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# Health, Safety & Security Review

VOLUME 6 | ISSUE 4 2020

## Middle East

### FIGHTING COVID-19 WITH SMART TECHNOLOGY

#### INSIDE...

PPE Buyers' Guide  
Your comprehensive  
directory of PPE suppliers

Infection control  
Hearing protection  
Fire safety in buildings

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Model shown - EXP-J-14K/1500: 1500L Emergency Tank Shower fitted with the Zero Power Cooler (Patent Pending). Other chiller options are available.



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## editor's note

With vaccines starting to be rolled out, there finally appears to be a light at the end of the COVID-19 tunnel. However, it will be some time before the virus is brought under control. In the meantime, continuing efforts need to be made to halt its spread. In this issue, we look at the role new technologies are playing in fighting COVID-19, and how they are being deployed in the GCC to arrest the spread of infection (p11). We see how the learnings from the pandemic can help to drive new approaches to health and safety (p12). Also, covered are safety in confined spaces (p24), hearing protection (p14) and cybersecurity (p22), as well as all the latest news and product developments.

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## Healthcare 4.0 will push AR, VR healthcare revenues to US\$11bn in 2024

The COVID-19 pandemic has ushered in Healthcare 4.0 as healthcare systems and providers have been forced to accelerate their digital transformation journeys and adopt novel and innovative solutions that empower healthcare professionals and support remote patients. Both Augmented Reality (AR) and Virtual Reality (VR) solutions are starting to revolutionise healthcare applications and services, and at the same time, contribute to the fight against COVID-19. The AR healthcare market is expected to generate approximately US\$10bn in revenues, with the VR healthcare market reaching US\$1.2bn in 2024, according to a new report from global tech market advisory firm, ABI Research.

“AR and VR solutions have proven their value and are increasingly established in healthcare training and education, pre-operation and



Image Credit: Adobe Stock

COVID-19 has accelerated the healthcare sector's shift to the digital age, and AR/VR solutions are proving their value.

treatment planning, and data/3D model visualisation use cases,” explained Eleftheria Kouri, AR/VR research analyst at ABI Research.

The shift to more patient-centric and predictive healthcare monitoring approaches will drive the growth and adoption of digital solutions. Mixed Reality headsets will play an essential role in digital twin concept

visualisation, such as hospital planning concepts or drug development and examination scenarios.

In addition, AR applications allow patients to enrich their knowledge about medical issues or assist them with drug intake processes by overlaying information regarding dose, schedule, and chemical components.

## Tackling carcinogens at work

### Occupational health

The UK's Institution of Occupational Safety and Health (IOSH's) 'No Time to Lose' campaign is urging organisations not to lose sight of managing carcinogens in workplaces while they concentrate on risks associated with COVID-19.

Global research estimates that one person dies on average every 43 seconds from a cancer caused by work – a staggering 742,000 deaths a year. However, these deaths are all preventable.

'No Time to Lose' provides free practical resources to help businesses manage dangerous carcinogens in the workplace.

The campaign is tackling four serious carcinogens – asbestos, silica dust, solar radiation and diesel fumes. Over the years, 'No Time to Lose' has gained support from more than 400 leading organisations worldwide who have joined the fight to tackle cancer caused by work, which outstrips those dying from work-related accidents. For further information on the campaign, see <https://www.notimetolose.org.uk>

## World Risk Poll highlights global workplace risks

### Occupational health and safety

The Lloyd's Register Foundation World Risk Poll, a global study of worry and risk across the world, reveals that 600 million people have been seriously injured at work.

The most dangerous places to work are the fields and fishing boats of some of the poorest countries in the world, according to the survey. 34% of farmers, agricultural labourers and fishers in low-income countries were recorded as having been seriously injured at

work, and 32% in lower middle-income countries.

The next most dangerous jobs are in construction and manufacturing. In low-income countries 37% of workers in these areas of work reported being seriously injured at work, with some regions reporting even higher numbers. In East Africa, for example, 40% of workers in these jobs reported serious injuries, with the Middle East and West and Central Africa at 38%.

Fire was the second most-mentioned risk in the Middle East and throughout most of Africa and Asia.

“A better understanding of how people perceive the risks at work can help employers, unions, industry bodies and regulators to prioritise measures to reduce harm and can empower workers themselves to take actions that reduce their risks,” said Professor Richard Clegg, chief executive of Lloyd's Register Foundation.

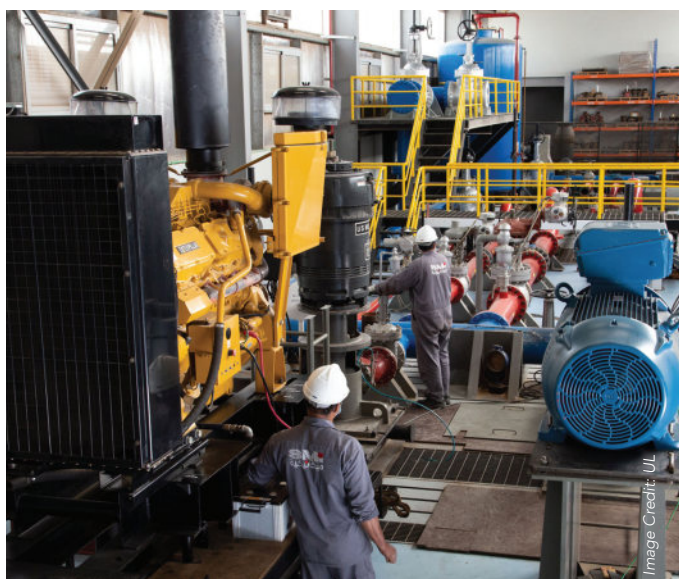
## UL completes first remote witnessed testing

### Fire safety

Global safety science company, UL, awarded pump manufacturer, Saudi Mechanical Industries (SMI), certification following remote witnessed testing of SMI's fire pump series, making it the first company in the Middle East within the fire and safety sector to remotely receive UL 448, the standard for centrifugal stationary pumps for fire-protection service. UL has worked with SMI since 2016, providing certification services, enabling it to achieve certification of its range of fire pumps.

Due to restrictions affecting travel into Saudi Arabia, UL's team was unable to physically attend SMI's facility to conduct testing. In response to limited travel, physical distancing measures and SMI's urgent requirements, UL utilised DAP's provision for remote witnessed testing after assessing the laboratory's capabilities.

"We assessed SMI's testing facility prior to witnessing tests, which included the review of SMI's laboratory environment, equipment, calibration and



UL SMI testing facility.

safety requirements. For remote witnessing of the tests, we used fixed and roaming live cameras, giving us access to the entire facility. Over the course of two days, we connected with the SMI team via an online meeting platform, which allowed us to remotely witness test and collect the data required to complete the project," said Rami Qaradeh, UL's project engineer.

"The requirement to certify

these pumps arose during a critical period in the project. UL's remote witnessed testing provided great flexibility, enabling us to work side by side with UL to complete the witnessed tests, while ensuring we maintained the high levels of quality and consistency we are accustomed to during on-site tests," said Khalid Ziad Saif, application manager of SMI's engineering department.

## Telehealth adoption accelerates in UAE

### Healthcare

Data from vHealth – a telehealth provider in the UAE – shows a 500% increase in utilisation of telehealth services between March and September 2020, compared to the same period last year.

"Services like vHealth provided a much-needed lifeline to those who were confined to their homes but wanted to address their health conditions," confirmed Dr Nairah Rasul-Syed, medical director at vHealth.

vHealth has been available to members of Aetna International in the UAE since 2018.

"Customers trust the service and see it as a marked improvement on face-to-face consultations," explained Joe Hawayek, senior director and head of vHealth MEA.

Data shows that vHealth consultations save employees around three hours away from work, he added,

"Telehealth is becoming a fundamental feature of every corporate health plan in the UAE," Hawayek concluded.

## Dassault Systèmes, Aden Group introduce hospital solution in Arab countries

### Healthcare

Dassault Systèmes and Aden Group, one of the largest integrated facility management companies in Asia, have introduced a ready-to-use infectious disease hospital solution, Akila Care, in the Arab countries severely affected by COVID-19.

The two companies have worked together to develop new hospital engineering, construction and operations processes by leveraging Dassault Systèmes' 3DEXPERIENCE platform and Aden

Group's Akila Care smart and connected hospital concept. The solution relies on a virtual collaborative environment for the design, simulation and development of hospitals that can be built and operated within 150 days and remain operational for many years, as well as for optimising their operations and maintenance throughout their entire lifecycle. "Aden's Akila Care novel and proven approach to outcome-based facility management calls for modular, smart and connected facilities engineered and built

with an advanced manufacturing approach. The modularity and operation-centred facilities can only be made possible with a holistic, integrated, end-to-end virtual twin experience of the outcome. The 3DEXPERIENCE platform is the catalyst and enabler of such radical transformation, making our alliance a showcase for the future delivery of mission-critical infrastructure," said Olivier Ribet, executive vice-president, Europe, Middle East, Africa, Russia, Dassault Systèmes.

# Abu Dhabi launches consortium for global vaccine distribution

## Infection control

The Abu Dhabi Department of Health, having already transported five million COVID-19 vaccines in November, has launched the Hope Consortium, representing a complete supply chain solution to address vaccine transport, demand planning, sourcing, training, and digital technology infrastructure, and facilitate vaccine availability across the world.

Comprising Etihad Cargo, Abu Dhabi Ports Group, Rafed, and SkyCell, the Hope Consortium has pooled its collective expertise to garner a multi-faceted capability to provide logistics services to handle more than six billion doses of the vaccines being developed around the world, rising to more than three times more doses by the end of next year.

HE Sheikh Abdullah bin Mohammed Al Hamed, chairman of the Abu Dhabi Department of Health, commented, “While assuring vaccine supply to the domestic market, the Hope Consortium will offer international governments, non-governmental organisations, and vaccine suppliers a cohesive solution across every supply chain step – from air freight, regional storage and temperature monitoring, to inventory management, cold and ultra-cold container solution, regulatory clearance, and



Image Credit: Hope Consortium

Leading Abu Dhabi and global entities mark the launch of the Hope Consortium, which will address global vaccine distribution.

healthcare and pharma quality assurance.”

Distribution of the vaccines, which will be stored in Abu Dhabi Ports Company facilities, will be carried out by Etihad Cargo, the first Middle Eastern carrier to gain IATA’s Centre of Excellence for Independent Validators (CEIV) certification for pharmaceutical logistics. The UAE’s national carrier will leverage its extensive intercontinental network, fleet and charter flights to supply vaccines globally.

“With two thirds of the world’s human footprint within a four-hour flight of Abu

Dhabi, the UAE capital’s investment in technological expertise and world-class infrastructure facilities means we can serve as a global logistical hub to, and for, the world,” explained Tony Douglas, group chief executive officer at the Etihad Aviation Group. “Etihad Cargo’s role in the consortium will leverage our outstanding pharmaceutical logistics expertise and specialised pharma and healthcare service, PharmaLife, the IATA CEIV Pharma certified product capable of facilitating temperature-sensitive cargo between +25 degrees C and -80 degrees C. Our network reach across key destinations will be supported by the utilisation of our charter operations to meet global demand for swift and secure COVID-19 vaccine shipments.”

The Hope Consortium intends to transport the vaccines using SkyCell’s hybrid containers. The storage and transportation containers are secured through an IoT monitoring service which tracks temperature conditions to ensure sensitive vaccines are protected even under extreme conditions. With efficient insulation and cooling technology, the containers maintain steady temperatures for an average of 202 hours (8.4 days) and self-recharge automatically in a cooling chamber or reefer truck.

## Digital transformation can improve work of medical teams

### Healthcare

Ernst & Young has published a report on how to create the right data environment for a connected health ecosystem, and Better Ltd, a European provider of digital health solutions based on an open-data platform has subsequently published a paper on how digital transformation can help improve the work of medical teams. Both documents discuss approaches on how to overcome the technological challenges associated with the

support of new models of care.

In order to address the challenges of making timely, accurate and safe decisions, healthcare organisations must adopt new models of care and fundamentally change their current approach to digital technology. The focus should be on the data that needs to be stored and governed independently of the applications that created it.

According to Aloha McBride of Ernst & Young, an open platform environment is

needed to connect and share data on a scale, within and between businesses and systems. The optimal platform will separate content and technology and be vendor-neutral, distributed and modular – incorporating both third-party and legacy systems.

Hospitals, research institutions and regional and national healthcare systems across 15 countries have already implemented an open-data approach, which has proved to be effective during the COVID-19 pandemic.

