

A GUIDE TO LONE WORKER SAFETY SOLUTIONS

Options for Lone Worker Safety Solutions
in Your Workplace



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The Industrial Internet of Things is based on proven and familiar technologies — like sensors, networking and cloud computing — but its potential for workplace safety transformation is unlike anything before.

WE PREDICT:

By 2025, best-in-class organizations that extensively use IoT technologies in their products and operations will be up to 10% more profitable.

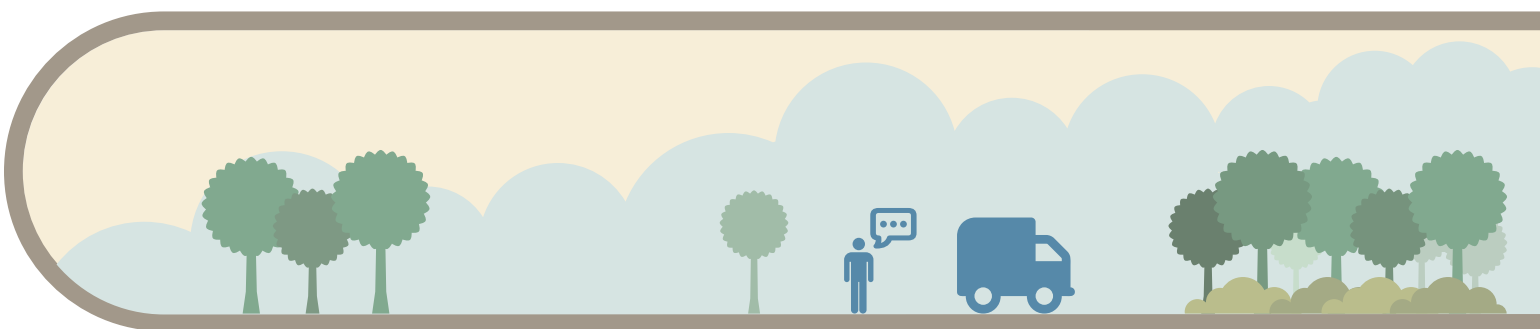
[Verizon](#)

TWEET THIS

It's estimated that **53 million employees** across North America work alone.

Some of these workers travel to remote locations to monitor or maintain equipment. Long haul transport drivers also work alone. Others may be employed as security guards, safeguarding property and critical assets such as remotely located generators.

The challenge for employers is how to keep these mobile employees safe on the job.



A Sobering Reality

Lone workers are still largely unprotected in North America. More than 90 workers die on the job every week across the continent.

That's 13 deaths each day.



The Urgent Need for Employers to Improve Workplace Safety

The need for employers to do a better job of protecting lone workers is real, and it is urgent: for example, in North America 5,000 workers are killed on the job each year. In fact, more than 90 workers die on the job every week across North America, or at least 13 deaths every day.

To protect workers and to comply with occupational safety regulations, employers have implemented safety processes and policies.

The challenges are keeping employees safe while working within a budget and ensuring employees stay efficient.

THE NEED TO COMPLY WITH LEGISLATION

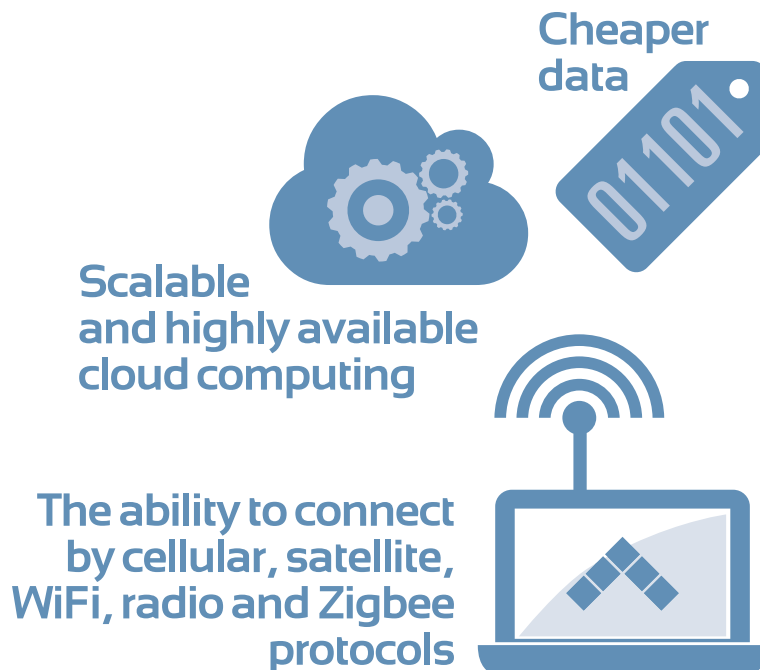
Employers want to do what's right and keep their employees safe. Employers are also compelled to comply with occupational health and safety regulations aimed at protecting lone workers.

