



PERIMETER CONTROL
& SECURITY SYSTEM

OPTRAL

HIGH PERFORMANCE
OPTICAL CABLES

Since 1988, OPTRAL has dedicated itself to the design, manufacture and sale of fibre optic cables.



As specialists in fibre optic cables, OPTRAL is evolving towards innovative product lines, with its creation of OPTRAL SOLUTIONS, a set of sensing and monitoring solutions that detect events of interest via fibre optic cables; capable of capturing magnitudes such as temperature, pressure, vibration or tension.

These solutions can be applied in a large number of situations or markets, such as security and surveillance systems, infrastructure analysis, fault control in telecommunications networks, and fire and leak detection systems among many others.

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This is a security system aimed at detecting intrusion events in perimeters of up to 3 km; turning a fence, wall, or unbounded area into an efficiently monitored area.

It is made up of:

1. The **OPTRAL Fibre Optic sensor cable** that detects vibrations caused by knocks, cuts, climbing, lifting or footfall.
2. The **OPTRAL analyzer equipment** that processes and examines the signals sent by the sensor cable.
3. The **OMONITOR software platform** that displays and manages detected events.

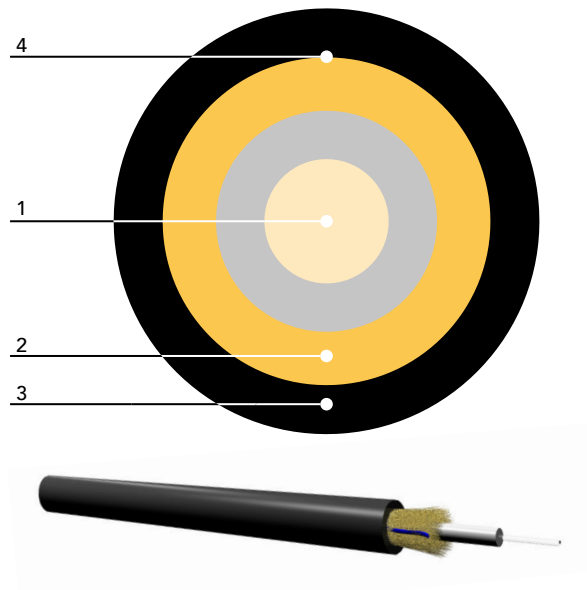


Fibre Optic Sensor Cable

01

DVS (Vibration Sensor Cable)

Shielded dielectric sensor cable (1 OF)t



1. Optical fibre (adjusted)
2. Strengthening elements
3. Exterior cover
4. Ripcord

Applications

Exterior
Vibration sensing
Demanding environmental
environments

Features

Compact
Rigid
Resistant
Small diameter



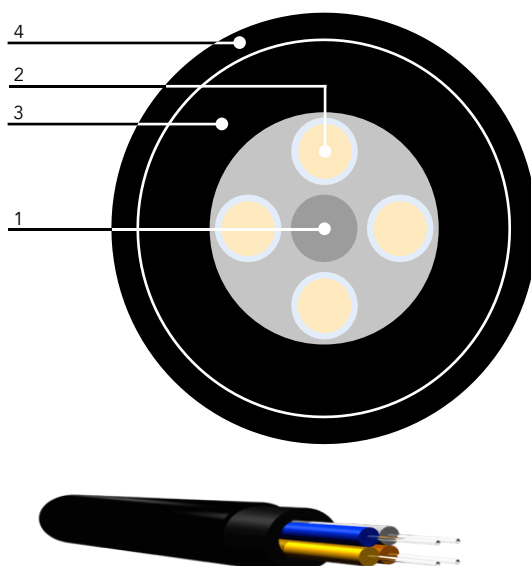
MOISTURE
PROTECTION



UV RESISTANCE

DVS+ (Vibration Sensor Cable)

Dielectric sensor cablet (more than 4 OF)



