



# Progea's Movicon keeps lone workers safe

## VerticalMan: the “Man Down” detection system by Aldea Srl.

Aldea Srl started up as a group of experienced information technology experts in Rome in 2001. The company name, 'Aldea' means 'little village' in Spanish and reflects the company's philosophy: a place where professional solutions and customer needs-oriented projects thrive. Aldea is totally committed to design engineering and installing innovative solutions based on cutting-edge technology.

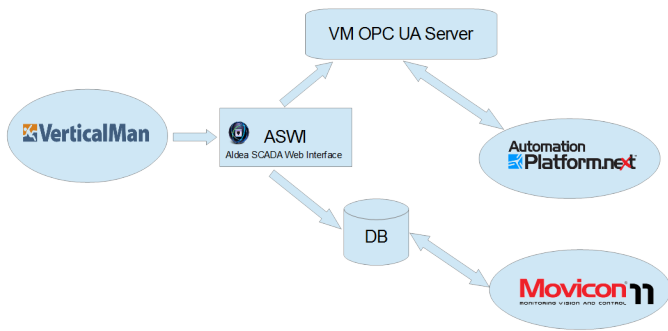
Its insight and ability to synthesize customer technical and business needs and meet the demands of technological solutions in the international market with excellent software engineering has brought them great success. Aldea's strong point is its capability to develop

Mobile and Web applications that seamlessly integrate with company management systems.

### Demands

There are diverse working environments where operators are usually expected to work alone in isolation or without the assistance of another fellow worker.

Most working environments can be hazardous and pose several risks to the worker whose safety is not only a priority but also a legal obligation for the employer.



A network connecting VerticalMan, Movicon.NExT and Movicon 11

## The automation solution

Aldea Srl is fully aware of the importance of Man Down solutions in companies that need to keep track of workers operating in isolated and hazardous situations by means of using a smartphone. Aldea's latest solution offering is called 'VerticalMan', an application designed to ensure the safety of workers.

The VerticalMan solution is an app developed for commercial and ultra-rugged Android smartphone devices designed to be waterproof, shockproof, dustproof and ideal for hazardous working environments.

The system automatically detects dangerous 'Man Down' or 'Man Still' situations and activates an SOS alarm to alert rescue workers by using SMS, GSM phone calls, emails, or VoIP calls.

The 'Man Down' function constantly monitors the worker's vertical posture while working: if the worker tilts beyond the set angle limit, a local visual and acoustic alarm is activated.

The 'Man Still' function monitors the worker's movements while working. If the worker stays still longer than usual, it activates a local alarm. The VerticalMan's SOS alarm function permits the worker to activate a SOS alarm by using the relevant button on screen or a button dedicated to so the same job on Ecom Atex devices.

External commands can also be connected to in order to activate SOS alarms. This function can also be activated in silent mode to use as a Panic Button in the event of emergency situations where a threat to workers exists.

Some system alarms are activated automatically by the app to ensure that the application is always functioning correctly.

These alarms include:

- Low battery: VerticalMan can be configured to send local or remote notifications when the device battery goes below a certain set limit.
- Wrong configuration: in the event of incomplete configuration, an error notification is sent locally by phone or SMS.
- No connectivity: the system checks the connectivity status of chosen notification channels. For example, if using SMS to send notifications, it will check for any available GSM connections.



VerticalMan Main Screen

If the alarm persists, the remote notifications are sent to rescuers according to which communication channel has been selected: SMS, phone call, web service recall or VoIP call.

SMS, email and web notifications include GPS coordinates or a Google Maps link to locate the device. Alternatively, a Bluetooth Beacon device can also be used to locate the device indoors. GSM phone call notifications are sent with active speakerphones and can be recorded locally on audio files.

It is crucial that the exact position of the lone worker in distress is notified pursuant a dispatched alarm in order to accelerate rescue operations. VerticalMan can also detect the position of workers in distress outdoors using the smartphone's inbuilt GPS system or indoors using an Indoor Position System (IPS) with a Beacon network.

Beacon network runs on low energy Bluetooth transmitters that are installed in those areas in need of monitoring.