Fines for companies that fail to comply with worker safety legislation can cost tens of thousands of dollars a day, plus eventual penalties of millions of dollars.



New, Innovative Approaches to Workplace Safety Help Protect Workers While Reducing Costs

A wave of innovative new technologies and ways of doing business is making it easier and more cost effective to help protect the safety of lone workers. These innovations include:



94% of businesses who have implemented IoT have already seen a return on their investment.

[CSG](#)

[TWEET THIS](#)

As well, improved analytics platforms can now act as a “control center” to send alerts from lone workers to the right people at the right time.

This e-book explains the different options employers can select when choosing a lone worker safety solution.

The High Cost of Non-Compliance

Penalties for companies failing to comply with worker safety legislation can cost tens of thousands of dollars per day.

Eventual fines into the millions can ensue.



Solutions for Keeping Lone Workers Safe

Besides facing serious penalties for workplace safety violations that result in injuries or death, employers have a moral responsibility to keep workers safe. Employers must also comply with legislation specifically aimed at protecting these workers.

WHAT IS A LONE WORKER?

In many jurisdictions around the world, a person is “alone” at work when they are on their own, or when they cannot be seen or heard by another person.

Workers may be traveling alone to perform maintenance on an oil rig, may be driving delivery vehicles or long-haul transport trucks or could even be working alone in a retail or office setting.

No matter where lone workers work, employers are obligated to keep them safe.

WHAT IS A SOLUTION?

A solution is more than a product or a software application. It is a combination of people, process and technology.

Typically a solution solves a problem faced by your business, such as how to keep your people safer, manage your assets better and stay ahead of the competition.

The best solutions take these three elements to help solve all of these problems at the same time while reducing costs and providing opportunities to generate more revenue.



INNOVATIVE SOLUTIONS HELP PROTECT WORKERS WHILE STREAMLINING OPERATIONS

Traditional approaches to lone worker safety do not always keep workers safe. Instead, workplace safety guidelines are focused on complying with regulations. Managers may be focused on following the letter of the law, while workers may forget to check in if they are busy.

Under this traditional approach, actually finding ways to keep lone workers safe might not really be the focus of the safety program.

New innovations in technology such as wearables, smart phones, and satellite devices can help improve lone worker safety while helping your business become more efficient.

Most importantly, innovative solutions are exception-based and easy to use. Lone workers check in and quickly confirm their safety electronically with the tap of a button.

An automated control center receives these alerts, and notifies a human member of the team only when there is a problem such as an SOS or a missed check in. This should all lead to greater productivity which should influence your bottom line.

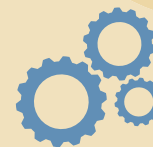
CLOSED VERSUS OPEN LONE WORKER SOLUTIONS

Some lone worker safety providers offer an “off-the-shelf” solution that can be quickly integrated into your operation.

The speed of integration is facilitated by the “closed” nature of the solution — your business must use the provider’s technology from end to end. There are no choices to explore and no ways to customize according to the unique needs of your business.

In contrast, Open Solution Providers are typically “device agnostic.” They work with you to determine how to best integrate your operation’s existing devices and technology into a lone worker solution.

With Open Solution Providers, you have more choice, and the implementation process also can help discover other areas of your business where you can streamline operations and cut costs, or even find new business opportunities.



Traditional versus Innovative Solutions for Lone Worker Safety

Until the appearance of new and innovative technologies over the past few years, lone workers would call in to a human monitor at specific intervals to confirm they are safe.

At smaller businesses lone workers will often check in with an operations manager or supervisor. Besides using up precious time and resources, this phone-based approach to lone worker safety only works if the employee is able to phone in to say they are safe.

The monitor only knows when the lone worker is in danger or needs help if there is no phone call at the scheduled time.