1. Central element
2. Optic fibres (adjusted)
3. Interior cover
4. Exterior cover

Applications

Exterior
Vibration sensing
Demanding environmental
environments

Features

Compact
Rigid
Resistant
Small diameter
Protection from rodents



MOISTURE
PROTECTION



UV RESISTANCE



FREE OF
HALOGENS



RODENT
PROTECTION



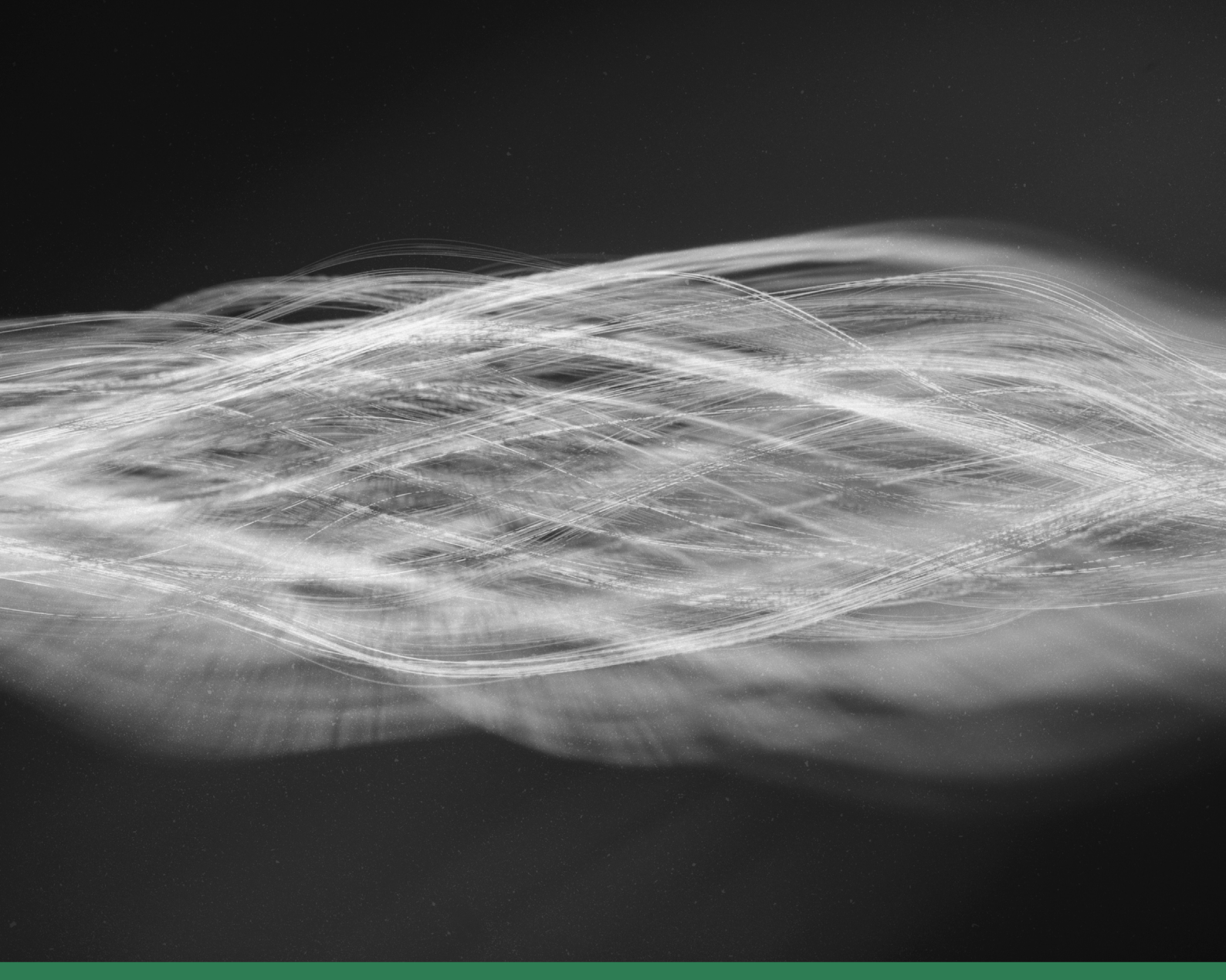
COMPLETELY
DIELECTRIC

Analyzer Equipment

02

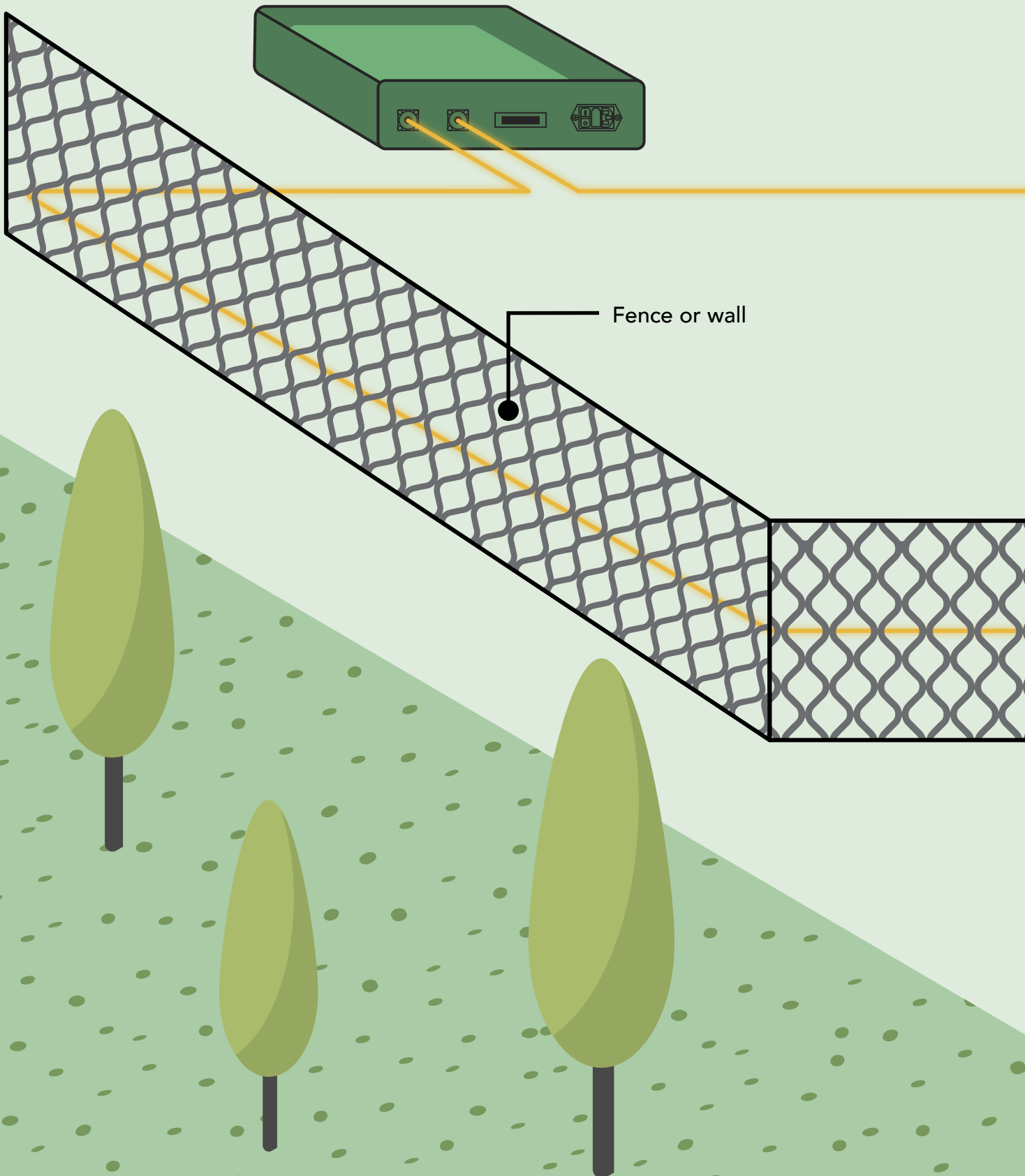
It uses "Optical Fibre Vibration Sensor" (OFVS) vibrating wire technology and is responsible for:

