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safety solutions

health & safety at work

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COMPLIANCE PROGRAMS: HOW TO LEVERAGE AI

CHOOSING THE BEST BOOTS FOR ANY JOB

IMPROVING PLANT SAFETY: LOCATION MONITORING TECHNOLOGY

SENSING THE FUTURE: IoT AND WORKPLACE SAFETY

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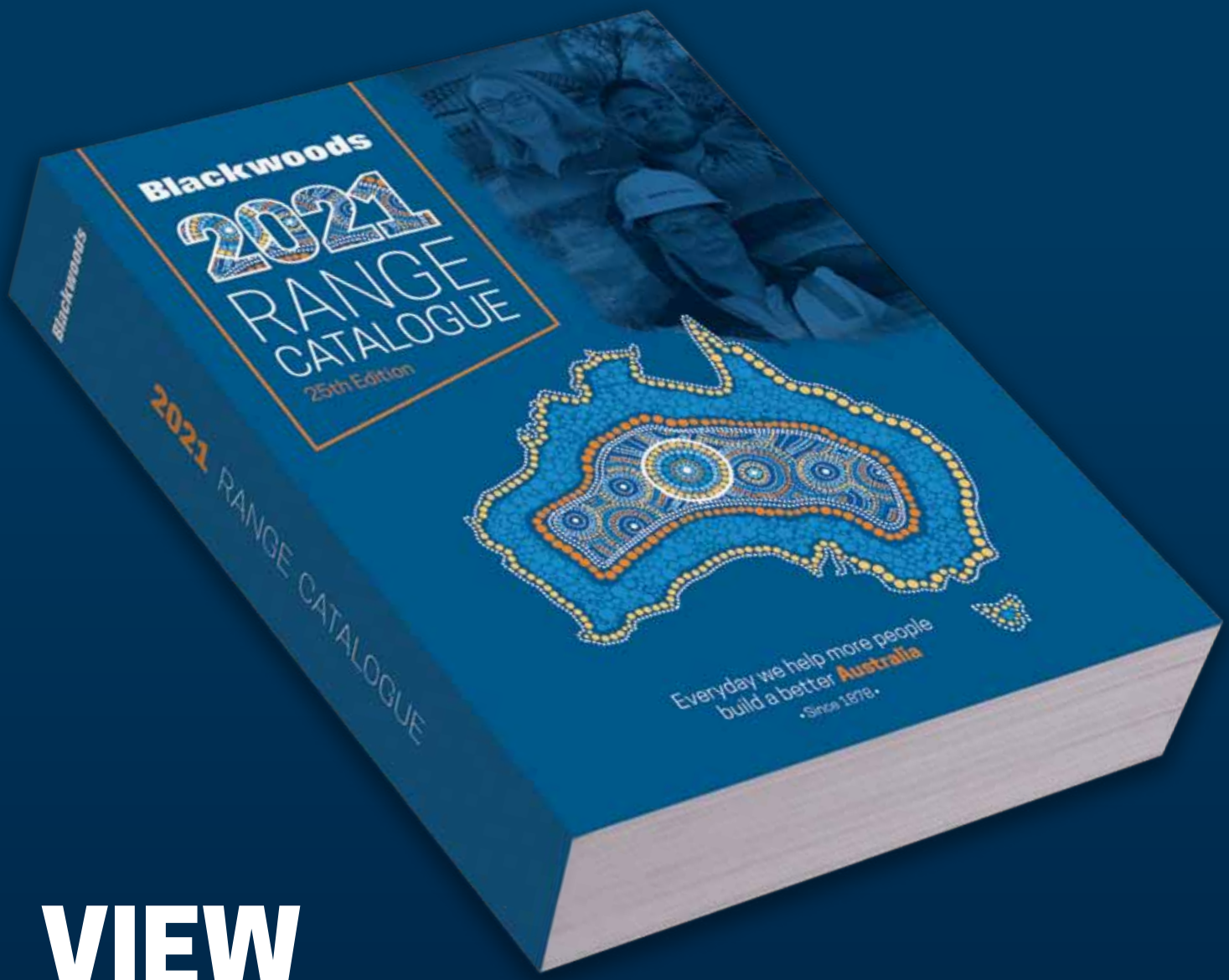

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FROM THE EDITOR

Technology has an increasingly important role to play in the workplace, particularly when it comes to safety compliance. In the August issue of ***Safety Solutions***, Max Girault takes a look at how sensors and the Internet of Things can be used to increase plant and equipment safety on construction sites.

In a similar vein, artificial intelligence can play a key role in helping organisations maintain compliance. David Smith delves into the use of AI within HSE compliance programs, with a key focus on how natural language processing can help to navigate lengthy compliance documents and site permits.

Manuel Seidel has some advice on the common pitfalls organisations face when implementing a WHS software program, and also highlights the importance of end-user acceptance when rolling out this type of technology.

Finally, this issue also explores the dos and don'ts of safety footwear, offering some top tips from Ross Fitzgerald on how to select the best work boots — thus ensuring optimum comfort and safety for any job.

I hope you enjoy perusing this selection of articles and in-practice case studies as much as I enjoyed reading all of the submissions from our contributors. And if you would like to submit an article or case study for a future issue of the magazine, please get in touch on the email address below.

Amy Steed
Editor, Safety Solutions
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IN THE NEWS

SPEAK UP SAVE LIVES APP MARKS MILESTONE OF 10,000 REPORTS

The NSW Government's Speak Up Save Lives app has marked more than 10,000 reports on workplace safety and compliance made through mobile devices since its launch. The app is an innovative tool that allows people to anonymously report unsafe work practices in any workplace and industry, including by sending a photo directly to SafeWork NSW. Minister for Fair Trading Eleni Petinos said the milestone for the app shows employers and workers are becoming more confident in reporting unsafe work situations anonymously.

Petinos said the SafeWork NSW received 300 reports in April, with inspectors issuing 50 improvement notices, 18 prohibition notices and four penalty notices. The most common hazards reported were those concerning physical work environments, working at heights and biological hazards. Construction sites were the most reported workplaces, and of the 50 improvement notices issued in April, 38 of them were issued to construction sites.

"10,000 reports is a fantastic achievement and means the app is working to stop unsafe work behaviour in its tracks, as it ensures targeted intervention to where it's needed most. I'm pleased to see NSW workers playing their part in protecting themselves and their workmates. The Speak Up app ensures we are building a brighter future for all NSW workers, and I urge anyone who sees anything risky or unsafe at work to please report it," Petinos said.

Businesses are still required to report all notifiable incidents, including death, serious injury or illness, or a dangerous incident, by calling 13 10 50 immediately.

TRANSPORT COMPANY CHARGED AFTER WORKER SUFFERS ELECTRIC SHOCK

WorkSafe Victoria has charged transport company Malina Enterprises Pty Ltd after a worker was seriously injured when a crane truck he was operating struck overhead powerlines at a construction site at Dromana in April 2021. The company is facing three charges under section 21(1) of the Occupational Health and Safety Act for failing to provide and maintain a workplace that was safe and without risks to health.

The company allegedly contravened regulation 114(b) of the OHS Regulations by failing to ensure plant that was exposed to an electrical hazard was not used in a manner that was likely to trigger such hazards. WorkSafe also alleges that the company breached section 21(2)(e) of the OHS Act by failing to provide information, instruction or training to enable employees to work safely. The company is also accused of contravening regulation 327(1) of the OHS Regulations by failing to prepare a safe work method statement (SWMS) before performing high-risk construction work.

The matter was addressed at a filing hearing at the Melbourne Magistrates' Court on 28 June 2022.

SWA PUBLISHES GUIDANCE ON INDUSTRIAL ROPE ACCESS SYSTEMS

Safe Work Australia has published guidance to assist persons conducting a business or undertaking (PCBUs) to manage the health and safety risks of industrial rope access systems. An industrial rope access system is used for gaining access to, and working at, a workface, usually through vertically suspended ropes. The use of these systems can pose work health and safety risks that must be identified and managed by PCBUs.

The guide provides information about duties under the model Work Health and Safety laws, and practical guidance on the selection and installation of anchors, anchor access and layout, anchor inspection and testing, rigging techniques, rope protection and exclusion zones.

This guide is for industrial rope access service providers, building managers, owners and body corporates, principal contractors, and other PCBUs at a workplace where an industrial rope access system is used. PCBUs and workers are encouraged to download the guide to ensure they know their duties and how to manage the health and safety risks associated with using industrial rope access systems at work.

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IN THE NEWS

WA LAUNCHES MINE SAFETY MANAGEMENT SYSTEM CODE OF PRACTICE

Western Australia's Department of Mines, Industry Regulation and Safety (DMIRS) has released the Mine Safety Management System Code of practice. This code of practice constitutes a central component of the risk management framework for mine sites. The Work Health and Safety (Mines) Regulations 2022 create a duty for the mine operator to establish and implement a mine safety management system (MSMS). This MSMS is the primary means of ensuring safe operations by providing direction to everyone at a mine site and must be in place before mining operations commence and also applies to exploring operations.

To assist mine operations to establish and implement an MSMS, WorkSafe Mines Safety has published a code of practice: Mine Safety Management Systems. Following extensive industry consultation and public comment, the MSMS code of practice has been approved by the Minister for Mines and Petroleum and endorsed by the Mining Industry Advisory Committee (MIAC) and the Work Health and Safety Commission (WHSC). MIAC Chair and Chief Inspector of Mines Christina Folley said that while most mining operations will have health and safety related policies, plans and processes in place, the MSMS combines all of these elements into an integrated system. "The MSMS enables persons conducting a business or undertaking to ensure there are no gaps in the management of all health and safety risks and that all of the elements work in a coordinated way," Folley said.

The code was developed based on the publications 'Code of Practice: Safety management systems in mines' and 'Guide: Preparing a principal mining hazard management plan', produced by the NSW Resources Regulator. Through ongoing consultation with workers, the MSMS identifies the outcomes that a mining operation must achieve, rather than creating a set of rules to be followed. It recognises that no two operations are the same and that hazards will vary from site to site.


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QLD ANNOUNCES RANGE OF EVENTS TO CELEBRATE SAFE WORK MONTH

Safe Work Month is held nationally in October; to mark the event, Workplace Health and Safety Queensland (WHSQ) is taking a new approach to encourage a focus on safer, healthier workplaces for everyone, every day. Its new Work Well 365 Speaker Series of free online events are held throughout the year, to encourage Queensland businesses and workers to focus on the importance of work health and safety, mental health and wellbeing, and best practice rehabilitation and return to work. The speaker series features industry-leading experts who will discuss ways to predict and manage injury risks using artificial intelligence, managing work-related violence, mental health and wellbeing, corporate accountability for work health and safety, and more.

First up as part of the Work Well 365 Speaker Series is Dr Sarah Cotton, an organisational psychologist who will address mental health in the small business sector on 28 July. Business owners and workers are encouraged to register for Cotton's presentation and to stay tuned for new Work Well releases every month between now and November.

WHSQ will also release regular updates with the launch of new event programs and resources. With in-person events back, Safe Work Month presents an opportunity to take the learning beyond the podium and into the networking areas, so attendees can connect, collaborate and share ideas with other industry professionals.

Work health and safety professionals and business leaders are invited to network and learn in person at the Work Well Breakfast Forums. With expert speakers addressing good work design, incident preparedness and equipping workers with high-performance skills, behaviour and attitudes about safety, it's an event that all work health and safety professionals are urged to attend. The Breakfast Forums will take place across Queensland: in Rockhampton on 5 August, Toowoomba on 18 August, Cairns on 22 September and Mackay on 2 November.

The Work Well Conference (previously named the Injury Prevention and Return to Work Conference) will take place in Brisbane on 24 October 2022. The conference will give attendees an opportunity to reconnect with the health, safety and return to work community. The conference will focus on practical information for designing health and safe work, fostering a culture of health and safety, enhancing teams' safety skills, behaviours and attitudes, and navigating complex case management.

WHSQ has also provided a range of free resources to help raise awareness, change behaviour, and improve health and safety performance in workplaces. Access films, event recordings, podcasts and downloadable digital promotional tools on the WHSQ website.

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SENSING THE FUTURE

IoT AND WORKPLACE SAFETY

Max Girault, Chief Commercial Officer, Inauro

Regardless of the size of an operation, there is space for technology to improve its safety and general efficiency. Sensors and the Internet of Things (IoT) can be instrumental in facilitating these goals, and indeed are already changing the nature of workplace safety.

There is no doubt that the safety of workers should come first within any organisation. Thanks to the COVID-19 pandemic, new safety threats have crystallised across labour-intensive operations, making many safety controls even more expensive to execute (albeit absolutely necessary).

And therein lies part of the challenge. With rising costs across the board, executive teams across various industries now have to carefully balance safety with profitability.

That's where technology comes in. The advancements in technologies such as sensors and the IoT offer up an alternative to costly safety measures. Even digitisation of simple checklists can have an outsized impact on a company's operations.

Fuelling the construction industry

A construction site, with a large amount of plant, equipment and labour on-site, requires strict safety, compliance, time and budget constraints and is a highly process-driven operation.

More often than not, under current work methods, fuel tanks on-site are visited at a set time (eg, twice a week) by a worker who reports a value to the plant manager. The tanks have sensors that visually indicate a value, or the tanks have to be manually opened and checked. With a connected sensor, the model becomes more accurate and less risky — the tank reports its status permanently into a system that the plant manager can access. Leaks can be detected and alerts are sent when such an event is identified, without having to put workers at risk.

Within the construction industry, safety issues usually occur when corners are cut — and this generally boils down to increased time pressures, meaning that solutions which remove time wasters across a project also have a positive result on safety outcomes. And in that space, digital technologies like online forms, plant and machinery telematics, as well as other environmental monitoring solutions (dust and noise, for example) are all solutions that assist in providing a safer site. They speed up workflows and processes and remove the need for a lot of human intervention.

Using telematics

Take the induction of a piece of earthmoving equipment on a construction site as another example. An excavator is transported to site on a semitrailer — on arrival to site the excavator, the delivery vehicle and the driver need to be inducted. This all takes time to complete, meaning the asset is not operational on the site when it gets there. It may take hours until someone can start working, meaning the time pressures can then increase risk to the safety of the operation.

Now, if the telematics of the excavator are properly linked to the asset data (servicing history, user guides and so on), then an online induction form could be pre-populated — saving some precious time for the project down the track. If the delivery truck itself has telematics that can be fed to the site manager, then preparations can be made in advance for the arrival of the asset, saving further time across the chain.

Once the excavator has been inducted onsite, it also needs to be operated by specific resources — if it is fitted with a driver identification module, then the operator's credentials can be interrogated when the asset is started. An online pre-start checklist can also be addressed to that operator to ensure the correct visual and operational checks have been done. Flags can be set up for any non-compliance and therefore risks are averted.

While these examples demonstrate how IoT, in its purest definition of interconnected sensors and systems, can improve the safety of construction sites, the great news is that this remains true across any industry, in its context.