As well, under this traditional approach, human error is inescapable. If someone forgets or neglects to check in with the missing worker, the safety of the lone worker may be at risk.



The Traditional Approach:

FOCUSED ON COMPLIANCE, NOT WORKER SAFETY

The traditional approach is also labour-intensive, requiring regular phone contact with call center monitoring staff.

More importantly, this approach can only work if the employee is able to check in.

An injured or incapacitated worker may not be able to call for help. If this happens, your entire worker safety program has failed and now both you and your workers are at risk.

HOW DO INNOVATIVE WORKPLACE SAFETY SOLUTIONS WORK?

The shift to providing innovative, automated lone worker safety solutions has been made possible thanks to:

- Scalable and cost effective cloud computing
- Increased connectivity options (e.g., satellite, cell, WiFi, ZigBEE)
- Cheaper data connectivity

These technologies should come bundled with a powerful “control center” software platform that will automatically send alerts to the right person to keep workers safe.



HOW INNOVATION CAN HELP SAVE LIVES

Innovative solutions help protect workers while saving costs

Innovative solutions take advantage of increasingly powerful technology to keep workers safe. With an innovative, technology-based solution, alerts and other safety processes are automated.

This means human operators no longer need to confirm over the telephone that workers are safe. This not only makes lone worker safety programs more efficient, but also improves the safety of the workers themselves.

Human Error is Reduced

Workers use mobile devices to check in at predetermined intervals to confirm they are safe. An automated control center monitors everything, and sends out alerts only when a worker needs help. This removes human error from lone worker safety programs.

EXCEPTION-BASED MEANS MORE EFFICIENCY

Traditionally, lone workers could only check in with a human operator to confirm safety. The process of calling to confirm safety is inefficient and does not guarantee workers will be safe:

- It takes valuable time for the worker to call in to a human operator
- Workers will often refrain from calling in if they are busy with a task
- Lone workers may simply neglect to follow proper safety guidelines

With an innovative approach, compared to phoning in to a supervisor or operator, it's easier for lone workers to tap a button on a smartphone app to confirm they are safe. The speed and efficiency of check-ins means it's much more likely that workers will follow workplace safety programs.

Finally, human supervisors or phone operators become involved only in exceptional circumstances — when a worker is in danger or needs help.

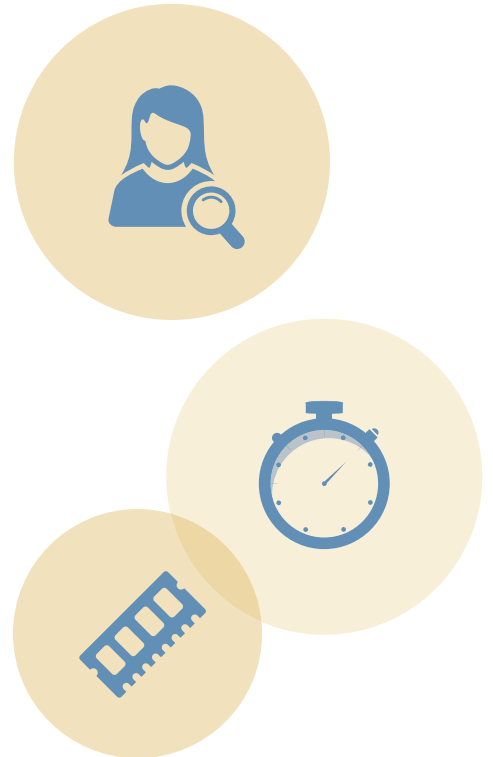
INNOVATION HELPS IMPROVE PRODUCTIVITY

There can be a significant return on investment for companies that implement a technology-based lone worker safety solution.

Thanks to automation and an exception-based approach to alarms, productivity improves as less time is spent on tracking down and confirming the safety of lone workers in the field.

Innovative solutions are easy to use. Smartphone apps allow workers to check in with the click of a button. This means workers no longer have to make time in their busy schedules to phone in and confirm they are safe.

Instead more time can be spent by managers and other employees focusing on the core mission of growing your business.



The New Reality

innovations in IIoT technologies such as wearables, smartphones and satellite devices will help significantly improve lone worker safety while making businesses more efficient

Working With a Closed Solution for Lone Worker Safety

For busy safety managers, the task of integrating a technology-based lone worker safety solution into your company's operations can seem daunting.