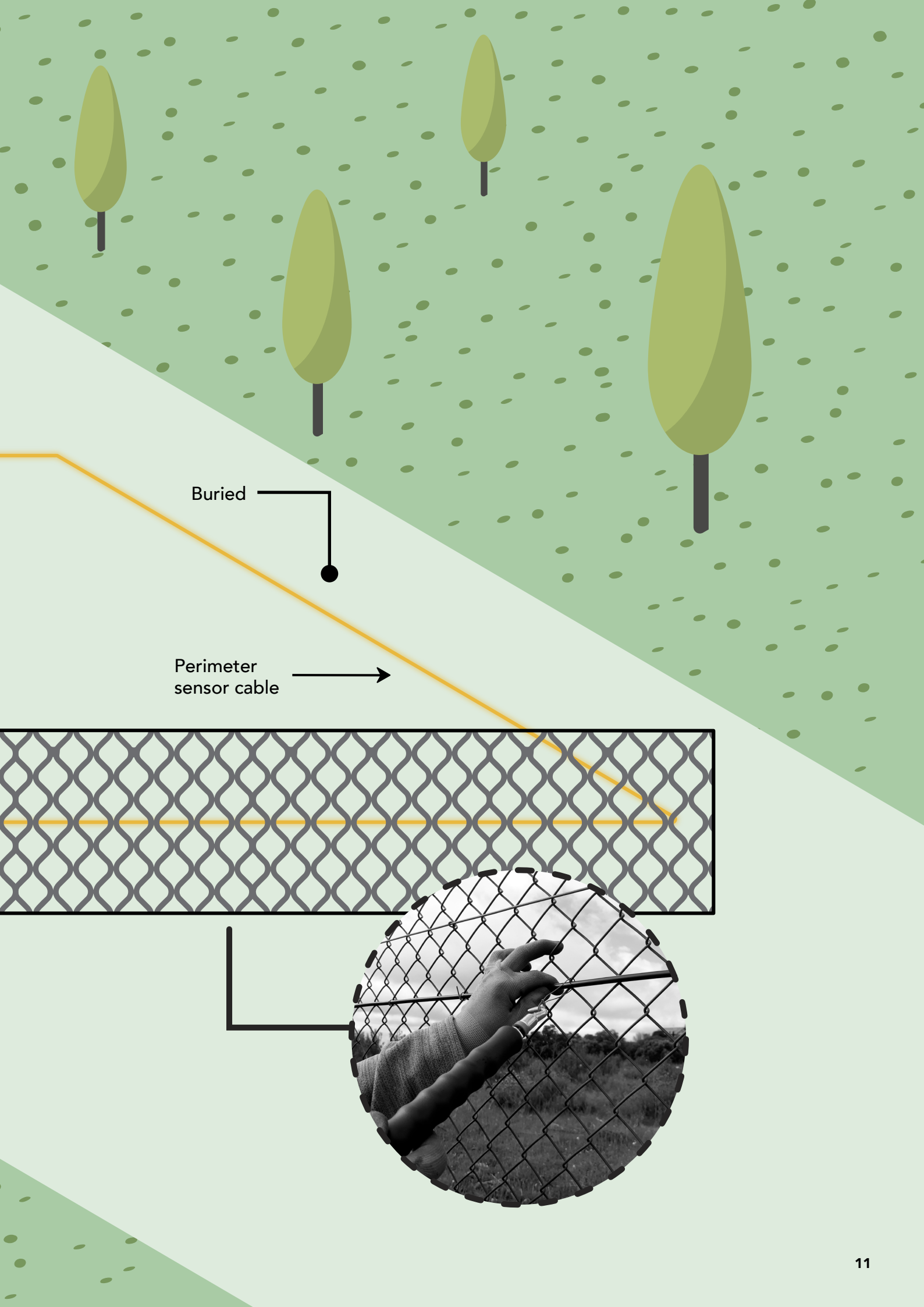
- ✓ Processing the signal sent by the sensor cable.
- ✓ Analyzing information with maximum precision.
- ✓ Applying sophisticated algorithms to minimize false alarms.



DVS
Distributed Vibration
Sensing

 GUARD
Analyzer unit





Buried

Perimeter
sensor cable

03

Monitoring Software

OMONITOR is **OPTRAL**'s software platform for managing, visualizing and monitoring events detected in several different geographical areas.

The platform is located in a PC that centralizes, in a database, information such as: the inventory of analyzer equipment, geolocation in GIS (geographic information system), real-time status of all monitored systems, registered alarms, and users, among others.



It is designed with web technology and can be accessed from multiple browsers simultaneously.