Putting IoT into practice in food processing

A meat processing facility that operates a temperature-controlled environment, for example, has a range of compressors and mechanical machinery it operates, alongside assets like forklifts and pallet trucks. Without these assets, the facility has to revert to manual operations, which has a direct impact on the exertion levels of the teams.

Being able to monitor the status of these assets (battery charge, impact, rollover, for example), as well as ensuring compliance to food safety controls by registering temperature through the use of sensors, ensures that businesses can minimise the operational and safety risk across the facility. Not only does the temperature control ensure the safety of the product for consumption, but in case of a failure that could result in a gas leak, it has a direct impact on the safety of the facility's workers.

A solution for every organisation

There are many benefits that can be driven by the proper deployment of technologies like the IoT, and it is not simply a gimmick for the big end of town. No matter the size of the operation, these technologies can add value to safety.

The data needs to be generated, analysed and interconnected with the way the operation works. This may seem daunting at first, but the tools exist today to make operations safer without incurring the extensive costs and risks of manual controls. It is only a matter of getting started.

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CASE STUDY

Protecting lone workers with app, cloud-based hub

Workers can sometimes be situated at remote locations, or unmanned sites, where they are out of contact with other workers or members of the public for extended periods of time. Poor phone reception in these locations can make it difficult to notify emergency services if there is an issue while staff are alone in the field.

Throughout Australia and New Zealand, lone working is subject to specific requirements stated within the Work Health and Safety Acts and Regulations applicable to the state or country. Veolia's Water Division, situated across Australia and New Zealand, sought technology that would help it to adhere to Section 48 of the NSW Work Health and Safety Regulation 2017.

In late 2020, Veolia made the decision to review and standardise its lone worker solution. Before deciding on a new solution, the company first trialled the StaySafe app to assess its suitability.

StaySafe is a smartphone app and cloud-based monitoring hub that provides visibility of an employee's location while they work alone. In an emergency, workers can use the app to raise a variety of alerts to ensure that help is sent immediately to the right location. The free trial allowed lone workers to use the system during their normal workday and when responding to call-outs after hours. It also enabled users and managers to test a number of different scenarios to check the app's usability, functionality and response process.

"At the end of the trial, over 92% of Veolia's trial participants said they would prefer to use the StaySafe app compared to our old system," said Scott Murphy, Manager Operational Excellence at Veolia Australia/New Zealand.

Following the successful trial, Veolia switched the 60 operators and maintenance staff across its 25 Hunter region sites to StaySafe. Since that time, Veolia has moved an additional 20 staff across three sites in the Illawarra Region to StaySafe.

"Part of the value provided to Veolia and our employees is the ability to easily raise an alarm and get help, or, if an incident occurs, be easily located by emergency services," said Karen Arkinstall, Compliance Manager for Veolia's Hunter Water contract.

The StaySafe app is linked to a secure cloud-based hub that provides businesses with real-time updates on the safety status of their lone workers. In an emergency, employers can accurately locate their staff on a map and send immediate assistance to them. The hub is customisable and allows employers to create tailored reporting lines and escalation procedures to ensure lone workers get the help they need in an emergency.

The positive feedback from lone workers who were a part of the trial included:

- ease of use of the solution as a whole;
- in-app training that made rollout of the app quick and smooth;
- ability to configure the alerts such as man-down, and panic alarms;
- GPS accuracy, which allows for faster response times if a lone worker is in danger;
- highly visible red button that is easy to push in an emergency and easy to change or cancel.

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Lone worker platform

Guardian's Lifestream platform is designed to ensure lone worker and employee safety across a range of industries, including home health, construction, agriculture, transport or real estate. Lifestream not only supports duty of care obligations, but also makes a real difference to employee safety. Lifestream combines smartphone connectivity with a sophisticated response centre capability, delivering insights into accidents or incidents for response operators.

Multi-channel communications, including live video, voice and instant message communications, instant CCTV, live location and interactive mapping, as well as employee details, provide operators with a virtual presence at the scene of an incident and the ability to accurately assess and triage the incident. This allows for a rapid and effective response for employees.

For larger companies, the Lifestream response centre platform can be installed in their own operations centre, providing employees with direct-to-company multi-channel communications and advanced safety capabilities. Guardian's development pipeline also provides a stream of new capability releases, including features such as crash detection with automatic connection to professional response, employee check-ins, employee location sharing, employee communications and safety reporting.

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The RFU837 UniMask is lightweight (weighing 380 g) and is designed to be comfortable for users. The inner airflow regulation allows the user to set direction and intensity of the air to be delivered to the forehead or to the front of the mouth. Users can opt for a soft flexible or a neoprene face seal, according to their preferences. The visor provides a clear and high-quality view (class 1 according to EN 166), high mechanical resistance and an anti-fog coating. RFU837 UniMask is also easy to use and maintain.

The RFU837 UniMask is suitable for many kinds of grinding and other surface finishing operations and for heavy-duty maintenance. It is convenient for use in shipbuilding and the building and automotive industries.

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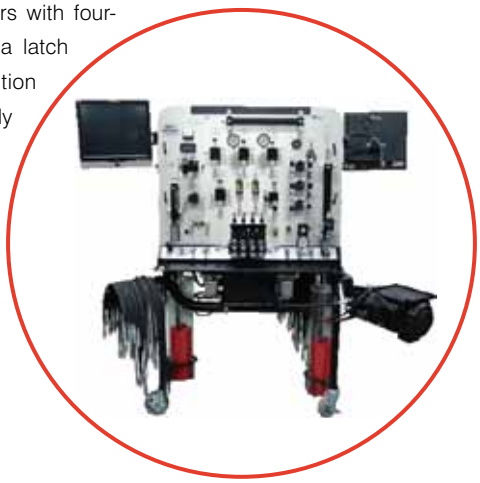
Hydraulic training simulator

The MF102 Hydraulic Training Simulator from the Fluid Power Training Institute is designed for teaching basic and advanced hydraulics, as well as safe troubleshooting and diagnostics techniques. It is a foundational building training system crafted with the intention to help students in understanding principles such as Pascal's Law, Inertia, Power, Resistance, Differential Pressure and Series-Parallel theory.

As an advanced hydraulic training simulator, the MF-102 is a sought-after training tool for apprentice training in TAFE, training organisations and industries alike. The MF-102 consists of many extra valves and diagnostics equipment which have to be packed separately. Customers that purchase the electrical troubleshooting models, MF-102-H-TSE, should also remove the touchscreen's panel and pack them separately to prevent damage.

The FPTI has included several upgrades to make the hydraulic training simulator convenient for users, to help transport the simulators to multiple sites. The hydraulic training simulator features heavy-duty casters with four-wheel steers, a swing-out power unit with a latch that can automatically lock itself into position below the tray and a swing-out hose caddy equipped with auto-locking mechanisms to securely store hoses. The hydraulic training simulator also includes an extra mounted tray below the simulators to safely store extra valves and diagnostics instruments, and an extra heavy-duty touchscreen holder.



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THE FUTURE OF COMPLIANCE MANAGEMENT: SAFETY, QUALITY AND ENVIRONMENTAL

Shayne Connolly, Group CEO, Keep it Simple Group

For those who have had to manage traditional compliance systems — whether safety, quality or environmentally based — the challenges are well known. Regardless of diligence, knowing that an auditor is scheduled can be an uncomfortable experience. Due to the manual nature and human dependence of these traditional systems, the margin for error is considerable — control of the system and processes is all human based and therefore naturally flawed.

That being said, the reason many businesses take on ISO and other compliance-based requirements like HACCP is to grow, improve and show the outside world they are at a higher standard. So, if it can be difficult just to meet the standards required in a traditional system, then how can organisations manage to continuously improve and achieve greater value from their compliance system? The answer for many is that they aren't. For many, compliance management becomes a chore; it's difficult and seems to have no reward. It's all reactive, the reporting is not good and everyone starts wondering why they are bothering.

This article will explore how technology can change the playing field and make compliance a simpler process.

It is well known that paper-based systems suffer from these and many other issues:

- Control: organisations have no control over a print version, or how it is used.
- Transparency: trust is required for the person who filled out the paper form.
- Automation: or lack thereof.
- Workflow: not possible.
- Adaptability: not offered by static forms.
- Integration: nothing available to plug into other systems.

The future is now

So, how can technology solve these problems? What should organisations be looking for in a piece of software to make their compliance management simple? The below checklist gives an idea of what to look for.

Control

Control is a key piece of the puzzle when looking for a system to manage compliance. Not only is it a critical component of things such as ISO, but it will make management of any system easier. To clarify, this refers to control of the system, version, information and access. It is important to be able to limit who can do what, and what people can see, across the organisation to a very granular level. This might include aspects such as the role of a person, their location, their involvement in an incident or inspection — there are a variety of ways in which access must be controlled.

Transparency

Knowing the truth of a document is key. When collecting information and making decisions on that information, it's vital to know that the information is true in essence. It came from the right place and the right person, and was completed in the right way. This provides confidence to build on the information and make decisions for the future.

When looking for a solution to manage compliance, having an audit trail and transparency across the system is key.

Automation

Many people believe that digitising a paper system can be just that — using a program like iAuditor and getting people to complete an online version instead of the paper version. While this may solve some minor issues, it doesn't really change the abilities of the form. It looks nicer, the data is better in some ways, but it is still just information that is now also in the cloud.

What is needed is for the information to trigger something. If an audit is conducted and there is a non-conformance that needs to be triggered automatically, then it is important to notify the right people, and that automation drives action in the system. Otherwise, organisations are returned to the initial problem of paper that is static and does not drive action in itself.

Workflow

In the ideal world, the goal is to build an entire workflow. When step A is done, then do step B — only move to step C when actions from step B are complete, and then move to step D where management sign off. Organisations already have a system in place — what they need is a way to build this process into their management tool. This way, it is clear that it will be done the same way each time, which links back to control.

The other huge advantage of being able to adapt the workflow to the business is that no changes to the system are required, because the software does it automatically. This is common through software today and it allows businesses to leverage existing knowledge and systems using powerful technology.

Adaptability

Adaptability can be viewed in many ways, but the focus here is industry-based adaptability. What works for one industry doesn't always work for another, and this can make it very hard to find great software for a specific industry. What organisations should be looking for is non-industry-specific software that can adapt to the requirements of the system, rather than trying to predetermine what is needed.

Most users have looked at software and thought, "Wow, that's great — except it can't do this or that, or it won't allow changes to this one part." Trying to use systems like this leads to inefficiencies and user dissatisfaction.

Customisation

Following on from adaptability, the ability to customise is vital. Making something look and feel right for the business is more important than most people realise. This can be as simple as changing the name of an incident or a form, or something more complex like the dashboard seen upon first log-in. Being able to adapt to the business, and even to the person who is logging in, is important for many reasons — but perhaps the most underestimated is user acceptance.

Arguably, the only thing more important than the system itself is whether people will actually use it. A simple, clean user interface that adapts to the company and user needs is key. Organisations should always have the acceptance of the end user in mind when looking at software, because they are the ones who will complete the forms, inspections and audits.

Integration

Having the best management system software in the world might only get users part of the way if there are a variety of systems involved. It may not be needed today, but the ability to integrate the system into other software is important. It could be as simple as flagging in the finance system that a contractor is not compliant.

An open API architecture is key here, as organisations may not know what software they will need to connect with in the future. An open architecture allows the development of the connection that is needed, rather than accepting some other basic connection that may not do what is required.

Key takeaways

- Don't settle for a paper system — take the step into technology and make compliance work for the business.
- Figure out what is needed before going to market. Make a shopping list of required outcomes.
- Research, research, research. Don't simply buy the first tool on offer — there are many options and it's important to find the right fit for the business.

Keep It Simple Group
www.kis.group

Contractor management system

LinkSafe provides tailored contractor management systems for safety teams across all Australian industries. The contractor management systems help ensure that everyone who comes onto a worksite has been pre-qualified, inducted and is compliant with industrial regulations and external laws. The software is designed for safety teams from the ground up; each system is custom built using client content to digitise existing manual processes in the workflow.

LinkSafe helps security professionals mitigate the risks posed to them by on-site contractors and visitors. It also eliminates the compliance paperwork and administrative tasks involved with contractor management, so safety teams can focus on safety. LinkSafe provides a central point of contact for clients, with live tech support on hand. The company strives to reduce clients' risk exposure with legally informed content and support compliance with a live and historical cloud database of contractor insurances, documentation, induction records and credentials.

LinkSafe Pty Ltd

www.linksafe.com.au

Site access solution

Site access and inductions are important components of site safety and contractor compliance management. Cm3 OnSite is an all-in-one site access solution with contactless QR code check-in that facilitates the tracking, verification and reporting of site visitors. The platform enables users to set and customise their inductions based on visitor types, including visitors, contractors and tenant contractors. Additional important information can be collected through user-defined checklists and declarations.

Cm3 OnSite collects and organises site check-in and induction data into simple dashboards and reports, to help users manage the risks associated with site visitors and contractors. Users can also distribute SMS alerts to visitors to get a real-time view of site activity. By connecting OnSite to CM3's contractor safety management prequalification system, contractors entering worksites can have their prequalification status checked and insurances verified in real time. OnSite is also designed to alert users to any failed prequalification attempts.

Greencap Limited

www.greencap.com.au

Safety management platform

Donesafe is an end-to-end, all-in-one, safety management platform that is designed to take care of HSEQ use-cases, employees, visitors, suppliers, contractors and vendors, across all locations, workplaces and devices.

Users can pick and choose from over 30 modules to create a complete, fit for purpose solution for their organisation, or to fill a gap within their existing solution.

HSI Donesafe ranked top three for brand awareness in the 2021 Verdantix Corporate Survey on EHS Software. HSI Donesafe also reported 98%+ average customer retention in 2021, while its safety management platform was used by a third of ASX 100 companies (33%+).

The HSEQ safety management platform lives on the cloud and features more than 30 modules, for customisation, and facilitates real-time reporting.