# BloT solutions for COVID-secure buildings

Dan Shields, CEO of Shields Energy explains how safely managing building occupancy rates, throughput and maintaining air quality have become mission-critical for businesses in a post-COVID-19 society.

**“Connected sensors and monitors linked to cloud-based software can provide true building health diagnostics and enable significant safety benefits.”**

*Building managers have had to make significant changes to meet government guidance.*

**B**uilding managers and those responsible for health and safety have had to make significant changes to the way their spaces are managed. Everywhere from offices to shopping centres, hospitality and leisure venues and transport hubs have had to be carefully assessed and spaces and people flows recalculated to meet government guidance.

Organisations such as the Chartered Institute of Building Services Engineers (CIBSE) and the Institute of Workplace and Facilities Management (IWFM) have published best practice documents to help building managers keep staff, customers and visitors safe.

But how to ensure that best practice is actually taking place in the real world?

This is where building internet of things (BIoT) technology solutions come into their own. Connected sensors and monitors linked to cloud-based software can provide true building health diagnostics and enable significant safety benefits.

BIoT devices that also feature cloud-based software and feature digital twin technology, can also create a complete ‘picture’ of a building, floor or room’s occupancy levels and the people



Image Credit: Adobe Stock

flow within.

By taking data feeds from sensors throughout a site, platforms such as Shields Energy’s CODA can create a digital twin to show managers at a glance what is happening within their buildings in real time.

Managers can set up alerts when occupancy limits are close to pre-defined thresholds, or when people flow management requires attention.

Traditional occupancy sensors can be combined with wearable sensor technologies and CCTV to create a dynamic feed. BIoT systems such as CODA can also combine occupancy data with air quality monitoring and HVAC data streams. In fact almost any data feed can be integrated into

the platform, with APIs enabling bespoke application development for any environment.

Meanwhile, building managers can use their actual physical building data via a digital twin to visualise and test different scenarios and create new people management plans as the COVID situation changes – without taking a leap into the unknown.

As well as providing demonstrable records and an audit trail of building health measures and management, deploying BIoT solutions gives building occupants and visitors confidence that all possible measures to ensure their safety have been taken. ♦

*For more information see <http://www.shields.energy>*

## Study reveals UAE workforce health and wellbeing disparity

### Health

Research from AETNA International reveals disparity in health and well-being concerns amongst employees working from home and in the office in the UAE, and suggests employee benefits may need to shift towards mental health and wellbeing support as the working landscape shifts in the UAE.

The study of more than 1,000 employees in September 2020 found that the worries of remote workers were in stark contrast to that of office-based workers. 44% of remote workers cited weight gain as a major concern, with mental health issues (40%) and stress (35%) following closely. More than a third (34%) of remote employees were worried about home conditions leading to bone, muscle, and joint problems; a further 29% expressed concerns over fatigue or lack of sleep.

Those in the office have contrasting concerns about working arrangements. 46% raised contracting coronavirus as their major worry, in contrast to just 13% of those working from



Image Credit: Adobe Stock

Aetna International's study reveals a disparity between the health and wellbeing concerns of employees in offices and remote workers.

home. A further 27% of office-based employees said they worried about the prospect of contracting other seasonal diseases such as flu.

Common stress is the second greatest concern of office-based employees (41%), and other mental health issues were cited by 23% of office-based respondents.

David Healy, CEO of Aetna International, explained: "This has been an extremely challenging year for people

everywhere, regardless of geography, industry or job title. Provisions for the proper care of conditions such as depression, anxiety and stress must be our primary focus moving forward."

When asked whether comprehensive health insurance is more important now than before the pandemic, 76% agreed, and 66% said their employer should focus more on adapting employee health benefits.

## Pure Safety Group partners with HSE Global Series

### Fall protection

Fall Protection Company Pure Safety Group (PSG) and HSE Global Series, the safety-focused education and network association, have announced a partnership to educate companies, organisations, and employees on fall protection and risk assessment. The partnership is effective immediately, through the end of 2021.

The partnership was launched at the virtual HSE Global North American Congress. The HSE Global congresses scheduled to be held in the UK next year will see PSG play a key role as an education resource throughout the 2021 events.

Clients of HSE Global will also have access to a range of PSG safety resources.

PSG CEO, Jeff Ward, commented: "HSE Global clients have indicated they want more education and solutions for this high-priority business risk and, as the largest company dedicated exclusively to global fall protection, PSG is the right source."

## COVID-19 boosts demand for automated UV-C disinfection systems

### Infection control

As the global concerns regarding the environmental and health impacts of chemical and biological by-products of certain disinfectants grow, and demand for disinfection systems grow due to COVID-19, industries appear to be turning towards UV-C light-based surface disinfection systems.

An Allied Market Research report said the UV disinfection market was valued at US\$1.3bn in 2019, but is now projected to

reach US\$5.7bn by 2027; a growth rate of 17.1% across seven years.

Commenting on the growing demand, the report explained: "The demand has been raised especially from the healthcare industry and commercial institutions to stop the transmission of coronavirus by avoiding the manual cleaning practices. This factor is expected to drive the growth of the UV disinfection equipment market."

The report also referred to the application

of UV disinfection equipment in the drinking water, wastewater, and process water treatments to combat water supply issues across the world. It said, "R&D investments by the manufacturers to enhance the performance of UV disinfection equipment for industrial process water treatment is expected to drive the market growth. The surge in demand for clean and safe drinking water is expected to have a positive impact on the UV disinfection equipment market."



## Tadweer launches marine waste vessel

### Waste management

Abu Dhabi Waste Management Center (Tadweer) has launched a marine waste vessel in Al Dhafra region of Abu Dhabi. The facility will be used to transfer different types of solid waste from Dalma Island in Al Dhafra region to Ruwais landfill on a regular basis. The first of its kind facility has the capacity to deal with 79 tonnes of waste, operating six weekly services with a specialised crew.

The new vessel is part of the Abu Dhabi Waste Management Centre's efforts to develop the collection, transportation, and treatment of solid waste.

Unlike more traditional waste management methods, the vessel can accommodate large-sized waste containers, doubling the centre's capacity to transfer large amounts of waste from all areas of the island. The 79-tonne vessel is approximately 26 metres long, operating under a permanent crew of six members, comprising two captains, a mechanic, an electrician and two assistants.

His Excellency Dr Salem Al



Image Credit: Tadweer

The new 79-tonne vessel doubles the Abu Dhabi Waste Management Centre's capacity.

Kaabi, director general of Tadweer, said, "The opening of our first marine waste vessel comes as part of Tadweer's continued efforts to develop an integrated waste management system to address the challenges posed by the increasing amounts of waste. Such efforts contribute to achieving Abu Dhabi government's objective of promoting environment sustainability and minimising the adverse effects of pollution on the environment."

Al Kaabi added, "We launched

this facility in response to the directives of our wise leadership to provide the highest standards of waste management services in Dalma Island."

Tadweer is a key government entity, adopting all responsibilities regarding Abu Dhabi's waste management services. The centre is tasked with carrying out pest control, delivering environmental education and encouraging communities to adopt environmental habits to drive sustainability.

## New Fire Safety Standard launched

### Fire safety

A global coalition of more than 80 fire safety organisations have launched a new worldwide consistent approach to the fire safety and management of buildings, hoping to save more lives by reducing risks and preventing fires.

The International Fire Safety Standard Common Principles (IFSS-CP) is a global response to country-to-country differences in fire regulation. The standard delivers a clear performance-based framework and common principles that apply to all stages of a building's life cycle (from design, construction, in use, to change and eventual demolition).

Gary Strong, chair of the IFSS Coalition, said, "Our coalition has worked hard to produce this globally applicable way to bring consistency on fire safety to buildings new and old and reduce the risk to lives.

"The new standard is unprecedented, being the first agreement on fire safety principles on this international scale."

## Report reveals spike in COVID-19 related trojan attacks

### Internet security

According to data analysed by the Atlas VPN research team in a recent report, coronavirus-related trojan infections saw an increase of 228% in Q3, 2020, compared to Q2.

Malicious coronavirus-based campaigns were seen to adopt pandemic-related subjects, including testing, treatments, cures, and remote working, to lure targets into following a malicious link, download a file, or view a PDF, which then infects

users' computers with trojan and other internet malware.

The report analyses Q2 2020 statistics, during which there were more than 737,000 coronavirus-related trojan infections worldwide; an average of 8,000 a day.

During Q3, this figure increased by 228% to a total of 2.42 million infections, the daily average seeing an increase to more than 26,000 per day.

The highest daily number of infections

was September 23, 2020, when more than 35,000 trojan attacks were recorded.

The majority of malware infections were recorded in the USA, with nearly 1.15 million attacks since the start of a pandemic. Spain saw more than 1.08 million attacks, the second biggest.

While various trojans differ in effects, millions of users likely had keyboard strokes recorded, access to their computer redirected to hacking networks, and pre-saved passwords and bank details targeted.

# Fighting COVID-19:

## Tapping into disruptive and smart technologies

Amid the fears of a COVID-19 second wave with the rise of new cases in some parts of the world, technologies such as artificial intelligence, big data, robots, tracing apps and UV lights are set to play a crucial role in arresting the spread of infections. Abhishek Paul reports.

“The UV robot can move automatically without the need for human intervention and ensure greater and better coverage of high-contact areas.”



Image Credit: Blue Ocean Robotics

*UVD Robots' solution enables hospitals to reduce disease transmission by killing 99.99 % of bacteria and microorganisms.*

**A**mong the GCC nations, the UAE's efforts to ensure limited movement and proper social distancing stand out in the wake of the ongoing COVID-19 pandemic. By deploying robots, using artificial intelligence and developing virus tracing and monitoring apps, the country is at the forefront in controlling rising coronavirus infections.

### Robots

Quick response came from Abu Dhabi Airports which collaborated with Tawazun Strategic Development Fund. Designed for the disinfection of

areas, limiting the risk of human exposure to viruses including COVID-19, the new CoDI BOT UGV developed by Marakeb Technologies has been deployed at Abu Dhabi International Airport (AUH) from May onwards. To ensure aircraft cabins are kept clean and sterile, the state-of-art unmanned robot manoeuvres through aeroplane cabin while providing the safety of its operators through remote control capability, using real-time video and high-speed 4G data connection. The robot's versatility also enables the disinfection of spaces within the airport terminals, reinforcing

public safety against the coronavirus and any future virus outbreaks.

Deployment of a robot can give benefits to the sectors such as hospitality, healthcare, shopping malls, public transport and any other places that need disinfection.

To sterilise its government-run hospitals and clinics using smart technology, the Dubai Health Authority (DHA) has introduced eight robots, developed by UVD Robots.

Commenting on UV sterilisation scans at its health facilities, Kholoud Abdullah Al Ali, project manager and leader of the DHA's Dubai Future

Accelerators team, said, “The UV robot can move automatically without the need for human intervention and ensure greater and better coverage of high-contact areas.”

Other features include providing 360 degrees coverage and repeating the same process with high accuracy several times.

A subsidiary of Blue Ocean Robotics, Denmark-based UVD Robots’ solution has proven to eliminate pathogens within 10-15 minutes of a patient’s room. The company’s self-driving, disinfecting robots have been rolled out to more than 50 countries worldwide.

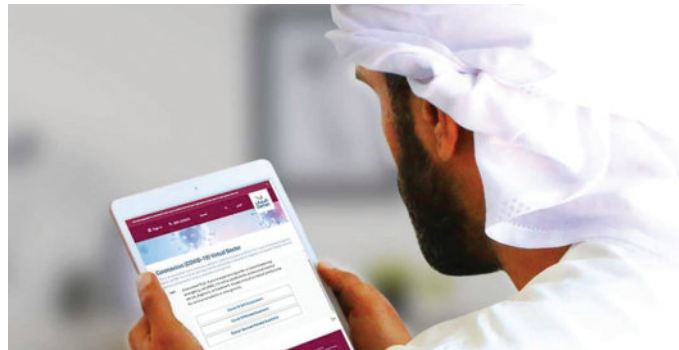
Another remarkable innovation comes from Granteq, a leading supplier of UV disinfection machines in the UAE, Saudi Arabia, Oman, Kuwait and Bahrain. Granteq’s chemical-free automated and programmable UV-C robot can disinfect surfaces and areas efficiently that are not easily reachable.

