

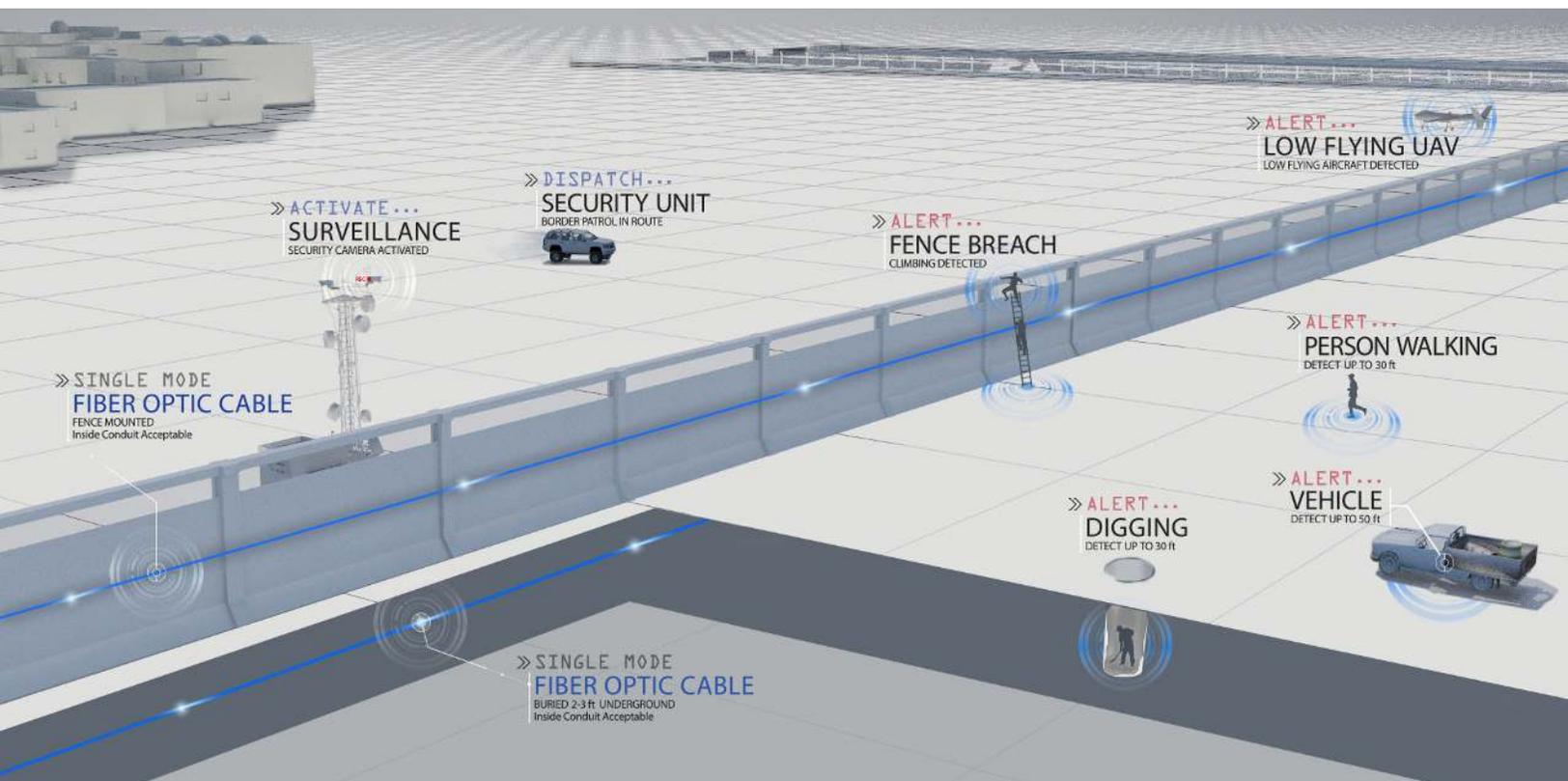
Border Security and Surveillance

Fiber optic monitoring system

Technical limitations and environmental factors can impact the performance of many border security systems—leaving them vulnerable to infiltration. Protect your borders cost-effectively with a fiber optic monitoring system that utilizes smart technology to identify multiple threats reliably and in real time.