At first glance, a "closed" lone worker safety solution seems to promise an "off the shelf solution" that can promise to be quick to implement.

The "plug-and-play" nature of the closed solution is based on the fact that everything, from the mobile device the lone worker uses to check in to the call center that monitors alerts and responds to notifications is all included as part of one complete and integrated package.

However, what may seem like a quick fix can become a straightjacket for your organization in the years to come.

WE PREDICT:

By 2025 1 trillion sensors will be connected to the Internet. This means that everything from connected clothes to heads-up displays will be common parts of working life.

[World Economic Forum](#)

TWEET THIS



RISKS INHERENT IN CHOOSING A CLOSED SOLUTION

When you choose to work with a Closed Solution Provider, your company must adopt technologies and services provided by the solution provider. This can create new and unnecessary costs, and may not be a long-term solution as your company grows.

Incurring Costs for Redundant Devices

Typically, many companies have already invested in devices such as pendants as part of their legacy lone worker safety program.

When working with a Closed Solution Provider, companies need to purchase what can be essentially the same devices in order to conform with the requirements of the closed system. Employees also must be retrained to use the devices.

Walking Away From Longstanding Relationships

While an Open Solution Provider allows you to work with your long-standing business partners, Closed Solution Providers will likely require you to switch to a new monitoring center to receive and respond to alerts.

Many companies have spent years developing relationships with staff at the monitoring center. These relationships are not only cordial, but add value for your business. After working with companies for years to provide lone worker safety, call centers get to know how your business operates. This knowledge helps your service providers become more efficient when communicating with your team, or even proposing new processes that help ensure the safety of your workers.

When you choose to work with a Closed Solution Provider, typically you will have to walk away from these longstanding relationships and be forced to work with their new and unknown monitoring service.

Not Future Proof

Working with a Closed Solution Provider means you're locked into using whatever devices you choose today, no matter how your business evolves in coming years. If you increase the number of employees, it may cost more to scale up with a Closed Solution — even as newer, more cost-effective technologies become available.

Short-Term Savings, Long-Term Cost

What may seem cheap and efficient to implement today may impose constraints that will affect the growth and profitability of your company in the future, closing off opportunities.



WE PREDICT:

B2B IoT segments will generate more than \$300B annually by 2020, including about \$85B in the industrial sector.

BAIN

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IoT Explained

No matter what industry or application, all IoT solutions share similar moving parts.



SENSE:

Data is gathered, processed, filtered and transmitted by a terminal or connected device.



TRANSPORT:

Data passes over networks, which may include Wi-Fi, radio, cellular, satellite, ZigBEE or fixed line.



STORE:

Information from across the given IoT network is gathered and stored, usually in the cloud.



ANALYZE:

Through manual analysis or auto processing, insights are extracted and presented.



ACT:

Based on the insights, alerts are sent to people, enterprise systems or devices to take action.



SHARE:

IoT data is exchanged with other systems, monetizing it and enriching it with third-party data.



Open Solutions for Lone Worker Safety

Not all lone worker solution providers force your business to use an off-the-shelf solution. Instead, Open Solution Providers work with your business to identify what devices and technologies you are currently using to manage lone worker safety.

Open Solutions Providers can also help you discover opportunities for new technologies and innovative processes to streamline other parts of your operation.

For example, many businesses looking to implement innovative lone worker safety solutions may also be in the position to make all of their operations more efficient by implementing innovations such as asset tracking or remote monitoring of equipment in the field.

An Open Solutions Provider can help you identify the best solution for your business so that everything can be implemented at the same time.

Overview: Lone Worker Devices

A lone worker safety solution typically incorporates a variety of different devices. Each device has a unique capability, and can be used in support of different lone worker scenarios.

This section provides an overview of the capabilities of Aware360's lone worker safety solutions.

SMARTBANDS

Smartbands are simple wearable devices that allow lone workers to send out an SOS and initiate an emergency response protocol quickly or covertly.

Who uses them?

- These can be used by workers who travel to remote locations, by security staff checking on or protecting property, by retail workers, by real estate agents and others.

Key Benefit:

- It is quicker and safer to send out an SOS using a smartband than taking the time to produce and unlock a smartphone.