## Artificial Intelligence

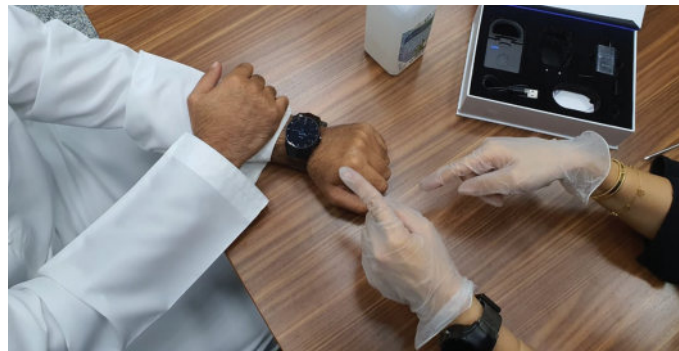
Dubai’s Roads and Transport Authority (RTA) is leveraging big data and AI technologies, such as computer vision and machine learning algorithms, to detect and report violations of preventive measures undertaken to fight the COVID-19. Such monitoring covers physical distancing and wearing of face masks onboard taxis, whether for passengers or drivers.

In another development, Daman, the UAE’s national health insurance company, has collaborated with Microsoft to introduce a health bot.

AI-powered Daman health bot assists patients to conduct self-assessment on COVID-19



*Daman health bot asks patients a defined set of questions and follows specific protocols, and advises them to connect with the authorities.*



*The smart watches help identify and track the geographical location of the patient.*

symptoms and guide them to the appropriate level of care. The bilingual health bot can provide patient assessment for the disease, triage and symptom checking, offering general medical information, and making medical recommendations.

## Tracing and monitoring apps

Using electronic wristbands to enforce isolation and reduce the spread of coronavirus is another phenomenon. A smart watch device, serving as the tracing and monitoring tool, is linked to the COVID-19 testing and tracing app of UAE’s AI Hosn and will be used to make sure that self-isolating people stay at home.

Other infection-related apps by Abu Dhabi’s Department of

Health include TraceCovid, DOHRemoteCare and StayHome, which are available on the App Store and Google Play.

## UV disinfection lights

Many research studies show that

the UV-C radiation can be used to eliminate viruses, bacteria and moulds from water, air and surfaces. Sensing the growing need for disinfection products, lighting specialist Signify has introduced UV-C desk lamps to disinfect rooms.

“The new desk lamps can make a difference by helping to inactivate viruses (including SARS-CoV-2, the virus that causes COVID-19) and bacteria to help keep our homes clean from harmful micro-organisms,” said Rowena Lee, division leader digital products at Signify.

Not only do all bacteria and viruses tested to date respond to UV-C irradiation, Signify’s UV-C light sources, in laboratory testing, inactivated 99% of the SARS-CoV-2 virus with an exposure time of six seconds on a surface, according to Signify.

For targeted disinfection, cleaning and hygiene products provider Diversey has developed a portable and powerful MoonBeam3 for on-demand disinfection of high-touch surfaces, operating rooms and bathrooms. It is also suitable for patient care equipment, fixtures, keyboards, monitors and work stations on wheels (WOWs). ♦

## Honeywell’s AI video analytics system

ENSURING BUILDING OCCUPANTS follow social distancing and mask guidelines is a challenge for building operators. Honeywell’s new solution addresses this issue by leveraging deep learning and artificial intelligence video analytics.

The Honeywell Pro-Watch and MAXPRO network video recorders (NVR) and video management systems (VMS) can now use existing cameras to identify building occupants are complying with guidelines around social distancing and wearing masks.

When used in the recommended operating conditions, advanced analytics can isolate and report any instances of non-compliance to buildings and facility managers with a high level of accuracy.

# Coming together for global safety

Giving a keynote presentation at the Lloyd's Register Foundation's inaugural Digital Summit 'The Future of Global Safety', Andrew Curran, chief scientific adviser and director of research at the UK's Health and Safety Executive (HSE), discussed how the learnings from the COVID-10 crisis can help to drive new approaches to health and safety.



Image Credit: Adobe Stock

**“If you have that conversation about risk, people will be innovative about the solutions they develop.”**

*Workplaces have put in place effective measures to manage risk of transmission.*

In his presentation at the Lloyd's Register Foundation's inaugural Digital Summit 'The Future of Global Safety', Andrew Curran, chief scientific adviser and director of research at the UK's Health and Safety Executive (HSE), highlighted three important lessons learned from the COVID-19 crisis – the first being the importance of the clear communication of risk.

“In the UK, we have made the

point that there are three types of transmission of the virus – person to person, through surfaces, and through the air. If these risks are understood and properly communicated, it enables citizens to do things in the right way.”

This is particularly true of workplaces where mitigations are put in place using the hierarchy of control, to ensure people understand why things are being

done, he said. “Understanding those three routes of transmission is important for any individual to take action to prevent themselves being a danger to others, or others being a danger to them.

“We've seen some really good examples through the spot inspection work we've done for HSE, that demonstrates that if you have that conversation about risk, people will be innovative

about the solutions they develop, and that a collaborative and cooperative approach to the co-creation of solutions is important, because it is only by co-creating the solutions that people will come up with the things that will work in their particular environment.”

The second point Curran highlighted was the difficulty in dealing with the complexity of the system of interest. This had come to the fore when considering some of the issues around outbreaks, which as the UK regulator the HSE has responsibility for investigating, in partnership with the National Institute for Health protection. Curran remarked that initially when outbreaks were seen at workplaces, particularly in food processing facilities, there was a view that it was the work activities that were leading to transmission in the work environment. However, that failed to take account of the complex relationships and issues present in many workplaces today.

“From the point of view of food processing for example, it soon became apparent that there were many other factors we needed to consider, such as the employment status of individuals in the workplaces.” He pointed out that workers on zero hours, commonly used in this environment, could be loath to self-isolate given the negative impact on their income. He added that many food producers reporting outbreaks employed migrant workers, who were often in shared accommodation and sharing transport to work, creating additional opportunities for the spread of the virus.

“Had we just taken that single

view about the work environment, we would probably have ended up closing many factories unnecessarily, because a thorough investigation using an analysis of the whole system soon identified that it wasn’t necessarily the workplace that was the problem – it was very often some of the peripheral issues around the workplace that were leading to the outbreak escalating. So intervention was developed to enable us to deal with that more effectively.

“That’s something to think about going forward, to understand the root cause of problems in the work environment, thinking how that work environment sits within the complexity of the system it’s operating in, because that will help us understand some of the influences and additional factors we will need to consider as part of any mitigation process.”

### Creativity and innovation

The final point Curran highlighted in terms of learning was around creativity and innovation. “Clearly one of the ways we will manage our way out of the situation is by developing innovative solutions to the problems we are facing. One of the key things from my perspective for considering effective mitigation in workplaces, is to involve that individual taking part in the work activity. They will understand what is possible and what is not.”

He added that during the course of the HSE’s spot inspections, covering different workplaces in a variety of different sectors, it had identified many creative and innovative approaches to managing the transmission risk through work

activities by ensuring that exposure through person to person contact, surface contact or through the air is fully controlled and managed. An example is the introduction of COVID marshalls, to make sure workers are operating safely not only while doing their job, but also during their breaks.

“It is those kind of informal interactions where social distancing can break down,” he pointed out.

“We’ve also seen some really good uses of technology to reduce exposure, and good uses of behavioural change programmes, to shift people, for example, away from production lines into managing a COVID-secure working environment, so you’re using people who understand that workplace to provide leadership when it comes to delivering a COVID-secure environment.

“One of the things that will improve as time goes on is our ability to innovate in that space, not just in the work environment, but more broadly,” he continued. “We’ve also seen that from an HSE perspective with the design of PPE. Clearly we’ve had to respond to an increasing demand, and we’ve seen some

**“It wasn’t necessarily the workplace that was the problem - it was very often some of the peripheral issues around the workplace that were leading to the outbreak escalating.”**

interesting and innovative approaches to delivering PPE that not only conforms to required standards, but also takes different approaches to the protection of individuals from exposure to virus particles.

“If we can take that forward, and harness that energy and creativity, there are opportunities to address workplace challenges of the future by harking back to what we did during COVID. A crisis is difficult to manage, but if you can take those positive learning opportunities from it, there are clearly benefits to be gained in the future world of work. By taking the ability of those individuals who deliver particular work activities, to ensure they are part of the solution, and help to co-create the particular solution to the particular work activity, there will not only be an opportunity for that innovation, but also a resilient and robust solution to the problem going forward.

“The learning we’ve gained over the last six months or so will help us take forward some new approaches to health and safety – working at pace, developing solutions in conjunction with workers and organisations -- which will really help us develop the solutions for the future,” he concluded. ✦

*For HSE advice on making your workplace COVID-secure, see <https://www.hse.gov.uk/coronavirus/working-safely/index.htm> Lloyd’s Register Foundation is an independent global charity that supports research, innovation, and education to make the world a safer place. See <https://www.lrfoundation.org.uk/en/>*

# Preventing hearing damage through PPE

How an effective hearing conservation programme can save workers from damage to their hearing.

“It is important that we maintain our hearing not only to be able to work into our longer retirement age but also to enjoy those special moments that we have with our loved ones”

Mohammed Saleem



Image Credit: Adobe Stock

In an online webinar Mohammed Saleem, of 3M, delivered a presentation on the effects of noise-induced hearing damage and how this can be prevented by regular safety measures.

According to the World Health Organisation, 466mn people suffer from disabling hearing loss worldwide which poses an annual cost of US\$750bn. It is estimated that public health measures, such

as the implementation of suitable protective equipment, could reduce hearing loss by up to 50%.

Saleem began by stressing the importance of hearing conservation, especially against the increasing retirement age: “We are having to work longer into our retirement lives. It is important that we maintain our hearing not only to be able to work into our longer retirement age but also to enjoy those special

moments that we have with our loved ones.”

The human ear, which can pick up sound frequencies between 20Hz-20kHz, is most sensitive within a 2kHz-4kHz range and damage begins with noise levels outside of this parametre. Additionally, harm can be caused by high-volume noise. Prolonged exposure to noise above 70dB (a normal conversation is 50-60dB on average) can be damaging to

*Industrial equipment can produce damaging levels of noise.*

hearing and often industrial environments exceed this range. Welding can reach 90-100dB, a jack-hammer can rise to 130dB, and an aircraft engine will get to 140dB at a 10 m distance. Exposure to volume at these levels will cause noise-induced hearing loss which can bring a whole range of side effect. Outside of hearing difficulty, Saleem noted that fatigue, anxiety, high blood pressure, tinnitus, and even early-onset dementia (according to previous research conducted at Johns Hopkins University) can all be caused by hearing loss. It is therefore vitally important to take effective measures to prevent potential hearing damage.

## Implementing a hearing conservation programme

The first step in the 3M programme is to assess risk in the workplace by examining simple questions such as; do workers often complain about noise? Are there vulnerable or sensitive groups at work? Is there a new work layout or equipment which could be generating more noise? Routine monitoring to create a noise layout of the site and accident investigation are also essential methods of assessing risk.

If there is dangerous excessive noise then the hierarchy of noise control should be used to reduce risk. Eliminating or substituting the noise is preferable but this is not always possible. If not, then engineering methods such as erecting an acoustic enclosure or isolation barriers with noise reducing material should be explored. The next step is administrative, splitting up workers or changing schedules will reduce exposure to the



Image Credit: Adobe Stock

*Properly used PPE can prevent hearing damage.*

danger. Lastly, if all other methods of noise control have been exhausted, personal protective equipment (PPE) should be introduced and worn at all times. Saleem added that in practical terms, it is a combination of all of those several different approaches which can bring about the desirable outcome of noise reduction to a safe level.

## Selecting the right PPE

On today's market, there is a wide range of PPE available, from simple rolled down ear plugs to electronic communications head sets, which can make selecting the right one challenging. Therefore be sure to consider the sustainability to the environment and the wearer, compatibility with other PPE, and comfort. It is also essential that hearing is not reduced too much as this can lower situation awareness; 70-75 dB is the "sweet spot" to aim for. Level-dependent protective

equipment allows communication with colleagues 2-3 metres away, but there is also built-in two-way radio equipment which will shield against hearing damage while also allowing communication of up to one km.

In addition to obtaining the most appropriate protective hearing equipment, providing fit testing and training are vital steps to prevent noise-induced damage. Different techniques such as MIRE, audiometric, loudness balance, acoustic leakage, air leakage or the 3M's Quantitative Fit Test can be used to gauge the effectiveness of hearing protective equipment when in use. Equipment often does not function correctly due to a lack of

**“Providing fit testing and training are vital steps to prevent noise-induced damage”**

worker understanding.

A case study, held at a UK construction firm, tasked 80 operators with achieving a minimum of 10dB reduction. Initially, there was a wide spread of noise attenuation attained with only 6% able to achieve a reduction of 10dB. After training, the test subjects reached much higher levels of attenuation with 10% achieving 10dB. The study also measured the shape of the subjects ear canals and found that only 61% had a 'normal' shape. The remaining 39% possessed curved, kinked, large or narrow canals, highlighting the need for properly fitted PPE which will equip each individual best.