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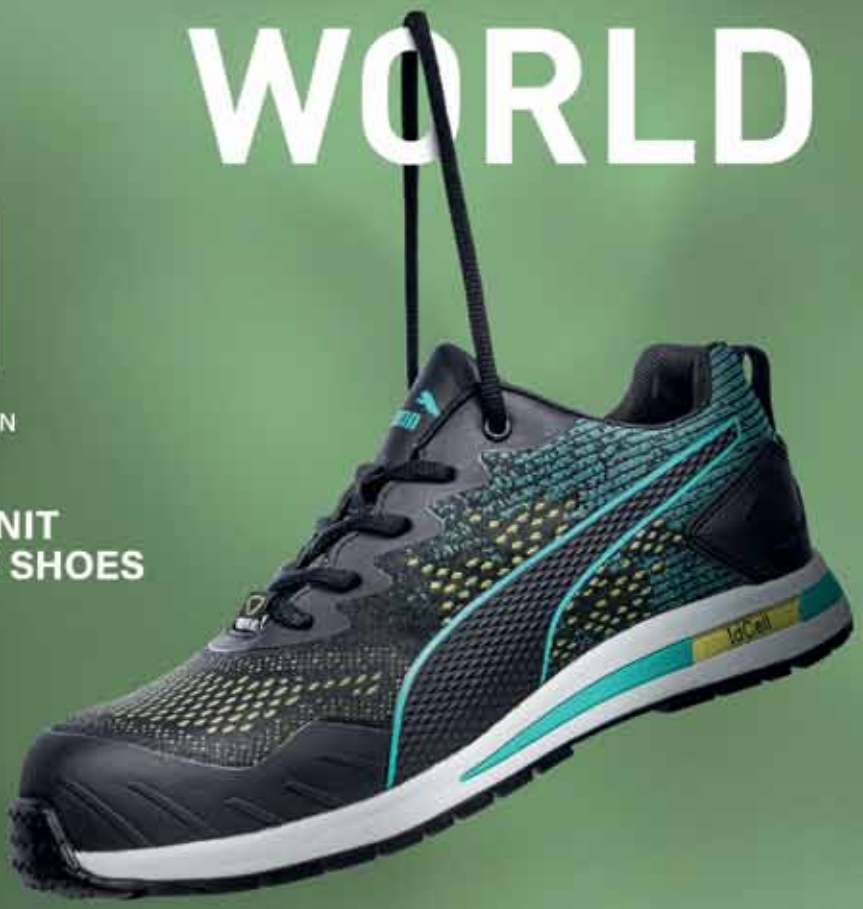

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CASE STUDY

Digitising crane safety compliance

One of the most common safety hazards associated with overhead cranes is dropped loads.

According to Konecranes, this preventable hazard is usually caused by poor operator training, improper rigging technique, an incorrect lifting device, overloading the hoist and side pulling.

The global crane manufacturer and service provider has developed its CheckApp to improve daily crane safety inspections.

In addition to any tests, training and inspections required by local laws or regulations, some key basic pre-use recommendations can enhance crane safety and help to avoid dropped loads. The Konecranes CheckApp for Daily Inspections is a digitised way to perform these inspections and includes 15 points to check. Daily inspections are a statutory requirement in several countries and good practice for any crane operator. Checks include:

- Test run the crane the full length of the runway and bridge span to ensure no obstructions will interfere with the crane travel motions. Test that all travel motion speeds match the designed specifications.
- Turn the crane off and engage the hoist 'up' switch — the hook should not rise. Engage all other motions to ensure no movement is possible. Turn the mainline switch back on and raise the hook to test the upper limit switch. All travel and hoist motions should match the control labelling directions.
- Check that the wire rope is properly seated. Ensure that it is not twisted, kinked or damaged. Check all other limit devices for proper functionality.
- Train all crane operators on the functionality of all new cranes.
- Provide proper inspections and maintenance as required by local regulations and recommended by the original equipment manufacturer (OEM).

Crane users can quickly and easily record their findings in the CheckApp when performing pre-shift and/or pre-lift inspections. Inspection results can be viewed on the yourKONECRANES customer portal. Besides providing an audit trail of daily inspections, the information can help users recognise potential asset-specific safety or production risk issues and identify workplace improvement opportunities. It can also help identify needs for operator training as well as deviations in following local safety and other site rules.

The daily inspection is a user's — or crane operator's — own assessment of the condition of an asset and environment for safe use. It is not an expert's examination of the condition of an asset or component. The Konecranes CheckApp for Daily Inspections follows the guidance set in the ISO 9927 standard and in applicable statutory regulations.

The app can be downloaded for free on the Apple App Store and from Google Play for Android devices on a mobile or tablet. Company personnel can use their own or shared company-provided devices to perform the daily inspections.

Benefits of CheckApp include:

- Satisfies regulatory requirements, helping companies stay compliant.
- Allows for easy and reliable auditing of performed daily inspections.
- Easy to use and can help motivate users to perform daily inspections on a regular basis.
- Assists with timely recognition of potential asset-specific safety or production risk issues.
- Assists in identifying workplace improvement opportunities.
- Assists in identifying needs for operator training as well as deviations in following local safety and other site rules.

Konecranes Australia
www.konecranes.com.au

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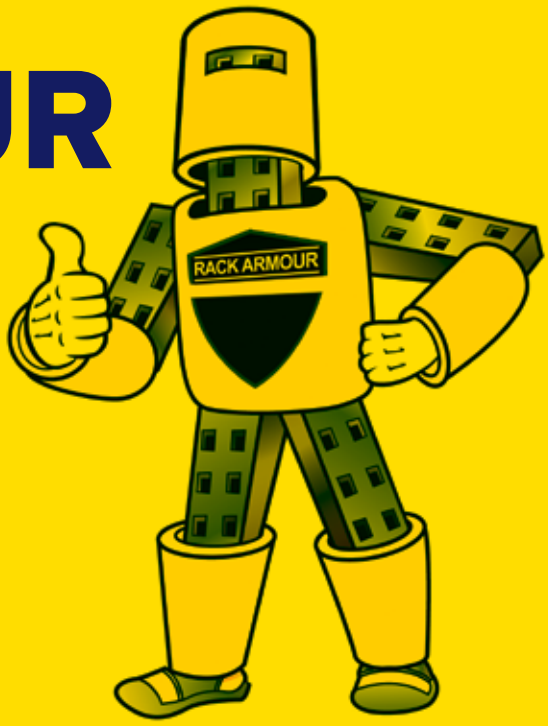

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USING AI TO IMPROVE HSE COMPLIANCE PROGRAMS

David Smith, Business Director, APAC Region, Wolters Kluwer Enablon

Compliance with health, safety and environmental (HSE) regulations requires a lot of resources, and it is time-consuming. Non-compliance can have a significant impact on safety, productivity, profitability, liability and company reputation.

The situation is made worse by the fact that HSE departments are often understaffed and not properly funded. All of this increases both non-compliance risks and the severity of impacts.

How can artificial intelligence (AI) alleviate the pain associated with HSE compliance efforts, and reduce risks?

The compliance burden

Organisations with operations in multiple countries have to comply with many regulations that cover vastly different areas, such as workplace safety, occupational health, air emissions, water discharges and hazardous waste. But this is only the beginning of the complexity faced by companies. The texts of regulations and permits are voluminous and difficult to digest. It's a challenge to identify specific obligations scattered throughout hundreds of pages. For example, environmental permits include conditions that specify what is allowed and what is forbidden, but the conditions must first be located within the lengthy permit documents. In addition, most permits are site-specific, not generic to all locations, which means each permit must be carefully looked at.

HSE staff carry a heavy compliance burden. They must:

- Identify the regulations and permits that apply to each site.
- Identify and extract specific requirements or conditions from each individual permit or regulation.
- Determine the applicability of requirements and conditions all the way down to the level of each individual item of equipment or asset at each site.

Moreover, the regulatory landscape is constantly changing, with regulations being amended or new ones added, thus further increasing complexity.

A perfect storm

Regulatory complexity and a lack of HSE resources create a perfect storm that increases non-compliance risks. And the consequences can be severe, including:

- Penalties and fines
- Revocation of permits
- Worker injuries and compensation claims
- Environmental harm
- Reputational damage
- Equipment damage
- Production delays

The situation is even more worrisome for global organisations, because these pain points grow exponentially. For example, a large multinational oil and gas corporation shared with Enablon the example of a permit at one site. That single permit contains 168 conditions and over 1600 site- and equipment-level tasks that need to be completed to maintain compliance. This is just one HSE permit at one site!

Each site can have dozens of permits, and this oil and gas firm has hundreds of sites around the world, which means that they have thousands of permits to comply with globally.

How artificial intelligence helps

AI addresses many challenges through different technologies. One of them consists of natural language processing (NLP). Through NLP, machines can read and understand human language. For example, a computer or software program can 'understand' the contents of documents, including contextual nuances of the language within them. NLP can then accurately extract information and insights contained in the documents.

NLP offers many opportunities for HSE managers to save time during compliance tasks. Suddenly, instead of taking hours to read a long regulatory document in order to extract specific obligations (or paying high fees to a consultant), the task is performed automatically in mere minutes.

A typical process looks like this:

- Users submit compliance documents (eg, permits) into HSE software. This triggers an automated processing of the documents.
- NLP capability embedded in HSE software analyses each document and detects relevant HSE compliance language entities (eg, constraint signals and quantitative values).
- Conditions are recognised and extracted from detected language entities.
- The user is guided through the condition review and approval process (to ensure that the conditions were properly identified by AI). Once approved, the conditions are stored in HSE software.

For example, in the case of a permit, HSE software looks for wording that may relate to compliance actions, in order to find conditions. The types of wording can include:

- Constraint signals (eg, "shall", "must")
- Requirements (eg, "monitor and record", "inspect", "provide training")
- Equipment (eg, "boiler", "compressor")
- Quantitative values
- Periods of time

The conditions extracted by the HSE software system are reviewed by the user to ensure that they agree with the extracted conditions. They are then approved, stored in the system and broken down into compliance tasks for workers to complete.

The benefits (and business case) for HSE managers

The benefits of leveraging AI for HSE compliance include:

- Automated processing of regulatory documents: from extracting to associating assets and conditions in a few hours instead of days.
- Considerable cost-savings: there is no longer a need to hire consultants for condition extraction.
- Significant time savings: HSE departments can spend more time on activities requiring their expertise.
- More accurate and complete view of compliance requirements: all actionable language is detected so that conditions requiring action are not missed.
- Augmented capabilities for HSE departments: HSE managers understand the breakdown of compliance documents and the extraction of conditions.
- Reduced non-compliance risks: there is a lesser likelihood that regulatory obligations are missed because of human error.
- Data integration: a company's compliance data is immediately available within their HSE software and ready to be acted upon.
- Easier permit management: the permit deconstruction process is streamlined because conditions are highlighted and reviewed by users. Also, the sources of permit-based compliance obligations are retained.

Ultimately, AI makes the job of an HSE manager easier, without replacing their role. AI becomes a valuable tool to maintain compliance and improve the productivity of HSE departments, thus further enhancing the value that they bring to the rest of the organisation.

However, as with all emerging technologies, it is important to ensure any AI solutions are applied responsibly. The following should be considered:

- Overall benefit to the community and whether AI is the appropriate solution for the challenge at hand.
- The best AI solution will depend on the quality and relevance of the data being fed in and as such requires careful data management.
- Any AI project must consider data privacy and security. Stakeholders must have confidence that AI projects have this as a primary consideration.
- Data must be used safely and securely and with a level of transparency to engender trust in any AI project.
- Decision-making should remain the responsibility of organisations and individuals.

Wolters Kluwer Enablon
www.enablon.com

SAFETY WEARABLES: TRACKING CONCERNS, UNION BUY-IN & THE SCIENCE BEHIND THE ALGORITHMS

Toni-Louise Gianatti

Do the benefits of using wearable safety technology for preventing manual handling injuries in the workplace outweigh the associated risks?

Absolutely.

The insecurities once felt about employee tracking and using wearables for safety measures in the workplace has been quelled over time. The practicality and safety benefits of the objective insight along with the positive worker engagement generates invaluable safety opportunities that are undeniably outweighing the associated risks.

In February this year, the journal of Technology in Society published a study showing the acceptance levels of wearable technologies in the workspace. **82% of workers** out of 871 employees from European and Brazilian companies within various industrial sectors **approve of using wearable sensors to improve their safety**.

The study observed that in general, to accept any given technology, workers feel it is important to be informed about the wearable device proposal with the only concern being about the privacy of the collected data.

Soter Analytics has been supplying safety wearables to organisations globally since before they were thought to be a workplace possibility and has navigated and successfully overcome multiple union and employee acceptance barriers.

Matthew Hart, CEO and Founder of Soter Analytics explains, *"With the fast pace that safety technology advances, it is understandable that unions are sceptical about the suggested use of these products. One primary concern is that organisations could use the devices to spy on workers in terms of performance or use geolocation data as proof against employees. Another concern is the issue of data collection security and privacy."*

There are several ways to gain buy-in and one of the main points is knowing the product well before approaching the unions or your workers.

"The general acceptance and union buy-in arises from the understanding that wearable technology is not aimed at providing new methods for Digital Taylorism of measuring workers' performance. The focus is on the invaluable personal safety measurements and data insights they provide. Once unions understand that the sensors provide workers agency over engaging with their own learning, and have the choice to prioritise access to their own data for educational purposes, the concerns are dramatically reduced."

It is always good practice to involve the union and workers in the decision-making process and be receptive to any concerns. Be aware of and understand exactly what data is being collected and ensure only relevant data is accumulated.

Soter Analytics works with their customers to come up with ways to mitigate the risks and concerns as much as possible by: -

- Permanently removing GPS or geolocation
- Allowing only aggregated or anonymized data to be available to management

- Allowing workers to see all their own data and have access to it regularly
- Supplying simplified materials to assist with communicating the benefits to workers
- Guiding project leaders on best practices for deployment to avoid any pushbacks

Is the data being collected safe?

In Australia, when using any technology products that collect data, ensure the company privacy policy is in line with the Privacy Act 1988 and the Australian Privacy Principles.

These Australian Privacy Principles are principle-based law, which means organisations have the flexibility and agency to adapt the principles to meet their business model and personal information handling practices. As such, it is worth looking over a vendor's Data Privacy Policy covering their legal obligations, what the company deems as 'personal information', how they secure it and importantly that it is written in layman's terms, so it is possible to distribute to workers and unions.

Some areas to look out for include: -

- Make sure the product has been designed and manufactured by engineers
- Request detailed proof that the engineers are trained in data security and have addressed the security concerns with the principle of 'reasonable security'
- Check that encryption measures have been included
- Ensure there is a possibility of regular updates and that they are conducted frequently to reduce any possible security threats

The algorithm solving diversification in safety

Existing manual handling standards are based on statistical averages and anthropometric data which do not withstand the immense population variety observed today. The algorithms developed at Soter Analytics provide a solution to this issue, challenging standards and updating outdated ergonomic measurements.

The risk thresholds of the Soter technology have been built using international standard guidelines, including but not limited to the National Institute of Safety & Health (NIOSH) lifting equation, Washington Industrial Safety and Health Act calculator, Rapid Upper Limb Assessment (RULA), Rapid Entire Body Assessment (REBA).

Backed by these international standards, Soter Analytics has developed and designed an algorithm like no other on the market. It relies on a neural network trained on the actual effort required by the person to make the movement.

They had hundreds of people (more women than men) make several movements moving objects, while wearing the sensor. Medical Doctor & Physiotherapist on the team, Dr. Anastasia Vasina, labelled each movement. Capturing more than 10,000 movements, the data science team extrapolated these to create a neural network that can now predict the intensity of a movement for an individual person wearing a sensor.

Hazard identification is not an easy process. Hazardous behaviour varies from person to person, and the number of potential hazards depend on the task and working conditions. In the case of a repetitive and highly variative job it is hard to objectively perform risk assessments. It requires significant time and observation and analysing the data. Moreover, data received for one worker can't be scaled to all the workers due to individual differences in behaviour and movement patterns.