Other details:

- Smartbands are not standalone devices and must be paired with a smartphone app via Bluetooth
- Smartbands cannot be used to do more sophisticated tasks such as checking in
- Smartbands are not intrinsically safe



PENDANTS

Pendants are ruggedized devices used by lone workers to send SOS alerts. Unlike a smartband, pendants can be paired with both a smartphone or a mobile modem in a vehicle. The pendant communicates with a vehicle modem using ZigBEE or radio communications protocols

Who uses them?

- Lone workers traveling to remote or hazardous locations
- Security guards traveling by vehicle to check on different buildings and assets
- Janitorial and maintenance workers traveling by truck to different workplace locations

Other details:

- Pendants can be clipped to the worker's belt or lapel
- Pendants do not have WiFi, cellular or satellite connectivity, and instead must connect with a modem installed on-site or in a vehicle; the modem then sends the alert to the Control Center
- The ZigBEE protocol provides lone workers with communication over a 1 km radius
- Pendants are ruggedized
- Intrinsically safe pendants are also available

SMARTPHONE APPS

Smartphone apps are an essential component of a lone worker safety solution. Apps can be standalone on the mobile device or paired with smartbands or pendants to send an SOS. Workers can use the apps to check in with the Control Center to confirm they are safe or can send a request for assistance.

Who uses them?

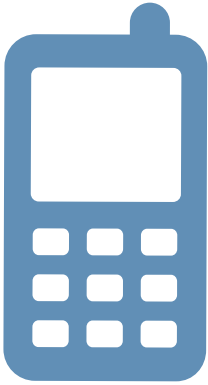
- Resource workers and others working in a remote setting
- Security guards and maintenance workers traveling from location to location

Other details:

- Smartphone apps can be installed on Android, iOS and Blackberry mobile operating systems
- Can be used to send an SOS, check in to confirm safety or request for assistance when encountering a flat tire or other issue
- Mobile apps can be used to set a hazard warning in areas where there is no cellphone coverage or in workplaces that are considered intrinsically safe environments; if the worker does not return in time, the app sends out an SOS



SATELLITE DEVICES



Many lone workers travel to remote locations where there is no cellular connection. Satellite devices help ensure their safety where there is no connectivity

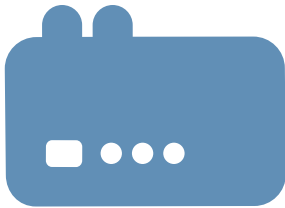
Who uses them?

- Resource workers in remote locations such as forestry, oil and gas, and environmental services
- Utility workers maintaining or constructing power lines and other assets and infrastructure
- Security guards

Other details:

- Standalone satellite devices offer no cellular connectivity
- This device can facilitate basic two-way conversations to check in and confirm safety, update status or send an SOS
- Provides GPS tracking ability

MODEMS



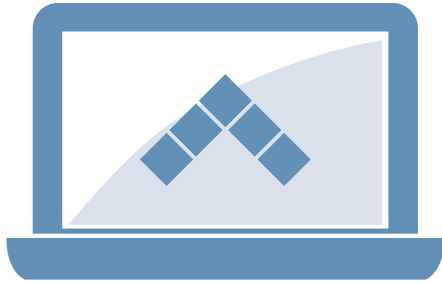
Modems are typically installed in trucks and service vehicles as part of a fleet tracking solution, and can also be located throughout a physical plant to provide connectivity for workers.

Who uses them?

- Resource workers in remote locations such as forestry, and oil and gas, and environmental services
- Utility workers maintaining or constructing power lines and other assets and infrastructure
- Security guards and maintenance workers traveling from location to location

Other details:

- Modems connect with the Control Center over satellite or cellular networks, and provide local communication with pendants using radio communications protocols.
- Provides GPS tracking ability



AWARE360.COM

CONTROL CENTER

As the central hub of an innovative lone worker safety solution. The Control Center makes use of sophisticated software to receive alerts from lone workers, and initiates emergency procedures when necessary to drive an event to a defined end.

The Control Center automatically contacts a call center monitor or supervisor only when a need occurs. Contact is exception-based, notifying a human only if there is a problem. This highly efficient approach saves time and ultimately saves lives.

Exception-Based Safety:

THE AWARE360 CONTROL CENTER

Our advanced safety solutions are monitored and managed via Control Center: a cloud-based dashboard that provides anywhere access to workers in the field, company vehicles and remote assets.