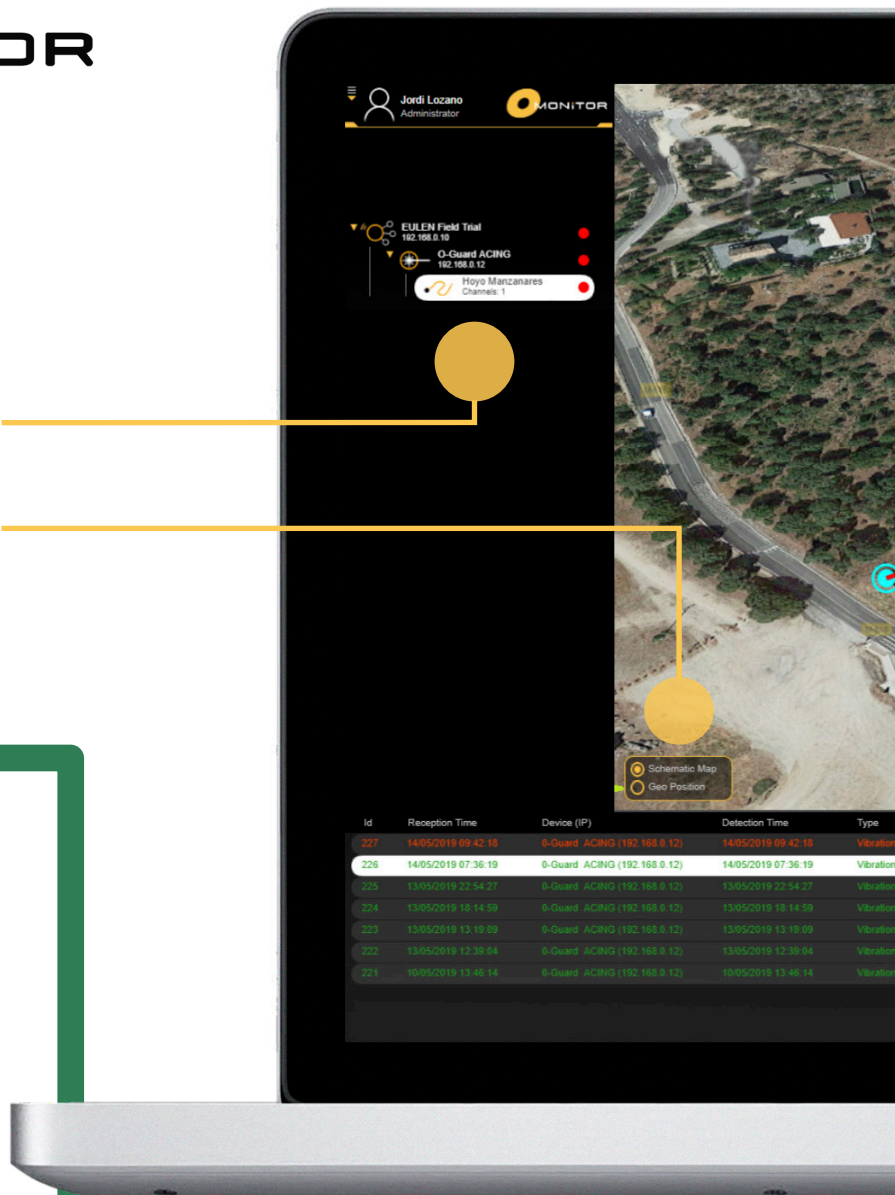
**Technical features:**

- Graphical, user-friendly PC calibration software.
- Real-time surveillance of all monitored systems.
- User management.
- Geolocation by GIS.
- Graphical representation of 3D schematics.
- Web browser.
- Calibration that can be carried out in situ, to test cutting, knocks or footfalls.
- Notebook PC for configuring zones.
- Possibility of using the internal network for centralized loading and unloading of parameters in stations around the perimeter.
- Non-volatile memory for the parameters of each zone.
- Operation in isolated mode for small perimeters.
- Network operation for medium and large perimeters.

