HEXAGON

A8V **MIND**

A8V MIND

Powered by LidarVision

- A8V MIND is a special portable version of the LidarVision volumetric detection system.

- It uses lidar technology for detection. The detector spreads laser beams into space. The reflected laser pulse informs about the distance of the intruder from the detector with an accuracy of 2cm. In this way, the area around the detector is monitored in real time up to a distance of 97 meters. Detection zones can be defined in the system. If the system triggers an alarm, it immediately shows the operator the number of intruders, their exact positions, object sizes, movement speeds, and the system also displays the trajectories of the objects' movements.

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A8V MIND

Powered by LidarVision

- LidarVision is a full-fledged security system. When an alarm event occurs, it informs the operator of the number of intruders, their exact positions, speeds, and trajectories.

- It contains an event archive and can control other connected devices.

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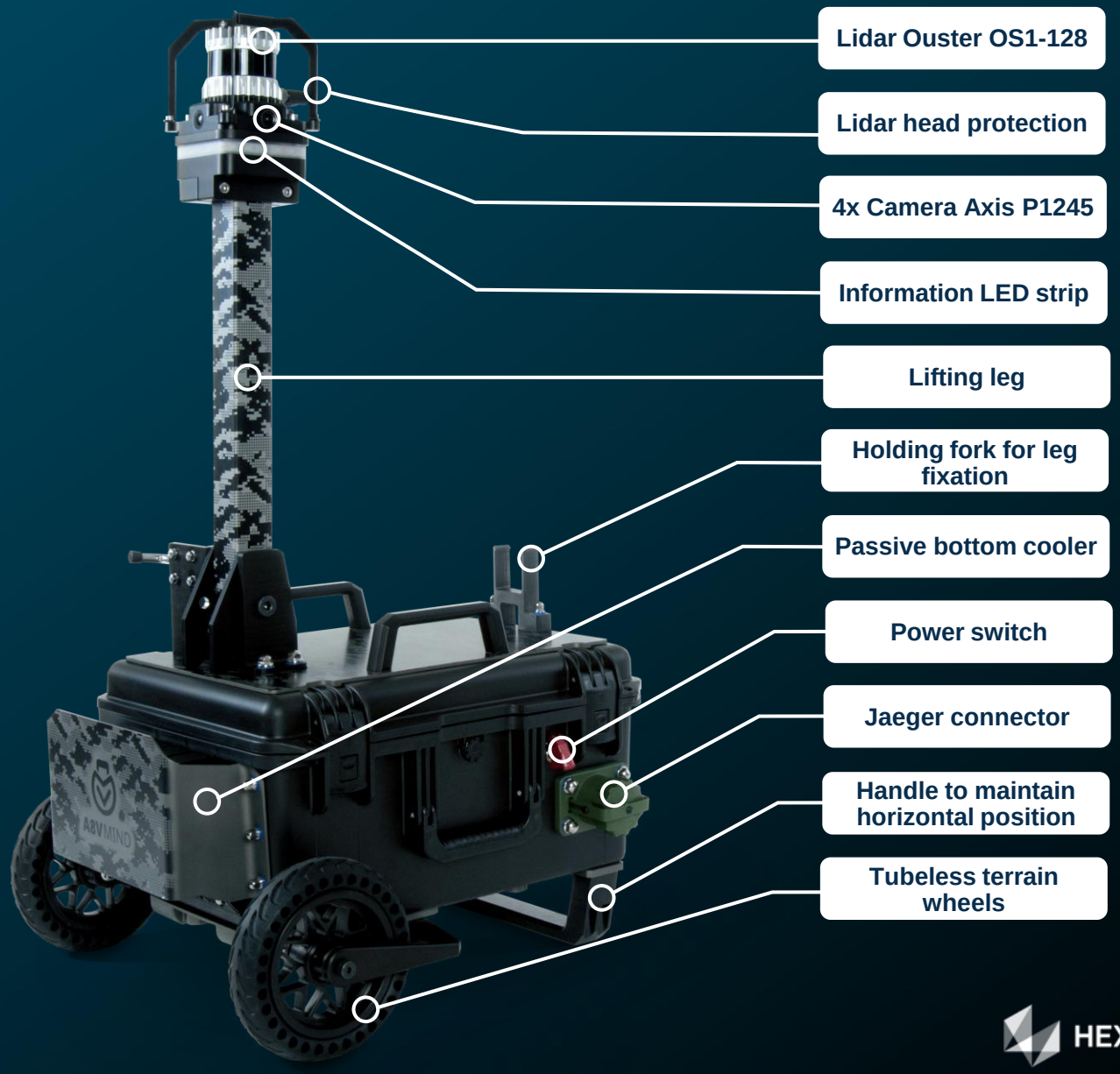
A8V MIND

Powered by LidarVision

- A8V MIND is a special portable version of the LidarVision detection system. It includes Lidar detector, 4 fixed cameras, LVS server, Wi-Fi and GSM router, information LED strip, rugged outdoor design, terrain wheels, internal bridge battery and stackable battery cases for external power supply. A rugged tablet for the LidarVision client and the system can also be connected to via a web-based thin client.



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A8V MIND

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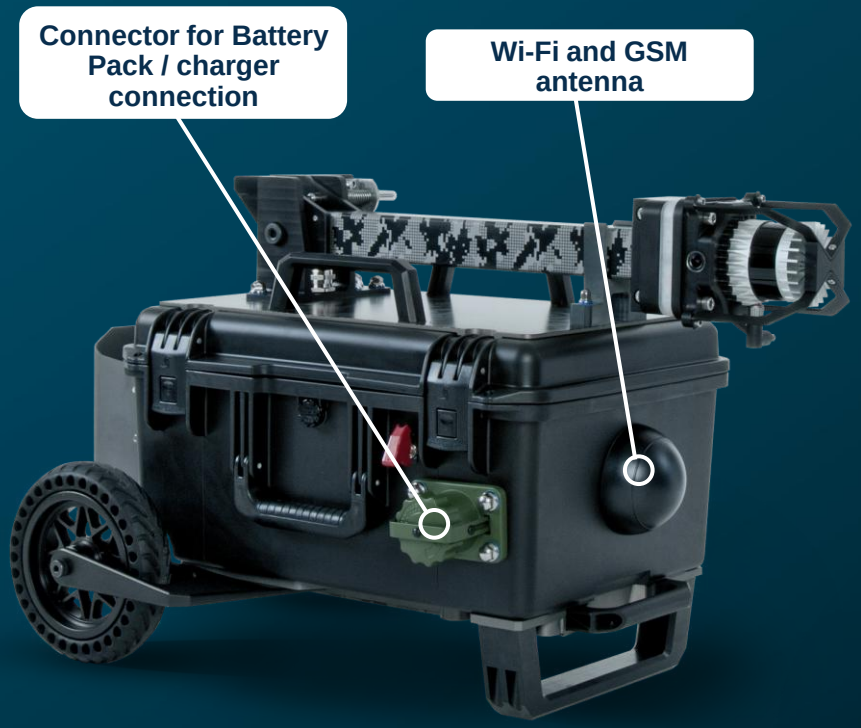