The backbone of all Aware360 software offerings, Control Center provides an ideal solution for anyone seeking to increase worker safety, operate more efficiently and add significant value to their lone worker safety program.



WE PREDICT:

The IoT will add up to \$15 trillion to worldwide GDP by 2030.

[General Electric](#)

TWEET THIS

Common Lone Worker Safety Scenarios

About 75 per cent of employees in North America are mobile workers. Advances in communications technology means these workers can work anywhere at any time.

Fines for companies that fail to comply with worker safety legislation can cost tens of thousands of dollars a day, plus eventual penalties of millions of dollars.

Mobile workers will also work alone at some point during their workday, and employers are obligated to keep them safe.

Different workplace situations will require different lone worker safety solutions. Here is an overview of several common lone worker scenarios.

RESOURCE WORKERS

Lone Worker Safety in Remote Locations

Many resource workers work remotely. Some may be sent to areas with no cell connectivity to check on or maintain assets including oil rigs, generators or forestry harvesting equipment.

While workers may be dispatched in teams or in pairs they will often work alone while on assignment, out of sight and out of contact from coworkers, often in hazardous situations. The challenge is keeping these workers safe when there is no cellular network: there is no easy way to check in or send an SOS and call for help.

A satellite device is therefore critical in remote settings. A satellite device can be used to check in or send simple messages to request assistance or send an SOS from anywhere.

Working Remotely With Unreliable Cell Coverage

In remote settings with limited cellular connectivity, a lone worker safety solution must be able to switch seamlessly between cellular and satellite connectivity.

Crews may travel to oil and gas wells where cellphone coverage is unreliable, or travel from one valley that has cell coverage to another valley that does not. They need a solution that provides comprehensive connectivity no matter where they are.

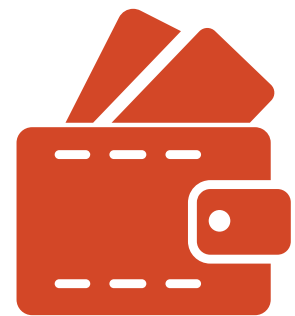
As well, while workers may be dispatched in pairs or as part of a crew, they will likely work alone, out of eye or voice contact with other team members. Your business must implement a plan to keep them safe. In this scenario, the lone worker can use the following devices to check in, call for assistance, or send an SOS:

- A smartband paired with a cellphone app to send an SOS
- The cellphone app can also send regular updates and notifications over a cellular network.
- A pendant, when connected to a vehicle equipped with a modem, can also be used to send an SOS
- When out of cellphone contact, a satellite device can be used to check in and send notifications to the Control Center

The lone worker can also set up the smartphone app to provide extra protection when working in dangerous areas. Even if the lone worker is out of cellphone range, an alert can be set up on a cellphone app to alert the Control Center if the worker has not been able to check in.

The ROI in doing Lone Worker Right

On average, Innovative lone worker solutions can save employers nearly 50 per cent of the cost of a traditional voice-based monitoring service.



TRANSPORT AND DELIVERY DRIVERS

There are approximately four million professional transport drivers employed in North America. The majority of these drivers work alone, often for extended periods.

It can be challenging for dispatchers and safety officers to keep these mobile workers safe. Besides confronting workplace hazards that include theft and vandalism, truck drivers may encounter collisions and serious accidents

Lone Worker Safety Solutions for Truck Drivers

For truck drivers, a mobile smartphone app is the most efficient way to make scheduled check-ins with dispatch and safety managers, or request assistance and help.

While most trucking routes travel within range of cellphone networks, transport drivers traveling to remote locations can also connect with a satellite device to check in, request assistance or send an SOS.

SECURITY PROVIDERS

There are over one million private security guards in North America. Most are lone workers, traveling from site to site, checking on property and assets

Lone Worker Safety Solutions for Outdoor Security Providers

Some mobile security providers travel from place to place to protect buildings and assets in urban, rural and remote settings. They often work alone and must check in at regular intervals.

A typical lone worker safety solution for mobile security providers can include:

- A smartband paired with a cellphone app to send an SOS
- The cellphone app can also send regular updates over a cellular network
- A pendant, when connected to a vehicle equipped with a modem, can also be used to broadcast an SOS
- When out of cellphone contact, a satellite device can be used to check in and send notifications to the Control Center

Lone Worker Safety Solutions When Working Indoors

Other security providers are assigned to protect and watch over buildings and facilities. These workers typically work alone during their rounds, and can encounter a variety of dangerous situations.