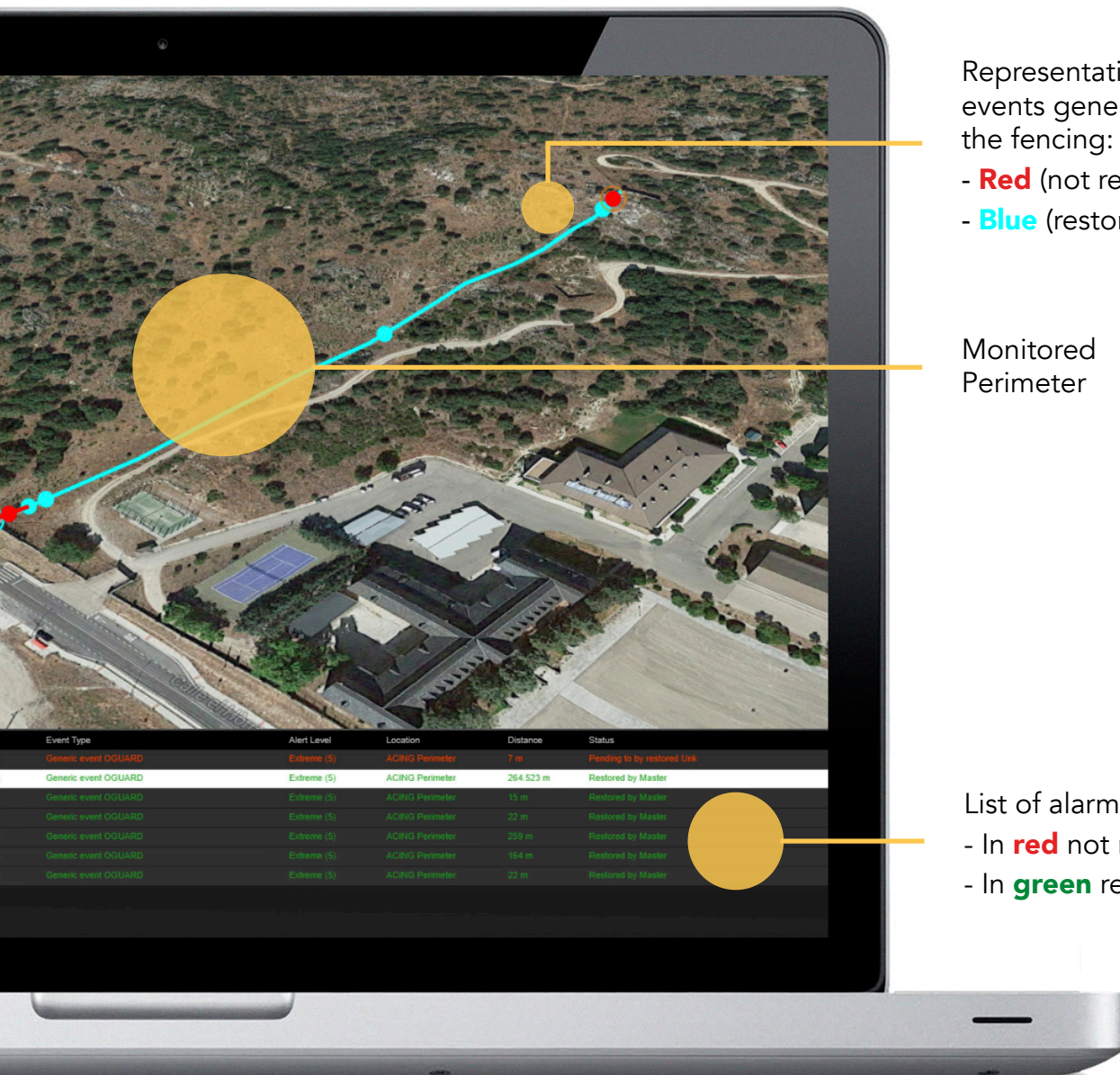


Inventory of the list of
monitored equipment

Image option
or GIS



Example of the parametrization
adjustment process of a system
applied to fencing.



NETWORK

Station 2

R: 0.5

LASER SETTINGS

LASER -OUTPUT-

1000 meters

INPUT 1 | INPUT 2 | INPUT 3 |

INPUTS

NOT used

R1 | R2 |

RELAY 1

☒ RELAY 1 EXTERNAL CONTROL
☒ SYSTEM alarm
☒ CUT IN FENCE ALARM
☒ CLIMBING FENCE ALARM
☒ BLOW ON FENCE ALARM
☒ PRE-ALARMS ACCUMUL
☒ INPUTS ALARM
☒ Until event restored (System)
☒ Until event restored (Inputs)
☒ NORMALLY ACTIVATED

Default SETUP

Advanced SETUP

Oguard ON FENCE

----SETTINGS----

UNKNOWN MODEL

SENSITIVE SETTINGS

Sensitivity to CUT.....

1 CUTS / MIN

MEDIUM SENSITIVITY 50%

Sensitivity to CLIMBING

1 CLIMBS / MIN

MEDIUM SENSITIVITY 50%

Sensitivity to BLOW.....

1 BLOWS / MIN

MEDIUM SENSITIVITY 50%

Accumulation of Pre-alarms ..

1 pre-al. / MIN

LOW DISCRIMINATION 20%

WIND DISCRIMINATION.....

MEDIUM SENSITIVITY 50%

GENERAL sensitivity to the event.....