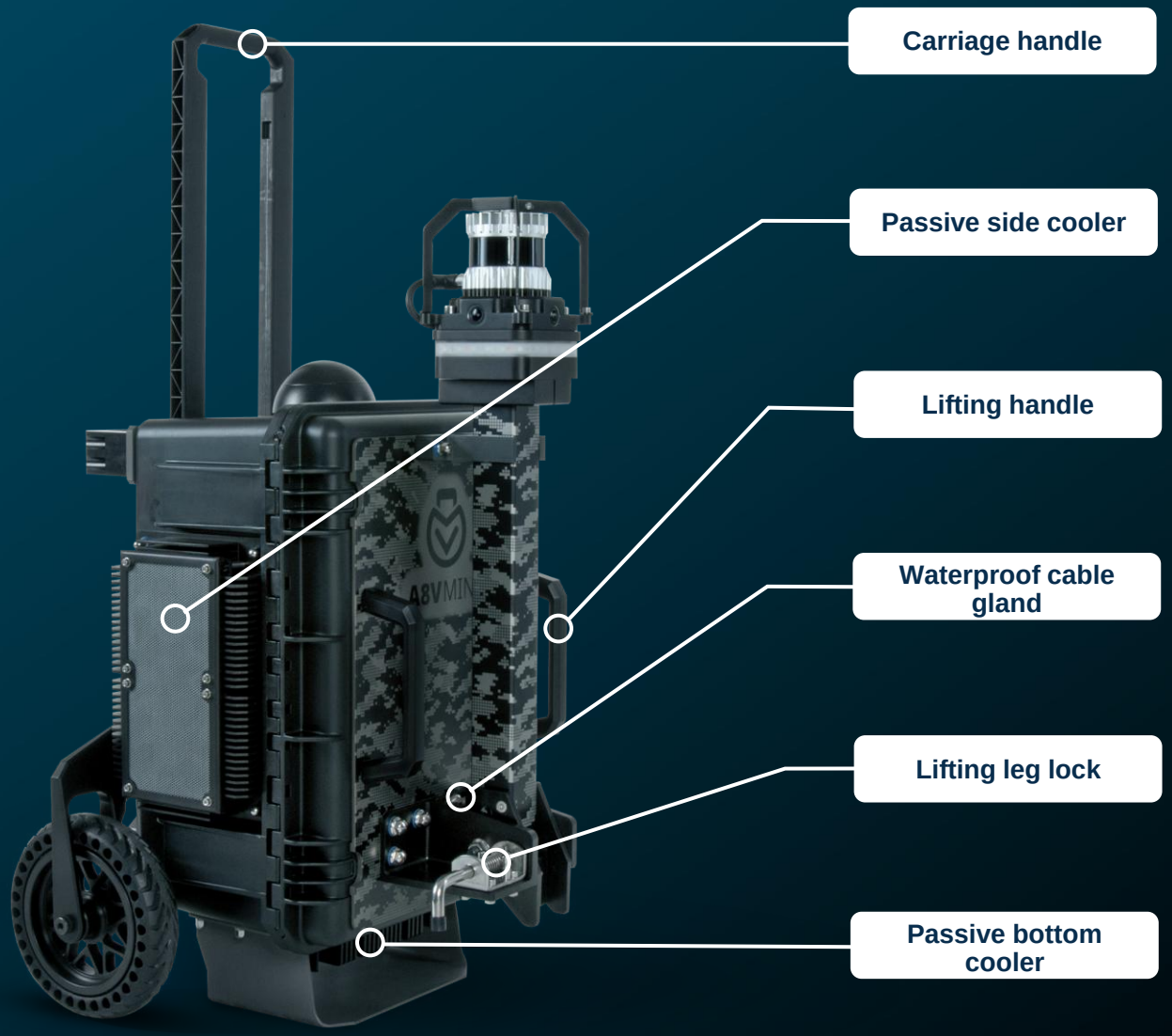

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A8V MIND

Dimensions & weight

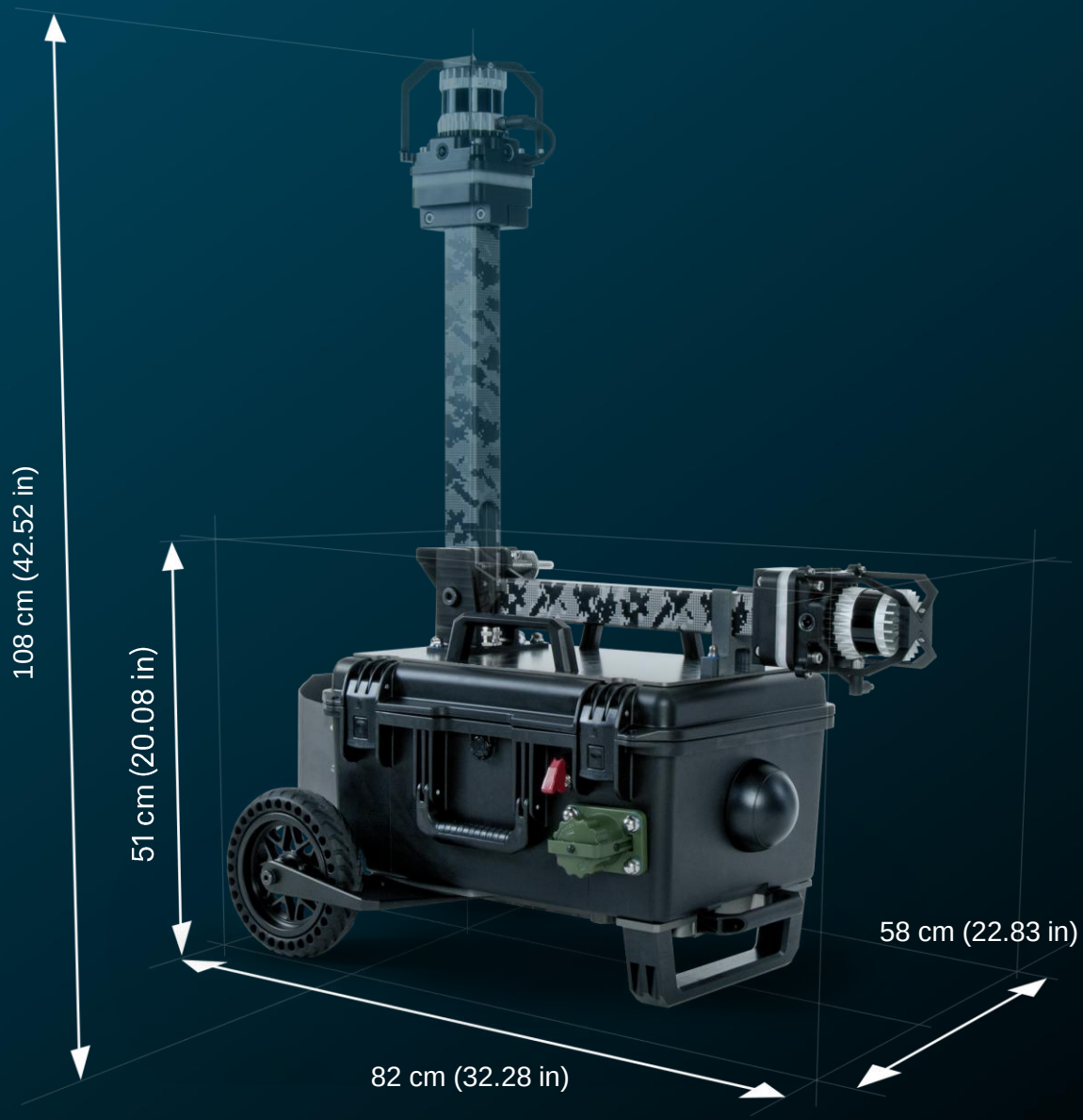
- Unit

Length:	82 cm (32.28 in)
Width:	58 cm (22.83 in)
Height:	51 cm (20.08 in) in transport mode, 108 cm (42.52 in)
Weight:	48,2kg (106.25 lb)

Internal components

- LVS server

CPU:	Intel® Core™ i7-1185G7E
Chipset:	Intel SoC
System Memory:	DDR4 16GB RAM
Storage Device:	SSD Samsung 870 EVO 500GB
OS:	Linux Ubuntu
Anti-Vibration:	3 Grms/ 5 ~ 500Hz/ operation (with SSD)
Anti-Shock:	50G, IEC 68-2-27, half sine, 11 ms duration (with SSD)
Operating Temperature:	-20 °C to +60 °C (-4 °F to +140 °F)



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A8V MIND

Dimensions & weight

Internal components

- Ethernet

LAN:	10 x LAN ports, 10/100/1000 Mbps, compliance with IEEE 802.3, IEEE 802.3u, 802.3az standards, supports auto MDI/MDIX crossover
PoE ports:	4
PoE standards:	802.3af and 802.3at
PoE Max Power per Port:	30W
Operating temperature:	-40 °C to +75 °C (-40 °F to +167 °F)

- Mobile

Mobile module:	4G (LTE) – Cat 12 up to 600 Mbps, 3G – up to 42 Mbps
SIM/mobile module switch:	2 SIM cards

- Internal batteries

Type:	Lithium-titanium-oxide (LTO)
Nominal Voltage:	12V
Capacity:	30Ah
Watt-Hour (Wh):	345Wh
Power consumption of A8V MIND:	60W (when active cooling is started, the power consumption is 100W)
Battery runtime:	5 hours 45 minutes (under ideal conditions and without active cooling)
Life:	25,000 Cycles
Temperature range:	-50°C – 65°C (-58 °F to +149 °F)

- Wireless

Wireless mode:	802.11b/g/n/ac Wave 2 (WiFi 5) with data transmission rates up to 867 Mbps (Dual Band, MU-MIMO), 802.11r fast transition, Access Point (AP), Station (STA)
Operating temperature:	-40 °C to +75 °C (-40 °F to +167 °F)

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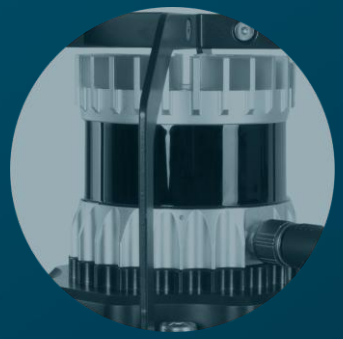
A8V MIND

Dimensions & weight



Internal components

- Lidar

Horizontal Field of view:	360°
Vertical Field of view:	42.4°
GVT detection measurement:	97m
Maximum Range:	120m
Channels of resolution:	128
Maximum deviation:	2.5cm
Standard deviation:	0.5cm
Ingress protection:	IP68
Laser class:	Class 1 eye-safe
Wavelength:	850 nm
Operating temperature:	-40 °C to +60 °C (-40 °F to +140 °F)

- Cameras

Number of cameras:	4
Image sensor:	CMOS
Min illum./light sensitivity:	0.22 lux
Max video resolution:	1920x1080
Max frames per second:	25/30
PoE Class:	2
Lens Focal length:	2.8mm
Horizontal field of view:	111°
Vertical field of view:	61°
Operating temperature:	-20 °C to +50 °C (-4 °F to +122 °F)

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A8V MIND

External Battery Pack

- Battery packs are based on LTO technology. A lithium-titanate battery is a modified lithium-ion battery that uses lithium-titanate nanocrystals on the surface of its anode instead of carbon. This gives the anode a surface area of about 100 square meters per gram, compared with 3 square meters per gram for carbon, allowing electrons to enter and leave the anode quickly. This makes fast recharging possible and provides high currents when needed.

- External battery packs are stackable. They can be connected in parallel to give the A8V MIND more battery life. Everything is connected by a very durable cable with NATO connectors. The charger is IP-protected and uses the same cable that is used to connect the battery packs.

Type:	Lithium-titanium-oxide (LTO)
Nominal Voltage:	24V
Capacity:	40Ah
Watt-Hour (Wh):	1035Wh
Power consumption of A8V MIND:	60W (when active cooling is started, the power consumption is 100W)
Battery runtime:	17 hours 15 minutes (under ideal conditions and without active cooling)
Life:	over 25,000 Cycles
Temperature range:	-50°C~65°C (-58 °F to +149 °F)
Length:	40,6 cm (15.98 in)
Width:	17,4 cm (6.85 in)
Height:	33 cm (12.99 in)
Weight:	22,2 kg (48.94 lb)

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A8V MIND

Charger

Capacity:	2x600W (1,2 kW) Charger
Charge Time:	1hour
Input voltage:	90 – 264 VAC

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A8V MIND

Full 3D Client

- The system can be connected via Wi-Fi and a touchscreen tablet that can run the full LidarVision system. This allows the system to be configured. An unlimited number of detection zones can be created. Arm and disarm the system, view the event log, etc.

- Rugged Tablet, L10ax XSlate, 10.1”, WUXGA 1920 x 1200 (16:10), Active 1000 Nit Display, Win11, i7 vPro 11th Gen, 16GB, 512GB PCIe SSD, WLAN/WWAN w/ GPS, FPR, F&R Cameras, NFC, IP65, Stylus.

OS:	Windows 11
SW:	HxGN dC3 LidarVision | Prime

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A8V MIND

Lite Client

- The system can be accessed using a thin client. LidarVision Lite Client is a native app for Android and iPhone phones. It displays detection zones and moving intruders in real time on a 2D map (which is automatically generated from a 3D map) or on a grid. The app runs in the background and notifies the user when an alarm event occurs. The user can then monitor what is happening in the application online or work with the event archive.

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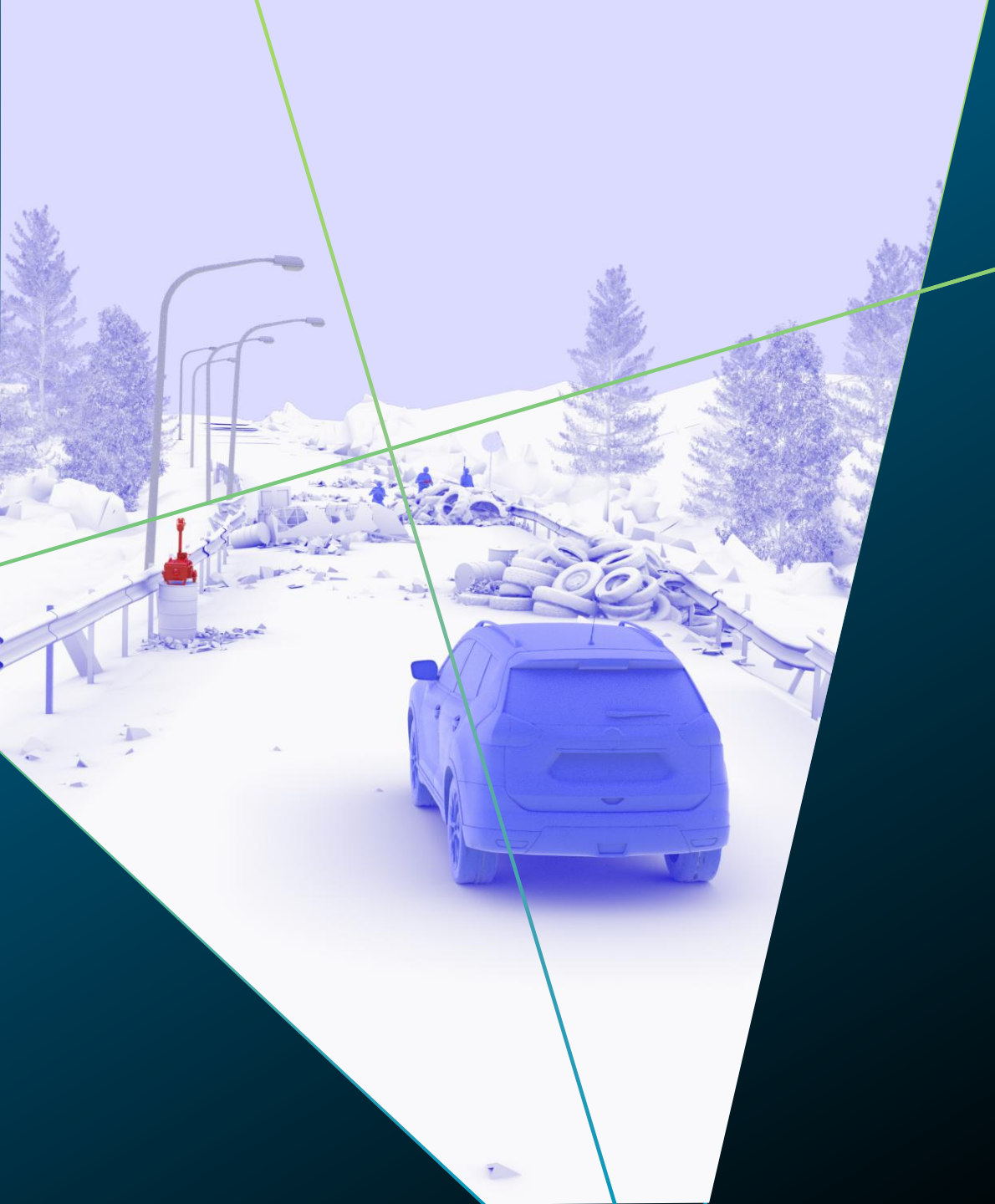

