Border and Perimeter Protection Solutions

RAD
data communications

RAD's Border and Perimeter Protection Solutions

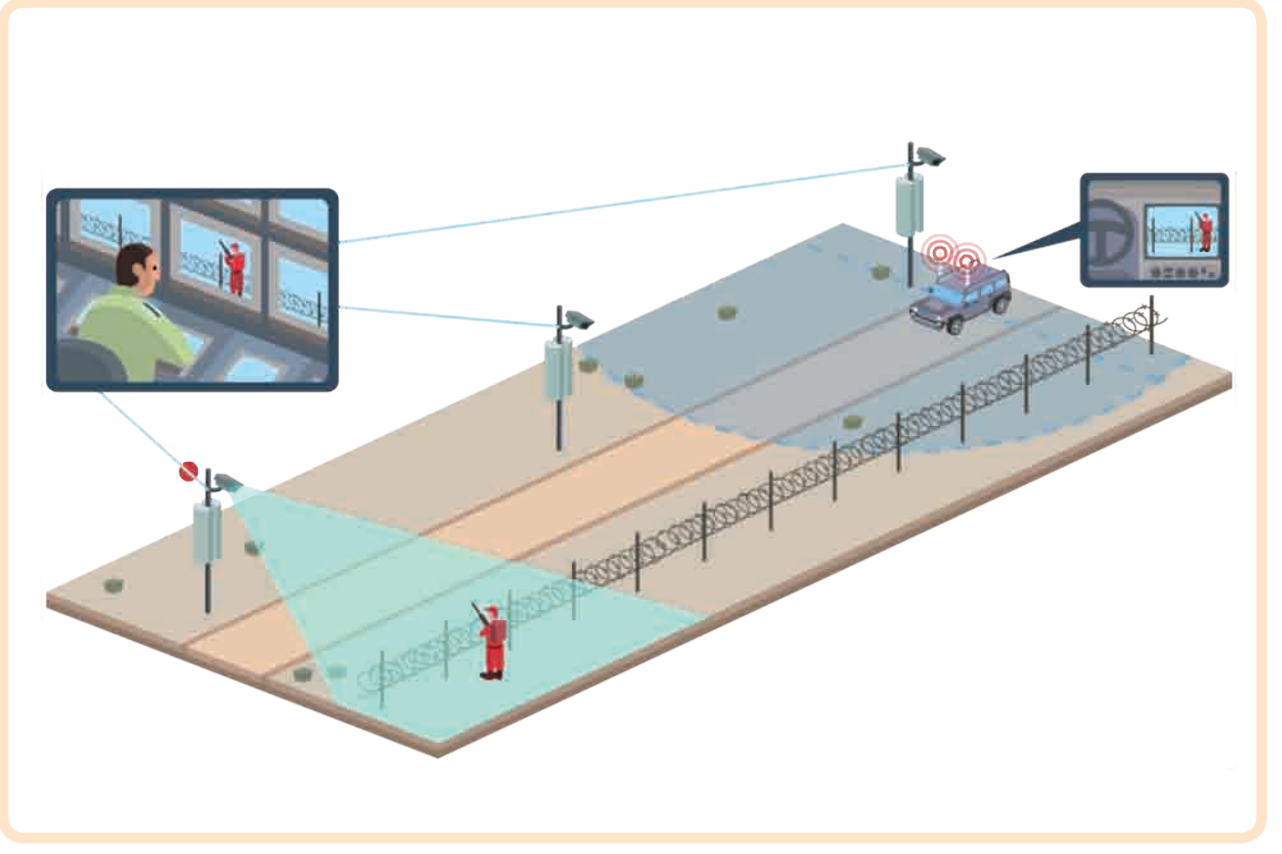
Specially trained manpower alone cannot sufficiently protect critical assets, vital infrastructure sites or sensitive border zones from terror attacks, unauthorized entry or hostile penetration. In addition to a mobile and rapidly deployable security force, successful border and perimeter protection efforts require seamless communication capabilities and precise early warning systems with continuous real time monitoring and control to react instantaneously to events, day or night, regardless of weather conditions.

In its 30 years of operations, RAD has provided a wide range of communications solutions used to protect critical assets and military sites, including perimeter and border security installations. RAD's advanced network platforms enable the flexibility to accommodate an array of sensors and communications equipment, supporting TDM and IP traffic over fiber, copper, wireless, and cellular.