MEDIUM SENSITIVITY 50%

Analysis threshold

510

Fiber AUTO-ADJUSTMENT

Alta velocidad de detección

Auto_arranque localización

☒
☐

FENCE HARDNESS

MEDIUM-SOFT

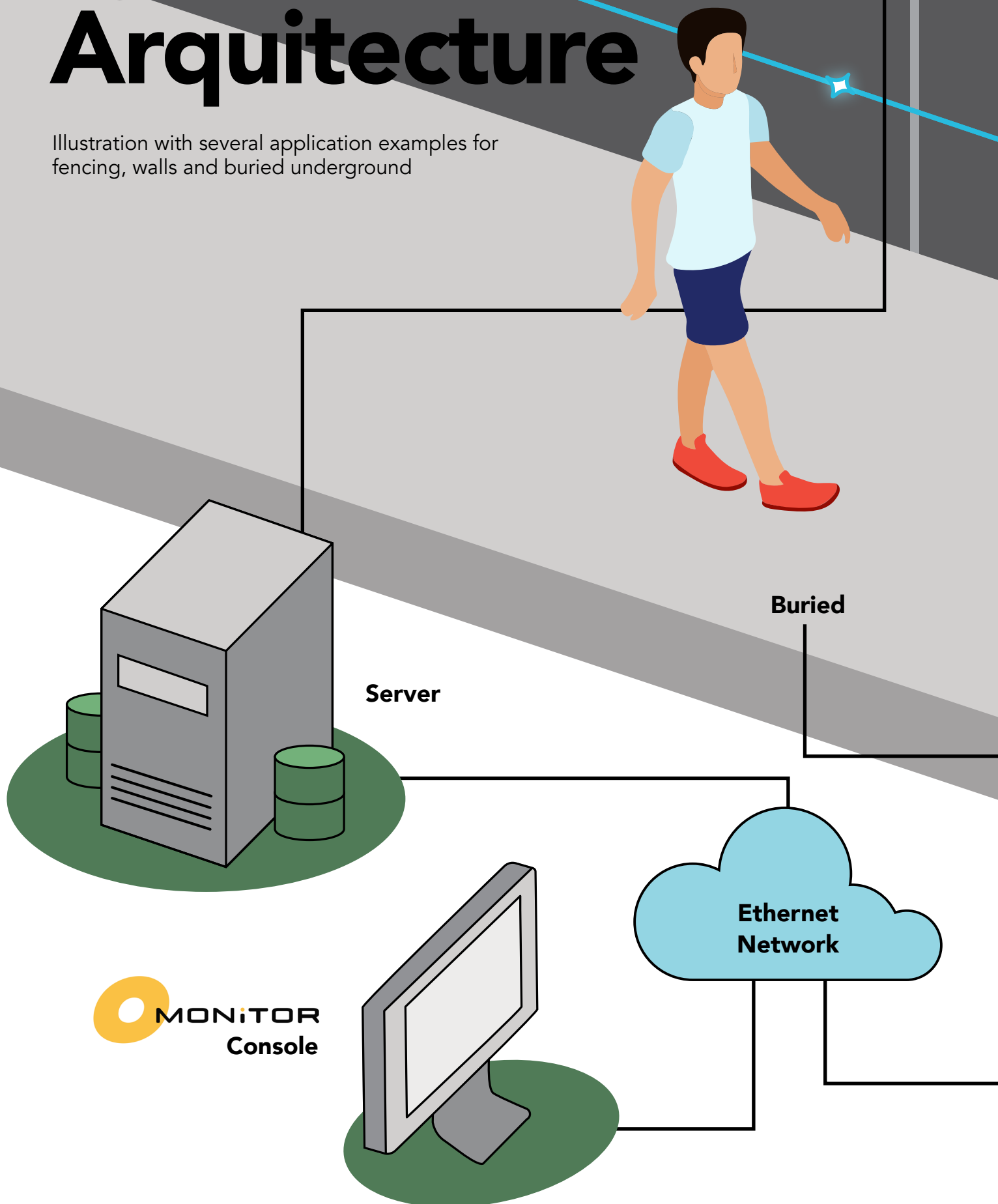
ON-LINE viewer

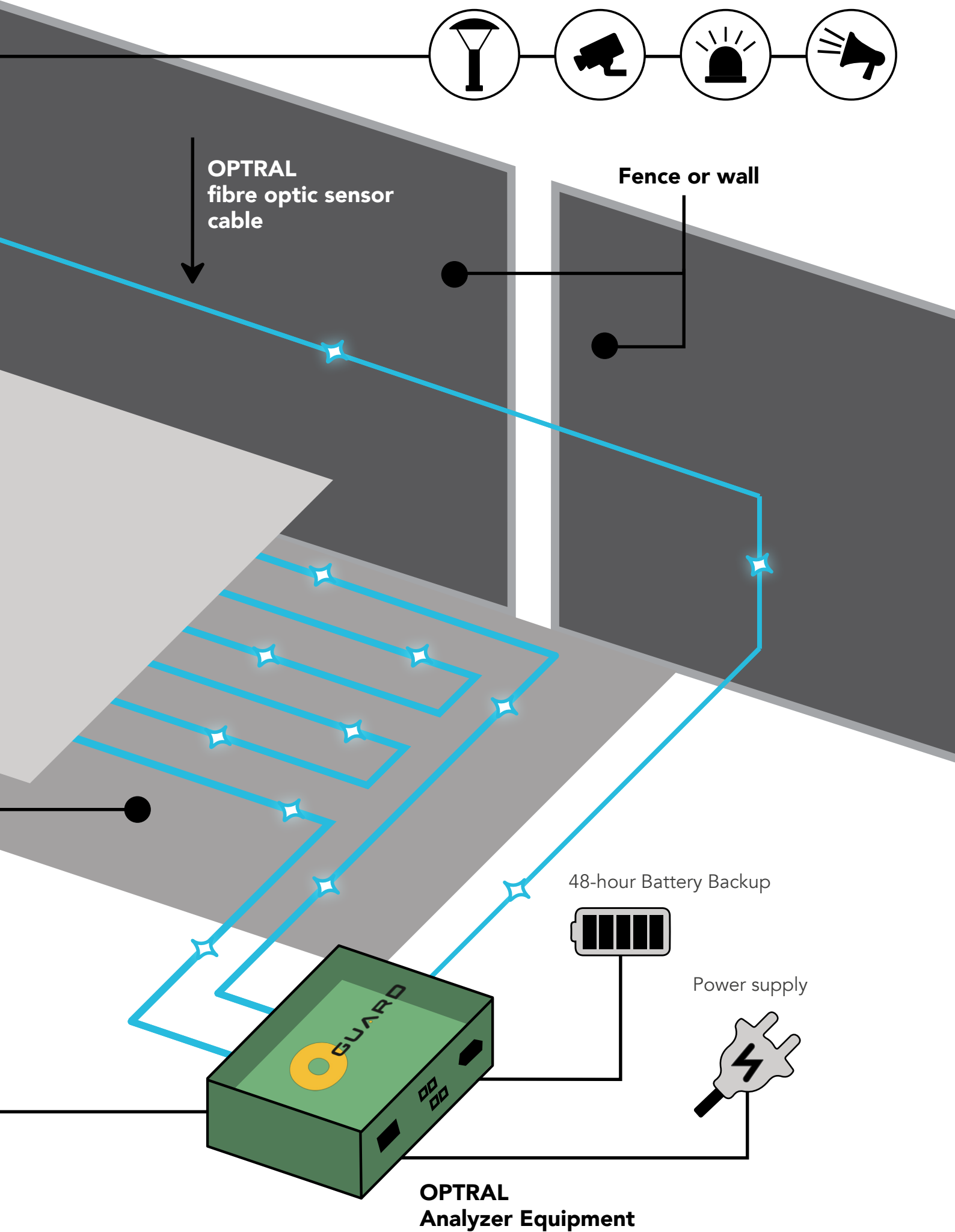