Use Cases

3D Volumetric protection
with A8V MIND

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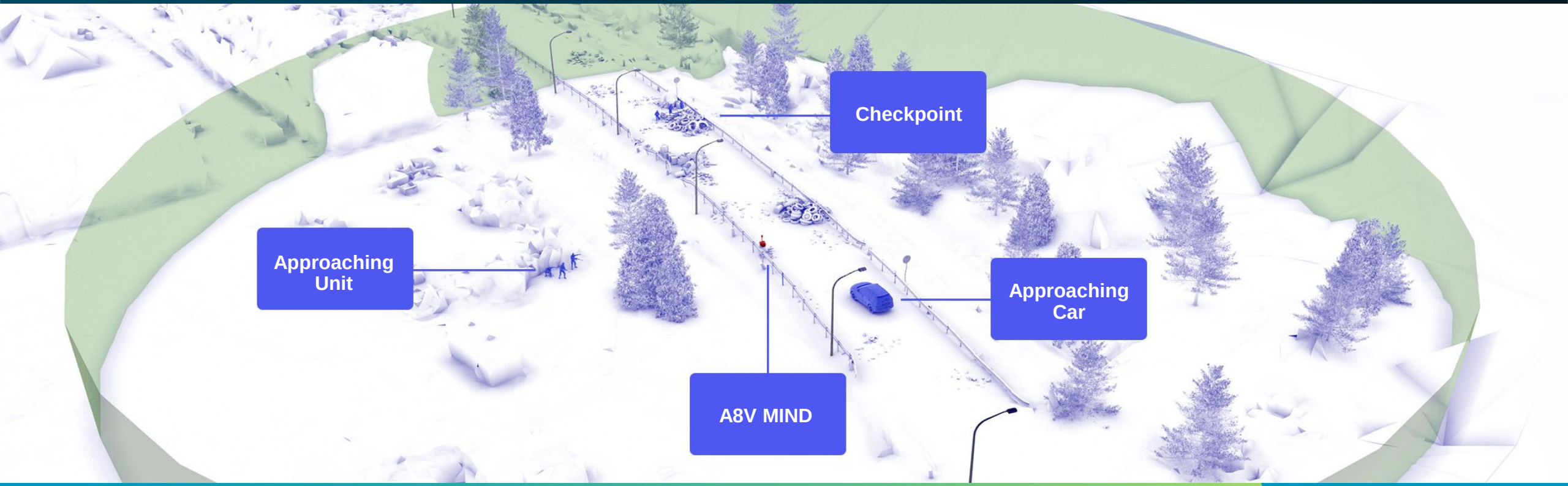
Military Checkpoint Use Case

- Volumetric protection of the area. There must be direct visibility of potential targets from where the A8V Mind is positioned. Wherever the lidar’s view is not blocked, very accurate detection can be made up to 97 meters from the lidar.



Military Checkpoint Use Case

- The operator communicates with the system using a rugged tablet that is connected to the case over a Wi-Fi network.

Military Checkpoint Use Case

- A8V Mind then detects and visualizes any objects that appear in the detection zone. It also displays the sizes of these objects. The operator can thus see whether a vehicle is entering the zone or a person or, for example, a group of people.

Military Checkpoint Use Case

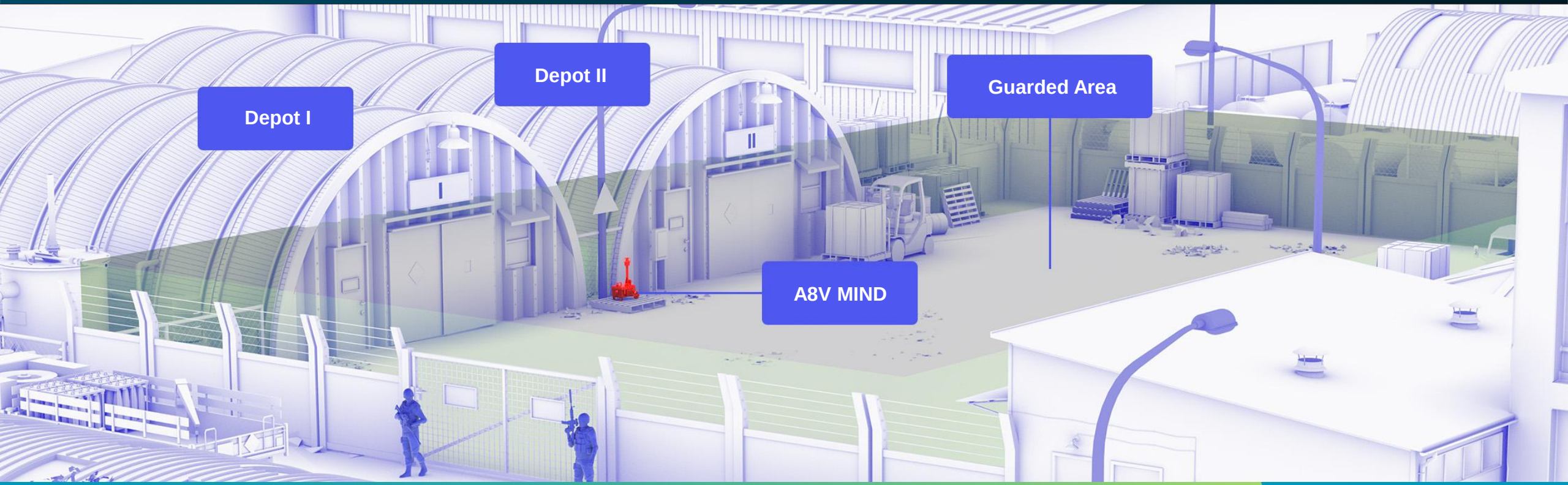
- The case is IP54 waterproof and can be placed anywhere even in harsh environments. It allows very fast deployment within minutes.

Military Checkpoint Use Case

- In the event of an alarm, the operator is notified by an audible or optical signal only. Likewise, the system can signal a breach by flashing an LED strip on the device. This light indication can be switched off.

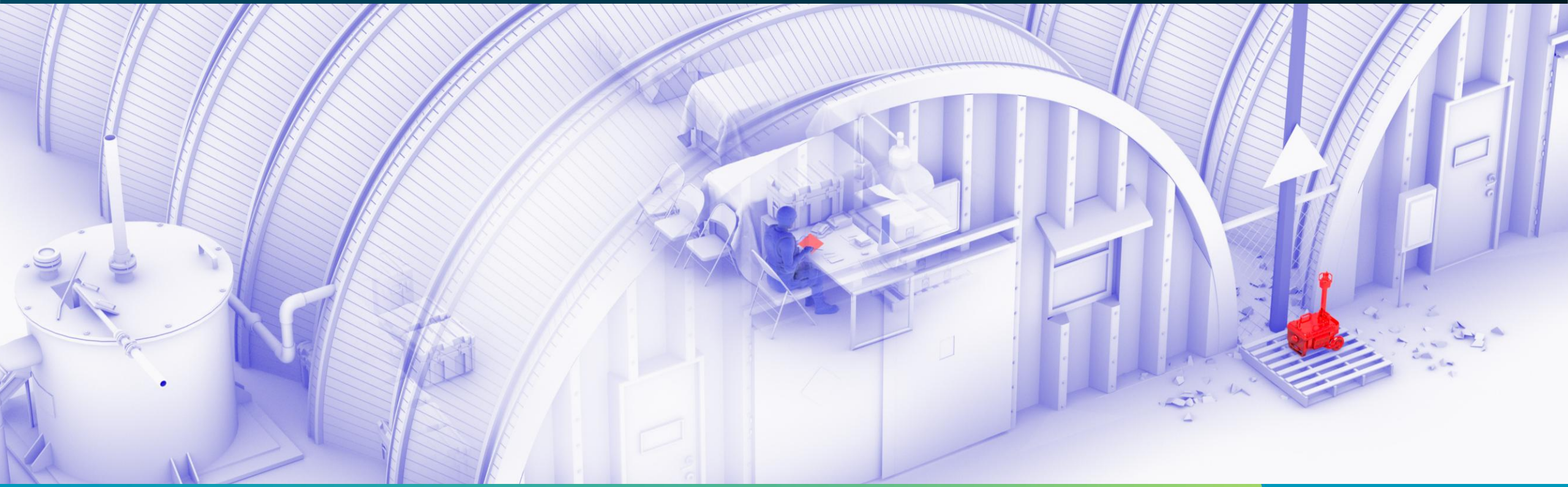
Ammunition Depot Use Case

- Volumetric protection of the area. There must be direct visibility of potential targets from where the A8V Mind is positioned. Wherever the lidar’s view is not blocked, very accurate detection can be made up to 120 meters from the lidar.



Ammunition Depot Use Case

- The operator communicates with the system using a rugged tablet that is connected to the case over a Wi-Fi network.



Ammunition Depot Use Case

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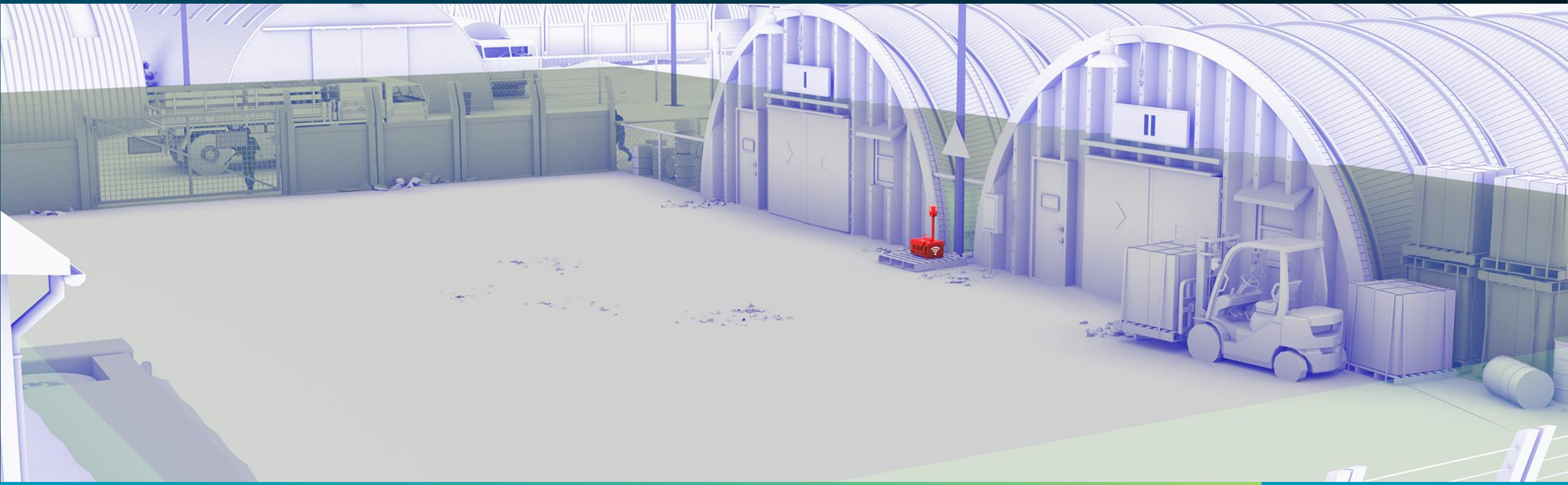