Indoor security providers will typically rely on a smartband paired with a mobile app to send an SOS when necessary.

The mobile app is also an integral part of the safety process for checking in or sending requests for assistance over cellular networks.

WE PREDICT:

There will be 20.8 billion connected devices by the year 2020.

[Gartner](#)

TWEET THIS

LONE WORKER SAFETY IN THE SERVICE INDUSTRY

As with security providers, many workers in the service industry travel from location to location and work alone as they complete tasks.

This can include janitorial and building maintenance workers, and tradespeople such as plumbers and electricians.

Common lone worker safety solutions for this group of workers include:

- Smartbands that are paired with a mobile app to send an SOS
- Connecting with a mobile app via cellular networks to check in or request assistance

A Spectrum of Solutions:

FOCUSED ON WORKER SAFETY ABOVE ALL ELSE

Aware360 gives businesses the tools and technologies to be proactive about lone worker safety.

Gain peace of mind and help improve the safety of your workers in the field by knowing where they are in emergency situations.

Aware360 also makes your organization compliant with federal and provincial health and safety regulations.

Monitoring and Alerts

Any technology-based safety solution you implement must improve the safety of your lone workers.

Devices alone will not make your workers safer. Innovative lone worker safety programs must also be end-to-end solutions that ensure alerts from the worker are sent to the right person to be resolved.

Ensure Alerts Reach the Right Person in Time

Alerts, requests for assistance and SOS calls sent from the lone worker's device must be monitored, and action must be taken to resolve a situation and keep a worker safe.

The Control Center is powered by sophisticated algorithms that make all contact with your Call Center exception-based — a human operator is contacted only when there is a problem. This saves time and ultimately saves lives.

Get Help Implementing Emergency Procedures and Protocols

Finally, escalation procedures and emergency protocols must be defined. Strategies must be developed to efficiently implement these new procedures into your organization.

A lone worker solution provider must be able to help your organization set up these procedures and protocols to keep your workers safe.

But, thanks to an implementing an innovative, technology-based approach these policies and procedures are more than just printed pages in a manual. Instead, safety procedures are embedded in the technology your employees use.

It is easy and straightforward for lone workers to use devices and other tools to follow your lone worker safety program.





Employers Have a Responsibility to Protect Workers

While most employers devote significant efforts to complying with workplace safety guidelines, employees are being harmed in the workplace every single day.

This is because businesses have traditionally implemented safety programs in order to comply with legislation, rather than actually trying to determine how to make workers safer on the job, even as companies now have access to sophisticated technologies.

As well, traditional approaches to improving lone worker safety can be inefficient, resource-intensive and time-consuming for workers and supervisors