This algorithm does not care about the weight of the object, it does not care if you are male or female, it cares only about measuring how intense the movement is for the person.

Using wearable technologies has opened a new era in hazard identification, enabling assessment of the task via automatizing the use of standard observational tools, they monitor the worker's "at risk" movement patterns and safety, generating more objective and actionable data in one day than what a large team of ergonomists would possibly gather over weeks.

The use of technology, its collaboration with existing processes and yielding clever data driven techniques is an update on outdated and inaccurate ergonomic assessments. Combined with a consistent and engaging approach to manual handling without the loss of time to a classroom, allows on-site ergonomists to deploy their time to solving problems rather than trying to find them, increasing the safety of workers.

As Industry 4.0 merges with 5.0 and related laws are continually evolving, when deciding to deploy any safety technology, it is important for the discussion to include everyone in the organisation. Engage safety and health teams, human resources, legal groups, innovation teams, operational management and understand the product well. Once these discussions have taken place, involve workers in the decision and seek their feedback. This will bring to light all possible setbacks before engaging, from data collection issues to worker acceptance, and help to address any gaps or worker concerns that management may have missed.

Case Studies

The first longitudinal outcome data of impact of the wearable technology solutions built by Soter for musculoskeletal disorders (MSDs) was announced in early 2019 by Travis Perkins in the UK and stated a 55% drop in musculoskeletal injuries. Since then, multiple organizations have reduced their risk of injury including a large retail leading supply chain partner in the UK, Wincanton, achieving more than 250 days of no lost time injuries since deploying the wearables a year ago. More case studies can be found here.

Soter Analytics is a global ergonomic technology company that builds and develops wearable solutions, AI-driven coaching programs, and sensor free assessment tools for worker safety. Drawing from over 5 years of user experience, their solutions encompass proactive injury prevention, improving worker retention, engagement, and productivity, with all parameters and thresholds backed by international standards for musculoskeletal safety in the workplace.

Soter Analytics

Soter Analytics Pty Ltd
soteranalytics.com

Laser alignment power transmission tool

Gates Australia has a range of power transmission tools available for industry that have enhanced the way belts and drives are installed and maintained. The Gates EZ Align Laser Alignment Tool allows a single person to align a belt quickly and easily. The EZ Align uses a powerful green laser line to achieve angular accuracy on belt drives up to 7.6 metres in centre distance. Gates Australia's power transmission tools are designed to reduce downtime and injuries, facilitate efficient installation and maintenance, and reduce operating costs for businesses.

The laser line technology is designed to be accurate and is suitable for both horizontal and vertical mounted drives. The EZ Align Laser Alignment Tool shows parallel and angular misalignment simultaneously, reduces vibration and belt noise, prolongs belt and pulley life, and is suitable for both V-belt and synchronous belt drives. Its alignment can also be adjusted by one operator. The laser alignment tool's new design includes strong magnetic brackets to hold the tool more firmly in place, with an LED torch included in the end of the laser unit.

Gates Australia Pty Ltd

www.gatesaustralia.com.au

Lockout, starting key system

Treotham has released Euchner's innovative, one-fits-all Flex-Function CKS key system, designed for the safe starting or stopping of dangerous machine movements independently of the installed safeguards. In combination with highly coded, transponder-based keys, Treotham's key adapter CKS2 from Euchner forms a safe system that meets safety requirements for machine installation lockout and starting.

When combined with the Euchner IO-Link Gateways, the integral evaluation electronics in the compact CKS2 system provides comprehensive diagnostic and communication functions to users. Proven transponder technology and the use of keys with a high coding level provide maximum safety. Developed as a FlexFunction device, the CKS2 system can operate on a lock-out system, trapped key system or authorisation system as defined by the key version.

The CKS2 is also available as a submodule for the successful MGB2 door locking system. It is also suitable for use in fully automated logistics systems or complete turnkey installations.

Treotham Automation Pty Ltd

www.treotham.com.au

Safety footwear range

The uvex x-flow safety footwear range, specially developed for Australia, was designed with biomechanics at the heart of the process. The sole is engineered to provide a flowing transition from initial contact to toe off, while the wave-like upper is designed to adapt to changes in the foot shape for ease of movement. The seams have also been minimised with essential seams located away from sensitive areas.

The high energy-return uvex i-PUREnrj cushioning and the lightweight, flexible design help reduce fatigue, while uvex's climazone technology maximises breathability and airflow channelling to address high levels of heat stress. The seam-free scuff cap improves durability, while the external heel counter provides additional support. Zip access provides convenience, and the magnetic cover protects the zip. The insole foam is made from 87% recycled production waste and the top cover is made from 100% recycled plastic. The uvex 3 x-flow is designed to move effortlessly and perform as one system with the body.

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Can you afford this?

SafeWork NSW Recorded
598 forklift incidents, 5 were fatalities

When forklifts and people mix, bad things happen.

Regardless of how hard you try, it is impossible to separate people and equipment 100 percent of the time. Best practices point to barriers, separation, and plenty of space, but real-world conditions prevail. Workers stray, drivers are distracted, facilities are operating at full capacity with cramped conditions, and smoke, dust, and poor lighting diminish visibility. People are put in harm's way.

The BodyGuard Safety i-Tag System envelopes your workers in a new layer of Safety

The BodyGuard Systems provides an adjustable safety exlusion zone around the vehicle to separate vehicles and pedestrians. If a pedestrian breaches the safety exlusion zone the driver with an unmistakable human voice warning and the pedestrian receives a vibration alert.when workers are near a forklift. In an environment overflowing with bells, buzzers, and flashing lights, the human voice warning cuts through the maddening din of plant floor noise to get the driver's attention.

The BodyGuard System is Easy

Installation is easy, requiring no changes to the forklift. There are just three easy to deploy components:

- A personal tag – small and easy to carry fob identifies employees.
- A sensor unit – attaches to the vehicle in minutes.
- A cab alert unit – speaks to the driver in a human voice.

The BodyGuard System is dependable

- No False Alarms
- No maintenance required
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- Detects Pedestrians wearing Tas through most solid objects
- Overcomes human issues like inattention and poor safety behaviour

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IMPROVE PLANT SAFETY WITH LOCATION MONITORING TECHNOLOGY

Bala Chinnappan, Business Development Manager – Pervasive Sensing ANZ, Emerson Automation Solutions

A critical lesson learned from the COVID pandemic is the importance of safety — including in the workplace. Personal protective equipment (PPE) is used in many hazardous plant environments, but exposure to an airborne virus can happen in any area of the plant where PPE is not worn. Locker rooms and breakrooms, or any place where workers gather in close groups of more than two or three, become potential spreader locations.

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Following established safety guidelines is one thing, but what if personnel contract the virus? In that case it becomes vital to know their movements from before they became symptomatic, as they would have been contagious and could have spread the virus to others in the plant. Production goals won't be met when too many employees are out sick.

Technology offers a solution

Recent field testing of a new location monitoring device, developed by a global manufacturing and technology company, proved to be an effective option. The location monitoring device can be clipped to clothing or worn on a lanyard. It has a chip embedded that is read from a distance by access points deployed at various locations across the facility, providing high-resolution location measurements.

The easy-to-deploy location access points are unobtrusive, small, lightweight and battery-powered. Far less expensive when compared with systems that utilise industrialised Wi-Fi access points, and their Class 1/Div 1, Zone 0 rating allows them to be deployed throughout a process plant environment. The access points are low-maintenance with batteries that have a long life.

Using proven technology, the access points communicate with each other and the WirelessHART gateways similar to the way conventional WirelessHART instrument transmitters communicate with other measurement devices.

To test the efficacy or value in a facility, a company can first implement it in small high-risk areas of the facility, though this technology is more budget-friendly compared to other location technologies available today.

The software component of this solution offers several useful features, such as:

- Safety alerting, which allows an injured worker or one who has found themselves in an unsafe situation — or is witness to an incident — to press the user-assistance button on the tag they wear to indicate an emergency in progress at their location.
- Safety mustering gives first responders real-time data on which people have moved to approved safe areas during a drill or incident.
- Geofencing indicates when individuals have entered areas they shouldn't be in due to the presence of hazards or lack of specific training.

The software has been updated since COVID protocols went into effect to include new functions, such as contact tracing and monitoring social density.

Social density in a plant environment

The term social distancing has made its way into the world's collective vocabularies in recent years, and it is understood to mean maintaining a six-foot distance from other people in order to limit the spread of the COVID-19 virus.

A related term is social density, which extrapolates and translates the social distancing concept into one that is less about ensuring people keep an appropriate distance and is more about how many people are in one area of a plant at any given time. And how does that impact risk levels, not just of virus transmission but overall safety?

Knowing the location and how much time is spent where is valuable data, which can help develop employee scheduling patterns that reduce risks such as virus transmissions or potentially hazardous clustering of people doing routine work or maintenance.

Blending the technology into a real plant environment

In several locations worldwide the technology is being trialled with considerable success.

For example, a global chemical company with a facility in Asia–Pacific needed the means to ensure worker safety — a way to broadcast safety alerts and automate safety mustering in case of hazards or emergencies. Onsite implementation included coverage of most of the chemical facility, with a specific focus on hazardous areas. Included

A visual representation of the location monitoring architecture.

in the implementation were custom-delineated hazard zones and multilevel location detection.

The customer commented that the user assistance button on the tag was impressive, saying, "Even if we're able to save the life of one employee, the purpose of the technology has been achieved." It adds an extra layer of security for personnel.

At the Middle East facility of a global oil and gas company, the challenge of location monitoring was primarily around contractors who were widely employed in one area of the facility. Scheduling these contractors was challenging because they were only allowed onsite if accompanied by an employee. Using the location monitoring tags, the facility could automate safety mustering, add geofencing to hazardous areas and provide safety alerts. The facility plans to add its permit system by automating issuance and closure. Once data from this first implementation is evaluated, the company plans to deploy the system at other sites, including remote well site locations.

Looking to the future

Keeping employees safe is not temporary; it's an ongoing effort that won't change once COVID restrictions are lifted. What has been learned during the pandemic is that technology can provide valuable long-term benefits when applied to short-term problems.

Once COVID restrictions are lifted, the location monitoring and geofencing technology will continue to reduce the risks of injury or exposure and will be an integral component of meeting safety and compliance regulations. The pandemic accelerated the adoption of digital transformation plans, and it is anticipated that location monitoring technology will become more integrated in those plans. Because of its modular nature, the tool can be implemented in both small areas and across a facility. It is a tool that can be adapted to fit a facility's needs while keeping personnel safe from harm.

Emerson Automation Solutions
www.emerson.com/au/automation

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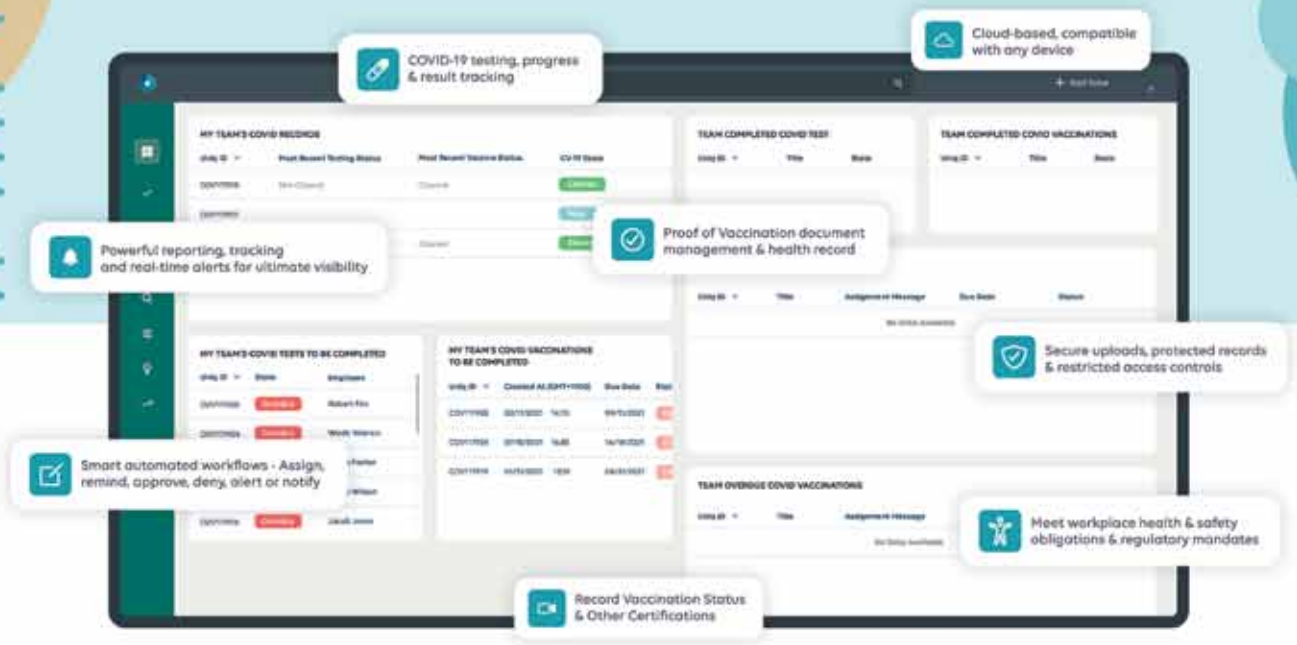

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AUTONOMOUS VEHICLES FROM ASSECO CEIT — FULLY EQUIPPED WITH INTELLIGENT SENSOR TECHNOLOGY

Production and intralogistics complement each other perfectly and are growing together. What used to be two completely separate areas is now experiencing joint growth thanks to advances in automation and digitalisation. Mobile platforms, AGVs and mobile robots are playing an important role here. Our long-time partner, technology expert Asseco CEIT, is using sensor solutions from SICK. CEIT is now once again relying on the safety expertise of SICK for its new AGVs.

Asseco CEIT, a.s. is an innovative technology company that offers comprehensive solutions in the areas of technology and process innovation, industrial automation, digitalisation and optimisation as well as intelligent intralogistics. The company has its own research and development center and is dedicated to supporting the productivity, efficiency and increased competitiveness of industrial companies. Asseco CEIT is based in Slovakia and operates with success on a European level. Its customers include large industrial companies, especially in the automotive, mechanical engineering, chemical and electronics industries. Asseco CEIT has been part of the international Asseco Group since 2017.

"Our first automatic AGV devices with SICK components were FTS500 and FTS1300 tractors, which we used at the largest car manufacturer in Slovakia," says Rastislav Tribula, responsible for research and conceptual design at Asseco CEIT. He adds: "Since then, new, more modern generations of AGVs with contour or laser navigation have been produced. Our excellent cooperation with SICK as well as the quality of the components are the main reasons why SICK parts can be found in every automatic-intelligent AGV device from Asseco CEIT."