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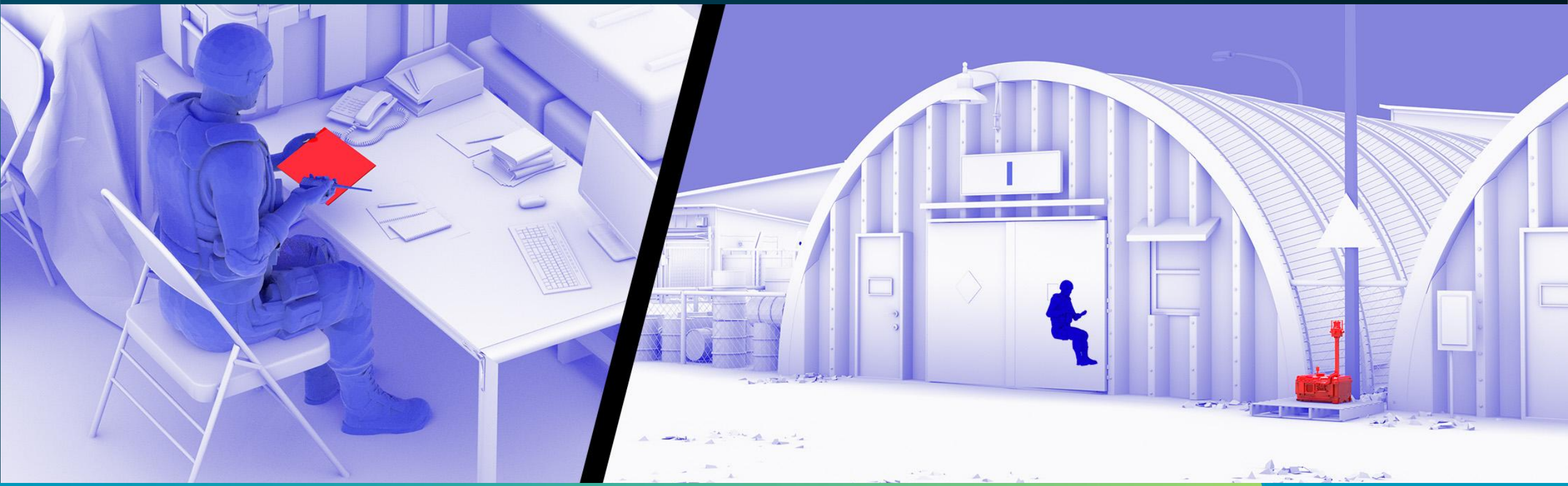
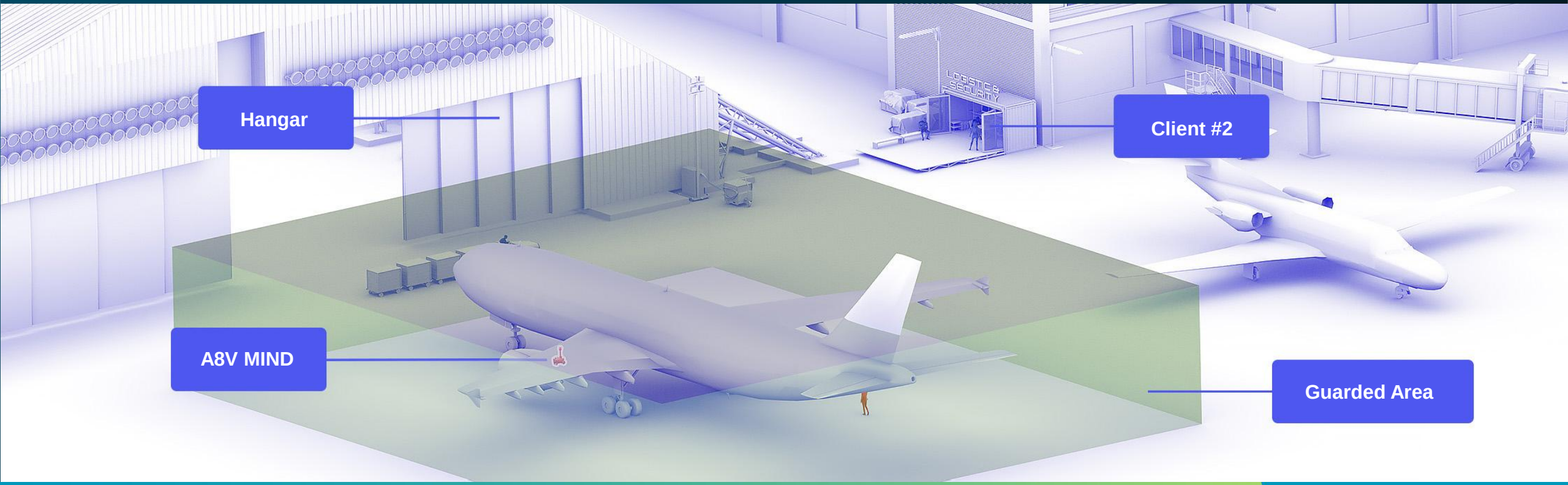


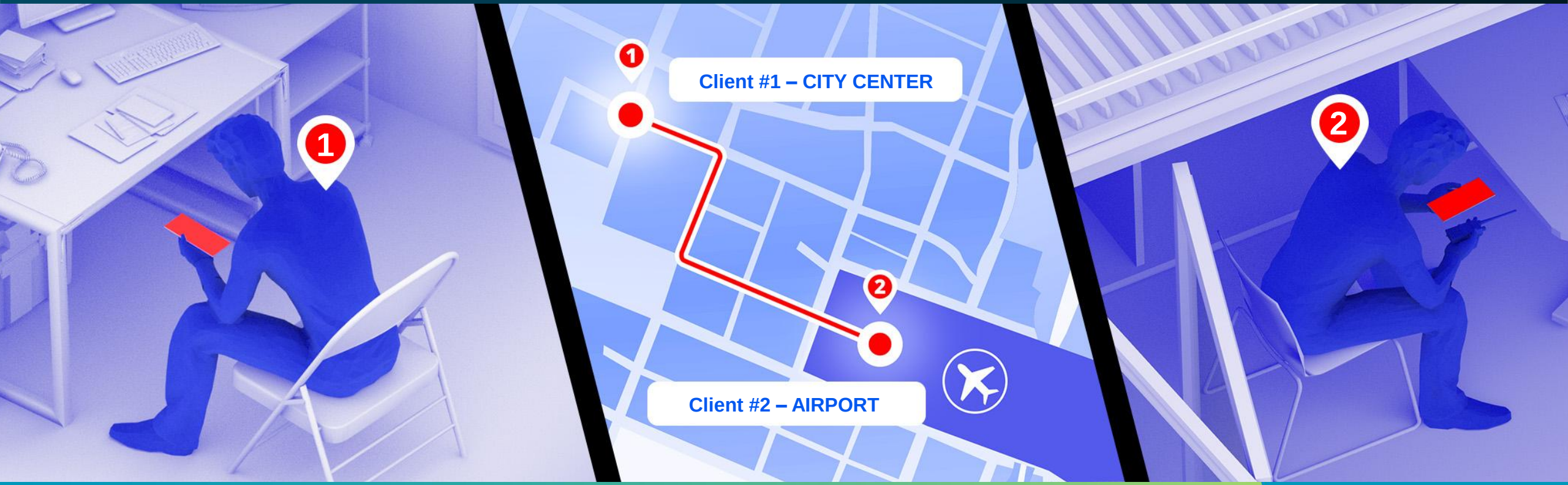
Airport Use Case

- A8V Mind can guard parked aircraft or vehicles very effectively. It is impossible to get to such a guarded aircraft without detection. The aircraft is thus perfectly guarded for over 24 hours.



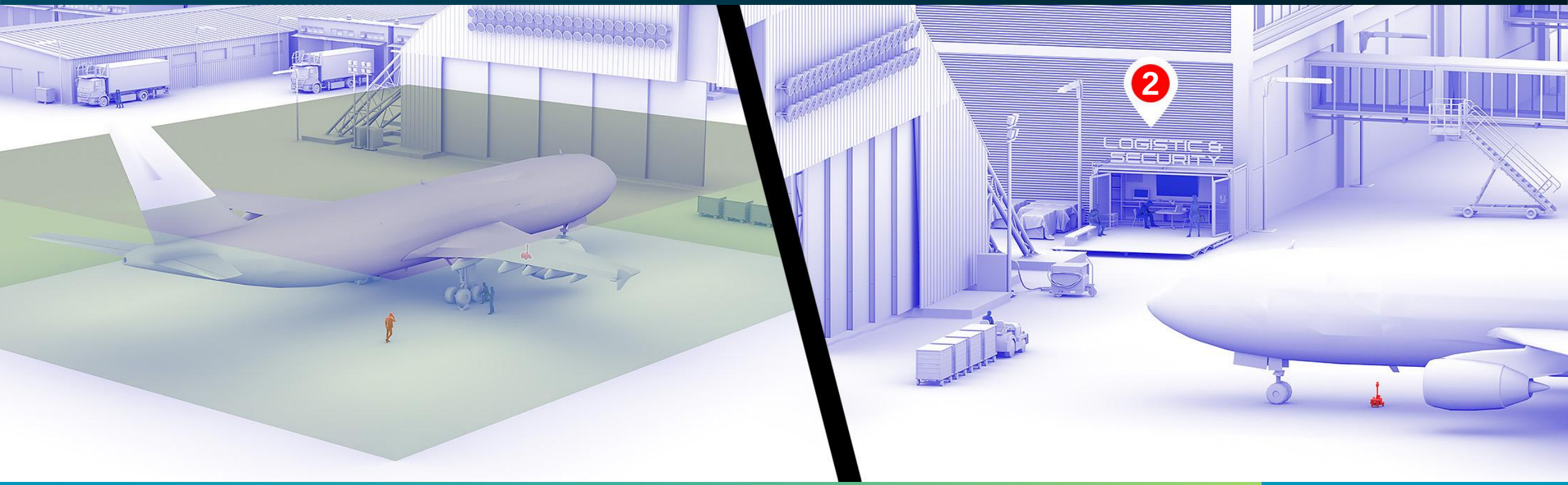
Airport Use Case

- If the detection zone is violated, the operator is immediately informed. Either directly in the LidarVision client, which is within range of the local network, or the alarm event can be monitored by the thin client via GSM transmission on his mobile phone.



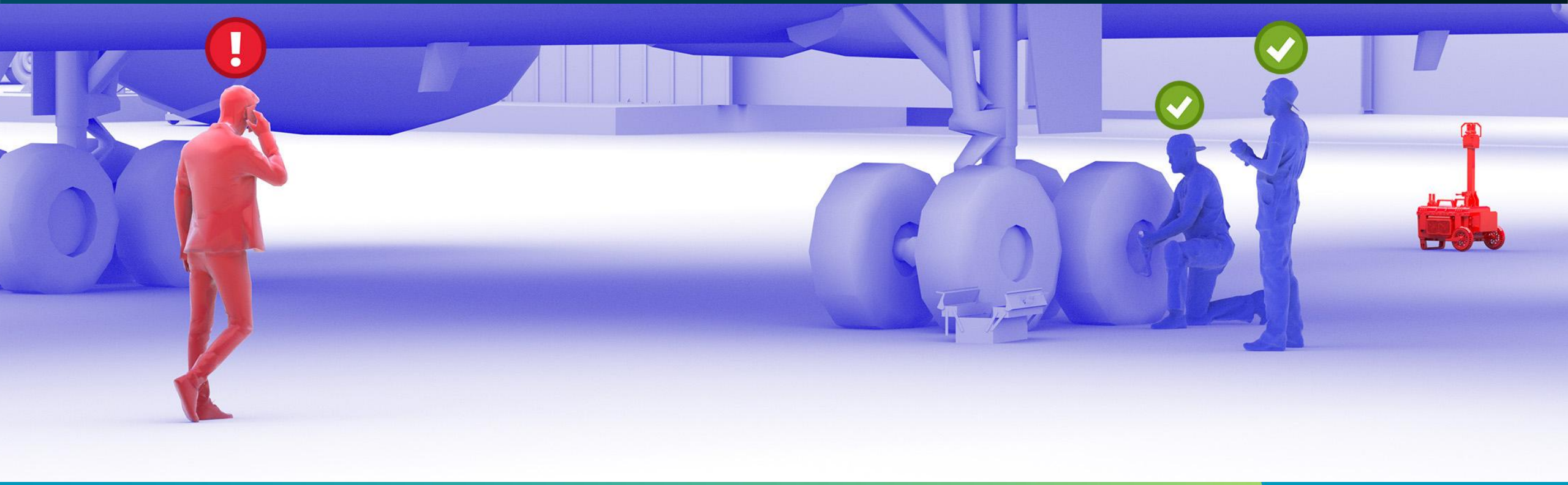
Airport Use Case

- The operator can always see the position of the intruder in real time and knows the trajectory of the intruder’s movement.