Typical Installations

- **Military compounds and international borders**
- **Refineries**
- **Power generation plants**
- **Airports and sea ports**
- **Large campuses**
- **Defense industries**

Operational Concept



The process of securing a vital asset or perimeter begins with a risk-based threat and vulnerability assessment. Using various design information, threat modeling and site surveys, RAD's solution can identify how best to apply the available resources to ensure the highest level of protection possible. RAD then works with the stakeholders to create an integrated concept of operations, maximizing the value of the networked threat detection technologies, existing perimeter operations, security systems, and personnel resources.

The initial deliverable to the client is a coherent operational and technological solution with several alternatives and prioritization recommendations at the national, regional and local levels.

Technological Concept

RAD's complete border and perimeter protection solution is comprised of the following components, providing a best of suite solution for the end user:

Command & Control Center

Imagine an integrated security system that allows you to monitor border perimeter, check points, buildings, and compounds, anytime, day and night, from a single location. RAD's solutions are integrated into a seamless network of wide area surveillance and Detection capabilities that provide real time intrusion detection and situational awareness to a Central Command and Control Center.

Using global positioning, the software layers accurate facility data over satellite imagery of the area. If an alarm is raised in a designated zone the system will automatically zoom-in to provide a more detailed visual reference of the security breach. The dashboard provides a real time threat summary and exact location of the breach. With a simple click of a mouse, security officials can focus on an area to further assess and review the situation in order to deploy the appropriate response.

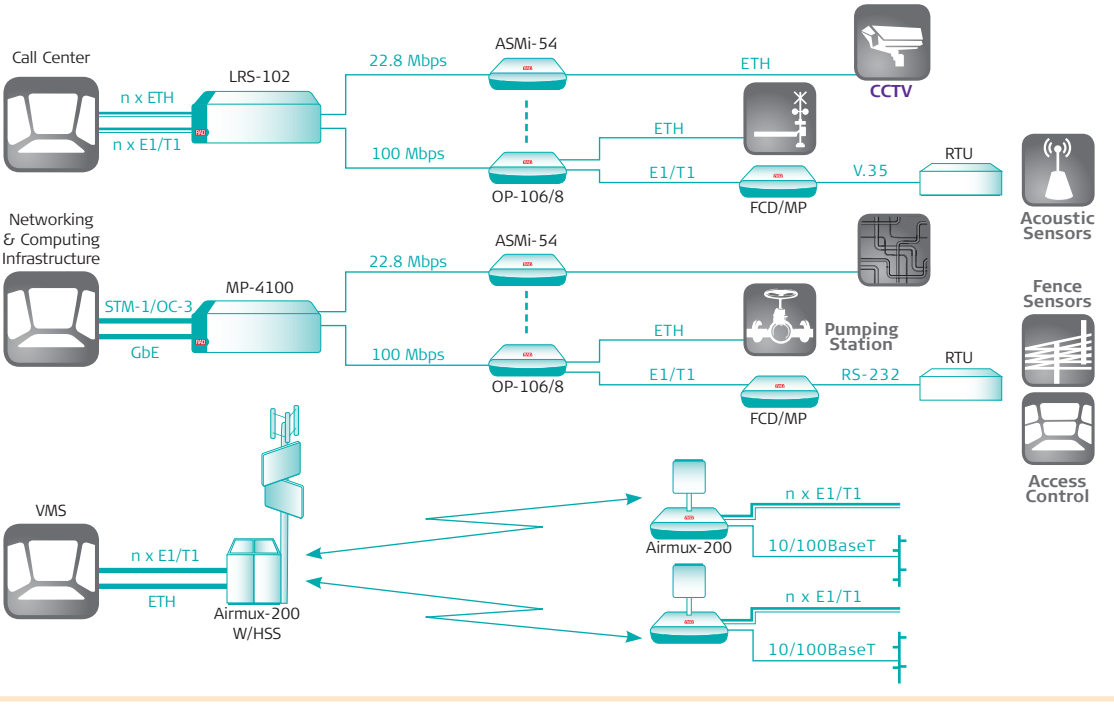
The radar detects the ground intrusion and immediately selects the relevant integrated camera covering the suspected zone. Before human intervention even begins, video analytics software provides visual information and tracking of the intruder, regardless of ambient light or weather conditions. Once the alarm has determined to be a threat, the security officials can immediately deploy an intervention team, long before the perimeter is actually breached. This scenario applies to both land and sea-based threats.

Border and Fence Sensors

A passive vibration sensor cable specifically designed for outdoor installation on various types of perimeter barriers offers a solution for intrusion detection by the analysis of typical vibrations made by an attempt at forced entry. The system can recognize motion caused by a legitimate threat to breach the fence and disregard signals caused by weather conditions, preventing nuisance alarms. Actual alarms are immediately transmitted to the Command & Control Center GIS system.