To avoid future hearing damage in the workplace Saleem not only recommended following an appropriate hearing conservation programme with suitable hearing protective equipment, but advised that fit testing and regular training should be mandatory. ✦

# Driving forward HSE best practices

The acclaimed UAE Health, Safety & Environment Forum is returning for its sixth year, bringing together more than 200 key stakeholders for the delivery of a best-in-class HSE function fit for the current environment.

“The health and safety regulations in the country are becoming increasingly stringent.”

*The Forum will provide a platform to share best practices.*



Taking place in Dubai from 6-7 April 2021, the event will, as in previous years, bring together government regulators, business leaders, HSE practitioners and solutions providers to share insights and expertise on the latest regulatory changes, global best practices and technology advancements to drive forward effective HSE strategies.

As the UAE continues to deliver multi-billion dollar infrastructure projects, the health and safety

regulations in the country are becoming increasingly stringent, and ambitious socioeconomic reform programmes such as UAE Vision 2021 continue to drive heavy investments. There is also a heightened focus on sustainability, with Dubai Municipality investing US\$1.8bn in environment and sustainability projects in an effort to preserve the environment and protect the health and safety of the population.

At the UAE HSE Forum 2021, delegates will hear from senior

officials from the National Crisis & Emergency Management Centre, Ministry of HR & Emiratization, UAE Ministry of Health and Prevention, Dubai Municipality and Dubai Electricity & Water, as well as learning from the experiences of industry leaders such as ADNOC, AlMansoori Specialized Engineering, Fujairah Natural Resources Corporation, Dubai International Financial Centre, Healology Academy Dubai and many more.

Image Credit: Alain Charles Publishing



This year's event will focus on six key areas:

## Regulatory updates

The Ministry of Health and Prevention's latest strategies to improve occupational safety and health coverage of workers throughout the UAE and improve safety culture in organisations. How to remain compliant and adhere to the guidelines and regulations.

## Best practice post COVID-19

The impact of COVID-19 on HSE standards, requirements and operations; the latest best practice and sustainable processes NCEMA have established to deliver consistent HSE operations in light of COVID-19 and how to comply with these standards; how to develop clear and precise guidelines to eliminate COVID-19 transmission, protect the workforce and ensure business continuity.

## Sustainability

How to reshape your workforce and best practices for environmental behaviours to reduce carbon footprint and plan a sustainable future for your business; the methods that the Emirates Environmental Group (EEG) are taking to implement an efficient and effective sustainability strategy; and the new processes and technologies which will help the UAE achieve its sustainability goals.

## Digital transformation

The impact of disruptive technology and high-speed

**“Addressing these topics is a line-up of expert speakers.”**

# Navigate the latest UAE regulatory changes and align with global best practice to deliver an optimized HSE function suitable for the current environment

**200+**  
DELEGATES

**30+**  
EXPERT SPEAKERS

**15+**  
TECHNOLOGY  
DEMONSTRATIONS

**2**  
BESPOKE  
WORKSHOPS

*The HSE UAE is one of the key events in the HSE domain and it offers a platform having all leaders from diverse sectors, service providers. All of them come under one roof talking and discussing the best way to develop safety practices.*

**Dr Mohammed Aref OSH Expert  
Ministry of Human Resources & Emiratisation**

communications to improve workplace safety, monitor employee health status and build a sustainable workforce; how to incorporate VR and online tools for HSE training.

## Hazardous environments

Best practices to minimise risks and improve safe work behaviours while working in remote and hazardous locations, including confined spaces and excessive

heat; how ADNOC's evolving best practice minimises the risk to a high reliability industry functioning in the most remote and hazardous environments.

## Transformative technologies

Technologies having the greatest HSE impact by contributing to workforce economics.

Addressing these topics is a line-up of expert speakers including Dr. Maisoon Ali Al

Shaali, head of Environmental Section, United Arab Emirates Ministry of Health and Prevention; Dr. Mona Shawki, specialist-Occupational Medicine, United Arab Emirates Ministry of Health and Prevention; Saleh Nuaimi, head of Safety National Crisis & Emergency Management Centre; Dr. Mohammed Aref, Occupational Safety and Health expert, Ministry of HR & Emiratisation; Dr. Naheed Elahi, director Strategy Dubai Health Authority; Dr. Hannan Selim, founder Healology Academy Dubai; Karim Pachyannakis, corporate HHSE & Quality manager, AlMansoori Specialized Engineering; Faeza Al Katheeri, geoscience manager ADNOC; Dr. Hithame Al Khodry, head of QHSE, Fujairah Natural Resources Corporation; and Mrs Habiba Al Marashi, chairperson Emirates Environmental Group.

The Forum will feature keynote presentations, panel sessions and two bespoke workshops, along with a technology showcase displaying the latest solutions from leading technology providers.

Researched and developed by Health, Safety & Security Review Middle East magazine, the UAE HSE Forum 2021 is the latest in the successful event series designed to highlight best practices, process improvements, technology advances and innovative applications to enhance occupational health and safety performance in the GCC, aligning world-class principles with local industry requirements. ❖

*For further information and to register, email [register@hssreview.me](mailto:register@hssreview.me) or call +971 4 448 9260.*



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# ZALUX launches new ATEX lighting portfolio for the oil and gas sector

## Safety lighting

Spain-based ZALUX has launched its new ATEX luminaires catalogue, with high-quality lighting solutions for explosive atmospheres.

The company is a registered vendor in major EPC companies and promotes its products to oil and gas end-users globally, with projects in more than 70 countries.

ZALUX luminaires are manufactured in Europe, complying with ATEX-IECEX standards, as well as CE and ROHS marks. They are guaranteed for five years and have a long lifetime, up to 100,000 hours with very low maintenance.

To protect workers in hazardous areas, ZALUX has developed the new robust STRONGEX 2 for Zone 2, which offers outstanding IP69K resistance, according to the company. It is suitable for outdoor, even in offshore and chlorinated atmospheres or where there are ammonia or sulphur vapours, thanks to its high chemicals resistance and IK10 impact protection, and has a wide operation range from -35°C to +55°C.

Its reliability, combined with a great lighting quality, offers high energy efficiency. Luminaires can be wireless dimmed and controlled via Low Energy Bluetooth. When combined with presence and daylight sensors, light use is optimised, increasing luminaire lifetime and allowing savings up to 70% in the electricity bill.



Image Credit: ZALUX

ZALUX ATEX lighting portfolio includes luminaires to cover a wide range of needs.

KRATEx is a complete solution with increased safety for Zone 1. Its “db” protection mode and T6 temperature class make it suitable for almost any explosive atmosphere. With PC or glass enclosures, the temperature range is up to 55°C and has various control systems.

OREX offers up to 40,000lm for the highest installations in Zone 1 and 2 from -32°C to 55°C ambient temperature. Its aluminium body with tempered glass diffuser makes it resistant to weather and harsh industry conditions. DALI control can be added to improve efficiency, as well as accessories to facilitate installation.

ACQUEx is a simple and reliable luminaire for Zone 2. With IK10 impact protection, different lengths, high luminous efficiency, DALI control and emergency kit, it offers great flexibility.

For further information go to [www.zalux.com](http://www.zalux.com).

## ESP introduces four new twin spots

### Emergency lighting

ESP has added four new twin spots to its growing Duceri emergency lighting range, in the form of non-maintained IP20 and non-maintained IP65 Twin Spots.

Key features to highlight on the new non-maintained IP20 Twin Spot fitting include the 272 lumen emergency light total output, 5500K colour temperature and 2x adjustable 2W LED lamps.

The new Non-maintained IP65 Twin Spot is suitable for external use and offers a total of 380 lumen emergency light output, IP65 ingress protection, 5500K colour temperature and 2x 3W adjustable LED lamps.

Each new product offers three hours emergency duration, with charge and discharge protection, a vibrant green LED battery charge indicator and push to fit wiring terminals for ease of installation. The fittings have been tested to meet BS EN 60598-2-22 standards for emergency luminaires, with lumen data independently verified.

# Advanced software updates for emergency lighting testing solution

## Emergency lighting testing solution

Fire and life safety systems manufacturer, Advanced, has launched a new generation of highly intuitive configuration software for its LuxIntelligent emergency light testing solution.

Advanced’s ConfigTool for LuxIntelligent allows users to build both complex and straightforward emergency lighting systems with ease and speed.

The benefits of the new ConfigTool provides easy programming of the LuxIntelligent lighting panel, full remote

control of menu screen options via a ‘virtual terminal’ and the ability to pre-plan entire systems remotely, saving valuable time on site. It offers improved system visibility and an updated interface, providing an at-a-glance view of all available loops and their remaining capacity. In addition, devices can now be filtered by test group or zone location for quick review.

The new software also simplifies maintenance of existing systems. Event logs and configuration files can be downloaded

via a laptop, allowing you to check the status of the panel and devices and create essential back-ups. Fully customisable test schedules can be set up to ensure BS 5266-1 compliance.

Matt Jones, Advanced’s Emergency Lighting business manager, said, “With its updated user interface and straightforward navigation, configuring new systems and performing routine tasks on existing systems to ensure compliance becomes effortless, and can often be done remotely via a ‘virtual terminal’”

# Oil properties and their impact on oil spills

At a webinar hosted by Oil Spill Response Ltd (OSRL), Edgar Gerasmia, senior trainer and spill response specialist, OSRL, discussed how the properties of oil will shape the response to an oil spill, and how these properties affect the fate or weathering of the oil in the environment.

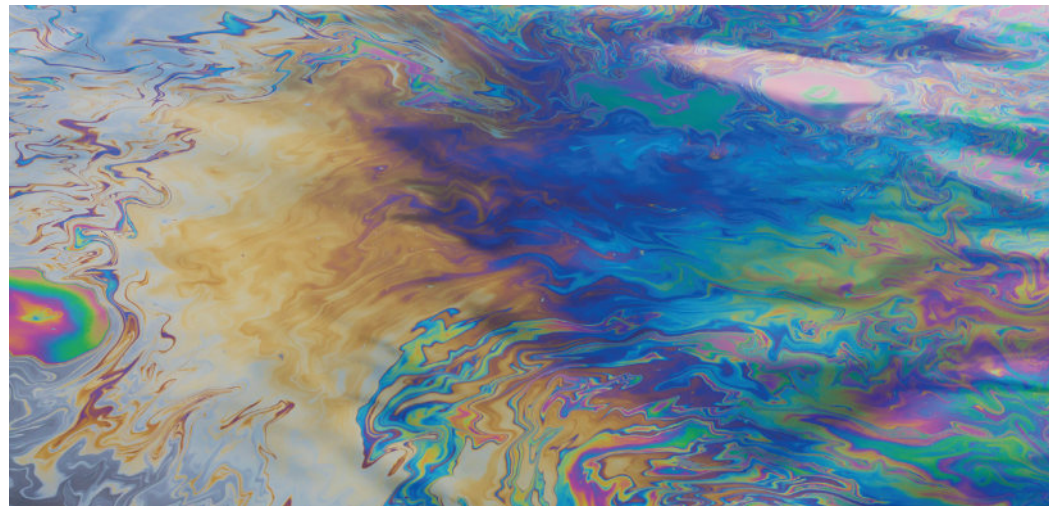


Image Credit: Adobe Stock

**“Oil which is not viscous tends to spread wide and evaporate faster.”**

*The properties of the oil will determine the optimum response strategy.*

**A**t the webinar Edgar Gerasmia started by explaining the five key properties of oil which will affect the weathering or fate of the spilled oil in the marine environment and shape the oil response:

**Specific gravity** – how heavy the oil is, ie the density of the oil, which determines whether the oil will submerge or float in the water. Oil when submerged is difficult to monitor, and it can cause sedimentation and damage the seabed. Lighter oil floats, but can be affected by the wind and

current, which can bring it to sensitive shorelines or sensitive structures.

**Viscosity** – how thick the oil is, or resistance to flow. Oil which is not viscous tends to spread wide and evaporate faster. Low viscosity oil can easily break, enhancing biodegradation and dissolution. High viscosity could increase the chances of the formation of sedimentation. The oil is almost stationary and hard to recover in a spill operation.

**Pour point** – the lowest temperature at which the oil is capable of flowing under gravity.

When the pour point of the oil goes above a certain temperature, it will stop flowing. Oil with high pour point spreads less on cold water as it will solidify. In warm water, the oil continuously spreads, and in open water could spread much faster.