Safety solutions for AGVs from SICK: Reliable, efficient, with modular expansion

The range of solutions from SICK for mobile platforms enables Asseco CEIT to easily implement line guidance, navigation, positioning and environment perception as well as safety or load handling. From small autonomous transport systems to AGC (automatic guided carts) and specialised AGV (automatic guided vehicle) systems, sensor solutions from SICK cover

the entire range of automatically controlled vehicles. The spectrum ranges from cost-effective solutions such as line guidance and simple collision avoidance to fully-certified safety solutions and integrated contour localisation.

Intelligent safety system: Fast and secure data exchange with Safe EFI-pro

To protect vehicles using safety laser scanners, the S300 and S300 mini series have already been used in combination with relay modules at Asseco CEIT for many years. Even back then, dynamic signals from the DFS60 incremental encoders were integrated which were used to adapt the monitoring zones of the scanners. Over the years, other anti-collision solutions using 2D LiDAR sensors or 3D machine vision were added to these systems. With the ever-growing market requirements in terms of safety and localization, Asseco CEIT has decided to prepare its portfolio for a new unique solution from SICK: The Safe EFI-pro System safety system combined with the DFS60 incremental encoder and the IME2S non-contact safety switch.

Quick and easy connection of system components in the network

The Safe EFI-pro safety system enables intelligent protection of automatically controlled stackers, robots and other demanding applications. EFI-pro industrial Ethernet-based network technology makes possible the rapid exchange and transmission of secure and non-secure data at all levels of communication. The Safe EFI-pro system combines the modular Flexi Soft safety controller with the microScan3 — EFI-pro safety laser scanner. Secure communication via the EFI-pro communication gateway allows for quick and easy connection of system components in the network.

The innovative safeHDDM® scanning technology gives the microScan3 safety laser scanner outstanding robustness, even in dust or stray light, and provides precise measurement data. Only one device is needed to obtain this measurement data — not only for safety purposes, but also for location and subsequent navigation.

Up to six microScan3 safety laser scanners can be networked for adaptive and safe environmental detection. Each device offers up to eight safety fields to be monitored simultaneously and up to 128 monitoring cases. Together with the Safe Motion Control function of the Flexi Soft safety controller, dynamic adaptation of the monitoring cases to the respective monitored areas is possible, depending on the speed and angle of rotation of the automatically controlled vehicle.

Other new developments and strengthening of innovative power — now and in the future

SICK is working on a number of revolutionary innovations in the field of mobile platforms and is confident that it can continue to be a reliable partner for Asseco CEIT. This concerns not only the field of mobile platforms, but also the production of single-purpose machines, in which Asseco CEIT is also involved. Consultation and training are offered as part of the long-standing cooperation between the two companies. This is what will make it possible for SICK and Asseco CEIT to continue to work together in the future on the development of new solutions.

SICK
Sensor Intelligence.

SICK Pty Ltd
www.sick.com.au

Ball valve

Designed for applications in the chemical process industry, desalination and water treatment, the Ball Valve 543 Pro features a variety of features. Combining the same modular and compatible construction with futureproof digital functionality makes it suitable for modernising existing piping systems across a range of applications. The Ball Valve 543 has been a durable and flexible solution used for mixing and distribution in applications ranging from water treatment to complex chemical and pharmaceutical processes. Building on this design, GF Piping Systems introduced the Ball Valve 543 Pro, which improves usability and adds sensors and actuators that offer new possibilities for process automation.

The three-way valve increases safety with a lever that prevents unintentional operation due to a locking ring. For an extra layer of security, a padlock can also be fitted in order to protect the valve against unauthorised usage. These improvements are relevant for industries where the safe and uninterrupted operation of piping systems is a priority.

The accessories include a manual spring return unit (or 'dead man's lever') which is designed to ensure that the valve closes automatically when it is released. The product also features new stems with a predefined breakpoint between the actuator and ball valve. In the event of a blockage within the system, the breakpoint ensures that only the stem has to be replaced, rather than the entire ball valve, thereby reducing downtime and saving costs.

The device features a retrofittable position feedback sensor with an LED display that records the position of the control leaver. The compact double sensor can be mounted with a snap-on design and is suitable for tight spaces within the piping system. In addition to traditional manual operation and a pneumatic control unit, the ball valve can be operated fully automatically with an electrical actuator. As a result, it can be integrated into the end user's process control and automation systems. The product also features a scannable Data-Matrix-Code that simplifies the storage of all component information and enables individual traceability.

GF Piping Systems
www.gfps.com/au

Safety light curtains

Leuze has expanded its safety product range with the ELC 100 safety light curtains: when guarding points of operation, these robust devices focus on the key features. The ELC 100 safety light curtains can be used by manufacturers and operating companies of machines and systems, for contactless guarding of points of operation. The safety light curtains represent an alternative to the MLC 500 series, particularly when it comes to a cost-effective machine design. They are suitable for applications with operating ranges of up to six metres.

The safety light curtains include key features for guarding machine openings and access points on machines or systems. Their resolutions of 17 and 30 millimetres enable them to reliably detect fingers and hands. The protective field extends to the edge of the housing so that no dead zones are created during integration. The devices are available with protective field lengths of 300 to 1500 millimetres. They are also resistant to shocks and vibrations.

Thanks to their 4-pin connection and supports with swivel function, the safety light curtains are quick to install, with a multi-level alignment display that is easy to read and can be used to quickly position the devices in the suitable alignment. The devices do not require configuration.

Leuze electronic Pty Ltd
www.leuze.com.au

Industrial headset range

Sensear's range of hazardous location smart headsets and earplugs is certified to major standards (ATEX, UL, CSA, and IECEx), being a manufacturer and global seller of IS and Ex headsets and earplugs. Many industries have environments that require equipment with hazardous location protection; all intrinsically safe products must be certified by regional standards that vary by country or region around the world, including ATEX (Europe), UL (USA), CSA (Canada) and IECEx (global). For equipment to be safe for use in a hazardous plant or workplace, the classification category of the equipment must be equal to or better than that required by the facility or location.

Sensear's hazardous location headsets include the SM1R IS Two-Way Radio Headset, built specifically to enhance two-way radio communication in high-rise environments (UL913 and CSA157). The SM1P IS Two-Way Radio/Bluetooth/Short-Range Headset and the SM1P Ex Two-Way Radio/Bluetooth/Short-Range Headset deliver headset-to-headset communication without a radio, with the ability to pair to a mobile device or a two-way radio via Bluetooth or a wired connection (UL913 and CSA157). The SM1P Ex Two-Way Radio/Bluetooth/Short-Range Headset complies with ATEX and IECEx standards.

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Zip work safety boots

Mack Octane Safety Boots are lightweight, comfortable, supportive and durable, designed to perform in rough terrain with the aim of reducing ankle strains that are common in the workplace. The Australian-based MACK product development team spent years working with health and safety personnel of leading industrial companies throughout Australia to gain an understanding of their injury profiles and bio-mechanical requirements in the workplace. This consultation process led to the design and development of the innovative Adapt safety footwear range (which the Mack Octanes are part of), designed to improve adaptation to rough terrain.

The Mack Octane zip work boots are wide-fitting with a metal free toecap and a 300° heat-resistant Adapt nitrile rubber sole. The boots are Electrical Hazard Certified and feature water-resistant, durable, full grain leather uppers. The boots also feature ArticulatedFIT for natural movement with support, and AsymBEVEL heel for a smoother ride when walking. The boots include an Ortholite breathable and comfort memory foam insole and a heavy duty breathable tongue for all day comfort.

Bunzl Safety

www.bunzlsafety.com.au

Composite toecap safety boot range

Blundstone has launched a design-driven range of composite toecap safety boots, developed using biomechanical technology for stability and flexibility. The RotoFlex range by Blundstone provides a suite of industrial composite boots that are fit for purpose across a range of industries. Created on new tooling and hardware, the RotoFlex range is full of safety and comfort features that provide innovative, evidence-based, detailed protection for the worker that wants strong yet flexible footwear.

The biomechanics system central to the design of each boot can be broken down into four key elements: GripTek HD, Fortalite, AirCell and SoftCell.

GripTek HD is Blundstone's all-new sole design, designed to provide all-day stability and comfort. The sole, with its unique tread pattern, is lightweight, durable and crafted to make the RotoFlex boot suitable for hard surfaces and graded ground. GripTek HD provides a strong foundation from the ground up, through the unique polyurethane PU tread patterns and super-cushioned midsole, with zoned support, designed to provide comfort for the entire day.

The Fortalite toecap provides compression-proof safety by using a patented Polymer composite material that holds strong under immense pressure. The Fortalite toecap retains its shape without restricting toe movement for all-day comfort.

An AirCell footbed provides air flow and full-body comfort with every step. This is achieved by a socialised zoning design, where the footbed is constructed to activate ventilation, moisture control and cushioning comfort as workers walk and move. The material breathes, pumps air and is soft, providing better air circulation and cushioning for workers.

Blundstone's fit system, SoftCell, creates more room to move within a stable foothold. This is achieved through understanding of the connection between a moving foot and the inside of a boot, providing a form-fitting and comfortably snug boot with space to move.

The RotoFlex range brings six safety boots into the Australian PPE market and is suitable for workers across a range of industries. The range includes four unisex styles; the 6″ #8560 and #8561, the 5″ #8553 and #8550, and two women's boot styles: the #8863 and #8860.

The RotoFlex range is available in September 2022. Blundstone boots are available online and in stores via select retailers throughout Australia and are backed by a 30-day comfort and six-month manufacturing guarantee.

Blundstone Australia Pty Ltd

www.blundstone.com.au

Safety footwear

Puma Safety footwear is designed to provide safety, comfort and style, with Puma Safety taking a further step towards reducing the brand's carbon footprint with its 643057 Vivid Knit from the Puma Safety Urban range, which features a sustainable upper and footbed that incorporates high-quality recycled materials.

The Vivid is also vegan rated, meaning no animal products have been used in the making of the shoe. It features a fibreglass toecap with 200-joule impact protection, is metal-free and is lightweight. The rubber outsole is 300°C heat resistant and SRC anti-slip rated, the highest standard for slip resistance in safety shoes. It is also breathable and has an idCELL shock absorber in the heels to provide enhanced comfort for workers on their feet all day.

This environmentally conscious footwear is available in both women's and men's sizes (Euro 36–47; UK/AU 3–12) and is certified to Australian Standards AS 2210.3.2019.

Trading Downunder Pty Ltd is the exclusive importer for Puma Safety in Australia and New Zealand.

Trading Downunder

www.tradingdownunder.com.au

SAFETY FOOTWEAR

TOP TIPS

CHOOSING THE BEST WORK BOOTS FOR ANY JOB

Ross Fitzgerald, Founding Director & Chief Sales Officer, Steel Blue Boots

A long day in the wrong boots can leave workers with a sore back and aching legs by knock-off time — if they make it that far.

Not all work boots are made the same; however, finding the best safety footwear for long days on the job is straightforward once wearers know what they are looking for.

What are the key things to look for?

Whether work boots are worn every day as required PPE, or only for the occasional site visit, high-quality footwear has a lot of benefits. Worker wellbeing tops the list, closely followed by peace of mind that they are adequately equipped for whatever comes their way. Here are a few things to keep in mind.

Safety

Safety footwear in Australia and New Zealand must pass the certification requirements outlined in AS 2210.3, the standard governing PPE on both sides of the ditch.

The basic requirements for standards-testing include:

- Toe protection including impact and compression
- Upper tests including tear and tensile properties
- Soling tests including slip resistance and bond testing

If the boots aren't certified, they should be avoided. There is a heightened risk of impact and compression injuries — as well as the boots literally falling apart at the seams.

Toe protection (impact resistance) is non-negotiable in most trades. There are a few different protective materials to choose from, steel caps being the most common. However, composites are becoming more popular due to their lighter weight. In terms of additional safety requirements like anti-static or penetration resistance, it is not worth taking any risks.

Wearers should think about what hazards might appear in their line of work — for instance, it is not only rig workers who need oil-resistant footwear, or dock workers who benefit from waterproof safety boots.

Style and fit

Most safety boot manufacturers offer a range of boot styles. One isn't necessarily better than the other, however, lace-up boots will

HANDY HINTS

- Lace-up boots generally provide better ankle support
- Look for boots that are endorsed by the Australian Physiotherapy Association
- The upper and outsole bonding should meet AS 2210.3 standards
- Check for a lengthy manufacturer's warranty
- Avoid generic safety footwear — seek boots designed for a specific trade

generally provide better ankle support. On the other hand, pull-on and zip-sided boots are easier to get on and off.

Just like the fastening style, safety boots come in a range of fits. Mid-cut boots are ideal for carpenters and bricklayers who work on their feet, but don't necessarily require the full support of ankle boots.

Meanwhile, ankle-high lace-up boots provide greater ankle support to prevent injury and strain, and have an internal tongue padding and collar, increasing comfort. In addition, the laces allow the wearer to adjust tightness.

Most workers find ankle boots provide better overall support for long shifts on job sites. Nowadays, they're also more accepted in offices, with tradies and managers spending more time behind a desk.

High-leg boots are becoming more popular among men and women working in environments like docks, oil rigs, or underground mine sites. When uneven ground calls for infallible ankle support, higher leg boots are best.

Comfort

Safety boots absorb up to twice the wearer's bodyweight in force with every step. Properly designed work boots are lightweight and cushioned, reducing fatigue and improving productivity. Leather should be durable, yet supple, to assist with less break-in time — making work boots comfortable from day one.

Look for boots that are endorsed by the Australian Physiotherapy Association (APA). The APA only supports products that offer clear benefits for physiotherapy patients and recognises the technological advancements of work boots that help protect the wearer from stress-related injuries to the ankles, knees, hips and spine.

Additionally, wearers should make sure they have the option to return their new work boots if they don't pass muster. Boot companies with a 'comfort guarantee' allow wearers to determine whether the boot is still comfortable even after a hard day's work.

Longevity

Inferior steel cap boots may be cheaper, but replacing busted boots every couple of months can be more expensive in the long run. Of course, it's hard to know which pair of brand new boots will last the longest, but considering premium boots with a higher construction quality is advisable.

Poorly built boots are, at best, a nuisance. But if they start to slip, are ill-fitted or not suitable for the environment, they quickly become a serious safety risk. Choose work boots that are built to last. That means:

- High-quality materials used inside and out
- Upper and outsole bonding that meets AS 2210.3 standards
- Lengthy manufacturer's warranty
- Specially designed for a trade, rather than generic safety footwear
- Laces, zips or pull-on tabs that are durable

Find the perfect fit at a workwear store

Wearers should try on boots tailor-made for their trade and get advice from a safety footwear specialist. This will help to ensure that they are stepping into the right pair of high-quality work boots with all the safety features they need to get the job done.