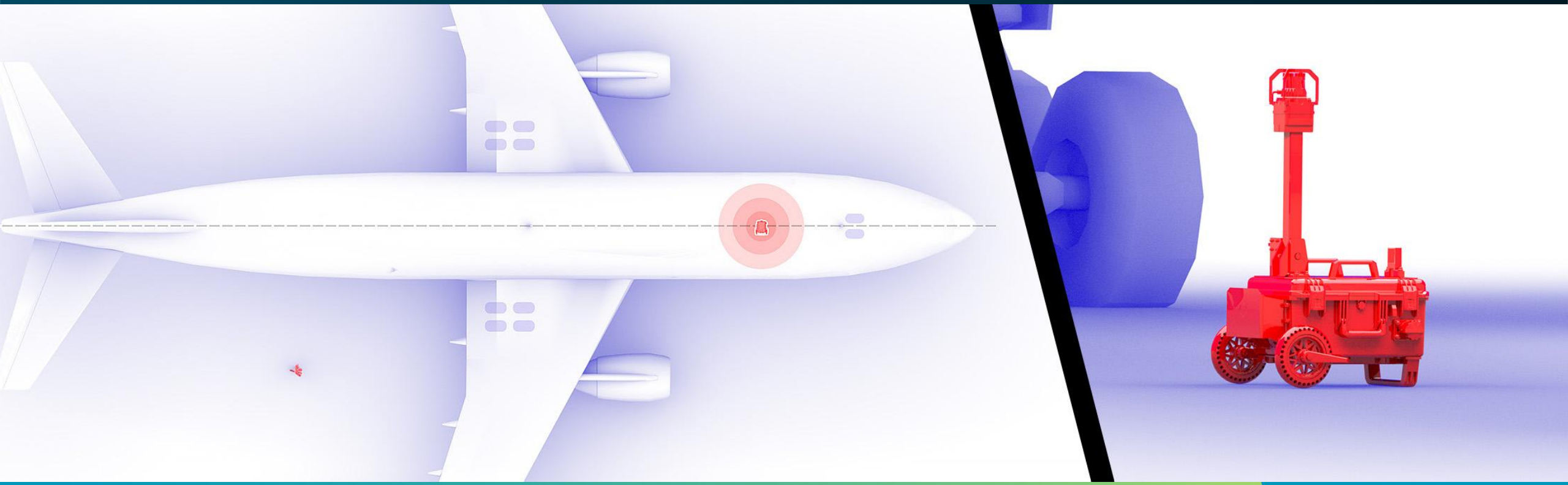
Airport Use Case

- Friendly tagging can be used in the system. This allows the operator to tag airline personnel/technicians who are allowed access to the aircraft. Other moving objects are automatically flagged as intruders and the system triggers an alarm.



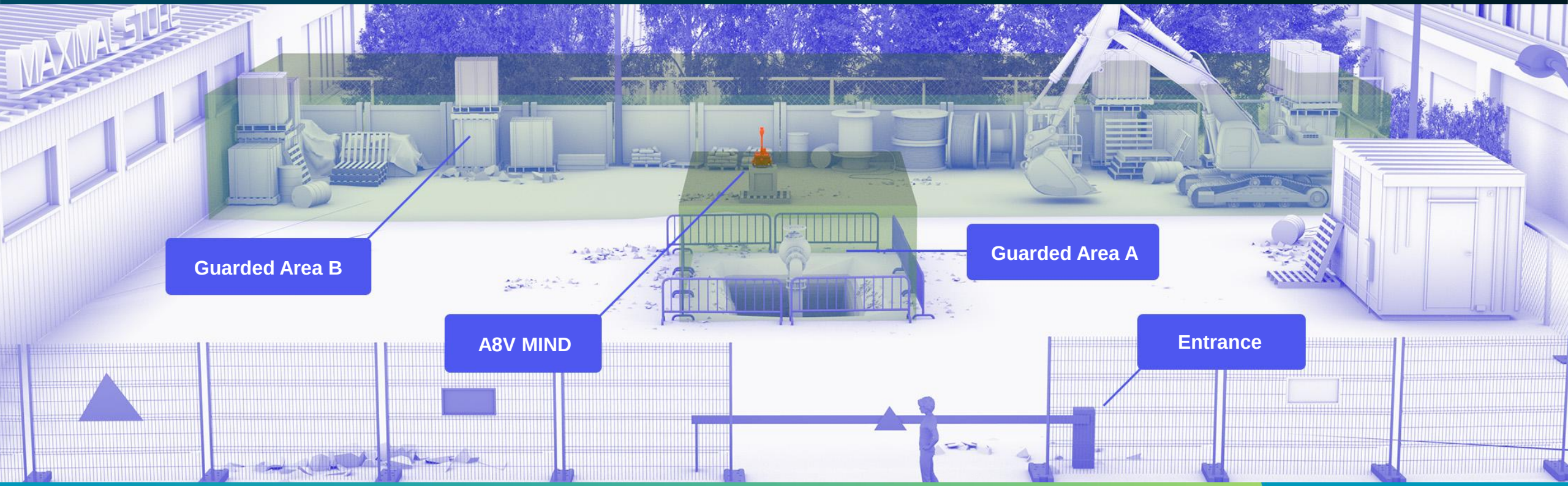
Airport Use Case

- The A8V Mind only works with the battery pack attached, it is small and unobtrusive. It can be placed anywhere.



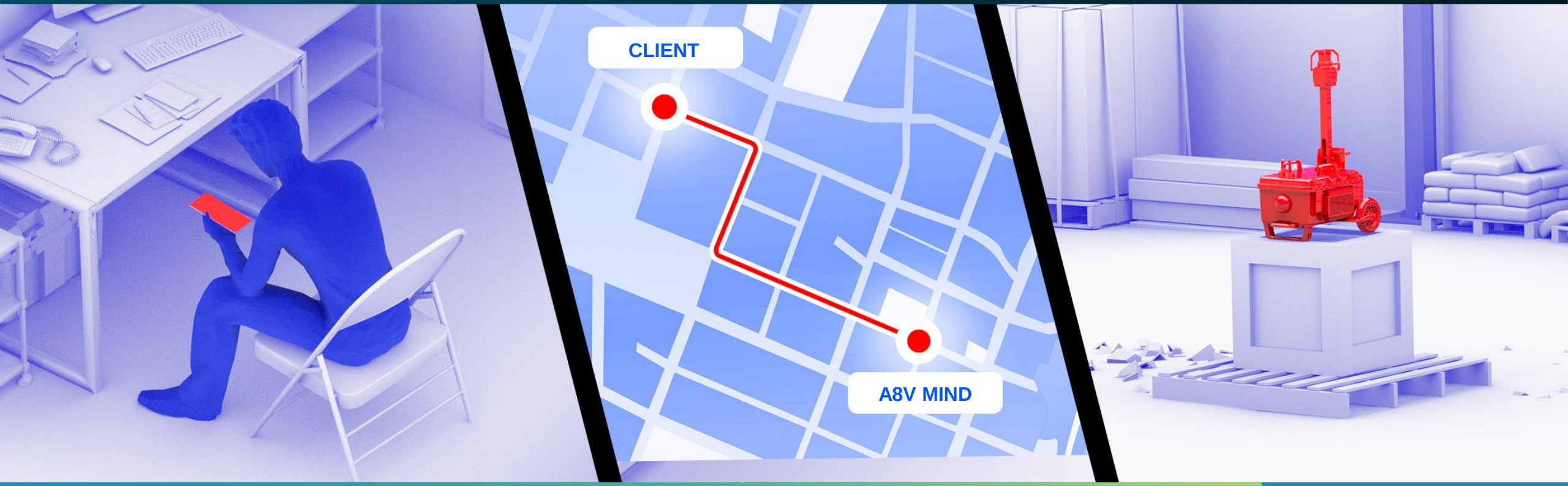
Construction Site Use Case

- Deployment of A8V Mind for site protection. The system thus protects part of the construction site, including parked construction machinery, as well as the area where there may be a risk of injury.



Construction Site Use Case

- The A8V Mind transmits real-time detection zone intrusion information to a 3D client in the form of a portable tablet via a Wi-Fi network. The operator is within range of the local network and monitors what is happening in the zone. Or it can monitor alarm events using a thin client on a cell phone and using GSM transmission anywhere in the world.



Construction Site Use Case

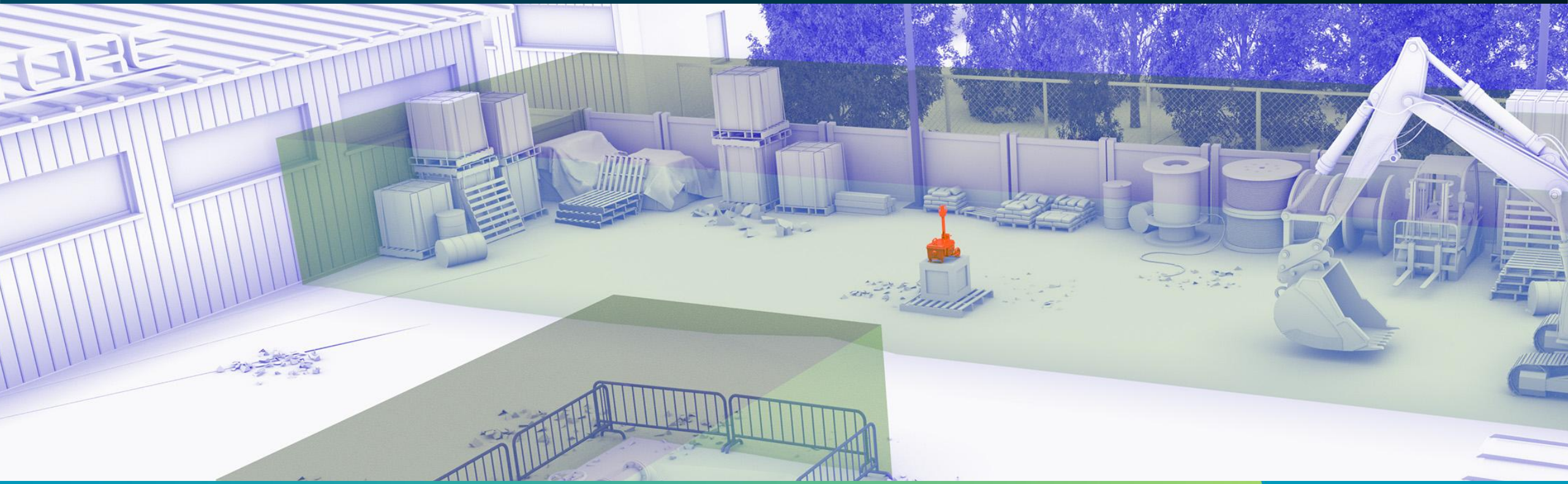
- A suitably positioned A8V Mind case can effectively guard hazardous areas where there is a risk of injury, falling into a trench, etc. These can be created on demand and for any length of time.

