KytraTech

System for Managing and Monitoring Forces Using Body-Worn Cameras
KBCMS -1.0

OVERVIEW

The system for managing and monitoring forces is an integrated solution that combines command information, coordination, visual monitoring, and data storage of field patrols. Through specialized body-worn cameras mounted on officers carrying out missions, all images, sounds, and events occurring at the scene are recorded and stored on the cameras, then transmitted to the Command Center (unit's headquarters or the local police command information center). The system displays video footage and operational positions on maps, enabling leadership to automatically supervise the activities of the tactical field forces, promptly coordinate and cooperate when support is needed, while ensuring the management and supervision of discipline and operational orders among field officers.

In addition, through body-worn cameras, officers can make group video calls or individual video calls to other officers actively engaged in operations.

Besides its function in managing and monitoring tactical forces at the scene, the video data collected from the field is also used for investigating and tracing criminals or hostile subjects, serving as evidence when incidents occur during the officers' mission execution.

The body-worn camera-based tactical field force management and monitoring system has been effectively utilized by security and police agencies worldwide, contributing positively to public security and crime prevention efforts.

SYSTEM FEATURES

1. Unified Communication System (UCS)
- Allows Push-to-Talk (PTT) calls directly to the camera via 4G/5G.
- Enables proactive video stream pulling from the camera via 4G/5G to the control desk without requiring consent from the camera wearer (or configurable to require approval upon request).
- Supports connection and calls to digital radio systems (TETRA/DMR Tier 3/P25).
- Provides flexible group creation based on patrol areas or operational units.
- Allows call monitoring from cameras or talk groups (incoming calls from cameras/groups are displayed on the control desk).
- Displays camera information on the map interface.
- Visually coordinates resources on the map when incidents or events occur.
- Permits drawing patrol zones or routes; if the camera wearer leaves the designated zone/route, an alert is triggered via sound (beeping), visual warning (camera icon turns red with related alerts), and simultaneous audio and message alerts on the violating camera device.
- Enables viewing of reports for all calls, messages, alerts, and device statuses directly from the control desk.

2. Field Patrol Data Management System
2.1. Evidence Management System (EMS)
- Allows management and statistics of all data (images, audio, video) uploaded from cameras, with retention periods ranging from 1 month up to 1 year, depending on storage capacity for each data type.
- Displays detailed information about evidence and event data: serial number and name of the recording camera, event date and time, duration (for video/audio).
- Supports importing and downloading events.
- Enables assignment of personnel for event processing and approval.
- Allows grouping of evidence and sharing event evidence among management groups.

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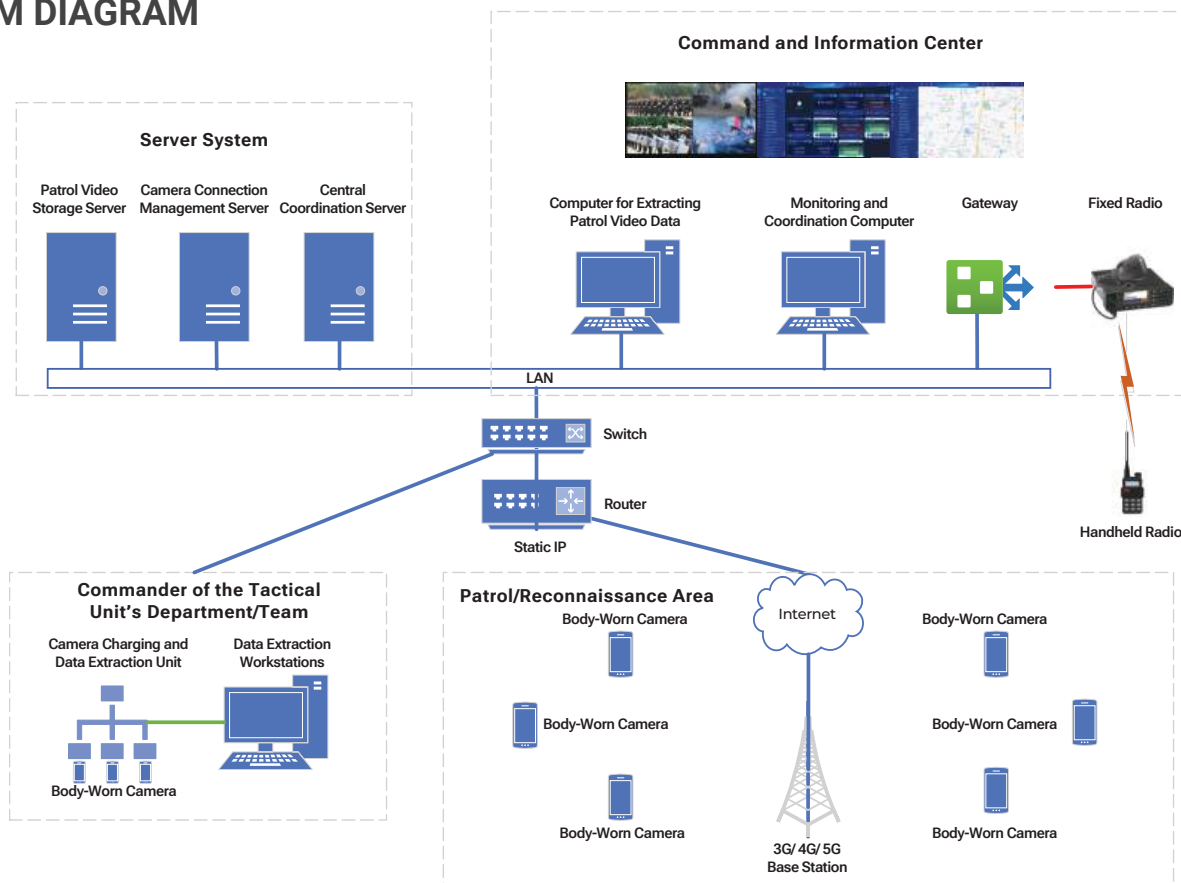
SYSTEM FEATURES

- Displays and manages events on the map interface, including location, event name, event format (image/audio/video), recorder's name, recording device name, event date/time, and event duration.
- Supports user creation and permission assignment based on requirements:
- Allows remote password reset of devices installing Docking Software via EMS (in case officers forget passwords)
- Enables cropping, muting, or pixelation of subjects (to obscure sensitive information) directly from original evidence videos.
- Allows searching for videos with the time period and location of the video evidence of the case being processed
- Manages system access control.
- Supports statistical reporting and data extraction with customizable options tailored to each unit's needs.

2.2. Camera Charging & Data Extraction Unit and Docking Software

- Automatically retrieves data from cameras when docked after a shift and directly sends the data to the EMS at the central system.
- Implements security measures to protect evidence and events: no operations or access to any information on the computer running the software are allowed - including closing the application - without administrator credentials.
- Displays information of the camera connected with workstation, including ID, name, serial number, status, available storage percentage, and battery percentage.
- Shows detailed event information (images, audio, video) stored on the device, including camera name and ID, recording date and time, the most recent time the officer connect the device with workstation, as well as the number and size of files stored by that officer.
- Provides an overview of the total data storage on the workstation running the software (images, audio, video) and the remaining storage capacity.
- Manages logs of Docking Software.
- Allows scheduling of data uploads to the central system.
- Supports options to retain or delete all data after upload to free up storage space on the workstation.

SYSTEM DIAGRAM