INTELLIGENT VIDEO ANALYSIS SYSTEM
CONTROL AND SAFETY IN PUBLIC SPACES
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Unique self-learning analytical system for automatic recognition and detection of alarming events by preset parameters and search criteria based on an artificial neural network.

The system is designed for real-time control and analysis of survey target status – people, crowds, objects.

The purpose of the system is to prevent various incidents and terror threats in public spaces and transport infrastructures.

APPLICATION:
• Railway terminals
• Airports
• Transportation hubs
• Stadiums and adjacent spaces
• Malls
SYSTEM FUNCTIONALITY
CROWD BEHAVIOR ANALYSIS

TASK: detection of unusual or untypical activity in places of mass gathering and movement based on “heat map” analysis in order to estimate and prevent potential safety hazards.

SYSTEM FUNCTIONS: analysis and evaluation of individual and group behaviors in the crowd – situation evolving prognosis to identify potential threats – alarm signal to administrative or enforcement agencies – implementation of comprehensive response scenarios, including those implying ventilation, lighting, alarm and access control systems, etc.

EVENTS TO BE RECOGNIZED:

1. VIOLENT BEHAVIOR: pursuit, conflict, fight, vandalism.
2. DISRUPTION OF PROPER MOVEMENT RHYTHM OR ORDER: using exit as entrance, wrong way movement, rapid change of movement direction of a certain person or a group, hindrance on the route.
3. BOTTLENECKS AND QUEUES: queues in the checkout area, congestion in the waiting area before the checkpoint, crowd bottlenecks, etc.
SYSTEM FUNCTIONALITY
TARGET CONTROL AND TRACING

TASK: detection of violent behavior in public spaces and public transport, search and recognition of unattended objects and luggage, identification of the luggage owner, tracing selected objects in video surveillance area.

SYSTEM FUNCTIONS: real-time and offline target analysis – identification and classification of events be preset criteria – alarm warning of the objects detected in the control area – generating and sending reports with the location, time and type of the event accompanied by the video recording to the corresponding enforcement and service agencies.

EVENTS TO BE RECOGNIZED:

1. UNATTENDED OBJECT:
   unaccompanied object or luggage as a potential terror threat, search of lost luggage.

2. IDENTIFICATION OF THE LUGGAGE OWNER:
   unauthorized handling of luggage during customs clearance.

3. MOVEMENT IN RESTRICTED AREAS:
   restricted area access, using restricted routes.

4. PERSON ON THE GROUND:
   timely aid for the injured.
SYSTEM FEATURES AND PARAMETERS

NEURAL NETWORKS AND SELF-LEARNING ALGORITHMS

Allow for the system to adjust to changing various factors that may impact the system performance in real-time mode, by configuring or generating non-standard scenarios for data management.

EFFICIENT DATA ARRAY MANAGEMENT

The system automatically retrieve video segments matching certain selection criteria out of the general video stream for backup to quick-search by preset parameters later.

SERVICE MODULE FOR WORKING STATUS MAINTENANCE

The service module controls the system hardware performance, namely monitors and manages operation parameters of surveillance cameras and communication channels. If there is an attempt to tamper with cameras, operation faults, or any disturbance deteriorating the signal quality, the system generates a warning and registers the event in the log.

Supports 8MP stream video
High-performance GPU chipsets
INTELLIGENT FACE RECOGNITION SYSTEM

High-res cameras allow for detection and recognition of faces in the crowd by preset parameters as well as each target and transmit data on each detected target.

Video stream processing SW can set the desired algorithms of detection, target identification and face recognition by various parameters, and generate automatic detection and recognition scenarios (facial expression, attempts to hide the face under the hood, cap, etc.) with generated data package on each detected target with the recognized face.

Transmission of the processed data (data package) in the desired format by a third-party ad-hoc SW for personal identification.