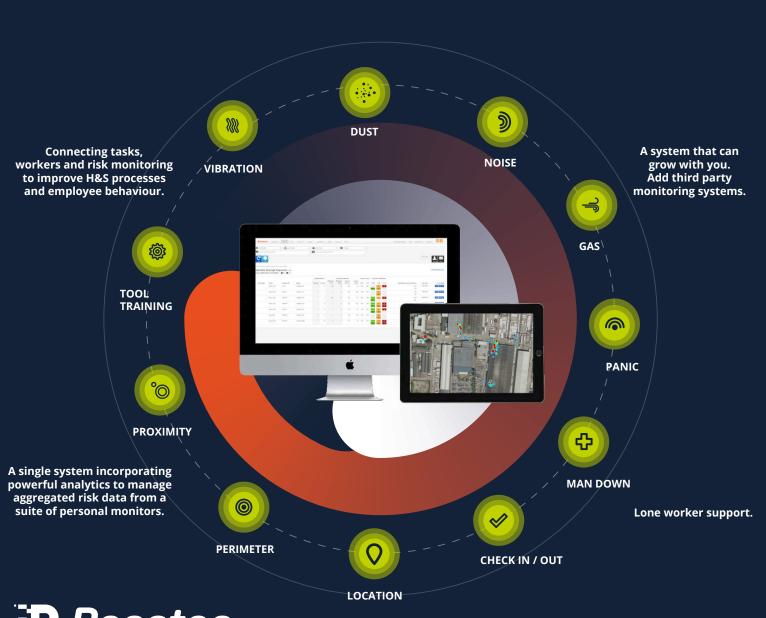


We are Reactec.

We help forward-thinking organisations switch from being mitigators of industrial workplace health risks, to being preventers.

We call it prevention engineering.

We're approaching old risks in a new way using an ecosystem of workplace wearables and cloud-based analytics. Armed with reliable data about what's happening on the ground you can refine your methods and tailor controls faster. Actively protect the health and wellbeing of your workers by engineering out risk.





Because guesswork comes at a cost

The organisations we work with want to protect their workers' health over the long-term. Whether it's monitoring exposure to risks such as HAV, noise or dust or keeping workers safe through social distancing or exclusion zones.

Even with all the right training, it's hard to know just how closely your people follow health and safety protocols. Individuals taking more risk than you want could be damaging their health, and unchecked exposure can lead to litigation down the line.

Paperwork isn't working

Having the paperwork to evidence compliance used to bring a sense of comfort. Now it's becoming outdated and something which takes too long and is easily lost in a digital world. Join the organisations who have moved from a system of paperwork, manual submissions and spreadsheets to technology that automates the generation and transfer of risk data to cloud-based intelligent analytics.

The Reactec Prevention Engineering approach

No matter what the risk, your challenge is to move away from a reliance on short term controls of 'last resort' towards those focused on prevention.

But until now, it's not always been easy to gather accurate and timely data from multiple places to inform decisions impacting 'top-level' controls.

Our workplace wearables can provide immediate feedback to those exposed to risk at work, whilst the data gathered brings you greater insight. The insight to find efficiencies and successfully determine the most feasible and effective controls for your people.

Use technology to drive change

We bring you an ecosystem of workplace wearables and analytics that take the guesswork out of workplace health and safety. With real-time data reporting from the field, you are connected to your atrisk teams, and are able to make better decisions. Being able to overlay multiple risk types also provides richer insight into what individual workers are exposed to on the job.



An ecosystem fit for workplace health

Building on a 20 year legacy of managing personal risk sensor data, Reactec offer a fully integrated and broad ecosystem which is simple and easy to deploy. No matter the scale or complexity of your interest Reactec will tailor an ecosystem of wearable sensors, network components and data analytics to suit your needs.



Tough Hardware

Using our electronic, environmental and data engineering expertise we've built an ecosystem of tough workplace wearables supporting a wide range of health risk sensors. By linking to cloud-based data analytics risk control can be re-imagined.

Not limited to Reactec sensors, our tough workplace wearables can be expanded to a wide range of IoT enabled health risk specialist sensors.

A range of building blocks provides you with the piece of mind of a plug and play system flexible to your needs.

Clever Software

Reactec Analytics

The data is automatically transmitted to our robust and resilient Microsoft Azure databases where Reactec Analytics software does the heavy lifting. Pre-define appropriate duty holders and have reports distributed to them highlighting those most at risk and the drivers behind that risk. Armed with data on exposure hotspots, managers can prioritise and design effective controls. Controls which are essential to fully comply with legislative requirements and HSE guidance.

In the real world of ifinite resources, let the Reactec Analytics data inform the highest risk processes and workers so that substitution and elimination efforts are targeted for best return. Help your clients move out of the territory of guesswork and into the place where real change is affected.