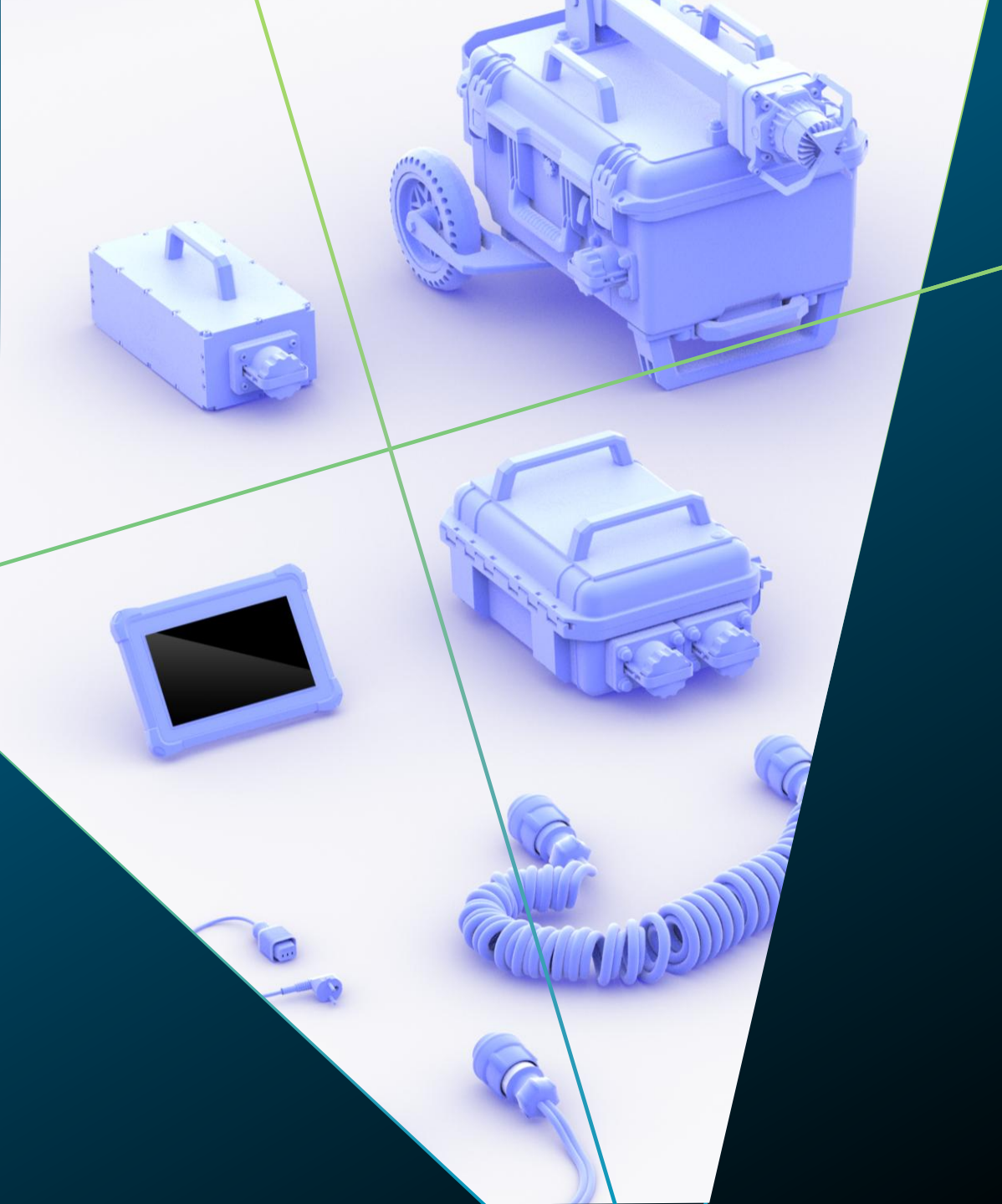
Construction Site Use Case

- Zones can have different shapes and functions. They can react immediately to unauthorized entry or they can detect only people who stay in the zone longer than the timer.

Construction Site Use Case

- The A8V Mind system can also be supplemented with a warning siren and optical intrusion signaling via an integrated LED strip.





Manual

3D Volumetric protection
with A8V MIND

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Construction Site Use Case

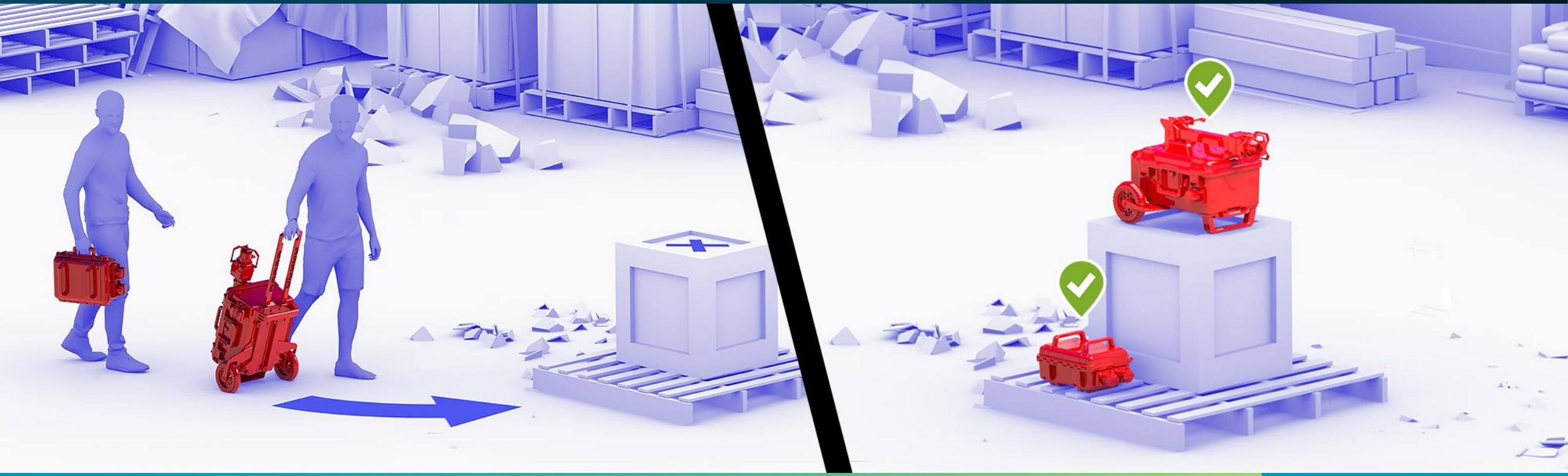
- LidarVision Mobile INtrusion Detection is a volumetric detection system that uses Lidar technology for detection. Portable, mobile, easy to use.

Construction Site Use Case

- Battery contains LTO batteries. Fast charger includes 2 600W chargers. The appropriate pigtail must be connected to the charger, then the charger is connected to the battery pack (any connector can be selected). The charger is then connected to the mains. The charging time is approximately 1 hour. There is a button on the battery pack indicating the battery status. By holding the button for 3 seconds the button will start flashing. By the number of flashes, it is possible to see how charged the battery pack is. One blink indicates a 20% charge, 5 blinks indicate an almost fully charged battery.

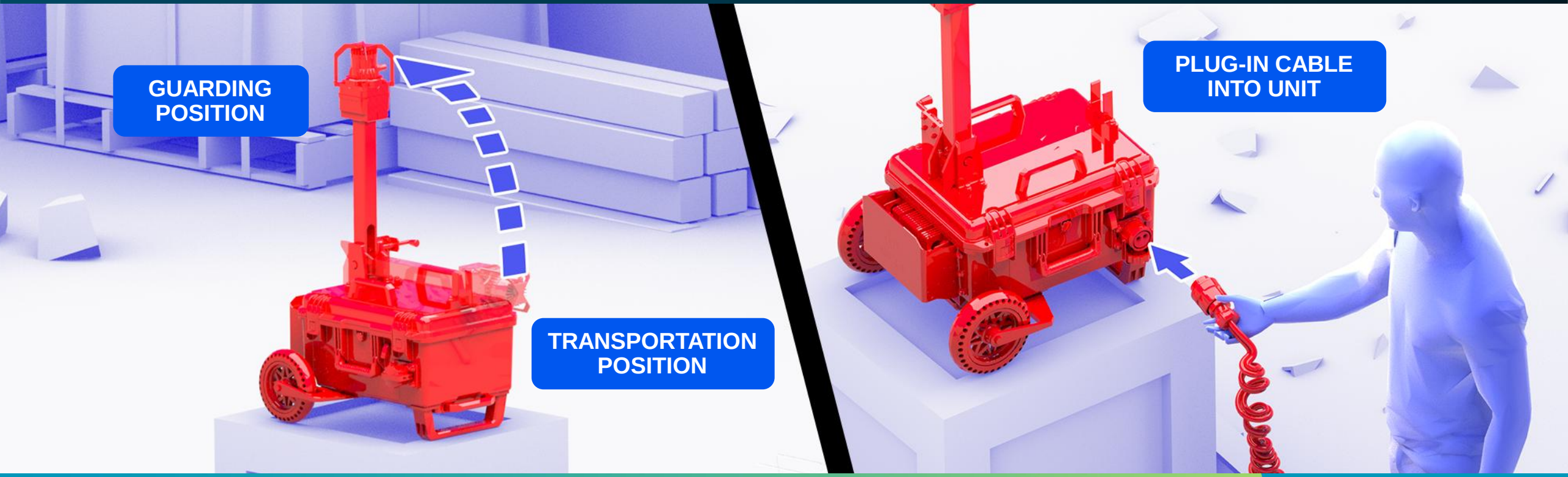
Construction Site Use Case

- The A8V MIND case has a very robust design and includes terrain wheels. It can therefore be pushed very comfortably even though it is heavy. It also contains various handles that can be used to lift or carry the device. The battery pack also contains handles with which it can be carried by one or two persons.
- The device has IP67 protection and is designed for outdoor use. It can therefore be placed almost anywhere. Attention should be paid to the fact that the lidar detector should have a good view of the surrounding area. It is therefore recommended to install it in elevated locations.



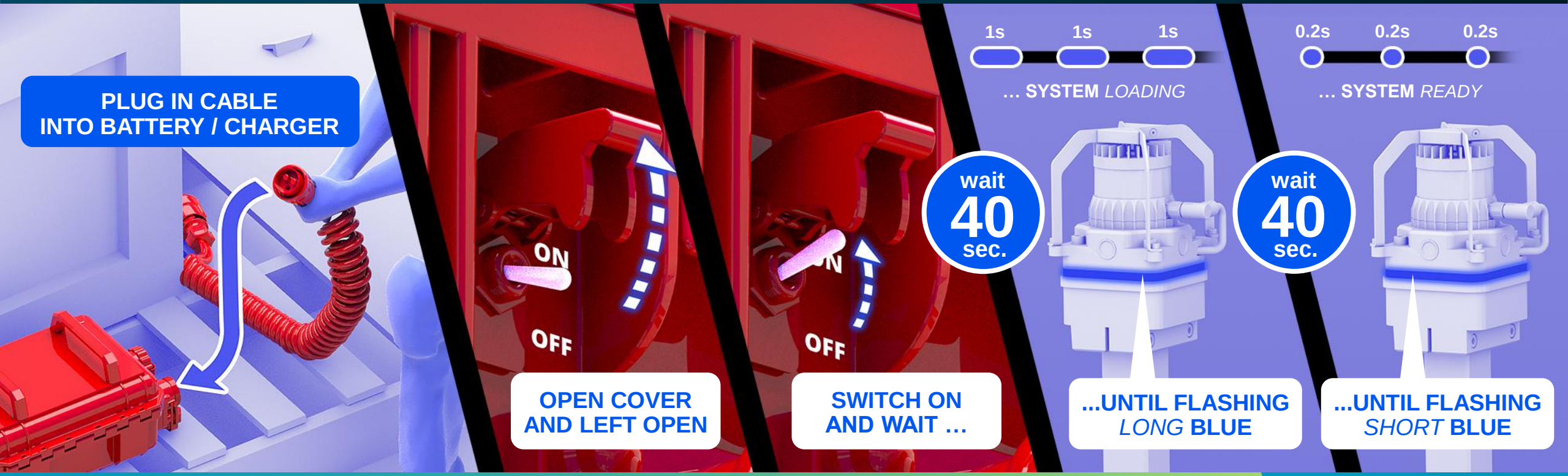
Construction Site Use Case

- After placing the unit in a stable location, the unit must be placed in the guarding position. This is done by releasing the fixing lever at the leg hinge and manually lifting the entire leg with the detection head. The locking lever must then be re-secured.
- The charging cable must now be connected to the A8V MIND. The connector is fitted with a screw cap to protect the connection from water entering the connector - therefore it must always be screwed all the way in.



