancy: 5 - 8 years (lifespan depends on usage and screen quality).
 - Annual Maintenance Cost: \$20 - \$50 (cleaning and testing for display quality).

Communication and Alerts

- Messaging Gateway System: \$500 - \$5,000, 5 - 7 years
 - Basic systems for sending alerts cost around \$500, while advanced systems integrated with analytics can cost up to \$5,000.
 - Life Expectancy: 5 - 7 years (software updates may extend functionality).
 - Annual Maintenance Cost: \$100 - \$300 (software updates and troubleshooting).
- Messaging Gateway System Control PC: \$500 - \$2,500, 5 - 7 years
 - Similar to other control PCs, depending on the system's complexity.
 - Life Expectancy: 5 - 7 years (similar to other PCs in the system).
 - Annual Maintenance Cost: \$100 - \$200 (similar to other PCs).

Transmission and Connectivity

- Transmitter: \$100 - \$500, 5 - 7 years
 - Basic transmitters for video signals cost around \$100, while advanced wireless models can cost up to \$500.
 - Life Expectancy: 5 - 7 years (depends on environmental exposure and usage).
 - Annual Maintenance Cost: \$20 - \$50 (testing and minor repairs).
- Receiving Set: \$100 - \$500, 5 - 7 years
 - Similar to transmitters, depending on the range and features.
 - Life Expectancy: 5 - 7 years (similar to the transmitter).
 - Annual Maintenance Cost: \$20 - \$50 (similar to the transmitter).
- Repeater: \$50 - \$300, 5 - 7 years
 - Basic signal repeaters cost \$50, while high-performance models for long-range use can cost up to \$300.
 - Life Expectancy: 5 - 7 years (lifespan depends on environmental conditions and usage).
 - Annual Maintenance Cost: \$20 - \$40 (testing and ensuring signal strength).

Network and Security

- Firewall: \$200 - \$2,000, 5 - 7 years
 - Basic firewalls for small systems cost \$200, while enterprise-grade firewalls with advanced security features can cost up to \$2,000.
 - Life Expectancy: 5 - 7 years (software updates may extend functionality, but hardware may need replacement).
 - Annual Maintenance Cost: \$50 - \$150 (software updates and security checks).
- Networking Equipment (e.g., routers, PoE switches, Ethernet cables): \$100 - \$1,000, 5 - 7 years
 - Basic networking setups cost around \$100, while larger systems with multiple PoE switches and high-speed routers can cost up to \$1,000.
 - Life Expectancy: 5 - 7 years (cables may need replacement sooner due to wear and tear).
 - Annual Maintenance Cost: \$50 - \$100 (testing connections, replacing worn cables).

Power and Backup

- Uninterruptible Power Supply (UPS): \$100 - \$1,500, 3 - 5 years
 - Small UPS units for individual components cost \$100-\$300, while larger systems for entire setups can cost up to \$1,500.
 - Life Expectancy: 3 - 5 years (batteries typically need replacement every 3 years).
 - Annual Maintenance Cost: \$50 - \$100 (battery replacement and testing).

Optional Advanced Features

- Cloud Storage Integration: \$10 - \$100/month per camera, Ongoing
 - Subscription-based pricing for cloud storage, depending on the provider and storage capacity.
 - Life Expectancy: Ongoing (subscription-based service, no fixed lifespan).
 - Annual Maintenance Cost: \$0 (maintenance is typically included in the subscription fee).
- AI-Powered Analytics Platforms: \$1,000 - \$15,000, 5 - 7 years
 - Basic AI analytics software starts at \$1,000, while enterprise-grade platforms with advanced features can cost up to \$15,000.

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- Life Expectancy: 5 - 7 years (software updates may extend functionality, but hardware may need replacement).
- Annual Maintenance Cost: \$200 - \$500 (software updates and system optimization).

Infantry Battalion Camp Size

- Battalion Strength
 - One company or subunit = 150 personnel
 - HQ & support elements = 200 personnel
 - Total battalion strength (4 companies, HQ & support elements) = 800 personnel
- Camp Size:

Deployment	Strength	Approx. Dimensions (m)
Full Battalion	800 personnel	300 x 350
1 Company	150 personnel	120 x 150
2 Companies	300 personnel	170 x 220
3 Companies	450 personnel	220 x 250
HQ & Support Elements	200 personnel	160 x 180

5. PROPOSED 2026 COE MANUAL TEXT

Based on the 2023 COE Manual and the Modern Intelligent Video Surveillance (CCTV) System components, here are proposed text changes or additions to be considered for the 2026 COE manual. These suggestions aim to incorporate modern surveillance technology into the existing framework for reimbursement and control of contingent-owned equipment.