Steel Blue
www.steelblue.com.au

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SAFETY FOOTWEAR

Penetration-resistant safety boot

Australian women's boot brand She wear has launched a Penetration Resistant (PR) safety boot with an Electrical Hazard (EH) rating (certified to ASTM F2413-18), designed to keep women safe at work. Penetration-resistant work boots can be a requirement in the construction, mining and transport industries. The She Excels women's safety boot addresses industrial OH&S shoe requirements, including BSI certified 200-joule impact-resistant composite safety toecap, metal-free mid-sole penetration plate, water-resistant upper and a durable, slip-resistant PU/rubber sole, heat resistant to 300°C and fuel, oil and acid resistant.

The She Excels safety boot is a zip lace-up style; it is also lightweight, supportive and airport friendly. It is designed to be puncture resistant, flexible and comfortable underfoot. The high tenacity mid-sole plate is metal-free, ultra-lightweight and covers the entire sole, for enhanced protection. The boots are available online now in women's sizes five to 12 and come with a six-month manufacturing guarantee.

she wear

www.shewear.com.au

Graphene safety boots

Steel Blue has developed a GraphTEC range of safety boots, featuring a graphene enhanced scuff cap and outsole for enhanced protection. Partnering with West Australian-based company First Graphene, Steel Blue was able to create a range of safety boots that offer increased durability and additional strength. When added to the TPU outsole and scuff cap of Steel Blue boots, graphene reportedly provides a 200% increase in abrasion resistance. PureGRAPH also improves mechanical properties such as thermal heat transfer, chemical resistance and permeability.

The range is suitable for mining, mining services, civil construction, heavy industry, and oil and gas. The GraphTEC range is designed to feel identical to other Steel Blue boots while providing a greater level of strength and protection. Due to the strength of the graphene in these boots, the GraphTEC range offers enhanced durability and makes them a more environmentally conscious choice.

Steel Blue

www.steelblue.com.au

Biohazard spill kits

The latest ZeoMed spill kits are designed to comply with Department of Health regulations in the handling of bloodborne pathogens in the workplace. Each kit is designed to provide a hygienic handling and disposal system for spills commonly encountered in workplaces and public and recreational areas, including blood, vomit and bodily fluids that pose health hazards including HIV and hepatitis.

ZeoMed kits — which can be hung next to fire extinguishers or placed in first aid kits for quick recognition — include protection required by Safe Work Australia. Contents of the kits include absorbent powder, absorbent cleaning cloths, sealing waste disposal bags or sealing bulk containers, face masks, splash goggles, aprons, scoops, scrapers, bright yellow waste warning materials and instruction sheets.

Customised kits can also be produced to suit the particular needs of individual sites. The main kits include the Body Fluid Spill Kit, designed for in-field use with portable first aid kits for quick access by employees. The Biohazard Spill Kit is suitable for corporate, hospitality and public domains, located near first aid stations or cleaning trolleys.

Cytotoxic Body Fluid Spill Kits provide additional protection for clean-ups of body fluids from patients who have been treated with cytotoxic drugs. The Laboratory Spill Kit is configured for laboratory and similar applications where spills may include body fluid or other liquids, such as chemicals. The Multipurpose Spill Kit is suitable for venues such as supermarkets, variety stores, shopping centres, restaurants, and hospitality and transport terminals where staff or the public may be at risk from biohazard and chemical hazards as well as slip and fall hazards. The Sharps Kit is designed for safely disposing of needles and syringes.

Clean Stream Technologies

cleanstreamtechnologies.com

WHICH PPE BEST PREVENTS WORKPLACE HEARING LOSS?


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Noise-induced hearing loss (NIHL) has an alarmingly high incidence, particularly in the industrial sector. This type of injury is often the basis for workers compensation claims and can cost companies billions of dollars in damages.

Background analysis of noise exposure data submitted to the Safety Regulation System (SRS) shows that a large percentage of industrial workers are regularly exposed to noise levels that could cause permanent and debilitating damage.

Therefore, finding the right PPE to prevent workers from experiencing hearing damage is crucial.

Why are heavy industry workers at higher risk?

High noise levels and proximity to loud machines and heavy-duty equipment, such as grinders and industrial machines, have a negative effect on hearing. Noise levels can exceed 105 dB around this equipment.

The measurement used to quantify noise exposure is the LAeq8h, which is indicative of the total amount of noise energy that the ear absorbs over an eight-hour period. Based on recent exposure monitoring data, areas of significant concern include:

- 61% of all noise exposure measurements for workers exceeded 85 dBA.
- In more than 35% of the noise exposures exceeding 85 dBA, the worker was not using PPE.

Failure to use hearing protection is consistent across all ages and occupations, including workers in management and supervisory roles.

Hearing loss and permanent damage

The severe or repeated stress associated with noise exposure (including occupational) causes permanent damage to neural tissue in the inner ear, leading to hearing loss. Hearing loss can impair communication and is associated with an acceleration of cognitive aging and increased risk of dementia, as well as increased heart rate and blood pressure, headaches and problems to concentrate. As neural tissue cannot regrow once it is lost, there is limited scope for recovery once the consequences of noise exposure become detectable.

Individuals who have experienced hearing loss need to be protected from further damage. Possible symptoms include difficulty hearing warning signals, difficulty in communicating, accidents caused by problems with hearing and a ringing or buzzing in the ears. After an employee leaves a noisy area, their hearing may seem dull or muffled.

Hearing loss usually occurs gradually, so people may not realise it until it's too late. But hearing loss is 100% preventable. Unfortunately, once it occurs, the damage can't be reversed and there is no cure.

Hearing protection and the legal workplace obligations

By law, hearing protection is required in any workplace environment where the average noise levels exceed 85 dB. From April 2018, health and safety personnel must also make sure that the hearing protection products used by employees comply with the Australian Personal Protective Equipment (PPE) Regulations as outlined by Safe Work Australia.

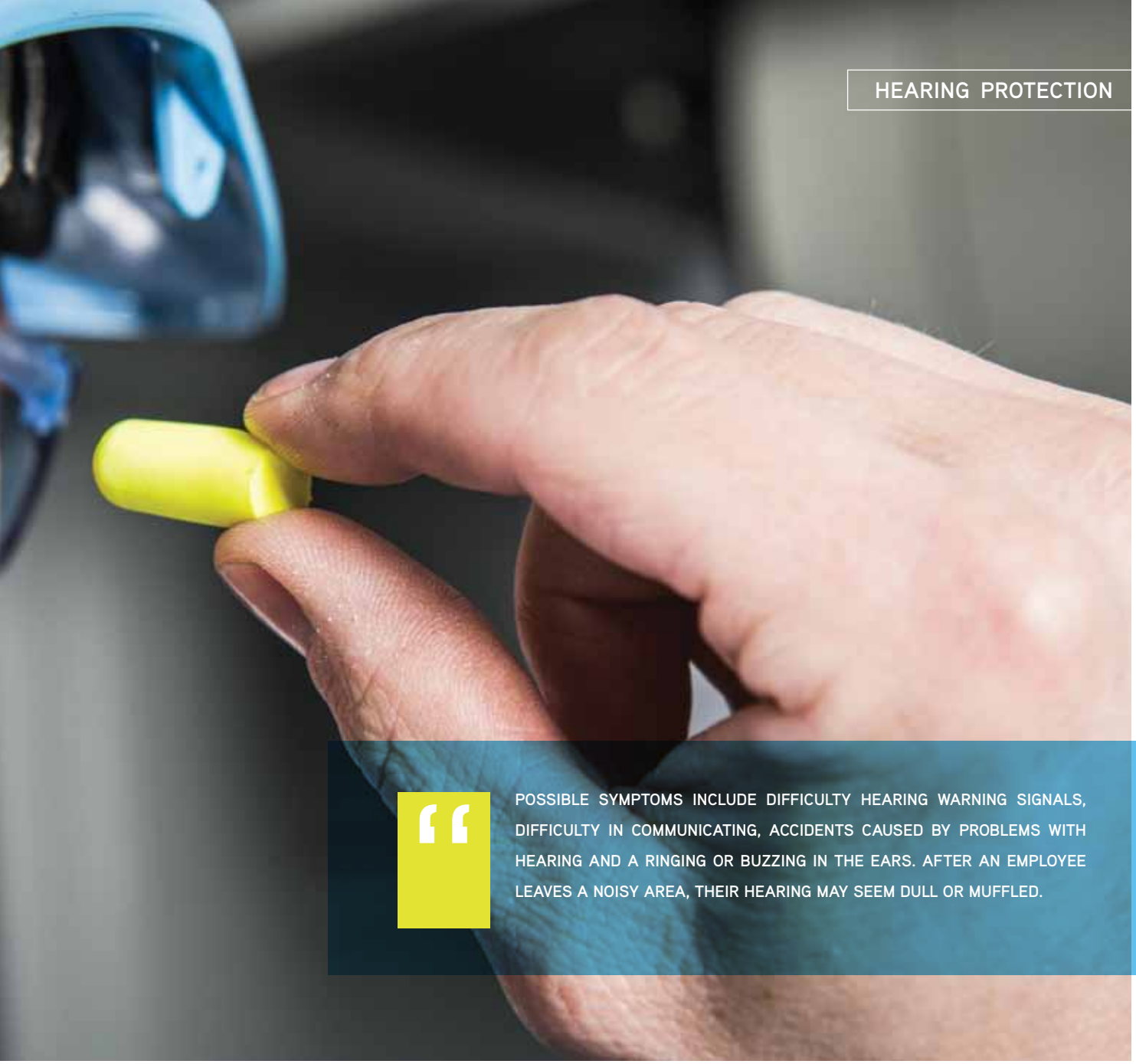
It is critical for industrial workers and their management to be aware of workplace noise exposures. Control of noise emissions at source and avoidance of exposure are critical to hearing conservation. Hearing protection becomes necessary if noise does exceed the safe threshold.

Hearing protection can only be effective if it is consistently and correctly worn by workers — and if it fits well.

Earmuffs are commonplace, but have disadvantages

Earmuffs offer a little protection, but make sound muffled and communication very difficult. Industrial workers often complain of confusion about identifying spoken words and reduced audibility when wearing conventional hearing protectors. A lack of clear communication frequently leads to an increased risk of workers struck by moving equipment or errors made due to poor communication with co-workers.

Over-attenuation can also endanger the user, as warning sounds are blocked. In noisy environments, workers are often



> POSSIBLE SYMPTOMS INCLUDE DIFFICULTY HEARING WARNING SIGNALS, DIFFICULTY IN COMMUNICATING, ACCIDENTS CAUSED BY PROBLEMS WITH HEARING AND A RINGING OR BUZZING IN THE EARS. AFTER AN EMPLOYEE LEAVES A NOISY AREA, THEIR HEARING MAY SEEM DULL OR MUFFLED.

forced to move to a quiet area, or they may rely on the use of hand signals to communicate.

Although very common, earmuffs can also be uncomfortable to wear — particularly in combination with other PPE-gear such as hard hats and safety glasses. Workers who wear earmuffs while operating in hot, humid types of environments will find that they become sweaty and hard to wear for long periods of time. Because of this added discomfort, some employees have the tendency to remove their hearing protectors to overcome the discomfort or obstacles in communication. Removing hearing protection increases the risk of being exposed to loud noises and suffering damage.

The pros and cons of universal ear buds

Like earmuffs, another common ready-fit option is disposable foam plugs. These ready-fit plugs are somewhat more comfortable than cumbersome earmuffs, but unfortunately also make communication difficult.

Compared to custom hearing protection, these earplugs have some very obvious disadvantages (overprotection, lack of comfort) and they are also a costly option — both financially and for the environment.

For example, a company of 50 employees that use four new pairs of foam plugs every day (new ones after each break) would spend around $86,000 on foam plugs over a period of four years, compared to $13,000 for custom earplugs in that same timeframe. That is a saving of over 80% in costs, and it prevents 192 kg of rubbish from going straight to landfill.

Why custom earplugs are a good solution

Industry requires PPE that enables workers to hear one another, stay aware of their surroundings and yet still be protected from dangerously high noise levels.

Fabricated using medically classified soft silicone material, custom-made earplugs achieve all this. Designed to offer comfort, discreetness and durability, these earplugs are made to suit a specific work environment, person and their individual ear shape. In addition to being cost-effective, advantages include:

- Easy for workers to communicate due to tuned filters
- Available in class 5 AS/NZS1270 tested
- No over-attenuation due to optimal protection
- A product that can be worn for an entire shift (comfort and communication)
- Doesn't interfere with other PPE like glasses and hard hats
- Discreet fit
- Suitable for humid and harsh environments (no sweating)

Pacific Ears Australia Pty Ltd
www.pacificears.com.au

Air purification system

Clean Stream Technologies has launched the EnviroKlenz Air System Plus, an air purification system that is designed to improve employee wellbeing and put customers' minds at ease, in industries like health care, aged care, dentistry and a range of industrial applications. The EnviroKlenz Air System Plus kills viruses multiple times smaller than the COVID-19 virus, such as SARS-COV-2. It is also effective in neutralising gram-negative bacteria (***E. coli***) and gram-positive bacteria, such as ***Staphylococcus epidermidis***, according to testing carried out by Intertek Labs, which are audited/accredited to ISO/IEC 17025 or equivalent standard.

EnviroKlenz is effective because it combines medically proven ultraviolet UVC germicidal irradiation with safe and effective earth mineral technology originally developed for the US military and still used today to destroy chemical warfare agents and toxic industrial chemicals. The EnviroKlenz Air System Plus will be displayed at the WHS Show in Melbourne from 25–26 May (Stand H17), where it will share a stand with Clean Stream Technologies' sister company, Enware, which will be displaying its safety showers and eye wash systems.

Clean Stream Technologies
cleanstreamtechnologies.com

Single-person lifter

The Pack King LEV8 single-person lifter is a hybrid, using a ladder (with fitted hand rails), to get the operator into a 550 x 600 mm working enclosure. This makes it safer to paint, clean, fit or fix using both hands, while the user's tools remain close by.

The LEV8 folds down to 1300 x 800 x 2070 mm high, so it fits through a standard doorway.

There are two front outriggers that can be set either forward or splayed out. Each has its own winding handle. They stow away by simply folding up and pinning.

The wheels are large (250 mm) with brakes on the swivels, so it is easy to push and locate the LEV8 precisely.

The operator's carriage is simply unfolded, pinned, then wound up to any height using a hand 'brake' winch, then the mast is underpinned for extra safety. A pin locks the unit in place, should the sensor detect a slack or broken wire rope, so that the operator works with two fail-safes.

The ladder has hand rails and telescopes. The operator enters the carriage from the rear, flips the rear floor guard up (to prevent tools from falling out), then fastens a safety chain behind themselves.

The product has no hydraulics, battery or electrics — simply wind up and work. The maximum load capacity is 125 kg.

King Group of Companies Pty Ltd
www.kinggroup.com.au

Compliance monitoring software

Cited is an online platform developed by software company CV Check that allows for real-time compliance monitoring of employees. Once information is onboarded in the easy-to-use dashboard, Cited sends real-time alerts to keep track of employee certifications and various expiry dates. CV Check offers screening and verification services to a range of industries including mining and resources and oil and gas. CV Check also provides OnCite, a free mobile app available to any worker that links to Cited to create a real-time, secure, digital credentials passport that allows employees to have their data available at all times, and to transfer required information to a future employer if they use the same system.