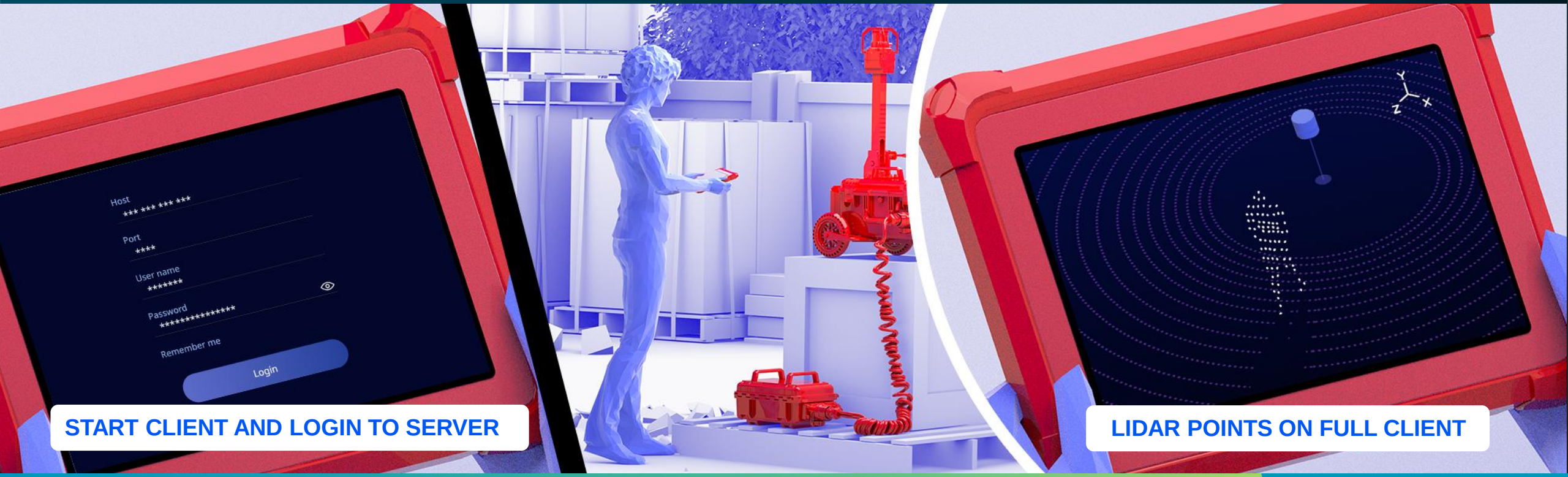
Construction Site Use Case

- A charging cable must now be connected to the battery pack. It does not matter which connector the cable is connected to. Care must be taken to avoid connecting the pins in the connector when handling the cable.
- The A8V MIND is now ready for operation. The start switch is hidden under the flap near the charging connector. When the cover is lifted off, the two-position start switch appears. Switching on (up) will start the system.
- Long flashing = the system is LOADING. Wait another 40s and see short flashing = the LVS server is READY.



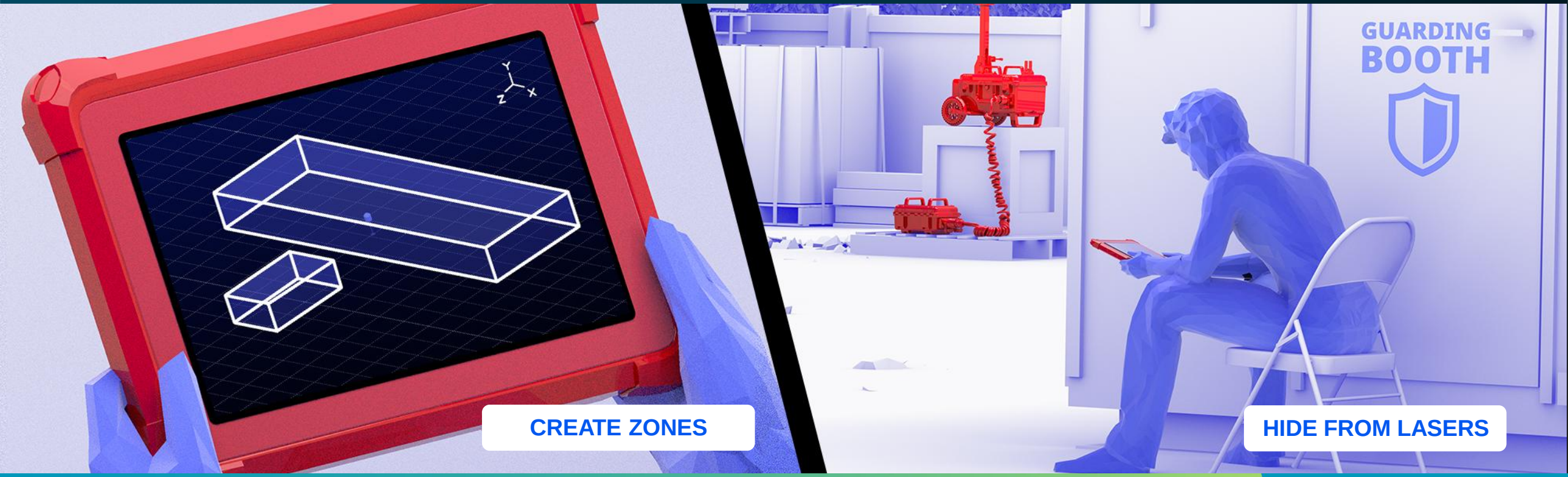
Construction Site Use Case

- Start LidarVision Full Client on tablet or Light Client on mobile and login to server.
- The system communicates over a Wi-Fi connection with a full 3D client that runs on a rugged touchscreen tablet. Raw lidar data can be viewed instantly in the app. This allows a clear view of the monitored area even without the use of a 3D map.



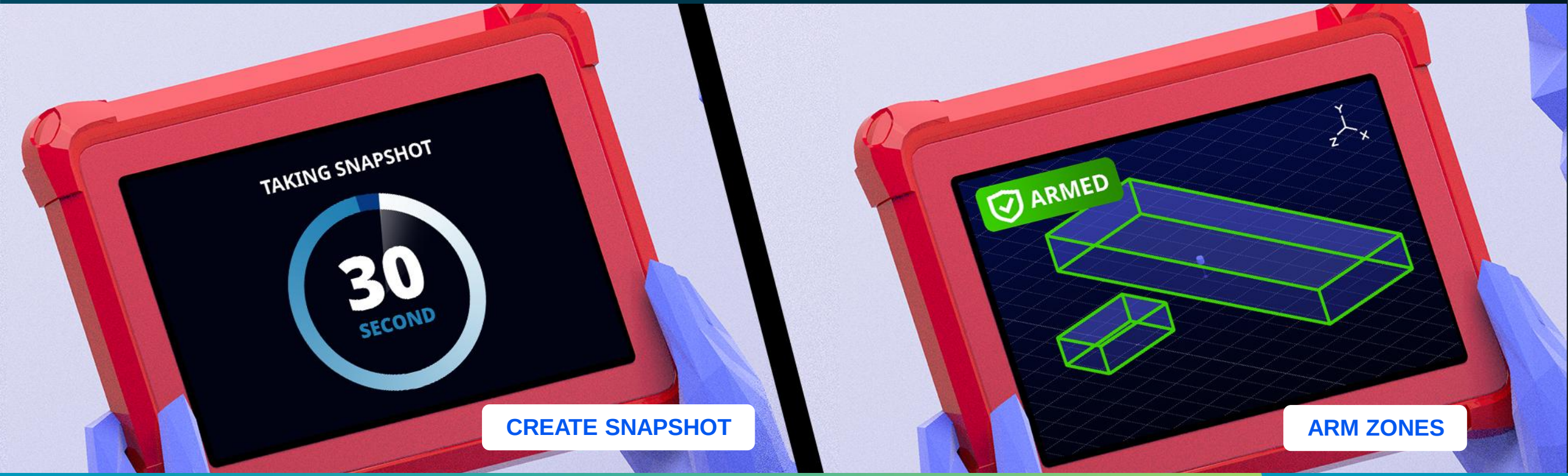
Construction Site Use Case

- The tablet is used to configure the system. Detection zones can be defined in the system. These zones can have different shapes, colors, names, but they can also be different types of zones (detection, loitering, entry).
- Before running the initialization snashot, it is a good idea to make sure that no one is within range of the lidar detector. This could invalidate such a snapshot. Using a Wi-Fi connection, the system can be operated remotely.



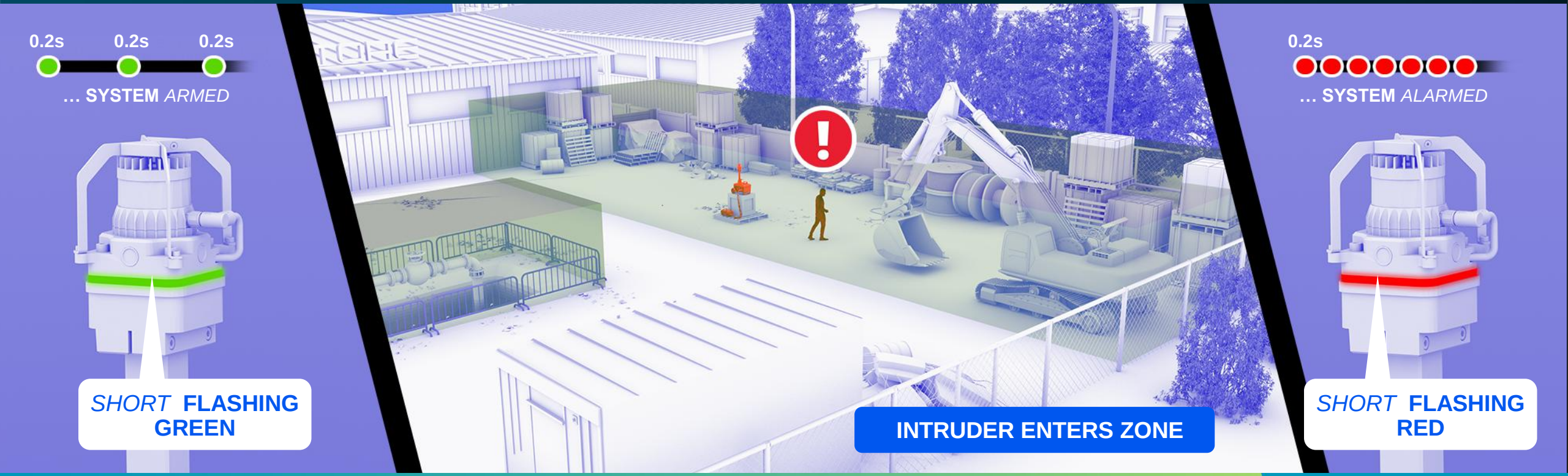
Construction Site Use Case

- Before using the system, an initialization snapshot must be taken. This helps the system understand what the scene looks like and how the system should react to changes later. By default, a 30 second snapshot is set - this time can be shortened or extended.
- Pressing the Arm - button will arm all detection zones. The arming process takes approximately 5 seconds - during these 5 seconds a short incremental snapshot is again performed. It is also possible to arm only individual zones. The guarded zones are highlighted in green in the system.