Connectivity and communications can be achieved and implemented in various ways, depending on the type of infrastructure available along the fence: Fiber, copper or dedicated wireless links.

RAD supplies different types of solutions which enable aggregation or drop and insert (daisy chain) connectivity along the fence, as well as protected rings for high resiliency networking, in order to supply real time communications between the sensors and command and control centers.



Technological Concept

Surveillance Towers

Towers located in the proximity of the border are equipped with ground surveillance radar and long range cameras, and connected to the Command and Control Center via optical fiber network.

RAD utilizes ground-based radar to rapidly and continuously scan 360 degrees, detecting movement in virtually any weather condition, inside and outside the perimeter, 24 hours a day. After an alert, the system automatically points a day/night camera at the intruder for assessment – all in a matter of seconds.

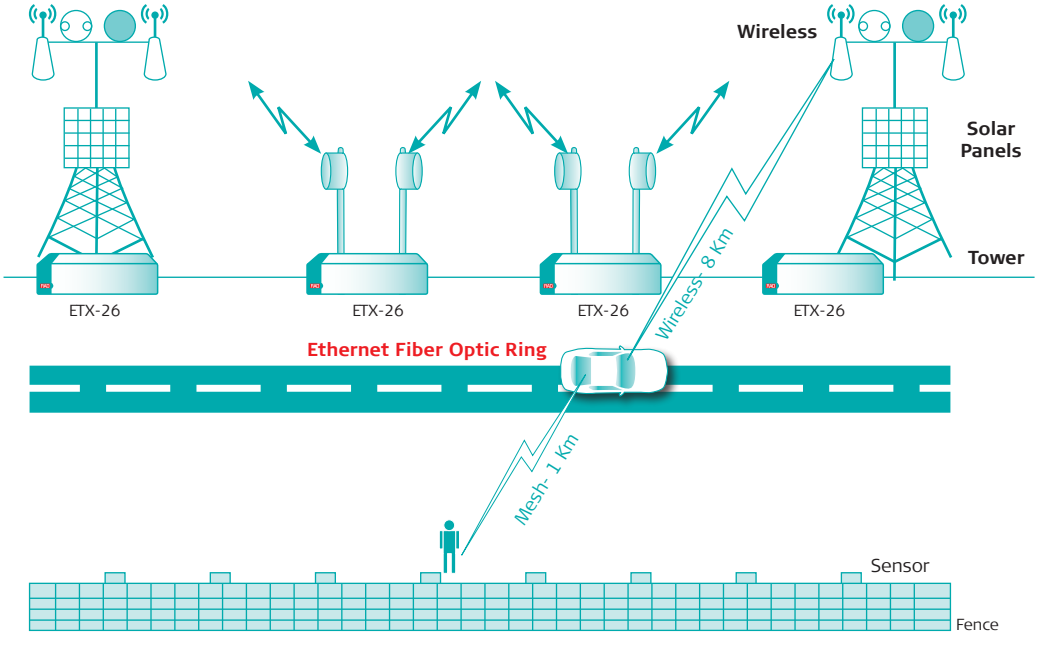
The operator and response team now have what they need – number of intruders, exact location, direction of travel and visual identification – to determine a safe, effective response.

The PTZ controlled cameras combine color daylight recording and thermal imaging, allowing detection of humans and vehicles from kilometers away. The communication of the sensor data to the Mobile Interception Vehicles is provided by RAD's unique wireless mobility solution.

Mobile Interception Vehicles

Equipped with RAD's mobile wireless equipment connected to the Command and Control Center, mobile vehicles patrolling the designated protected zone can be notified of an intruder's location and receive multicast video updates from the nearest tower camera in real time, even at speeds up to 100 kilometers per hour.

The mobile wireless system allows fast handover between the towers according to the vehicles' progression. The vehicles are equipped with GPS receivers in order to provide their exact location to the Command & Control Center, allowing it to efficiently dispatch the quick response teams for back-up or response to multiple threats.



Bringing Command and Control Intelligence to Mobile Patrols

As soon as the Mobile Interception Vehicle (MIV) approaches the location of the intruder, the mobile patrol team can exit the MIV, and equipped with a small size ruggedized notebook computer connected via a mesh wireless link through the MIV to the Command and Control Center, can constantly receive full situation awareness information from the Command and Control Center (data and video from the stationary towers). Communications between the Command and Control Center and the patrol can be conducted using radio equipment specially designed for communications in a rapid-response environment.

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