Each Beacon device transmits a unique identifier that VerticalMan associates to the name of the area.

Another important and well appreciated VerticalMan function is the alarm notification which connects to existing WiFi networks. This function can be seamlessly integrated with other company management systems to create a centralized alarm management.

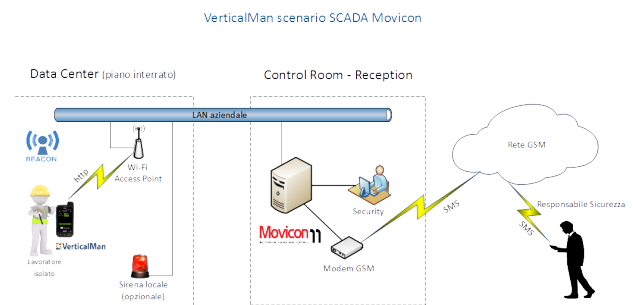
The benefits of using the WiFi network, permit operators to work autonomously in several ways:

- VerticalMan can be used in places where the GSM signal cannot be reached, such as certain areas inside the building or underground.
- Not confined to relying on service availability offered by GSM operators in cases of emergency
- No need of a GSM SIM card (that usually needs to be topped up regularly)

- Possibility to monitor proprietary network devices that are used to ensure that the entire system is completely secure.
- Integration of "Man Down" in the centralized alarm management system.

VerticalMan can work autonomously or can communicate with:

- Beacon Network for Indoor Positioning
- External Panic Button connected via Bluetooth
- Centralized system for Aldea Ecorolite configuration management
- Centralized alarm management system (Web, SCADA and other)
- External accelerometer sensor connected via Bluetooth



VerticalMan and Movicon 11 connection

## System description

VerticalMan app has been integrated with the centralized alarm management system realized with both Movicon.NEXT and Movicon11.

Integrating the app was made possible by using the remote alarm notification function on VerticalMan's WiFi network and by creating an ASWI web interface application (Aldea SCADA Web Interface) to connect to two Progea SCADA systems.

Basically what happens is that when an alarm is triggered, the VerticalMan calls the ASWI web

service that then updates variable values in the SCADA application's database created with Movicon11, or Tags exposed by Aldea's 'VM OPC UA Server' used in the SCADA application created with Movicon.NExT.

All alarm occurrences and other alerts issued by Movicon are displayed in the SCADA application's alarm viewer and dispatched by the Alarm Dispatcher (SMS, Voice, e-mail and other).

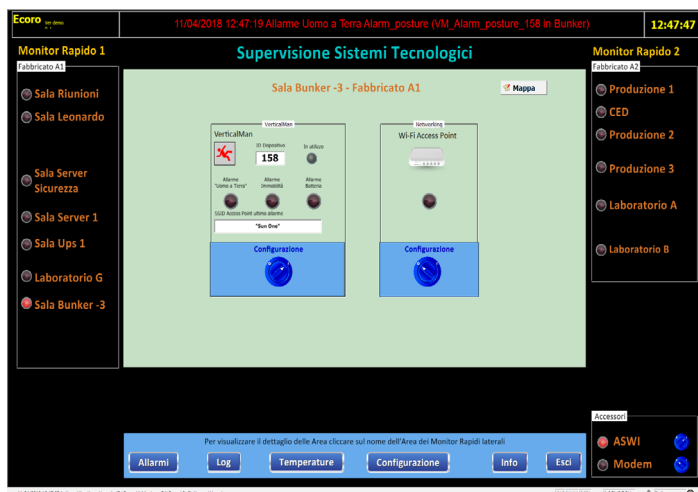
They are also published in reports generated by the Alarm Statistics module.

## Conclusion

There are many advantages to be gained by integrating the VerticalMan "Man Down" management with centralized alarm systems:

1. One unique console for all alarms
2. Alert management uniformity
3. Increased system security
4. Enhanced security for lone workers
5. The ability to use the Man Down solution

in areas where GPS signals are unreachable by simply installing a Wi-Fi network VerticalMan is a product extremely powerful and customizable that, together with Movicon's versatility, offers the best solution to complement SCADA with lone worker security.



Screenshot of the Movicon application used in VerticalMan

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