ADVANCED CENTRIC SYSTEMS B.V

AUTONOMOUS SURVEILLANCE & INTRUSION PREVENTION SYSTEM

Product brochure

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THE PROBLEM

Border protection and perimeter security are two classic examples of defense/security activities that tend to deteriorate into a repetitive and predictable routine. Routine security operations are easy to defeat as opponents can study and analyze them at their leisure, chart the regular patterns, identify the weaknesses and then develop their offensive moves in a manner that takes advantage of those patterns and weaknesses.

The weakest link of all routine security operations is the human element. After a while, even the most vigilant security officers, guards and operators grow bored and their alertness decreases.

In situations where the security setup must remain alert, fully operational and ready to respond at all times, automated elements may be integrated to form an autonomous security system. An autonomous security system aspires to achieve fail-safe operation and will respond as it was designed and programmed to do regardless of any subjective factors and influences – unlike a security system that consists exclusively of human operators.

THE SOLUTION

ACS presents ASIPS – Autonomous Surveillance & Intrusion Prevention System. This system combines the best of both worlds: an autonomous system designed to respond automatically to the initial threat and contain it, and a human command element charged with decision-making, employing tactical resources in real time and providing the conclusive response.

ASIPS consists of autonomous Unmanned Ground Vehicles (UGVs) and a command and control center. The UGVs function autonomously as patrol units, mobile forward surveillance sensors and first responders. They perform random patrol patterns around the perimeter or along the line being protected, and can also function as ambush units or as stationary sentries.

Each UGV can be fitted with a range of operational payloads – sensors, cameras, target acquisition systems and tactical resources, plus a two-way public address system (microphone and loudspeaker) to enable voice communication between the command and control center and the intruders/suspects on the ground.

When a threat or an actual intrusion is detected, ASIPS will respond immediately by generating a mission order and disseminating it to the individual UGVs. The UGVs will be dispatched and deployed in accordance with preprogrammed routines and the relevant scenario. The human commanders will be responsible for actually employing the tactical resources available, as required. Throughout the process, the UGVs will function as forward sensors by transmitting their data to the command and control center, where a current status picture will be assembled and maintained. The human commanders may utilize local control units to control individual UGVs and employ tactical resources during this stage.

When the threat has been isolated and contained, the human element will assume over-all command and conclude the incident.

The operational concept according to which ASIPS operates and the employment of autonomous robotic units and automated drills minimizes the risk to personnel, reduces the demand for human resource, maintains an excellent level of alertness while avoiding a predictable routine and enables the user to effectively handle any threat as it emerges.

KEY FEATURES & MAJOR ADVANTAGES

Key Features & Major Advantages

- Autonomous operation significantly reduces the vulnerability of personnel and the demand for human resources
- ASIPS UGVs are present, alert and ready to respond at all times
- ASIPSUGV operation:
    - Random patrol patterns
    - Ambush deployment
    - Standby mode
- Operational input transmitted to the command & control center: surveillance data, UGV status, doctrine/operational procedures, scenarios, terrain (3D map)
- Immediate response to warnings
- Prompt generation of mission order
- Tactical zones specified by doctrine, intelligence available & terrain characteristics
- UGVs deployed automatically according to preprogrammed routines and the relevant scenario
- Tactical status picture assembled and kept current
- During the initial response phase, human commanders are only charged with actual employment of tactical resources as required
- Prompt initial response contains threat and prevents it from expanding
- Human commander take over after the initial threat has been contained
- ASIPS Unmanned Ground Vehicle (UGV):
    - Armored (bulletproof) Unmanned Ground Vehicle based on off-road utility vehicle platform
    - Operational speed: 80 km/h
    - Operational payload: 250-300 kg
    - Automatic tactical deployment
    - Extensive range of payloads & tactical resources
- Command & control center:
    - Automatic/preprogrammed control of UGV operation – patrol patterns, ambush and static sentry operation, standby mode
    - Permanent interface with all surveillance resources

- Operational input received at the command & control center: surveillance data, UGV status, doctrine/operational procedures, scenarios, terrain (3D map)
- Automated generation of mission orders
- Tactical zones specified by doctrine, intelligence available & terrain characteristics