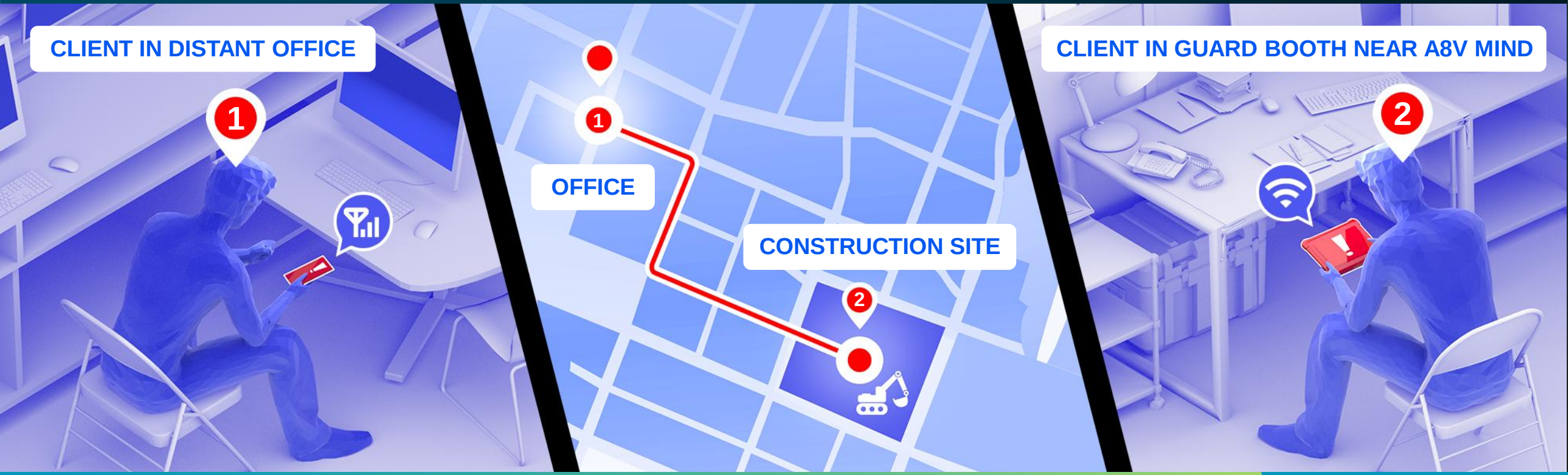
Construction Site Use Case

- Once the system is armed, the status LED strip flashes green.
- The detection system creates objects using the clustering method. These objects are visualized in the system using bounding boxes. If such a detected object enters the guarded zone, an alarm is raised. The operator can see the number of intruders, their exact positions, speed of movement and even the trajectory of their movement.
- In alarmed state, the status LED strip flashes red quickly.



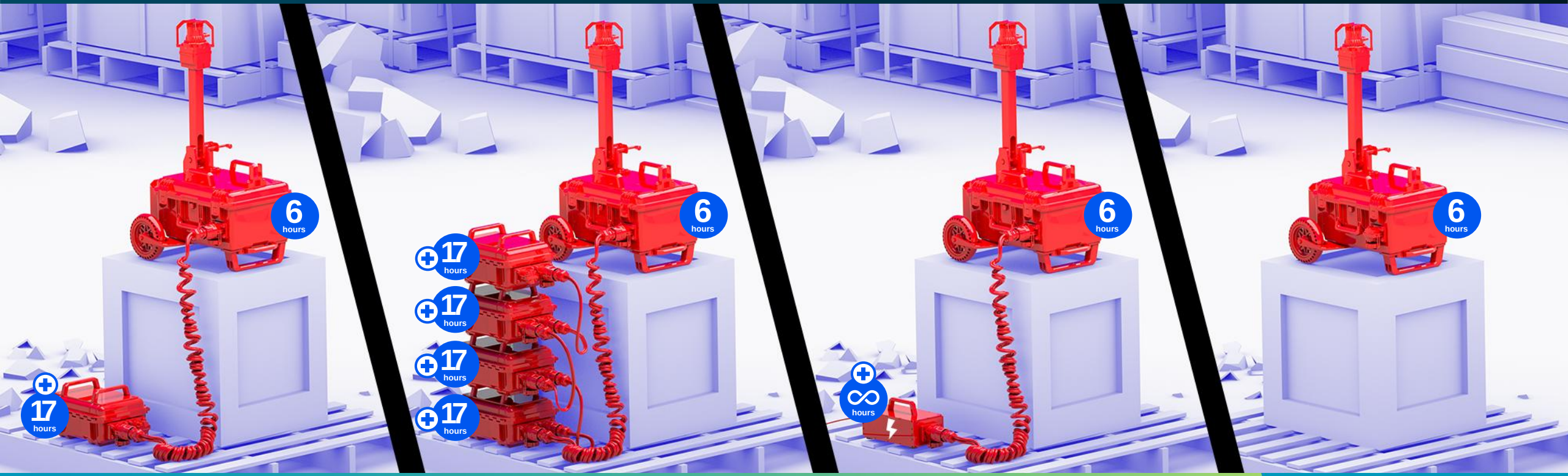
Construction Site Use Case

- Information about the alarm event is transmitted via GSM anywhere in the world. The alarm event can thus be monitored using a Thin Client on a cell phone and in real time.
- The thin client works only with the 2D map, which is automatically generated from the 3D map on the LVS server. The client also displays camera footage and allows basic archive work.
- Within range of a Wi-Fi network, it is possible to work with a full-fledged 3D client. This is used to configure the system, work faster with LidarVision and work better with the archive when investigating incidents.



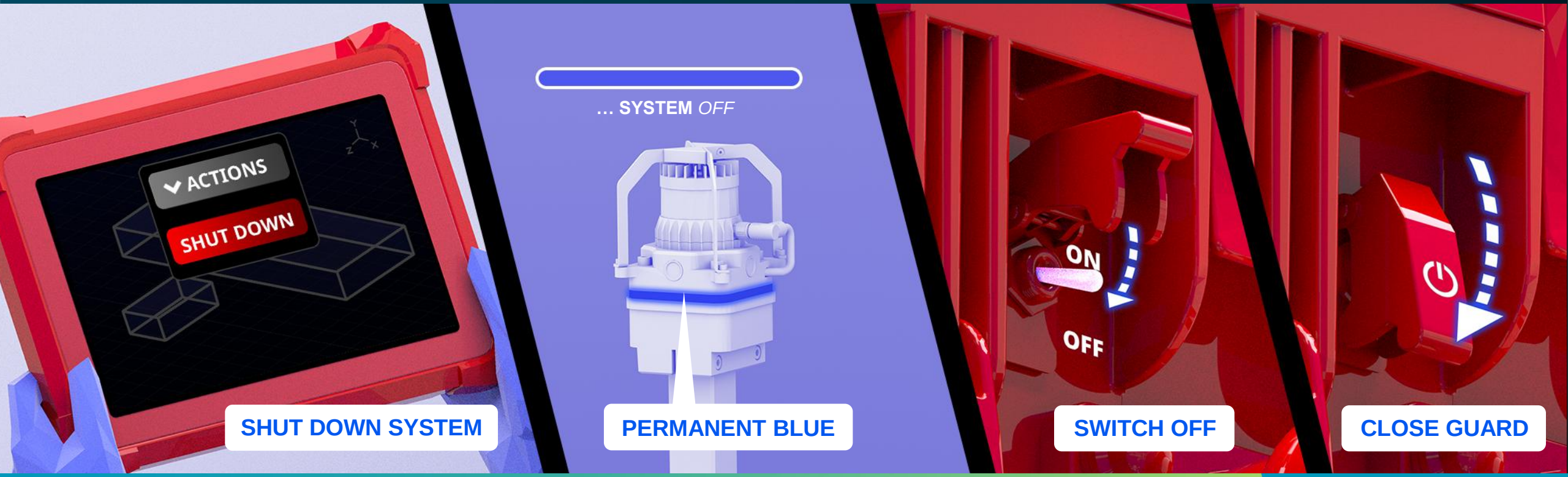
Construction Site Use Case

- The battery pack is designed to hold the entire system for 17 hours. The A8V MIND case itself contains internal batteries, which are primarily used to bridge the time when replacing the battery packs. The internal batteries will keep the system running for 6 hours.
- The battery packs are stackable. The battery carrying handles fit into the rails of each battery pack. Each battery pack has two connectors. They can therefore be connected in parallel. In this way, a system with a battery life of several days can be obtained.
- The system can of course be operated without battery packs. If a permanent power supply is provided, a charger that is designed for outdoor use and has IP67 protection can be connected to the mains and then the system has a permanent power supply.
- In the event of a power failure, the system is equipped with a 6 hours internal battery override. This internal battery is automatically recharged as soon as power is available again (mains or battery packs)



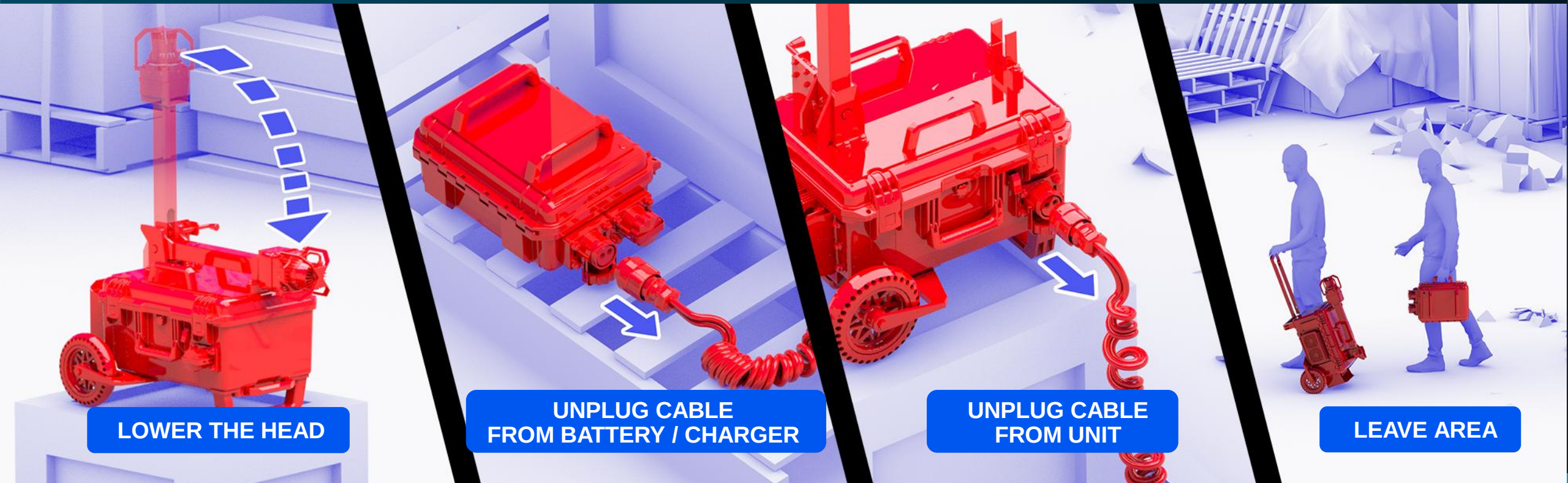
Construction Site Use Case

- Shutting down the system is done from LidarVision using the 3D client. Click on the Shutdown button in Actions.
- The LED strip will turn permanently blue when all processes are complete.
- The system can now be shut down by pressing the shutdown button.



Construction Site Use Case

- The detection leg can be folded to the transport position.
- Disconnect cable from Battery Pack or charger.
- Disconnect cable from main case.
- The system can be transported and stored.



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