The provision of the Modern Intelligent Video Surveillance for reimbursement under a wet lease arrangement will be applied to communications contingents providing services on a force level, that is, above the Infantry battalion or unit level. The services must be available to all units as designated by the mission headquarters and will be included in the memorandum of understanding. The memorandum of understanding will specify the technical specifications to be used.

Standard Elements of the Contingent-Owned Equipment System and Lease Options

- Add: **Major equipment are to include advanced surveillance systems such as Intelligent CCTV, Network Video Recorders (NVRs), and related analytics platforms, which can be provided under a wet lease arrangement.**
- Add: **Reimbursement rates for the “Modern Intelligent Video Surveillance” will take into account factors such as camera resolution, AI capabilities, storage capacity, and cybersecurity features.**

Chapter 3: Standards, Verification and Control of Contingent-Owned Equipment for Major Equipment and Self-Sustainment

Annex A: Major Equipment Data Sheet

Equipment Type:

Modern Intelligent Video Surveillance (CCTV) System

Description:

A modular, networked video surveillance system designed to provide continuous situational awareness, force protection, and incident response capability for the battalion headquarters, company bases, and critical infrastructure. The system comprises rotary (PTZ), fixed, mobile, and wearable (headset-type) intelligent CCTV cameras, supported by centralized and remote monitoring, AI-powered video analytics, secure data recording, and resilient communications infrastructure.

Main Components:

- **Rotary (PTZ) Intelligent CCTV Cameras**
- **Fixed Intelligent CCTV Cameras**
- **Mobile Intelligent CCTV Cameras**
- **Headset-Type Wearable Cameras**
- **Network Video Recorder (NVR)**
- **NVR Control PC**

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- Control PC (Home Area)
- Control PC (Remote Area)
- Display Monitors
- Messaging Gateway System
- Messaging Gateway System Control PC
- Transmitter, Receiving Set, Repeater
- Firewall
- Networking Equipment (Routers, PoE Switches, Ethernet Cables)
- Uninterruptible Power Supply (UPS)
- Optional: Cloud Storage Integration, AI-Powered Analytics Platforms

Operational Capability:

Provides 24/7 surveillance coverage of static and dynamic areas, real-time and retrospective monitoring, automated incident detection and alerting, and secure data management. Supports operational readiness, force protection, and compliance with UN security and reporting requirements.

Verification Requirements:

- Functional test of all camera types and coverage areas
- Demonstration of real-time monitoring and playback
- Verification of AI analytics and automated alerting
- Inspection of data storage and backup systems
- Confirmation of network security and power resilience

Remarks:

System configuration and deployment to be tailored to mission-specific requirements and site layout. All components to be maintained in operational condition and subject to periodic inspection as per COE Manual Chapter 3.

Annex B: Self-Sustainment Service Data Sheet

Service Type:

Modern Intelligent Video Surveillance (Self-Sustainment)

Service Description:

Provision, operation, and maintenance of a modern intelligent video surveillance system to ensure continuous monitoring, incident detection, and rapid response capability for all battalion locations. Includes all necessary hardware, software, communications, and power backup to maintain uninterrupted service.

Service Elements:

- Installation and configuration of all surveillance equipment
- Continuous operation and monitoring of video feeds
- AI-powered video analysis for motion, facial, and behavioral detection
- Automated alerting and messaging to designated personnel
- Secure data storage, archiving, and retrieval
- Network security management and cyber threat protection
- Power backup and system resilience measures
- Regular maintenance, updates, and technical support

Performance Standards:

- 100% operational availability of surveillance system during mission hours
- Immediate alerting security incidents to designated personnel
- Secure retention of video data for minimum period as per mission (or UN) SOP
- Compliance with UN data protection and privacy standards
- System to be fully functional during power outages via Uninterrupted Power System(s)

Verification Method:

- Inspection and functional testing of all system components
- Review of alert logs and incident response records
- Audit of data storage and backup procedures
- Assessment of network security measures
- Confirmation of maintenance and support arrangements

Remarks:

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Service to be provided in accordance with the standards and verification procedures outlined in Chapter 3 of the COE Manual. All equipment and services to be available for inspection and verification at any time.