Zero hassle, footprint free secure data to your suite of devices.



Prevention Engineering – a modern approach to tried and tested methods

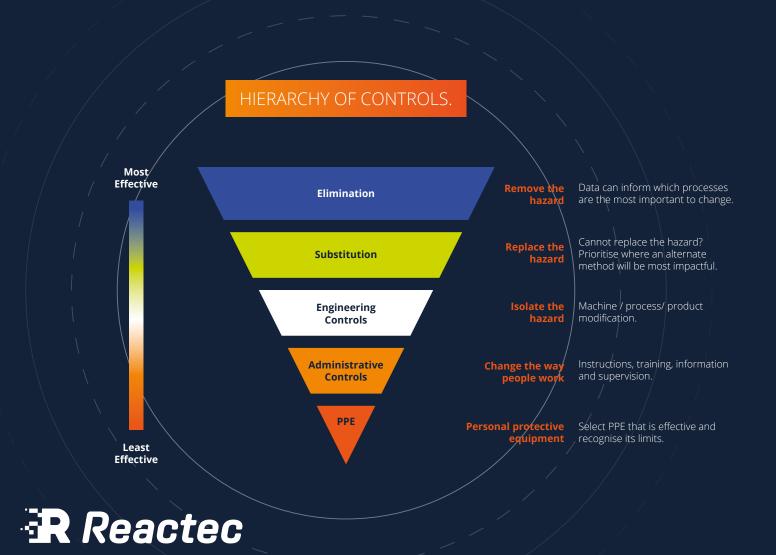
Reduce risk with Analytics.

Tap into easy-to-digest information without the need for costly outside interpretation. Gain powerful insights and apply them to your risk reduction policies.



Use technology to drive up the hierarchy of controls towards prevention

Effective administrative controls with our workplace wearables providing immediate feedback to those exposed to risk at work. Move out of the territory of guesswork and into the place where real change is effected.





With real-time data reporting from the field, managers are connected to their at-risk teams, and are able to make better decisions. Being able to overlay multiple risk types also provides richer insight into what individual workers are being exposed to on the job.

Turning exposure data into actionable intelligence requires the ability to find information that matters to your business.

Reactec developed sensor technologies and third party devices feed data into the Reactec Analytics automatically and securely via Reactec's holistic ecosystem, requiring no additional technology. Hosted on highly reliable Microsoft Azure databases the Reactec Analytics does the heavy lifting to turn data into actionable intelligence.

Microsoft Azure provides an uncompromising commitment to data privacy, investing over \$1billion in security R&D. Backed by a team of 3,500 cyber security experts, they offer the most comprehensive set of compliance offerings of any cloud provider.

The Reactec Analytics reports are designed to highlight what matters most in turning your gathered sensor risk data into risk prevention strategies. Available 24/7, GDPR compliant and securely hosted.

Informative data analytics

Multi-risk data analytics

Robustly hosted

♥ Fully integrated data management

A web hosted service means no footprint on your IT systems and the Analytics reports are accessed via an Internet connection and secure login.

The data is encrypted during transmission while the hosted data server is provided with access controls as used by many Government organisations.





INVOLVES ALL DUTY HOLDERS

The Reactec Analytics reports are created automatically and distributed to all duty holders providing wider and easier access to information. This helps increase awareness throughout a company of the measure of controls and activities to revise them.

The reports help employees understand employee risk levels and how to better manage them both reactively to daily occurrence and proactively to overall trends. They also demonstrate a company values the importance of worker welfare and team work.



MORE ACCURATE ASSESSMENT OF EXPOSURE TO DEPLOY MORE EFFECTIVE CONTROLS

Through a clearer understanding of the source and levels of exposure and related working practices; the Reactec Analytics will provide greater accuracy and insight to enable employers to design out exposure risk through work planning.



MORE TIME TO ACTIVELY REDUCE RISKS

With easy access to operator exposure risks, managers can utilise their time to proactively manage risk far more efficiently than using a manual process.



Control Measures

Be fully in control of your GDPR responsibilities with a robust administration tiered structure to appropriately manage access to all your employee data.

Managers and team leaders can view a wide variety of online Analytics reports 24/7 on demand to be informed of their employee monitored risk data.

From head office to remote locations only an Internet connection is required to view the online reports.

Or let the Reactec Analytics do the heavy lifting and automatically send e-mail alerts in response to high risk events and at your desired cadence provide selected KPI reports via email.

Supporting a company's continual risk reduction plan.

The Control Measures management service is part of the Reactec Analytics where managers can add intervention notes as well as log and track control measures against targets. This provides greater analysis of the performance of risk control activities against company objectives.