**Volatility** – the propensity to evaporate. Oil with high volatility evaporates very fast. Lighter oil tends to evaporate faster, and as it evaporates it reduces in volume, which reduces the amount of waste that needs to be dealt with. Very light oil does not need a physical response as it evaporates

fast, although there are exceptions. Oil with high volatility becomes dangerous to responders because of the high rate of evaporation. **Asphaltene content** – the propensity to emulsify. If the asphaltene content is higher than 0.5% it could create a stable emulsion. If it is below that, it could still create an emulsion but it becomes unstable and there is a possibility the oil gets separated in the water. It changes the properties of the oil, such as the viscosity and the density, as when it emulsifies it becomes very dense and very viscous. It also increases in volume, which means it increases the waste storage capacity required.

Gerasmia added that safety is paramount for response personnel, so it is also important to establish if the oil has an H2S content.

These properties will help to determine the optimum response strategy, whether that is containment and recovery, the use of dispersants, in-situ burning, mechanical dispersion or monitoring and evaluation.

## The fate or weathering of spilled oil in the environment and how it will affect the response

Gerasmia went on to say that in addition to the properties of oil, the fate of oil spilled in the marine environment is also influenced by the prevailing environmental conditions such as the wind, turbulence, current and water temperature. It also depends whether it is a continuous or instantaneous release, and the quantity of oil that is spilled.

**Spreading/fragmentation** – low viscosity oil can spread fast and wide, and the rate of the

spreading and fragmentation is dependent on the wind, turbulence and current. In an open sea it could spread very fast and wide. When it spreads over a large area or is fragmented into patches, it affects the complexity of the response, meaning more surveillance assets and multiple response teams in different locations may be needed. For offshore operations, greater aerial support may be required to guide responders to where the oil is.

**“With the right amount of wave energy it may require little or no response action, depending on the type of oil.”**

**Evaporation** – spreading and evaporation happen instantly and the rate of evaporation is influenced by the volatility of the oil. This rate increases with higher ambient temperature or wind speed. So the same type of oil spilled into cold water will evaporate less quickly than in very warm water, such as Middle East waters during summer. Spreading will also affect evaporation, because of the wide surface area, and the residues of the evaporation will have higher density and viscosity than the original product, so it will become very sticky. Since when oil evaporates the volume decreases, fewer resources are required, and there is less waste to manage. However, responders are exposed to a more volatile and explosive environment, which is a significant safety consideration, which will need to be evaluated when deciding the response

strategy. If it is dangerous to respond to the spill, the situation should be continuously monitored and evaluated.

**Natural dispersion** – here, oil on the sea surface is broken down into small droplets by wind and turbulence. With the right amount of wave energy it may require little or no response action, depending on the type of oil. Gerasmia gave an example of an oil spill which occurred in Manila Bay in the Philippines. A week after the spill, there was a storm, following which the beaches and waters in the bay were very clear, as if nothing had happened. This was natural dispersion because of the energy created by the storm, which promotes biodegradation, dissolution and sedimentation. However, if it had been a heavy crude oil spilled in the bay it would not have dispersed easily, and could have stuck to structures around the area. In the absence of strong waves and turbulence, natural dispersion can be enhanced by using natural agitation or mechanical dispersion to enhance the oil flow. Sometimes, because of natural dispersion or evaporation, responders may not be allowed to go in for safety reasons.

**Emulsification** – this is the mixing of oil in the water. Once this happens, the volume is drastically increased, by a factor of four or five, depending on the asphaltene content. The key factors driving the rate of emulsification are the asphaltene content and the sea state. The sea state of Beaufort Level 3 or above accelerates the process. The higher the energy, the higher the chances of the oil becoming emulsified, and the colour can often change to orange or brown.

**Stranding and sedimentation** – if the oil cannot be removed from the water, the chances are it will get stranded, and some of the oil could sink into the seabed and create a sediment. This increases the impact on the environment and people. If the oil is still in the water and in rough seas it may become submerged for some time, however, when conditions improve it could resurface. It can also promote the formation of tar balls which settle on the seabed, possibly washing up on shorelines weeks or months later. In the case of the Macondo spill, tar balls would appear on shorelines that had been cleaned the previous day, indicating there was submerged oil still on the seabed, and the change in tide had carried it on to the shoreline. **Biodegradation** – this would ideally be the ultimate fate of the oil. Oil-eating microbes and bacteria grow in number with the more oil available, metabolising the oil suspended in the water column. But the time taken ranges from days to years, depending on the type of oil, the temperature, the nutrient content, the area, and the oxygen level of the water. Spilt oil is broken back down into water-soluble compounds and eventually becomes water and carbon dioxide.

Gerasmia concluded by saying that a thorough assessment of the whole situation and all relevant factors is needed before deciding a response strategy. ✦

*Oil Spill Response Limited (OSRL) is an international industry-funded cooperative which exists to respond to oil spills wherever in the world they may occur, by providing preparedness, response and intervention services. [www.oilspillresponse.com](http://www.oilspillresponse.com).*

# Encouraging good cybersecurity practices

Ned Baltagi, managing director, Middle East & Africa at SANS Institute advises organisations that this is the time to inject a bit of coolness and fun into technology and help workers become more comfortable with basic cybersecurity and technology best practices.

“A lot can be achieved by educating and motivating the workforce to adopt best cybersecurity practices.”



Image Credit: Adobe Stock

*Remote workers should be encouraged to spend hands-on time with technology.*

**H**uman behaviour towards cybersecurity practices or today's greatest challenge – managing the risk of the pandemic – varies according to the individual. Yet every social action or organisational behaviour has a consequence. By monitoring human activity and reinforcing positive actions to adopt safe cybersecurity practices or follow safe pandemic practices, organisations and human communities can benefit.

Designing applications that reward an individual with points and badges and display them publicly can help motivation. Gamifications can help improve the level of compliance towards following basic cybersecurity best practices in an organisation, the same way as they can influence communities to shun risky post-pandemic behaviour.

Organisations criticise the lack of availability of technology skills, and especially those of

cybersecurity expertise. Yet human resources and information technology heads in organisations often do not realise that a lot can be achieved in their business by educating and motivating the workforce to adopt best cybersecurity practices.

Many employees can also be inspired to train themselves in cybersecurity skills to manage the basic administration of their devices and networks. With

remote workforces becoming part of the post-pandemic workplace there is a human resource requirement to relook at the level of basic technology skills across the hybrid workforce. However, a gamification approach may be required to add an active element of interest around this activity.

Here are some basic tips on what administrators can do to kick-start a cool and gamified approach towards technology:

### Personal information across the Internet

It is essential that remote workers maintain a clean record on the Internet. The post-pandemic phase has seen a disproportionate level of stress and readjustment and this may continue in the months ahead. But venting strong feelings and thoughts across multiple social media sites may just start working against remote workers and their teams. Threat actors are looking for such displays of personal information, including family names, assets and other information, shared under

duress, that can be used in phishing attacks.

### Break and fix technology and devices

One of the fastest ways for remote workers to get comfortable and experienced is to allow them to build up software tools and use them to test the technologies at their remote workplace. Instruct remote workers how to spend hands-on time with technology, engage with technology, break it and then fix it.

There are a lot of amazing free tools and resources available online for remote teams to work and play with. Some are easier to use than others, and you do have to make sure you know where to find them. But open source tools are a great way of expanding your tool kit and skill set.

### Build the technology lab at home

If remote workers are at home, let them feel comfortable to build a lab at home. Encourage teams to be curious about technology,

allowing them to make mistakes. The more mistakes they make, the more they are learning. And more technology learning helps to boost better understanding of cybersecurity best practices.

### Share technology experiences

Get remote workers and teams to share their experiences. If you want to physically protect a building, you need to understand doors, windows, and structure. For information security, remote workers need to understand the basics of computer networking. Understanding how computers function and communicate is the first step in defending them from cyberattacks.

### Finding a mentor

An experienced worker who is ready to engage with remote teams, can boost the confidence levels of remote workers who may find themselves without support at odd hours of the day or night. With remote workers dispersed across the country and the globe, while working under the same work deadlines as they

would in conventional offices, lack of face-to-face access to co-workers is often a huge demotivation. Informal mentorship can help plug such gaps and help to retain confidence in the organisation's technology set-up across remote workers and remote teams.

On a final note, every remote worker has their favourite device, app or feature. Use that as a starting point for them to explore, learn, share and move forward. Conforming to and understanding the organisation's cybersecurity best practices may just become an easy ride for them as they plunge into technologies that help them to work better and better.

### Expand your skillset with CTFs and ranges

Capture the Flag (CTF) events are not only a great way to interact with your peers and like-minded individuals, they are also a great way to learn and apply new skills in a real-life situation. Playing either on your own or with your team can really help you hone your skills. ❖

## Sophos report assesses the 2021 cyber threat landscape

Sophos, a global leader in next-generation cybersecurity, has published the Sophos 2021 Threat Report, which flags how ransomware and fast-changing attacker behaviours will shape the threat landscape and IT security in 2021. Three key trends analysed in the report include:

1. The gap between ransomware operators at different ends of the skills and resource spectrum will increase. At the high end, the big-game hunting ransomware families will continue to refine and change their tactics, techniques and procedures (TTPs) to become more evasive and nation-state-like in sophistication, targeting larger organisations with multimillion-dollar ransom demands.

At the other end of the spectrum, Sophos anticipates an increase in the number of entry level, apprentice-type attackers looking for menu-driven, ransomware-for-rent. Another ransomware trend is "secondary extortion," where the attackers steal and threaten to publish sensitive or confidential information, if their demands are not met.

2. Everyday threats such as commodity malware, including loaders and botnets, or human-operated Initial Access Brokers, will demand serious security attention. These are designed to secure a foothold in a target, gather essential data and share data back to a command-and-control network.

3. All ranks of adversaries will increasingly

abuse legitimate tools, well-known utilities and common network destinations to evade detection and security measures and thwart analysis and attribution. The abuse of legitimate tools enables adversaries to stay under the radar while they move around the network until they are ready to launch the main part of the attack, such as ransomware.

Additional trends analysed in the report include attacks on servers; the impact of the COVID-19 pandemic on IT security, such as the security challenges of working from home; the security challenges facing cloud environments; and 'unwanted' software applications employing tactics similar to overt malware.

# Working safely in confined spaces

Sayed Nazar, MSc, CMIOSH, FIIRSM, OSH director at SKD Group, Bahrain, discusses how to mitigate risks and fulfil legal obligations relating to working in confined spaces.



Image Credit: Adobe Stock

**“The most common underlying cause of these accidents is insufficient preparation for undetected hazards.”**

*Workers in confined spaces can encounter numerous hazards.*

**A** tragic accident recently took place at Eker village in the Kingdom of Bahrain, when toxic gas from an underground sewer killed three workers due to an oxygen-deficient atmosphere. This is one of the major problems confronting workers while working in vaults, and is ever-present.

Bahrain Ministry of Works

(BMOW), as the client of the project, agreed that this concern is often the ‘poor relation’ when company management sits down to consider occupational safety and health issues, and that the most common underlying cause of these accidents is insufficient preparation for undetected hazards, as per the police sources statement.

A similar scenario had

occurred in January 2012, when four workers died of toxic gases carbon monoxide (CO) poisoning in Hamad town site.

The investigation carried out by the Bahrain Occupational Safety and Health Department (BOSH) and Bahrain Civil Defence (BCD) of the two cases revealed that the main cause of the incident was quick and excessive inhalation of toxic gases



i.e. CO, which is a lethal gas and kills very quickly.

The same scenario occurred in every case in terms of the rescue operation. The first victim climbed down the septic tank only to fall to his death after inhaling methane gas. His colleague fell with him in the septic tank as he rushed to his rescue. The third colleague also suffered the same fate as he was trying desperately to save them.

“There are indications that the three workers might have died from failing to use safety oxygen equipment,” the BCD director said. The BOSH inspector said, “It seemed the men were working without proper safety equipment and had no gas masks. The other cause of death was due to lack of rescue techniques.”

In Bahrain, in view of the number of confined spaces incidents still happening, many with fatal consequences, the need to manage safe confined spaces entry needs to be effectively managed and should become one of the key focuses for the enforcement bodies.

Confined space operations have for a long time been a workplace challenge and threat, which causes many fatal accidents every year around the world. The causes are mainly a lack of adequate training, education and understanding of the dangers. Legislation has been enacted, in order to avoid or at least manage the inherent risks of entry and working in a confined space.

Managers have overall responsibility for safety at their sites and are legally required to have an active and reactive monitoring system for all safety activities at these locations. They are also responsible for reporting and correcting the findings.