Oguard UPDATE

- Set. for cutting
- Set. for climbing on fence
- Set. for knocks
- Set. for wind

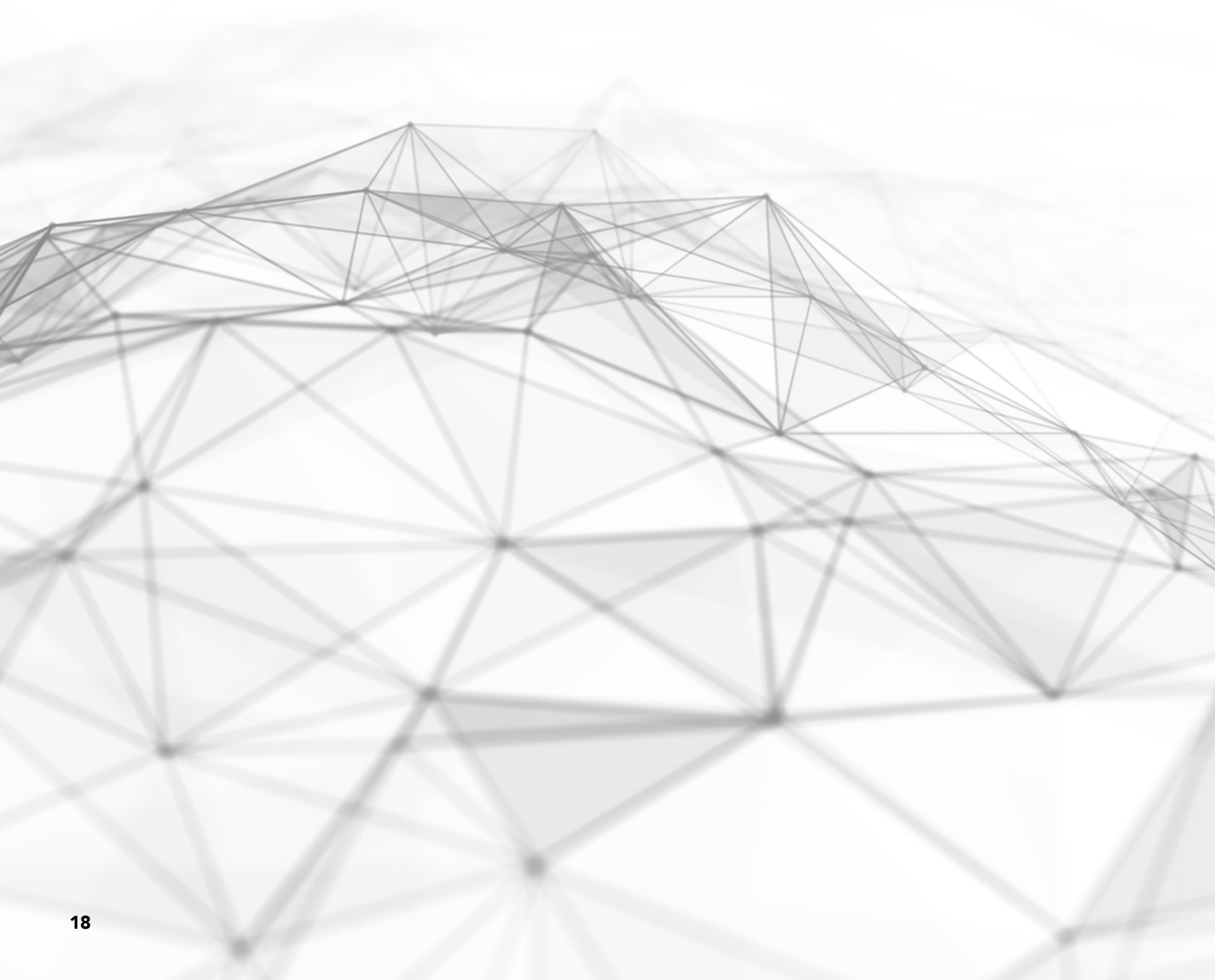
System Architecture

Illustration with several application examples for fencing, walls and buried underground