The locally developed real-time compliance monitoring technology offers companies the opportunity to streamline processes, thereby reducing cost and risk. Cited allows users to see in real time which employees need to take action and when to remain up to date.

With all documentation in one place and the ability to check compliance details at any time in the past, the compliance monitoring software makes generating reports for auditing and/or investigation purposes time-efficient and simple. Cited can also be tailored to individual requirements; companies can add and remove credential checks as required and new on-site inductions or changes to regulations can be added immediately, while workers' updates can be seen in real time, reducing the potential for downtime while checks are carried out.

Once employee credentials are onboarded, details can be accessed when offline, including in remote areas and during times of internet/Wi-Fi outage. Privacy concerns have also been considered, with employees owning all data, at all times. Employees can upload as much or as little as they're comfortable with and can delete information at any time.

CV Check

cvcheck.com

Active low-voltage switchboard system

Schneider Electric has launched the PrismaSeT switchboard as a complete system level architecture in Australia. The switchboard presents enhanced fire safety features, using innovative PowerLogic HeatTag sensors for early detection of overheating wire connections or cables. Reinforced doors and frame make it easier and safer to operate and maintain the LV switchboard, supporting its durability in any environment.

The sheet metal for the switchboard is manufactured in Australia, with the system adapted to meet unique Australian market needs. The switchboard's modular design helps optimise its footprint and ease scalability. PrismaSeT also achieves operational safety standards through comprehensive testing and validation, thereby complying with AS/NZS 61439.1&2 standards.

The smart and connected PrismaSeT is designed to make installations dependable. The active low-voltage switchboard includes built-in cloud connectivity, providing instant access to intelligent alarming, energy usage analysis, trends and preventative maintenance plans. It increases efficiency for switchboard builders, electrical contractors, facility managers and end users. PrismaSeT is available Australia-wide through a network of certified switchboard builders who are trained and onboarded before being appointed by Schneider Electric.

The PrismaSeT's fire prevention modules are designed to analyse gas and particles in the switchboard and alert before any smoke or insulator brewing occurs. Its simplified connectivity modules also provide energy usage analysis and performance tracking.

Schneider Electric

www.se.com/au

Clean rooms

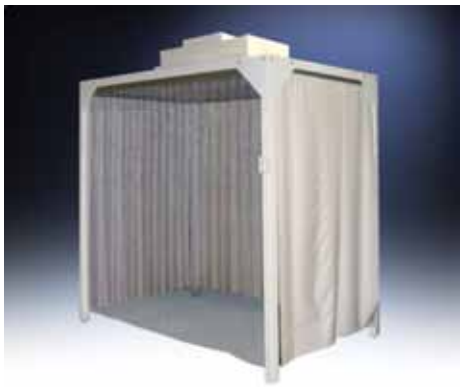
Softwall Clean Rooms are designed to meet ISO 5 – ISO 8 requirements, with a flexible design that allows them to locate over and around equipment, with the option of being mobile with casters.

The structural framework is of aircraft anodised aluminium with clear vinyl curtains around the unit. The curtains can be strips or solid, depending on restriction of access, in clear or opaque white vinyl. A fan-powered HEPA filter and fluorescent lighting modules along with blank ceiling tiles are positioned into a ceiling grid system and optional entry airlocks can be incorporated into the design.

The HEPA filter modules have power cords and speed controls and can operate on 115 or 220 V power.

HEMCO Corporation

www.hemcocorp.com



Hydraulic nut and bolt fastening technology

Technofast EziTite Hydraulic Nuts — designed and manufactured in Australia — can be actuated simultaneously so that groups of several or many fasteners are simultaneously tightened to the same force, for long-lasting evenly tightened jointing, vital to the reliability of slewing and luffing equipment. This is accomplished by delivering an exact hydraulic pressure through interlinked hoses to the EziTite fasteners, then tightening their individual Lock Rings to hold the generated bolt force. The force generated within the nut stretches the bolt to precise specification.

Applications of EziTite Hydraulic Nuts include rotating, vibrating, turbine, heat exchanger and mineral processing equipment, including stamping, crushing, dragline boom supports, high pressure grinder rollers, hoists, slewing tower cranes, heavy load support and mobility including civil engineering equipment, conveyor drives, motors and shells. EziTite Hydraulic Nuts are suitable for tensioning all of the studs on a flange, joint or cover simultaneously, loading entire groups of fasteners all at once. This gives an accurate and even load onto the flange/joint, enhancing its long-term security, safety and reliability.

The user-friendly hydraulic nuts are fast to fit and remove and require little physical effort. They are designed to reduce maintenance downtime and improve safety on the job by providing reliable and precise tensioning. The hydraulic nuts are also suitable for difficult or confined spaces. The EziTite Hydraulic Nut can be used where vibrational or torsional stresses are a problem; when regular maintenance requires repeated adjustment or removal of nuts; or where accurate loading is required on bolting.

Technofast Industries Pty Ltd

www.technofast.com

HOW PARALYMPIANS ARE CHANGING WORKPLACE SAFETY ATTITUDES

There's one thing that's always guaranteed to happen when icare speaker Kahi Puru visits a workplace — and that is the safety message he delivers will be personal, memorable and no-holds-barred.

As part of icare's Paralympian Speakers Program, the Paralympian weightlifter recently visited team members at Australia-wide building supplier Dahlsens, sharing a cuppa in the tea-room along with the hard-won insights he gained after experiencing a life-changing forklift accident.

The medal-winning Aussie athlete has never taken his success on the international stage for granted and said that in recent times, what has motivated him isn't winning gold, but winning over the attention of at-risk workers with his powerful story.

Recently, the team at Dahlsens heard how unreported workplace hazards resulted in the loss of Puru's leg, and that the painful journey to recovery impacted not just Puru, but his workmates, friends, family and community.

Puru shares his story not to cause alarm, but to let workers know that no matter who they are, and what role they hold, every individual in a team can make a difference to the safety of themselves and colleagues.

"Accidents can happen to anyone — at any time. Sometimes people with decades of experience in driving or operating a machine can slip up. Sometimes it's the inexperienced staff. My message is for everyone in the workplace to play their part," he said.

The weightlifter encourages workers to listen carefully to safety training and speak up whenever they identify a risk, no matter how small.

"Let's all play it safe! It's a really positive message for workers," he said.

"And the aim of sharing my real-life story is so the businesses I visit can really deeply engage their teams on the importance of workplace health and safety."

Puru's message resonated deeply with Nicole Iannazzone, Injury Manager at Dahlsens, who said it aligned with the wider program of safety training and awareness that the company had developed over several years.

"Kahi's story deeply resonated with our team and will stay in our memories for many years to come. By Kahi sharing his story, one of our team may make a safer choice at work which could very well prevent a life-altering injury from happening in the future."

Puru went on to compete at the Sydney 2000 Paralympics and now travels around NSW as part of the Speakers Program, sharing his unique stories of workplace injury to help support a culture of safety at work to drive down workplace injuries, and showing that a return to work and a return to life after injury is possible.

"I was a young man with a young family when I had my accident at work. I've experienced first-hand how devastating a workplace injury can be, not just for you, but also for your family and your friends," Puru said.

Chris Harnett, icare's General Manager Prevention, said icare's Speakers Program was a great way to spread the message of workplace health and safety.

"Stories like Kahi's bring home the 'why?' around injury prevention. Our ability to empathise is integral to our desire to take action to help others. Emotions are important because they motivate us. Knowing something is useful, but feeling that knowledge is what drives the impetus to act.

"With 53 workers killed in workplace accidents in 2021*, education, training and tools are crucial in building a safer work environment," Harnett said.

According to data gathered from the icare Paralympian Speakers Program feedback survey, over 96% of companies report positive changes in attitudes towards workplace safety after involvement with icare's Paralympian Speakers Program.

The program is run in partnership with Paralympics Australia and is free for icare customers. To find out more about the program, visit: https://bit.ly/3NKurWU.

** Key work health and safety statistics, Australia 2021.*

icare
www.icare.nsw.gov.au

CASE STUDY

Reducing lost time injuries through AI sensors

A retail warehouse operation in the UK, Wincanton, has identified musculoskeletal activity as the fourth highest hazard within its operation. The warehouse is primarily responsible for the pick, pack, and dispatch of household, and other 'awkward' products directly to the end customer — 20% of all the products are heavier than 15 kg. These products also comprise 19% of the lifts that are performed by workers across the operation.

As part of its safety processes, Wincanton wanted to provide movement training to workers on the job, enabling them to learn how they were moving while working (as opposed to simply in a classroom setting). The company needed to find a solution that was personal and allowed workers to oversee their own safety.

There was also a significant need for formalised continual checking of manual handling safety compliance. It needed to:

- Be scalable.
- Give workers the individual training needed to move safely on the job.
- Incite permanent behavioural change.
- Provide formalised monitoring, coaching and support to assess compliance with manual handling training for new starters; workers returning after an incident or injury; workers recommencing work after a performance management issue related to manual handling compliance; and all workers at random points across the year.

Wincanton utilised the SoterCoach solution, which consists of a small clip-on sensor that the worker can affix to their hi-vis vest. These devices provide feedback and data to the worker, and an online management dashboard that trainers, coaches and line managers at Wincanton used to appraise the workers' technique.

The sensor captures and alerts workers to any high-risk spine movements via audible and haptic feedback, including lumbar flexion, rotation, static postures, repetitive movements and any high intensity movements. All data is fed back to a communal tablet in the charging docking hub, where workers can view their own personal results.

The behavioural change aspect of the sensors' real-time biofeedback encouraged each worker to internally learn new and correct movement patterns, altering neuromuscular pathways and resulting in permanent movement change.

In fact, using the wearables resulted in 250 days without a lost time injury, with benefits including:

- a reduction in the manual handling risk to Wincanton workers across the operation;
- a reduction in the cost of musculoskeletal injury to the business;
- the pioneering of a 'safety first' culture protecting staff when they are at work;
- a reduction in downtime for both staff and management.

Wincanton deployed a soft launch approach to the implementation, which resulted in high engagement. A group of workers and safety professionals across the operation were chosen to introduce the technology to a wider audience. This allowed them to speak from a position of experience to colleagues about how it worked, the information they would receive and how it had personally helped them across the two weeks.

Typical worker concerns and challenges when introducing technology and devices included:

- management using them as a GPS tracker to see where they were onsite;
- being tracked for performance management;
- use of the data to manage those not improving their results.

To overcome this, Wincanton worked with Soter to clearly understand the sensors and eliminated the use of words like "tracker" or "monitoring" to remove any uncertainty. The company used information presentations from Soter to explain what applications the technology contained and how the devices were there to support the workers, giving them information and coaching on how to move safely. They used examples and compared the devices to a Fitbit or Apple Watch that would give them not only data on how they are moving, but teach them to move correctly and stay safe. Workers were unanimous in how easy it was to use and how straightforward and unobtrusive the devices were.

"We have been really pleased and surprised to find colleagues taking it to heart and doing their best to reduce the vibration and haptic feedback alerts that increase awareness of their unsafe movement postures," said Mark Douglas, Continuous Improvement and Projects Manager at Wincanton.

"Their considerations have been along the lines of 'I can choose to ignore the warnings, but they are there to give me information to help keep me safe so why would I?' Bringing this technology into our teams has empowered our workers to tell us about their safety."

Soter Analytics
www.soteranalytics.com

Rubber-and-fabric springs

Rubber-and-fabric Marsh Mellow springs from Firestone are distributed throughout Australia by actuation and isolation specialist Air Springs Supply. They are designed to alleviate excessive spring set and breakages.

Compression set can become a chronic problem with metal coil springs supporting and isolating crushing, shaking and screening equipment. This means that some springs can settle, or set, suffering permanent compression below their original design height, preventing them from performing to their original specifications. One side may become more worn than another, for example, affecting dynamic stability, imposing uneven loads and even leading to breakages and production interruptions. The problem is compounded by the springs often being in the most inaccessible parts of machinery where workers have to crawl around in confined spaces, leading to delays and safety issues.

Marsh Mellows can be used in applications such as shaker screens, crushing equipment, vibrating bins and other vibrating equipment used in manufacturing, materials handling and processing, quarries, mineral processing, food and beverage and primary product processing. They operate silently with more spring travel and greater load capacities than convention coil springs. Marsh Mellows are designed to withstand breakages, splinters or fragmentation and they suffer only 7% compression set over the life of the part. This means they can be changed in and out of different sets of springs without upsetting the dynamic balance of the whole set.

Cylindrical Marsh Mellow springs are constructed of a solid rubber core with a hollow centre and several plies of fabric-reinforced rubber as an outer cover. The plies provide the springs with stability as well as a consistent cylindrical shape. The spring's components (rubber, bias plies, size of centre) are combined in different ways to meet specific load and performance requirements (such as those of crushing and screening equipment). This gives them flexibility and precision. Marsh Mellows also offer constant vibration isolation with changing loads; their variable spring rate allows for a nearly constant natural frequency under the impact of such loads.

Air Springs Supply Pty Ltd
www.airsprings.com.au

Lone worker app

The StaySafe lone worker app gives employers visibility of the location and safety status of lone workers in an emergency and allows them to check-in safely once they have finished a lone working or travel session. Employees are in control of when their location is visible to ensure their privacy is maintained.

The app has been designed for a simple user experience. As the lone worker mobile app is installed on employee smart devices, it is generally always with them and charged; this means there is less user resistance compared to a separate lone worker device. With no capital outlay for hardware, the mobile app can be running in less than 24 h, with minimal upfront investment.

With the mobile app, employees can start a timed session before they begin a period of lone work or travel. This triggers a countdown and activates a satellite GPS tracker, visible in the Hub. If an employee fails to end their session safely, a session expiry alert will be sent to the monitor. A panic button also allows employees to send an immediate panic alert if they are in trouble and need assistance. This can be triggered in the app at any time, even if a session is not running. A panic alert can also be triggered discreetly using the phone's power button.

The app switches between all available connections to offer optimal connectivity and protection to lone working employees. Data is the first connection the StaySafe app attempts to make, but in areas where a signal cannot be located, low signal mode is automatically activated. In low signal mode, alerts and session functions will continue to operate as usual, with location data updating if an alert is triggered.

Employers can choose to monitor activity in the Hub in-house or outsource to StaySafe's professional 24/7 monitoring and response partners. These options can also be combined to structure a bespoke service.

Safe Apps Ltd

www.staysafeapp.com

Bluetooth headsets and earplugs

Sensear's Bluetooth Headsets and Earplugs can be used with mobile communication devices via a cabled/wired connection or Bluetooth, which supports conversation and audio streaming. The headsets offer high NRR ratings of up to 27 dB on standard headsets and up to 31 dB with extreme noise (dual protection) headsets or smart earplug solutions.