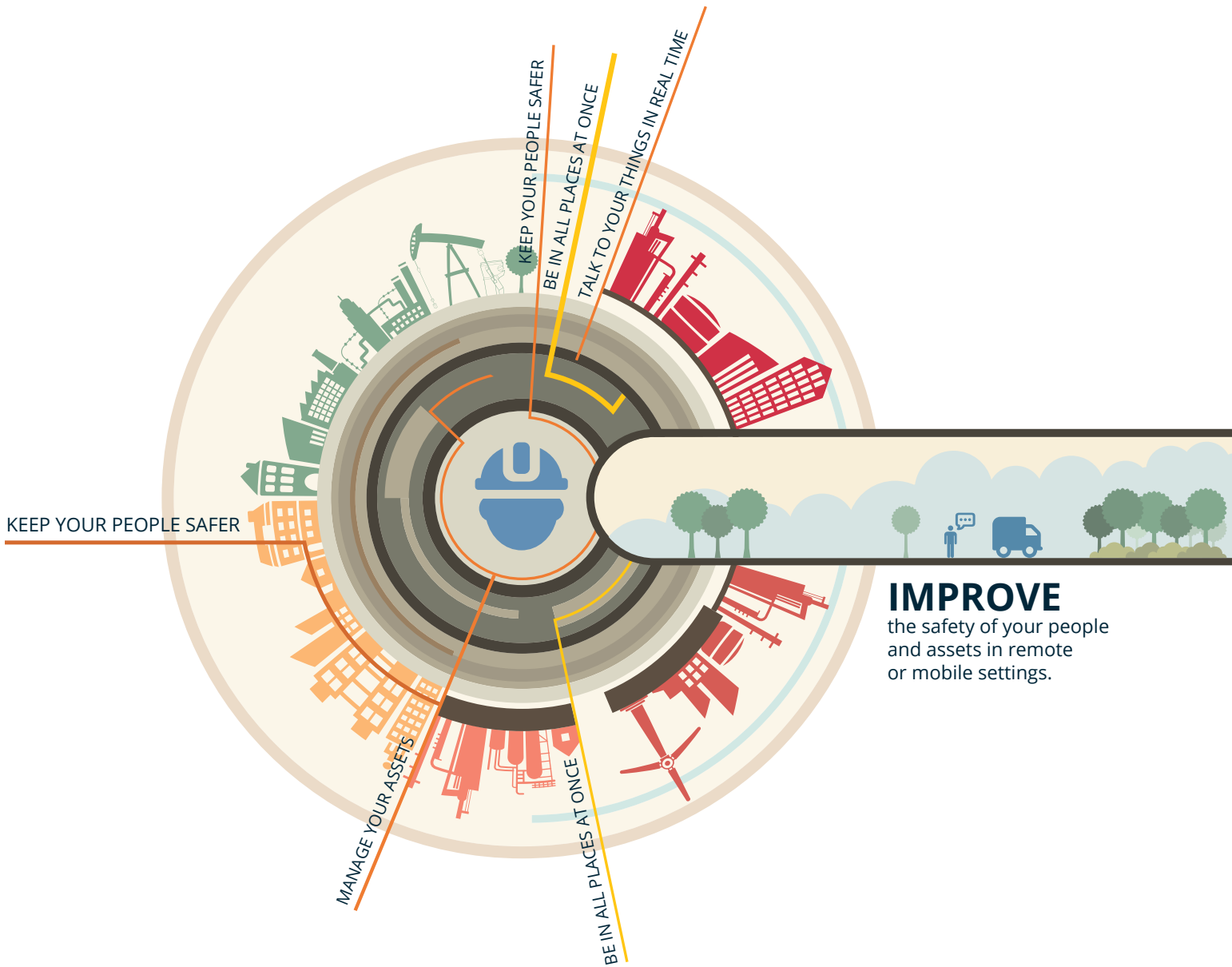
alike. To save time, employees may avoid or neglect safety procedures.

HOW INNOVATIVE SOLUTIONS HELP PROTECT LONE WORKERS

A wave of new technologies is making it much easier and more cost effective to help protect the safety of lone workers.

These innovative approaches to lone worker safety are exception-based — unlike in the past, a human monitor is notified only when there is a problem.

Sophisticated lone worker safety solutions only send alerts to the right person at the right time. This exception-based system not only helps save lives but can also reduce the cost of running your business.



IMPROVE
the safety of your people
and assets in remote
or mobile settings.

At Aware360, we have helped hundreds of businesses become more efficient, increase revenue and keep their people safe. For a free demo and consultation on your safety needs [contact us](#).

About Aware360



As the market leader in real time integration and monitoring solutions, Aware360 helps organizations of all sizes and industries keep their people safer, manage their assets better, and stay ahead of the competition.

Regardless of the unique technical challenge or remote location, we help hundreds of businesses manage the complexities of their daily operations. We deliver a spectrum of business intelligence solutions designed to help our clients track more than thirty thousand events each and every day.

This represents safer work environments. More productivity. Greater knowledge. Better bottom lines.

We help keep your people and your assets safe

Our mission is to improve the safety of your people and your assets in remote or mobile settings. Aware360 helps you stay in touch with your workers while being aware of their location at all times, as well as providing lone worker safety systems in any environment.

We make you more efficient

We increase your efficiency by doing all this through one comprehensive, easy to use end-to-end solution.

We integrate your existing devices

We will integrate your existing technology, or supply new, high-performing devices or even build custom hardware and software to create the optimum solution that balances performance, cost and productivity for your specific environment.

We are a complete solutions provider

You come to us with your goals and needs and we'll propose the most practical solution possible and then work with you through the process of solution design, implementation, and training and support.

Through our flexible offerings, we save customers money as compared to off-the-shelf integrations, and we reduce your initial costs by leveraging your existing infrastructure. This also leads to a more efficient solution, which costs less to operate and maintain.