Image Credit: Adobe Stock

### What is a confined space?

Confined Space Regulations (CSR 1997) in UK defines a confined space as "A place which is substantially, though not always entirely, enclosed or a place where there is a reasonably foreseeable risk of serious injury from hazardous substances or conditions nearby."

The employer has a clear duty to identify all confined spaces in his remit and must be alert to the hazards that may be encountered in confined space operations.

### Reasons for entering confined spaces

Entering into confined spaces is usually to conduct necessary tasks:

- Industrial tasks i.e. cleaning to remove waste or sludge, physical survey or inspection of plant or equipment, installing pumps, motors or other equipment
- Maintenance work i.e. painting,

sand blasting or applying surface coatings, reading of meters, gauges or dials

- Repair work i.e. welding or cutting, grinding, installing, repairing or inspecting cables i.e. telephone, electrical or fibre optic, taping, repairing or replacing valves, coating or testing of piping systems (e.g. steam, water or sewage)
- Constructing a confined space such as an industrial boiler
- Rescuing people who are injured or exposed to fumes.

**“The employer has a clear duty to identify all confined spaces in his remit and must be alert to the hazards that may be encountered in confined space operations.”**

### Hazards in confined spaces

Confined space rescue incidents are usually caused by many factors and there are two primary categories of hazards: atmospheric and physical. It is critical to recognise all the hazards in a confined space and determine how they can affect the health and safety of employees who enter and work in this space.

Confined space accidents expose humans to conditions that can cause immediate death. These accidents typically involve asphyxiation due to emission of a hazardous gas into an unventilated enclosed space. The air may contain too little oxygen or it may contain poisonous, flammable, combustible or explosive agents, or contaminants (e.g. fumes, dust) that pose an immediate threat to life or interfere with a person's ability to escape. The gas may be from contaminated soil or other processes, or it may be air that is

oxygen depleted. Confined space accidents may also involve engulfment in bulk materials (soil, grain, etc.) that flow into the space and cover the victims, or rapid influx of water which may lead to drowning.

## Law and regulations

Employers must abide by the health and safety law and regulations by providing an effective emergency plan for the work required for successfully performing a rescue operation and fulfilling legal obligations. It should consist of identifying the different types of emergency situations that might occur, i.e. fire, injuries etc.; the emergency team and their responsibilities; and effective and certified emergency equipment to eliminate or at least reduce the health and safety risks.

In the UK, for example, confined space regulations were promulgated in 1997, and came into force on 28 January 1998. The regulations provide the legal obligations for employer and employee and the best practice for performing work in confined spaces. Regulation 5 describes the required emergency procedure, i.e. emergency arrangements, certified and tested rescue and resuscitation equipment, procedures for raising the alarm, safeguarding the rescuers, fire safety, control of plant, provision of first aid, identification of public emergency services and the provision of sufficient training.

The regulations, standards and ACoP oblige the employer to consider the other related health and safety regulations and law to ensure full compliance.



*Employers need to ensure they are fulfilling their legal obligations.*

Image Credit: Adobe Stock

## Training

Training, both theoretical and practical, is required by law on a regular basis for employees attempting rescue regularly. In the event that an abnormal situation takes place, understanding what action needs to be taken, how the operation should proceed and what kind of method should be implemented are very important. The involved employees and emergency equipment should be evaluated under real-life emergency scenarios focusing on enhancing skills.

## Safe system of work

Beside training, you should consider other issues prior to working in the confined space, i.e. an effective permit to work system (entry permits), an updated hazard identification and risk assessment, generic and specific to be conducted by a competent person/s demonstrating the hazards, likelihood, severity, current and proposed control measures and their test and effectiveness. You

should have an updated rescue procedure in order to protect workers and achieve full compliance with legal requirements.

## Compliance

A proactive obligation programme must be achieved prior to starting any activity in confined spaces, which is normally audited by the clients/owner on or throughout a prequalification system. The documents relating to individuals' competencies, BA test and certification, gas meter calibration etc. should be checked by the client's representative to make sure that all requirements are met.

At SKD Group, Gap Safety Analysis is employed to ensure full compliance. A list of ministerial orders and each article have been analysed with a compliance score system demonstrating the degree of compliance, priority rating using colour coding system, methods of achievement of each article requirement and the responsible

person for achieving legal compliance. For example, the rescuer in charge is responsible for carrying out a visual inspection of all emergency equipment prior to starting any work in a confined space.

CSR 1997 and MHSWR1999 Regulation 3 oblige the employer to conduct sufficient hazard identification and risk assessments, which are very important as they assist you to decide what kind of control measures must be made available prior to entering a confined space. The activities, the number of employees involved, the atmosphere (i.e. gases, percentage of oxygen), securing methods, supervision, the identification and character of the previous chemical contained, should all be considered.

Finally, the regulations, standards and ACoP have a specific legal status. Should you be prosecuted for breaking the health and safety law and it is demonstrated that you failed to comply with the related provisions of the rules, regulations and code, then you must demonstrate that you have complied with the law in certain different methods, otherwise, the judge will quickly realise that you are at fault or negligent. ❖

**“In the event of an abnormal situation, understanding what action needs to be taken, how the operation should proceed and what kind of method should be implemented are very important.”**

## New air sensor to make chemical plants safer

### Plant safety

Chemical plants will become safer places to work with a reduced risk of injury, chronic respiratory ailments or even death, thanks to a new air sensor being developed to detect toxic and explosive solvents using photonics.

Scientists from the University of Navarra in Pamplona, Spain have teamed up with the EU photonics innovation hub ACTPHAST 4R to develop a demonstrator for their breakthrough optical sensing technology that detects lethal chemicals that are both dangerous to inhale and highly explosive.

This new detector uses optical fibres to monitor air quality, with no electrical or flammable components as part of the device. The optical fibre sensing solution is designed to be ideal for dangerous places where electricity is prohibited and could soon create safer working conditions for chemical plant staff who handle highly toxic and explosive chemicals.



Image Credit: Adobe Stock

*The new sensor will help to improve safety in chemical plants.*

The lead researcher on the project, Dr César Elosúa Aguado from the Electrical, Electronic Engineering and Communications Department Public at the University of Navarra, said, “An air sensor using optical fibres for the purpose of VOC detection is a major scientific breakthrough concept. It is currently in its pre-prototype, ‘demonstrator’ phase but has the potential to be further developed for industrial application.

“The innovation support we have received from ACTPHAST 4R has been crucial to bridging the gap between the ‘valley of death’ in innovation and accelerated TRL advancement.”

If the demonstrator is successful, the researchers will look at commercialisation options, such as licensing or a spin-out company from the university, to take it to the next stage of a working prototype and eventually a full commercial product.

## Improved antimicrobial treatment

### Antiviral protection

Polygiene is launching its newly-developed formula of ViralOff antimicrobial treatment, which is added to textiles and other products to protect the treated article from contamination. It offers lifetime of garment washability (30 washes), proving performance against SARS-CoV-2 with over 99% reduction of microbes in the material within two hours. This also results in longer lasting products, with a reduced impact on the environment.

“There has been some confusion in the market as claims to washability wrongly rely on tests that are not antiviral, but rather antibacterial,” said Daniel Röme, chief technology innovation officer at Polygiene.

“We have therefore developed a treatment that provides an antiviral effect, according to global test standard ISO18184:2019 (Determination of antiviral activity of textile products) and really meets the antimicrobial and antiviral claims that we make.”

## E2S updates its range of manual call points (MCPs)

### Control systems

E2S Warning Signals has updated its range of manual call points (MCPs), designed to be installed in hazardous areas primarily for the control of fire and gas detection and alarm systems. They are available in different enclosure materials: STEx in 316L stainless steel for use in the harshest of environments, GNEx in anti-static, UV-stable corrosion proof GRP, and BEx in corrosion proof marine grade copper-free LM6 (A413) aluminum with a chromated and powder coat finish. Specifiers can

choose the most suitable enclosure for the installation location and operating environment. There is a choice of four operating mechanisms.

The latest updates include the BExCP3C and GNExCP6C call points, now with extended approval temperatures and a wider range of EOL and series resistor values, approved to IECEx and ATEX standards with additional PESO, INMETRO and Ex EAC approvals. The GNExCP7 Ex d units are globally approved to IECEx, ATEX, UL

and cUL standard for all Zone 1, 2, 21 and 22 and Class I/II Div 2 installations with a variant approved to UL 38, Manual Signalling Boxes for Fire Alarm Systems and ULC-S528, Manual Stations for Fire Alarm Systems. The flameproof STExCP8 is ATEX and IECEx approved for Zone 1 and 2 and also carries DNV type approval for exposed locations. For installation outside hazardous areas, IP66/IP67 weatherproof versions WP3, WP6 and WP7 call points units are available.

## IDIS launches add-on appliance for COVID-19

### Video surveillance

IDIS has launched the AI Box (DV-2232) for COVID-19, which regulates COVID-related hygiene measures, relieving pressure on frontline workers.

Powered by the company's 98% accurate deep learning engine, the AI Box, specifically designed with COVID-19 in mind, is a simple add-on appliance, which is compatible with IDIS network cameras and DirectIP NVRs – removing the need for analytics software or edge VA devices.

The add-on appliance will operate across four advanced video analytics systems, which will stream simultaneously across 32 channels and each camera's live feed. Features include:

People/occupancy monitoring – counts the number of people coming in and out of premises, showing the occupancy status in real time. Cameras positioned at entrances and exits allow the IDIS AI Box to provide precise



Image Credit: IDIS

The system counts the number of people coming in and out of premises, showing the occupancy status in real time.

AI-assisted alerts to overcrowding, with real-time calculations to underpin occupancy control interventions.

Social distancing – the system can detect distances between individuals, sending an alarm when a defined distance is breached. Users can configure notifications to issue verbal reminders and select from different spacing sensitivity levels depending on distancing requirements.

Face mask detection – detects

those not following mask-based regulation in real time, giving users the ability to trigger alarms and notifications when breaches are detected.

Jamil Al Asfar, senior sales manager, IDIS Middle East and Africa, said, "IDIS has developed credible and practical solutions to help reduce infection risks, with automation that improves operating efficiency and technology that avoids the cost of hiring in additional manpower or redeploying existing staff."

## LogRhythm launches cybersecurity tools

### Cybersecurity

LogRhythm, a company that operates security operations centres (SOCs), has launched reporting capabilities and compliance use cases that make it simple and efficient to comply with the Kingdom of Saudi Arabia's (KSA) Essential Cybersecurity Controls (ECC).

Reporting and use cases can be deployed on the NextGen Security Information and Event Management (SIEM) platform of LogRhythm.

The system enables organisations of all kinds to use one-click, out-of-box automation to meet the cybersecurity requirements for information and technology assets operating within Saudi Arabia. It also provides rapid regulatory compliance and enables organisations of all sizes to create a secure foundation for digital transformation, to adopt new applications and services, as well as expand their operations.

Predefined reports and use cases are immediately available.

## PPSS Group announces advancement in knife protection technology

### Security

The PPSS Group has announced an official replacement for its polycarbonate stab-resistant body armour, to address the threats facing homeland and private security professionals today.

CEO Robert Kaiser said, "Following years of relentless R&D, we learned to accept that improved protection from knives, machetes, razor blades, shanks and indeed spikes was needed.

"We concluded that carbon fibre composites are the only real reliable and forward-thinking solution. Carbon fibre is enabling us to offer truly superior levels of stab protection alongside substantial weight reduction, lower thickness, and finally also fully certified spike protection. This is at no extra cost."

According to Kaiser, certified spike protection is crucial, especially to correctional and prison officers who face some of the cruellest makeshift weapons, such as shanks

and spikes, on a daily basis.

Spike protection has now also become of equal importance to private security professionals, simply because of the type of weapons that have appeared on the streets in recent years.

Compared to the company's highly successful polycarbonate stab resistant vests, the new carbon fibre body armour is even lighter, thinner, more efficient and more functional, the company says.

## Honeywell launches cloud-based fire safety solution

### Fire safety

Honeywell has launched the first tools from its new suite of Connected Life Safety Services (CLSS), its first all-in-one fire safety cloud platform.

Honeywell's CLSS suite of tools, built on the Honeywell Forge platform, enables fire technicians to minimise disruption, prove compliance and reduce the time needed for design, installation, commissioning, inspection, maintenance and reporting of life safety systems.

"Today's global environment requires the fire and life safety industry to innovate with solutions that enable facility managers and system integrators to monitor their systems and diagnose issues any time, from anywhere," said Sameer Agrawal, general manager, Global Fire Software and Services, Honeywell.