The OptaSense® Border Security and Surveillance system:

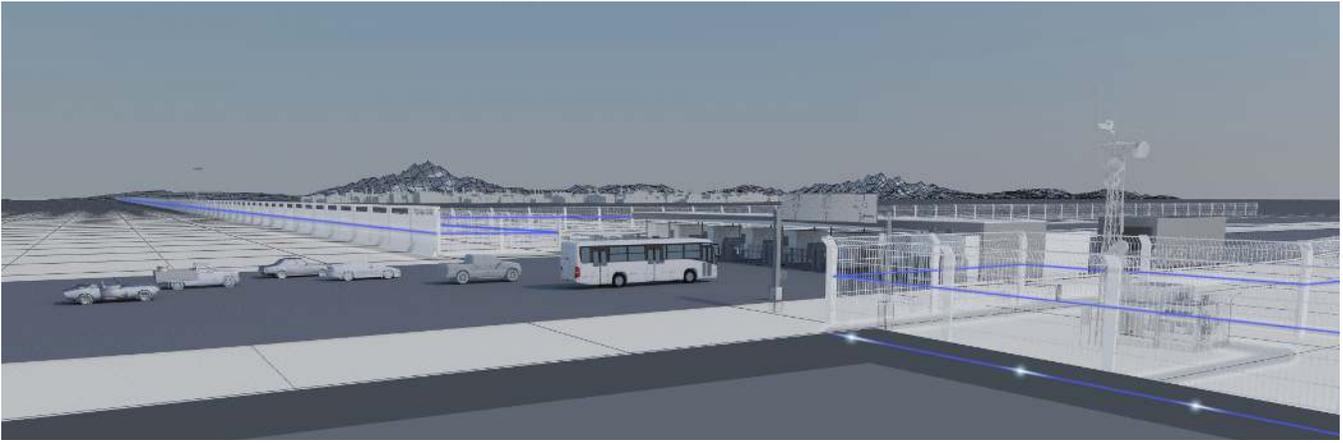
- Detects, tracks, and classifies a wide range of threats
- Offers customizable deployment options and detector applications
- Delivers real-time alerts and actionable intelligence for rapid mobilization
- Integrates with and activates other systems and sensors, such as cameras
- Endures challenging environments and remote locations



Multi-threat detection

This fiber optic monitoring system converts a standard telecoms fiber optic cable into an array of distributed sensors capable of detecting changes in pressure, temperature, stress and acoustics. Using advanced algorithms, this system can classify and locate activities such as people, vehicle movement, low flying aircrafts, digging, gunfire and many other events. With this insight, agents and field patrol gain a complete picture of the location, scale and type of threat detected—enabling rapid, more informed decisions that result in faster, more efficient responses.

OptaSense®
a QinetiQ company



Deployment options and applications

Standard Burial: 2-3ft depth / Direct buried or in rodent-proof conduit

This deployment enables the detection of surface activity such as

- Personnel (10ft range)
- Vehicles (20ft range)
- Manual digging (30ft range)
- Shallow tunnelling (20-30ft range)

Fence or Wall Mounted: Direct buried or in conduit

This deployment enables the ability to detect physical interference with asset, such as climbing, sawing, cutting and other tampering.

Horizontal Directional Drilling or Borehole Drilling:

This deployment enables the ability to detect deeper tunnels, with fiber cable depth dictated by desired detection depth and geological conditions. Specialized optical units and fiber optic cables can extend detection ranges.

System operations

All alerts are displayed in real time using a map display that allows operators to monitor very long distances. Alerts can be activated or suppressed in different zones, depending on the environment, threat profile or time of day (e.g. vehicle alerts along a road during the day vs. night time). System alerts can be relayed to PTZ cameras or UAVs for visual assessment, ground crew mobile devices, or remote command and control centres. Alerts can also be filtered for sector-specific operational centers, while management oversees the full system.

Operational value

This OptaSense Border Security and Surveillance system has been installed across multiple international borders, including four East Schengen borders in Europe, to help those nations cope with the migration crisis impacting the region in recent years. The OptaSense system has also been installed in Southern California to detect shallow tunnels and surface border incursions. Utilizing specialized cable burial techniques, the system has also been installed across one international country to detect deep tunnelling.

Using detection algorithms developed from decades of research in defence applications, OptaSense leads the market with the unique ability to perform pattern recognition of signals along the fiber. The system can classify critical events, such as a person or a vehicle, while ignoring insignificant signals like animals or severe weather. The system uses off-the-shelf fiber cable with the ability to monitor 50 miles of cable between optical equipment locations.