Sensear's Bluetooth Headsets can be connected to smartphones, tablets, computers or two-way radios with no wires to get tangled or caught on equipment. The headsets are also suitable for Microsoft teams meetings, Zoom meetings and Skype, while meeting the needs for audio streaming. The headsets also enable users to communicate clearly in high-noise work areas and make/take phone calls without removing their hearing protection.

The headsets also offer clear two-way radio communication via Bluetooth with the option for wired connection. Users can also communicate with colleagues in workgroups while maintaining social distancing, with headset-to-headset communication.

All of Sensear's smart products come with the company's patented SENS Technology, which enhances speech and suppresses background noise so that users can verbally communicate and protect their hearing while maintaining 360° situational awareness of their surroundings in noisy environments.

Sensear Pty Ltd

www.sensear.com

Construction manager training course

The Construction Manager Impairment Training course is designed to equip construction managers with the knowledge and skills to assist Human Resources with supporting employees who may be affected by drugs and alcohol, experiencing a mental health condition or affected by fatigue. The course helps managers identify staff who are at risk of harm and then provides a range of information that helps them understand what their employees may be dealing with. The course also provides training in steps they can take to assist them.

The course is easily accessible and affordable, and meets international safety standards. Because the course is online, managers can do the course at home or in the workplace. Users will receive their certification two to 24 hours after the course is finished, for minimal delays when inducting new employees.

Each Impairment Training course is designed using evidence-based learnings with oversight by Ken Pidd, Adjunct Associate Professor with the National Centre for Education and Training on Addiction at Flinders University.

Impairment Training

www.impairmenttraining.com.au

HUMAN VIBRATION

Industry workers are continuously exposed to mechanical vibration for performing their job daily, such as operating power tools, machinery or heavy vehicles. The effect of this vibrational phenomenon on the human body can be harmful depending on its intensity and the duration of exposure. This is a severe problem that has to be addressed in the industry. There is a high likelihood of damage to parts of the human body that are continually exposed.

Mechanical vibrations transmitted from the vibrating tools may negatively affect the tissues and internal organs from the shock excitation. Prolonged exposure of the human body to mechanical vibration will cause pathological changes in the nervous, vascular and osteoarticular systems. As workers from the industry sectors experience these days, the changes resulting from contact with mechanical vibration are called occupational disease. Occupational diseases are prominent for workers that operate heavy equipment in the forestry, mining, metals and construction industry.

Exposure to vibration does not directly translate to damage as injury may develop over a long period and repetitive activities. Therefore, employers need to prevent workers from excessive exposure by controlling the risk and limiting their daily exposure. The daily exposure limit is 5g and 1.15g for hand-arm and whole-body vibrations, respectively. The workplace must assess the risk and ensure that this value is not exceeded by implementing a maintenance program.

Performing vibration measurements to judge the risk of damages and injuries have become essential in the workplace. Measurement standards were developed based on ISO5349 and ISO2631 to evaluate human exposure to hand-arm and whole-body vibration, respectively. The triaxial accelerometers can be used with their special adapter to perform the specific measurement and must be capable of measuring the highest magnitude of peak accelerations.

The VM31 vibration meter is designed with the module suitable to perform triaxial measurement of hand-arm and whole-body vibration conforming to ISO2631, ISO5349 and ISO8041. It can display the running and interval RMS, maximum RMS, and maximum peak value with data logging function and capability for PC interface via USB or RS-232 interface.

As a starting point, vibration data is recorded when the workers are operating on a particular tool or machinery. Although the equipment manufacturers may have provided such data, the actual measurement may be more significant due to external circumstances commonly encountered in daily operations. This emission data is used to validate that the machine is safe to operate within the specification provided by the equipment manufacturers.

When determining the duration of exposure, the user should make the correct assessment based on observing the working process. For example, driving a truck may continuously last several hours, while operating a forklift or using power tools are intermittent.

The whole-body vibration measurement should be conducted over the entire exposure time as it mimics the actual working environment. It can be evaluated through the buttocks and feet of a seated person or the feet of a standing person. For accurate representation, it can be expressed as equivalent frequency-weighted acceleration within the test duration and the highest value of RMS or VDV in the three axis.

Hand-arm vibration can be performed by installing the sensors on special adapters and holding them on a handle or between fingers. The measurement is performed over a few short measurements rather than continuous measurements to mimic the typical operations when the workers are in contact with the tool.

A vibration meter is a reliable evaluation tool to implement a whole-plant action for monitoring and reducing human exposure to vibration. This system provides data in a clear format and comes with accessories kits to suit hand-arm vibration or whole-body vibration applications. Bestech Australia provides the VM31 vibration meter and accelerometers to support you in providing a safer workplace for your workers.

Bestech Australia Pty Ltd
www.bestech.com.au

BESTECH
Sensors & Teaching Equipment

CASE STUDY

Onsite vending machines: a safe solution

Access to PPE is critical for the safety of workers. When work is being conducted out of regular business hours, it can sometimes be difficult for employees to source the gear that they need.

The City of Canada Bay, a thriving local government area in the inner west of Sydney, needed a way for its workers to have 24/7 access to PPE items.

In October 2020, after an internal realignment, the council sought a solution from its suppliers. As part of its proposal, Blackwoods suggested the placement of an onsite industrial vending machine to manage the council's critical inventory, most of which was PPE.

"Like most businesses, we all had to realign our thinking during the COVID pandemic. Our first priority is to keep staff safe, and to do this we need access to key PPE items 24/7. The vending machine became the most cost-effective, space-saving and logical solution," said Marea Getsios, Procurement and Fleet Manager for Canada Bay City Council.

"As well as site-approved PPE, the vending machine has given the council a distribution point for COVID-related items such as hand sanitiser, antibacterial wipes and disposable respirators. The machine reordering process is automated and, through usage reports and stock-on-hand reports, we can help the customer avoid stockouts of critical PPE which would impact their work schedules," said Ben Lawes, Inventory Solutions Specialist at Blackwoods.

Canada Bay Council became the first council in the Sydney metropolitan area to adopt this solution, and the widespread benefits have included the following:

- A reduction in consumable spend
- Improved safety and compliance
- Greater visibility of usage among staff and ensuring the approved PPE is being utilising at worksites
- Automated reporting and managing key product trends
- Access to inventory 24/7 for essential safety and PPE items
- Higher productivity
- Blackwoods restocks the machine, ensuring all stock is maintained at high levels
- Touchscreen interface with item dispersal in just four seconds
- Less time spent by staff leaving the worksite to obtain these goods.

"At first our staff had a bit of a chuckle and were disappointed it didn't dispense soft drink or chocolate bars, but now they are all grateful that council has prioritised their safety by ensuring key PPE are available around the clock for easy access. There has been a reduction in the hoarding of items such as face masks, sanitisers and gloves," said Getsios.

Blackwoods
www.blackwoods.com.au

Antimicrobial sanitiser

Produced by BioInnovate and distributed by Aussie Pharma Direct, ViroCLEAR is an antimicrobial sanitiser suitable for the mining industry. Laboratory tested, the BioInnovate technology is powered by extracts of two botanicals — native lemon bush and chamomile.

The formulation contains no alcohol or other harsh chemicals, meaning it is non-toxic and non-corrosive to materials and machinery, thereby extending the lifespan of equipment. ViroCLEAR is available in three formats: a hospital-grade surface disinfectant, a fogger and a hand sanitiser.

The ARTG listed surface disinfectant is designed to kill COVID-19, SARS and rhinovirus (common cold) in 90 s, ***Candida albicans*** within 60 s and 99.99% of germs and bacteria.

The fogger sanitises and protects large areas with the touch of a button. Working much like a cockroach bomb, the ViroCLEAR fogger dispenses a fine mist of antimicrobial sanitiser that gets into every crack and crevice to create a protective layer covering up to 40 m^2.

The hand sanitiser is free from alcohol and ethanol, making it gentle on hands, unlike most hand sanitisers that can lead to dry, irritated skin and exacerbate eczema and other skin conditions.

Aussie Pharma Direct
www.aussiepharmadirect.com.au

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Director
NASA Safety Centre

Shane Fitzsimmons

Comissioner,
Resilience NSW

Rachael Robertson

Former Antartic Expedition Leader and Author

Prof. Dr. Joachim Breuer

President, ISSA

Kelly Ferguson

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WHS SOFTWARE IMPLEMENTATION
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Dr Manuel Seidel, CEO, ecoPortal

Health and safety in the workplace has, quite frankly, never looked more complicated. Thanks to a pandemic creating vast cultural changes, and a general mindset transformation in the working population, health and safety is no longer limited to managing hazards and risks.

Instead, leaders in the health and safety space are required to monitor organisational mental health, bolster employee wellbeing and manage their organisation's COVID-19 response plan.

Indeed, while the scope of workplace health and safety continues to grow, the extra work is often piled onto just one person's plate. These rapidly evolving job requirements mean that WHS leaders have to be switched on at all times, and require a system that supports them with real-time, actionable data.

Finding a technology system to help with achieving this can be the lifeline that safety managers are seeking. However, technology is an all-encompassing term. Despite being seen as the silver bullet for complex business problems, technology implementation projects fail at a rate of 69%.

Across the board are a plethora of common pitfalls that lead technology implementation projects astray. It is important to understand where things can go wrong, before committing to any one system.

Here are a few things to avoid.

Lack of alignment

What is the objective of the software? No matter where an organisation stands on its journey towards a software solution, it's important to consider its objectives and the problems it is looking to solve.

There tends to be a spectrum of what organisations are looking to achieve when it comes to health and safety technology. On one end of the spectrum is basic compliance, where businesses are just aiming to tick the boxes of industry standards, such as ISO 45001, or AS/NZ 4801. At the other end are organisations embedding a positive, holistic safety culture at all levels.

Both ends of the spectrum are valid objectives, and where a business falls often depends on which stage of growth the organisation is in, as well as its industry. However, these wildly different objectives require very different software solutions, as does each stage in between. This is, therefore, a key upfront consideration upon which all parties should be aligned.

Creating a system for the health and safety manager

Given that it is the safety manager's initiative, and an area in which they spend much of their time, there is often the temptation to scope, plan and create a system that meets all of their own needs. However, this isn't always what's best for the end user.

The number one critical success factor for any software project — including WHS software — is end-user acceptance. If the objective is to achieve engagement at all levels to truly embed a safety culture within the organisation, then the most important factor needs to be bringing people to the system.

Key elements such as a modern, clean — and most importantly, simple — interface make a system usable for everyone. It is essential to implement a system in which the user experience is aligned specifically to each individual person's role and only asks them for the important, key information to avoid clutter.

Lack of mobility

Let's face it, everything effective is mobile these days — and social media has transformed technological expectations in the workplace. Staff expect easy, mobile capabilities from any system they are using.

It's the same principle for safety. There are huge advantages to reporting hazards, near-misses or incidents from a mobile phone. Workers can capture valuable data, tag the exact geolocation, take photos or videos and upload them right then and there — and then continue to get on with their job. If people have to upload details about an incident or near-miss at the end of the day, when they get home from work, then it is possible for them to miss important information or forget specific details.

Even better, mobile capabilities can provide crucial offline access for workers in remote areas, as well as providing immediate, critical emergency and safety alerts to all key parties.

> THE NUMBER ONE CRITICAL SUCCESS FACTOR FOR ANY SOFTWARE PROJECT — INCLUDING WHS SOFTWARE — IS END-USER ACCEPTANCE.

Limited external party coverage

Organisations do not exist in a vacuum. Every organisation has at least some external stakeholders — be they suppliers, contractors or specialist services. Whenever these external parties are onsite, companies have a duty of care to ensure their safety, as well as the safety of all other visitors.

It's therefore crucial that all visitors are catered for by WHS software. Aim to find a software that allows contractor organisations to manage their own workforces, including updating their people, induction training and licence information.

Furthermore, consider software with visitor management capabilities. It is critical for a health and safety manager to know who is onsite, at all times. With visitors, not only is their safety important, but so is their experience of the workplace. Software that caters for visitors offers a seamless experience — after all, there's no worse first impression than a queue at reception.

Selecting a vendor based on features alone

When it comes to software selection, it's easy to get excited about features, and features only. While the software chosen is, of course, crucial to the success of a health and safety program, partnering with a vendor that focuses on a long-term relationship is just as important.

Organisations need to partner with a software company that not only understands organisational hazards and risks, but assists with establishing a company-wide safety culture at each level.

The software company needs to have the capability and capacity to onboard its clients effectively, providing ongoing service and support, and not be afraid to push the safety technology frontier further.

The benefits of compliance software

It's an old adage, but change certainly doesn't happen overnight. Technology can, however, rapidly transform and improve the way an organisation 'does' safety. Systems that are designed with key organisational objectives in place mean that more staff are going home to their families, unharmed.

With the right system in place, companies will benefit from increased reporting and engagement, ultimately affording managers time to work on proactive tasks that truly promote a blossoming safety culture.

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CASE STUDY

Tech to monitor drowsiness, enhance safety for mineworkers

Optalert, the developer of an algorithm to quantify deterioration in cognitive brain function due to drowsiness, sought a supporting hardware solution that could be deployed in heavy industrial equipment. The solution needed to operate in remote areas that experience large temperature and humidity volatility and high levels of dust and dirt.

Optalert is a medical technology company using blepharometry (the measurement of blinks) to measure drowsiness, as the company discovered a key biomarker for drowsiness: the connection between brain function and eyelid movement. Optalert's Eagle Industrial solution was designed specifically for in-field use across the mining and transportation sectors, and enables supervisors and managers to monitor the real-time drowsiness levels of drivers and equipment operators through cloud-based monitoring and reporting services, protecting people and equipment and enhancing safety.

Rugged technology provider Getac has now extended its partnership with Optalert; as a long-time Getac partner, Optalert chose the ZX70 7″ Android tablet to support its Eagle Industrial real-time drowsiness monitoring solution. The tablet was chosen for its reliability in temperatures ranging from -21 to 60˚C, while its custom operating system also provides Optalert with heightened security to protect data integrity.

The ZX70 device and customised operating system enable the Eagle Industrial product to be created from an existing hardware device, significantly reducing manufacturing lead times and simplifying the manufacturing process for Optalert. The Getac ZX70 has a powerful core processor, is certified to a MIL-STD 801H 1.8 m drop rating, and is engineered to withstand vibration, dust, liquid, rain, shocks and more, making it a suitable hardware platform for the Eagle Industrial solution.

Scott Coles, CEO of Optalert, said the ZX70's GPS and cellular and Wi-Fi communication capabilities mean Optalert can provide vital field-generated information to its customers via the Optalert cloud-based data analysis, monitoring and reporting system. "Optalert has seen the impact of Getac rugged devices in the field, proving their longevity and reliability even in challenging environments," said Coles.

"Getac has a longstanding partnership with Optalert, developing a tailor-made solution that meets the Eagle Industrial's solution requirements," added Frank Baldrighi, Business Development Manager, Getac.

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