"Many facilities are working to create healthier environments and even to limit the density of occupants in order to comply with social distancing. With CLSS, we help system integrators

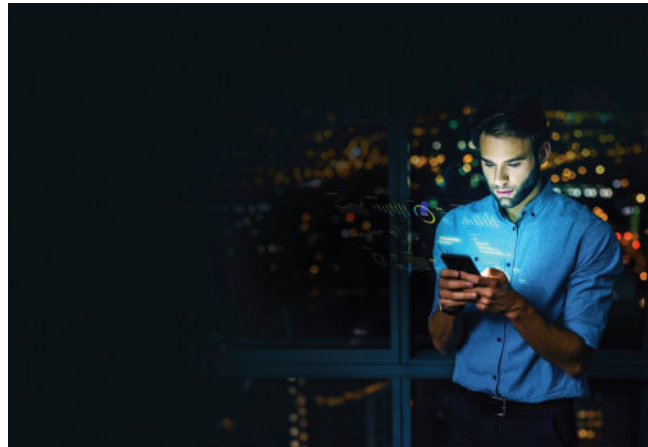


Image Credit: Honeywell

*The new tools enable facility managers and system integrators to monitor their systems any time, from anywhere.*

deliver the highest level of safety and service to their customers and work more efficiently by giving them insight into the system problem before they even get to the site," he added,

By applying the principles of digitisation and the Industrial Internet of Things technology, Honeywell's CLSS tools make it easier to design, install, test and commission fire systems while helping to eliminate errors and manual data entry across design,

commissioning and maintenance processes.

These tools can also improve the delivery of on-time completion and the delivery of a report compliant system, saving channel partners – and end-users – time and money. During scheduled maintenance, CLSS streamlines the verification of compliant fire system testing and automatically generates and archives compliance reports for audit purposes.

## Radio built for firefighters

### Fire safety

Motorola Solutions has launched the APX NEXT XE, its next-generation project 25 (P25) broadband radio, specifically designed for firefighters.

It combines mission-critical voice communications with data applications that combine radio voice control, messaging, mapping and vital new collaboration applications that can help improve the situational awareness of those in the field.

APX NEXT XE is offered with ViQi Voice Control, which allows users to control their radio via simple and intuitive voice commands.

It allows fire personnel to perform actions such as changing the radio channel, checking the status of the battery, adjusting the volume of the radio and more, with one touch of the dedicated ViQi button so that their attention remains on the task at hand. ViQi Voice Control is designed to work in the loud environments found in fire situations, with high dynamic range microphones that improve intelligence and speech clarity.

## Bio-Gate launches antiviral and antibacterial protective film spray

### Infection control

Bio-Gate AG, suppliers of innovative technologies and individual solutions for health and hygiene, has launched the new antiviral and antibacterial MSBG-Tec Protective Film Spray.

The spray is being used in the public transport system in Nuremberg to supplement the existing hygiene measures.

This was preceded by a successful field study in buses in which the Protective Film

Spray showed a high and long-lasting efficacy. More than a week after spraying, a germ reduction of around 90% was measured on the handrails, straps, handles and seats of the buses tested.

This was achieved in the normal daily use of buses during passenger transport.

In addition to its long-lasting effect, the Bio-Gate Protective Film Spray is skin-friendly and easy to apply. Apart from handrails and handles, spray can also be

applied to seats and other textile surfaces. If the technology is applied, e.g. directly after basic cleaning, the hygiene status can be maintained or extended for a longer period of time, since the cleaning and disinfection measures usually do not last long.

VAG in Nuremberg is one of the first to adopt MSBG-Tec impregnation spray in Germany, along with another domestic transport companies and customers abroad. Follow-up orders are under preparation.

# Personal Protective Equipment Buyers' Guide 2020

### The Middle East's annual where-to-buy guide

Section One: Listings by category

Section Two: International and regional suppliers

Section Three: Contact details of Middle East agents & subsidiaries listed by country

### Categories

#### Body Armour

Teijin Aramid GmbH

#### Breathing

##### Equipment/Protection/Respirators

Ansell Healthcare-Middle East  
Bauer Kompressoren GCC FZE  
Bullard Asia Pacific Pte Ltd

#### Chemical Protection Suits

Ansell Healthcare-Middle East

#### Disposable Clothing

Ansell Healthcare-Middle East

#### Face Protectors

Bullard Asia Pacific Pte Ltd

#### Fall Protection

D-S Safety AS  
Kee Safety Ltd.  
SINGING ROCK S.r.o.

#### Foot Protection/Safety Footwear

INDUSTRIAL ZAPATERA S.A.- PANTER  
D-S Safety AS  
Ejendals AB  
G.B. Industries Sdn Bhd

#### Hand & Arm Protection

Ansell Healthcare-Middle East

Ejendals AB

G.B. Industries Sdn Bhd  
Shanghai Select Safety Products Co. Ltd

#### Head Protection/Helmets

Bullard Asia Pacific Pte Ltd  
Shanghai Select Safety Products Co. Ltd  
SINGING ROCK S.r.o.  
Teijin Aramid GmbH

#### Heat & Fire Resistant Clothes & Garments

D-S Safety AS  
Teijin Aramid GmbH

#### Protective Clothing

Teijin Aramid GmbH

#### Protective Eyewear/Safety Glasses

Shanghai Select Safety Products Co. Ltd

#### Protective Gloves

Ansell Healthcare-Middle East  
D-S Safety AS  
Ejendals AB  
G.B. Industries Sdn Bhd  
Shanghai Select Safety Products Co. Ltd  
Teijin Aramid GmbH

#### Tockout Tagout

D-S Safety AS

### Suppliers

#### Ansell Healthcare-Middle East

1-Lake Plaza Tower  
Jumeirah Lake Towers, 22nd Floor  
2202  
United Arab Emirates  
Tel: +971 4 4523232  
Web: [www.ansell.com](http://www.ansell.com)  
E-mail: [syedfarrukh.ali@ansell.com](mailto:syedfarrukh.ali@ansell.com)

Ansell is a world leader in providing superior health and safety protection solutions that enhance human well-being. The world's need for better protection never stops, so Ansell is constantly researching, developing and investing to manufacture and distribute cutting edge product innovation and technology, marketed under well-known brands that customers trust. Operating in two main business segments, Industrial and Healthcare, Ansell is the market leader that continues to grow, employing 13,000 people worldwide. With operations in North America, Latin America/Caribbean, EMEA and Asia Pacific, customers in more than 100

countries around the world trust Ansell and its protection solutions. Ansell Industrial business unit provides workers with gloves that maximize protection, dexterity, comfort and grip across a wide range of industrial applications. Whether the job requires the handling of sharp edges, the manipulation of small parts, the operation of heavy machinery, the use of chemicals or food preparation, Ansell's work gloves deliver improved safety, efficiency and performance, which results in greater workplace productivity and reduced safety costs. Information on Ansell and its products can be found at [www.ansell.com](http://www.ansell.com).

#### Agents:

Saudi Arabia - Ansell Health Care Middle East (KSA)  
United Arab Emirates - Ansell Health Care Middle East (UAE)

#### Bauer Kompressoren GCC FZE

S103, AF07, South Zone 1  
Jebel Ali Free Zone  
PO Box 261413  
Dubai  
United Arab Emirates  
Tel: +971 4 8860259  
Fax: +971 4 8860260  
Web: [www.bauer-kompressoren.de](http://www.bauer-kompressoren.de)  
E-mail: [sales@bauer-kompressoren.ae](mailto:sales@bauer-kompressoren.ae)

#### Bullard Asia Pacific Pte Ltd

51 changi Business park central 2  
The signature #03-04  
Singapore  
486066  
Singapore  
Tel: +65 67450556  
Fax: +65 67455176  
Web: [www.bullard.com](http://www.bullard.com)  
E-mail: [bullardasia@bullard.com](mailto:bullardasia@bullard.com)

Founded in 1898, E.D. Bullard Company is a leading manufacturer

and one of the most trusted providers of high-quality personal protective equipment and systems in the world. Our sales teams provide a compelling portfolio of market-specific solutions to address the global needs of fire services, law enforcement, military, industrial, manufacturing and healthcare markets. Bullard is the recognized global leader in mission-critical safety. Product lines include thermal imagers, hard hats, firefighter and rescue helmets, supplied air respirators, powered air-purifying respirators, and air quality equipment.

#### Cam Lock Middle East LLC

PO Box 51  
Al Rusayl  
Muscat  
PC 124  
Oman  
Tel: +968 24253055  
Web: [www.camlockme.com](http://www.camlockme.com)  
E-mail: [info@camlockme.com](mailto:info@camlockme.com)

## CeoTronics AG

Adam-Opel-Strasse 6  
Rödermark, 63322, Germany  
Tel: +49 607 487510  
Fax: +49 607 48751265  
Web: [www.ceotronics.com](http://www.ceotronics.com)  
E-mail: [sales@ceotronics.com](mailto:sales@ceotronics.com)

CeoTronics communication systems, including effective hearing protection and other protective functions, are far superior to simple hearing protectors because users can still communicate with each other. Whether working, for example, in noisy or dangerous environments or wearing personal protective equipment (PPE), CeoTronics systems offer more protection in the workplace, increasing productivity and efficiency.

## D-S Safety AS

Menstrupvaenge 10  
Naestved, 4700, Denmark  
Tel: +45 55446644  
Web: [www.dsafety.com](http://www.dsafety.com)  
E-mail: [info@d-s.dk](mailto:info@d-s.dk)

Your complete supplier of personal protective equipment with a complete product range of work environment solutions, technical equipment and PPE. With 70+ years experience. We service all industries and ship worldwide. At our production in Denmark, we develop and manufacture tailor-made solutions ie our own fire retardant VARMEK® clothing

## Ejendals AB

Limavagen 28  
SE- 793 32, Leksand  
Sweden  
Tel: +971 50 397 2121  
Web: [www.ejendals.com](http://www.ejendals.com)  
E-mail: [Vishnu.kumar@ejendals.com](mailto:Vishnu.kumar@ejendals.com)

### Agents:

United Arab Emirates -  
Kanoo industrial & ENERGY

## G.B. Industries Sdn. Bhd.

No. 75-2, Jalan USJ 21/11  
Subang Jaya, Selangor  
Darul Ehsan  
47630  
Malaysia  
Tel: +603 8023 8899  
Fax: +603 8023 8877  
Web: [www.gb-intl.com](http://www.gb-intl.com);  
[www.novax-intl.com](http://www.novax-intl.com)  
E-mail: [sales@novax-intl.com](mailto:sales@novax-intl.com)

GB Industries is recognised today as a global leader in the manufacturing and

exporting of Electrical Safety Products under our own brand NOVAX. Our products are manufactured using the highest quality of raw material in the region whilst using environmental friendly manufacturing processes which meets stringent international standards.



## INDUSTRIAL ZAPATERA S.A. - PANTER

Camino De Los Clerigos  
Km 2, 03360 Callusa De Segura  
Alicante,Espana, 03360, Spain  
Web: [www.panter.es](http://www.panter.es)  
E-mail: [panter@panter.es](mailto:panter@panter.es)

100% spanish, leading manufacturer of safety, labor and uniform footwear. For more than 40 years, devoted to quality and continuous improvement.

## Kee Safety Ltd.

Cradley Business Park  
Overend Road, Cradley Health  
West Midlands, B64 7DW  
United Kingdom  
Tel: +44 1384 632188  
Fax: +44 1984 632192  
Web: [www.keesafety.co.uk](http://www.keesafety.co.uk)  
E-mail: [sales@keesafety.com](mailto:sales@keesafety.com)

Kee Safety, with its headquarters in the UK, is a global supplier of handrail and work at height safety equipment and has been trading in the Middle East since the 1980's. We can offer our customers also a full design and installation service, undertake surveys and produce CAD drawings for each project.

### Agents:

United Arab Emirates - Kee Safety LLC

## MSA Middle East FZE

PO Box 54910  
Dafza, Dubai  
United Arab Emirates  
Tel: +971 4 2996741  
Fax: +971 4 2996843  
Web: [www.msasafety.com](http://www.msasafety.com)  
E-mail:  
[Marketing.MEAIRR@msasafety.com](mailto:Marketing.MEAIRR@msasafety.com)

Our business is safety. We've been the world's leading manufacturer of high-quality safety products since 1914. MSA products may be simple to use and maintain, but they're also highly-sophisticated devices and protective gear — the result of countless R&D

hours, relentless testing and an unwavering commitment to quality that saves lives and protects millions of men and women each and everyday. Many of our most popular products integrate multiple combinations of electronics, mechanical systems and advanced materials to help ensure that users around the world remain protected in even the most hazardous of situations.