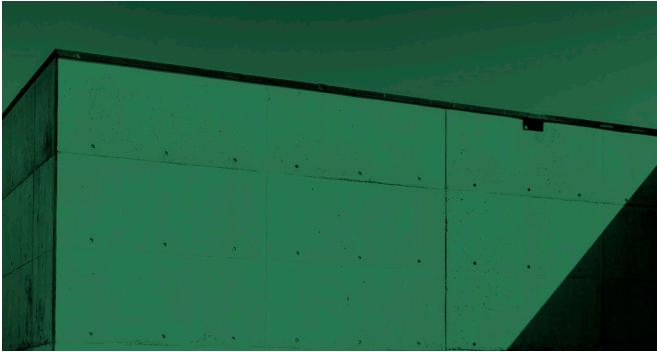
Advantages



- Early warning: this is the first line of security, offering more reaction time after detecting an intruder.
- Detects cutting, shaking, climbing or lifting (detects steps in the buried version) and calibrates them independently for each zone.
- In the buried and protecting walls systems, the perimeter system is invisible to potential intruders.
- Immune to electromagnetic interference (EMIs) and radio frequency interference (RFIs).
- Immune to environmental factors that could mask alarm events, such as: fog, humidity, light, sound, storms, lightning, etc.
- Minimizes meteorological effects that could cause false alarms (rain, wind, temperature changes, etc.).
- Almost non-existent false alarm rate.
- Cuts to the fibre in one area or section do not affect the rest of the protected perimeter.
- Centralized or distributed configuration depending on security requirements.
- Remote control with local or InCloud software, for managing several different geographical areas.
- Unlimited number of zones.
- Dynamic ranges of up to 5 km per system.
- Active system: automatically checks correct operation constantly.
- Easy to install and integrate with other existing security systems using relays or APIs.
- Minimal maintenance.
- Optimal quality/price ratio.

Markets and Applications

01 Cable integrated in wall



- Industrial warehouses
- VIP residences
- High voltage enclosures
- Warehouses for explosives
- Military bases
- Prisons

02 Cable integrated in fencing



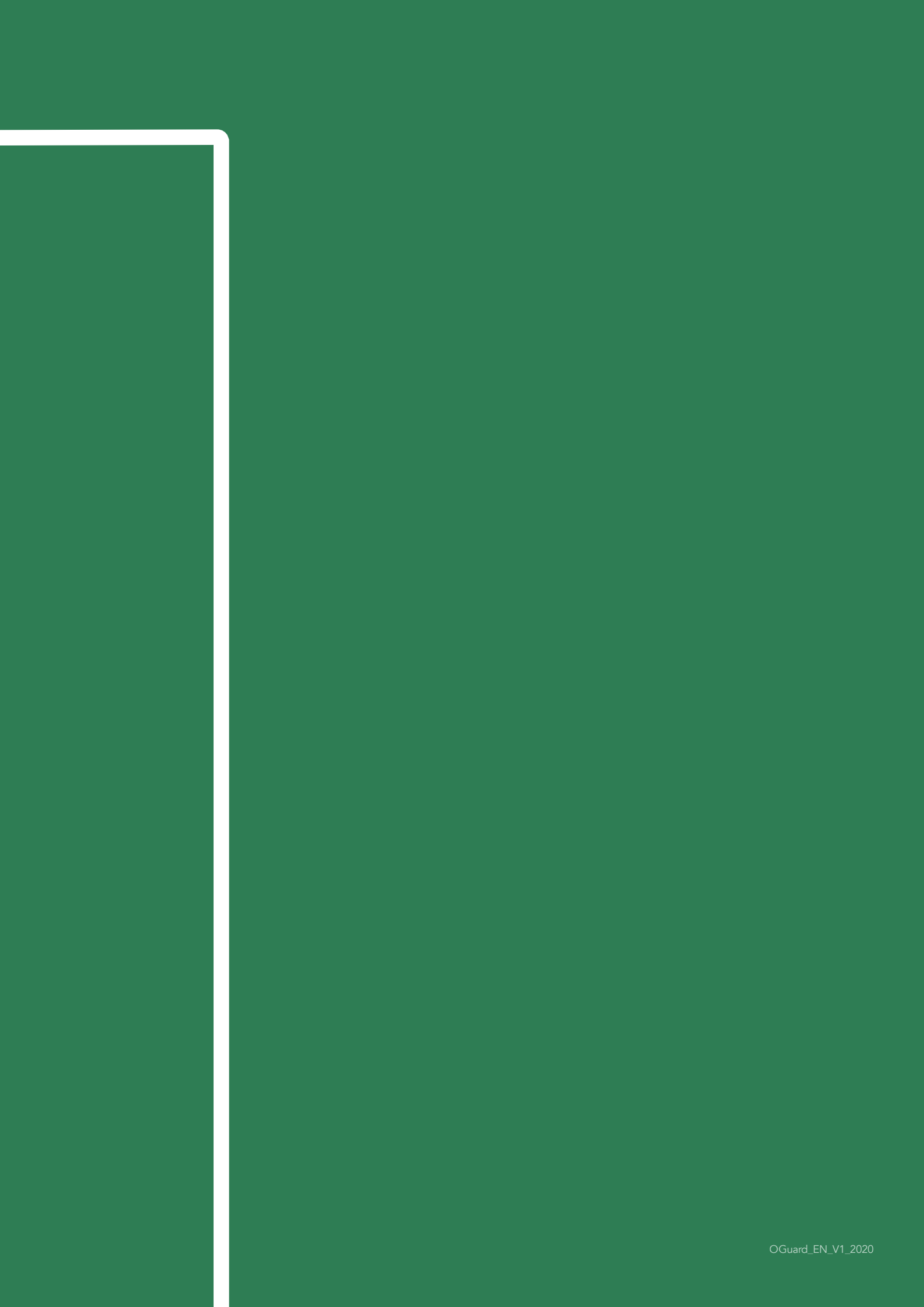
- Airports
- Industries
- Nuclear plants
- Logistic centres
- Warehouses for explosives
- Military bases
- Borders
- Prisons
- Houses
- Solar power plants
- Broadcast centres

03 Buried cable



- **Vaults**
- **VIP residences**
- **Broadcast antennas**
- **High voltage enclosures**
- **Military bases**
- **Prisons**







HIGH PERFORMANCE
OPTICAL CABLES

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