[www.msasafety.com](http://www.msasafety.com)

## Portwest

Portwest Middle East FZE  
T5- 113 & 114  
Sharjah Airport International Free  
Zone, Sharjah  
PO Box 122014  
United Arab Emirates  
Tel: +971 6 5527765  
Web: [www.portwest.com](http://www.portwest.com)  
E-mail: [orders@portwest.ae](mailto:orders@portwest.ae)



## Shanghai Select Safety Products Co. Ltd

1508 Huahong Business center,  
No.5, lane 388  
Daduhe road  
Putuo District,shanghai  
200333  
China  
Tel: +86 1381 7677572  
Web: [www.safety-inxs.com](http://www.safety-inxs.com)  
E-mail: [jason.sparrow@safety-inxs.com](mailto:jason.sparrow@safety-inxs.com)

## SINGING ROCK S.r.o.

Ponikla 317  
Ponikla, 51401  
Czech Republic  
Tel: +420 481 585007  
Fax: +420 481 540040  
Web: [www.singingrock.com](http://www.singingrock.com)  
E-mail: [info@singingrock.com](mailto:info@singingrock.com)

SINGING ROCK is one of the world leaders on the market of climbing equipment and professional protective equipment for work at heights, military and rescue. All our products are developed and produced in Czech republic and they are certified and fully comply with appropriate EU directives and standards.

### Agents:

United Arab Emirates - Global  
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تدريبي شامل أمرٌ ضروريٌّ للغاية. إذ لا يتحمل أصحاب العمل مسؤولية توفير المعلومات المناسبة والتعليمات والتدريب لموظفيهم فحسب، بل إن التدريب يمنح أولئك الذين يعملون في ارتفاعات عالية، الثقة والمعرفة والمهارات اللازمة لأداء عملهم بأمان وكفاءة. كما سيعلم العملاء كيفية استخدام معداتهم والعناية بها وصيانتها بشكل صحيح.

### إذا وجب الأمر، كُن مستعداً

بالنسبة للكثيرين، بعد اتباع التسلسل الهرمي للحماية من السقوط، يظل وجود العمل على الحافة الأمامية حقيقة لا مفر منها. إذا كان هذا هو الحال، توقف، وفكر واسأل نفسك الأسئلة الثلاثة التالية:

- 1 - هل تلقى العاملون لدي أفضل تدريب للمهمة المحددة المطروحة؟ هل هم على استعداد - قدر الإمكان - للعمل بأمان وثقة؟
- 2 - هل أنا على دراية بأحدث التشريعات وعمليات أفضل الممارسات وطرق تنفيذها؟
- 3 - هل المعدات التي أستخدمها تتوافق مع التشريعات ذات الصلة، وهل هي مصممة خصيصاً للعمل في تطبيقات العمل على الحافة؟

سيكون أي موفر لخدمات معدات الحماية من السقوط، يتمتع بحسن السمعة، على استعداد للمساعدة في إرشادك إلى تنفيذ أفضل الحلول وأكثرها أماناً للعمل في المرتفعات، وخاصة عند العمل في تطبيقات الحافة الأمامية.

يمكنك زيارة الموقع الإلكتروني [www.MSAafety.com](http://www.MSAafety.com)

لعرض مجموعة الحماية الكاملة الخاصة بشركة MSA، بما في ذلك الدورات التدريبية.

الجسدي. ويمكن أن يكون إنقاذ العامل الذي سقط أيضاً عملية صعبة وخطيرة. وإذا ظل العمل على الحافة الأمامية، بعد اتباع هذا التسلسل الهرمي، هو الخيار الوحيد المتاح، فيما يلي بعض الأمور الرئيسية التي ينبغي أخذها بعين الاعتبار. اختيار الحزام المناسب للوظيفة

يجب أن تكون جميع الأدوات في السوق متوافقة مع اللوائح ذات الصلة، ولكن الحزام الجيد، الذي يكون مريحاً ولا يقيد الحركة ويخفف من التأثير على جسم المستخدم في حالة السقوط، يتجاوز مجرد الامتثال. وتعد الملاءمة أمراً أساسياً لتحقيق ذلك. إذ يجب أن تكون أحزمة الساق والكثف قابلة للتعديل بسهولة للحصول على مقياس مريح. ويجب أن يكون المركز النهائي للمستخدم في سيناريو السقوط موجهاً للأعلى ويميل قليلاً إلى الأمام. وهذا مهم للتوزيع الصحيح للحمل من خلال أحزمة الساق والحمل عبر الجسم، لكي يتم دعم وحماية العمود الفقري والحوض بشكل صحيح. وفي حالة وقوع حوادث سقوط، يمكن أن يساعد الحزام الجيد والمجهز جيداً في الحد من آثار صدمة التعليق. وعلى الرغم من أن الملاءمة مهمة للغاية، فإنها جانبٌ واحدٌ فقط. كما أن أحزمة الحماية من السقوط عبارة عن قطع مصممة بشكل كبير من عدة أدوات. والعديد من ميزات التصميم هي ما يحدد مستوى الأداء، مثل المواد المناسبة لتحسين الملاءمة وسرعة الارتداء، أو كيفية تأثير الأوساخ على الحزام. وإذا كنت في حالة شك حول أي الأحزمة هو الأنسب لك / أو للوظيفة الحالية، فاستشر إحدى شركات التصنيع ذات السمعة الطيبة.

### أهمية التدريب

لا شك أن التأكد من إكمال العاملين لديك لبرنامج

### التسلسل الهرمي للحماية من السقوط

يساعد التسلسل الهرمي للحماية من السقوط على منع العامل من الوقوع في موقف يمكن أن يسقط فيه من خلال إعطاء الأولوية للتطبيقات المختلفة من «الأكثر تفضيلاً» إلى «الأقل تفضيلاً». وستعني تطبيقات الحافة الأمامية - حتماً - العمل في نظام منع السقوط - الخيار «الأقل تفضيلاً». هذا، بطبيعة الحال، ليس شيئاً يمكن الاستخفاف به ويجب أن يكون دائماً الملاذ الأخير، ولا يتم أخذه إلا بعد استكشاف الخيارات الثلاثة الأولى الموضحة أدناه.

- 1 - القضاء على المخاطر: هذا يعني إزالة الخطر عن طريق التصميم حيثما أمكن ذلك. هذا هو الخيار «الأكثر تفضيلاً» والأكثر أماناً. إذا لم يكن هناك خطرٌ، فلا يوجد سقوط.
- 2 - منع السقوط الكلي (أو السلبي): هذا يحدد المنتجات التي تمنع الوصول إلى خطر السقوط. حيث يعمل الدرابزين، على سبيل المثال، كحاجز مادي بين العامل والخطر.
- 3 - قيود السقوط: إذا كنت تعمل في نظام منع السقوط، فلا يوجد حاجز بين المستخدم وخطر السقوط. ويستخدم العامل بدلاً من ذلك معدات الحماية من السقوط (الحزام والحبل ونقطة التثبيت) التي لن تسمح له بالوصول إلى الخطر. على سبيل المثال، يمكن للعامل، الذي يعمل بنظام منع السقوط، استخدام حبل طوله ستة أمتار للاتصال بنقطة تثبيت على بعد سبعة أمتار على الأقل من خطر السقوط.
- 4 - منع السقوط: يحدد هذا البند المعدات المصممة للتقاط (أو «إمسك») العامل في حالة السقوط. هذا هو الخيار «الأقل تفضيلاً» لأن التقاط العامل أثناء السقوط يعرض العامل لقوى كبيرة، مما يعرضه لخطر الأذى

## مفكرة الفعاليات 2020 - 2021

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لا يجب الاستخفاف بالعمل على الحافة الأمامية

## العمل بأمان على الحافة

يشير تيم بيسيت، المدير الفني للحماية من السقوط في شركة MSA Safety، إلى أن الالتزام بالمعايير ذات الصلة، واتباع أفضل الممارسات، والتدريب الشامل واختيار المعدات المناسبة للوظيفة، أمرٌ بالغ الأهمية للعمل الآمن على الحافة الأمامية. وهو يُعرّف «العمل على الحافة الأمامية» على أنه العمل على أية حافة غير محمية بمنصة أو أرضية أو نقطة بناء أخرى، حيث الخطر مائل لأن حبل السلامة الذي يستخدمه العامل قد يتلامس مع حافة مكشوفة، أو حافة سطح العمل.

أجهزة ثنائية الأرجل، بالإضافة إلى أجهزة قابلة للسحب أحادية الوحدة. وقد لا يتم بالضرورة تصميم أو تصنيف أحبال السلامة ذاتية السحب العلوية أو التقليدية التي تفي بمتطلبات EN 360: 2002 لإيقاف السقوط من على الحافة، إذ يجب دائماً اتخاذ الخطوات اللازمة لتحديد المعدات المناسبة تماماً للوظيفة التي تقوم بها. CNB/P/11.060 هي وثيقة تنسيق مرتبطة بالمعيار (EN 360: 2002).

وتحدد هذه الوثيقة معايير الاختبار لاستخدام أحبال السلامة ذاتية السحب في تطبيقات العمل على الحافة الأمامية، وتحديد كيفية وجوب أن تحمل أحبال السلامة ذاتية السحب دليلاً على الأداء الديناميكي والقوة الديناميكية والقوة الثابتة في تطبيق العمل على الحافة، مع وضع حبل السلامة القابل للسحب في وضع مشدود. كما يعد الالتزام بوثيقة التنسيق هذه ومعايير الاختبار داخلها أمراً أساسياً لتخفيف من المخاطر المحتملة لتآكل الأحبال أو قطعها في حالة السقوط.

المعدات التي تستخدمها تتوافق مع المعايير ذات الصلة. أي تلك التي يتم تطبيقها في المملكة المتحدة وفقاً للائحة معدات الحماية الشخصية 425/2016 (EU). فهذه اللائحة، التي تم تقديمها للمرة الأولى في عام 2018، فرضت متطلبات إضافية على الشركات المُصنّعة لمعدات الحماية الشخصية، مما في ذلك تقييم المخاطر التي تهدف معدات الحماية الشخصية إلى الحماية منها، والتغييرات في متطلبات وسم المنتج. ومن الأهمية بمكان أن يتخذ القائمون على شراء معدات الحماية الشخصية خطوات لضمان تلبية مورديهم لهذه المتطلبات التنظيمية الجديدة.

كما يمكنك القيام بذلك من خلال البحث عن علامة CE الملصقة على معدات الحماية الشخصية. إذ أن هذا يقدم دليلاً على الامتثال لتشريعات الاتحاد الأوروبي المعمول بها. وهذا المعيار (EN 360: 2002)، المتعلق بأجهزة منع السقوط والقابلة للسحب، يخضع للمراجعة في الوقت الحالي، ومن المحتمل أن يشتمل المعيار المحدث على

في العديد من السيناريوهات، تقع حوادث العمل على الحافة عندما يكون العامل متصلاً بنقطة ربط أسفل الحلقة المستطيلة الخلفية (ذات الشكل D)، على الرغم من أنه من الممكن أيضاً وقوع الحوادث عندما تكون نقاط الربط فوق هذا الموضع. والعمل على الحافة الأمامية يمثل تحدياته الفريدة ومخاطر السلامة الخاصة به، أحدها هو الخطر الأكبر المتمثل في تآكل أحبال السلامة أو تمزقها أو قطعها عند الاصطدام بالحافة في حالة السقوط. هذا الأمر معقد أكثر في حالة تأرجح العامل بعد السقوط، مما يخلق حركة شبيهة بالبندول. حيث يمكن أن يؤدي الاحتكاك الذي يسببه هذا إلى زيادة احتمالية تمزق حبل السلامة أو قطعه. هذه المخاطر المحتملة تركز بشدة على معايير الاختبار ضمن المعايير ذات الصلة، واتباع أفضل الممارسات واختيار المعدات المناسبة للوظيفة.

### المعايير المتعلقة بالعمل على الحافة

قبل الشروع في أي عمل على حافة أمامية، تحقق من أن

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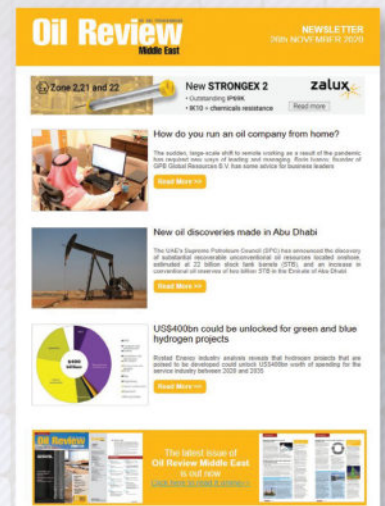
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المجلد 6 العدد الرابع 2020

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