Control measures analysis

This powerful report provides an overview of companywide and project specific risk management performance. The report displays the average daily exposure against reduction targets and planned control measures, to assess their effectiveness.



Intervention reports

It's quick and easy to add intervention notes allocated to individual employees in the Reactec Analytics. Categorise interventions to better analyse priority areas. Electronically sign to acknowledge interventions and exposure records using a mouse, stylus or touchscreen.



Use technology to drive up the hierarchy of controls towards prevention

Reactec's ecosystem of workplace wearables and powerful Analytics enables you to engineer out risk. The immediate feedback from the wearable sensors provides effective administrative controls in your workplace while the Reactec Analytics moves you further up the hierarchy of controls.





R-Link

Hand-arm Vibration Monitoring

With over 20 years of experience in preventing workplace health and safety issues, Reactec introduce R-Link, our third-generation workplace wearable with expanded functionality.



Leaders in HAVS Prevention

- 1 Validate your risk assessments
- Easily control your workers' exposure levels
- Identify preventative control measures such as training or tool selection

Over 140,000 UK workers have already benefitted from Reactec's first HAV management watch.



Wrist mounted device that automates the tracking of tool usage and daily exposure points calculation.



Real-time calculation of exposure level or time remaining on tool.



Operator alerted when personal EAV and ELV exposure values are exceeded.



Automated reporting of individual and company-wide exposure, online and by email.



Bluetooth feature identifies exposure risk in real-time.



Tool tags with determined vibration to comply with regulations (TEP). Plus unique sensed vibration to find hidden risks (SEP).



Informative back-lit display to see:

- Risk level
- Worker identity
- Tool in use
- 24 hour time display

Haptic sound and vibration alerts increase to highlight levels of risk

Reactec Analytics

- 1) Readily accessible reports and alerts are available online, auto-emailed, and are easily shared with all stakeholders
- 2 Granular detail on tasks and tool use
 - worker activities
 - tool utilisation and performance
- Clear and pertinent information to prioritise efforts on the hierarchy of controls
- 4 Record and monitor the impact of control measures and interventions
- 5 Secure access to intuitive analytics, hosted on a robust and GDPR compliant, scaleable cloud platform



R-Link Pedestrian - Machine **Prevention Engineering** Our third-generation smart watch, R-Link, builds upon our trusted HAVS monitoring capability with new functionality to alert an operator when they are within dangerous proximity to vehicles or active machinery. **Reactec Analytics UWB Beacon** Near-miss reports 1) Field configurable range 2 Interactive heatmaps 2 UWB for accuracy & speed Flexible mounting 3 Worker behaviours including magnetic 4 Inform safer workflows **Driver Watch Pedestrian Watch** 1 Auto-pair to vehicle Personalised 2 Electronic thumbs-up 2 Informative display

Proximity Detection Analytics

3 Configurable haptic alerts



A versatile multi-purpose wearable linking employers to their employees in the field



Built on 20+ years' experience in managing electronic devices in arduous environments



Scalable, robust ecosystem for managing large data sets of personal data seamlessly

Configurable pedestrian

warnings



RASOR is a device to help companies achieve greater regulatory compliance while enhancing the health and safety of field operatives and lone workers.

Real-time location & visibility of workers' HAV exposure risk. Additional third party sensors can be monitored simultaneously.

Seamlessly aggregate, visualise and manage disparate risk data via a single operational view.

Immediate alerts for field and remote supervisor intervention.

Alarms for immediate support to panic and man down detection.



Multi-purpose device to support a number of functions & roles with the flexibility to allow you to configure it to your specific needs utilising some or all of its capabilities.

Functions

The RASOR includes all the features below as a multi-purpose device to support employees in a number of different roles and work environments.



Panic alert



Employee check-in



Location mapping



Fall alert



Health & safety risk sensor

Manage data from your multiple risk sensors via the RASOR which is an open interface to third party bluetooth enabled sensors.



Vibration exposure



Noise exposure



Proximity



Dust exposure



Your workers are protected.
You are empowered to improve compliance.

It's an ideal device for employers who have multiple risks being monitored on disparate systems or have lone or mobile workers at risk from HAV exposure.

Site and remote supervisor

By assigning a RASOR to either a field supervisor or team member, the RASOR will automatically gather live exposure data from all their teams' health risk sensors.

The RASOR user and remote management will be automatically alerted to any exposure breaches for immediate over the shoulder intervention.

The RASOR transmits exposure data along with location information to the cloud based Reactec Analytics every 15 minutes, so remote supervisors can have full visibility of their team's location and exposure risk levels.

Connected worker

(such as noise and dust) wearing a risk sensor, they will no longer need to check multiple sensors whilst working, wait till the end of their shift, or even longer to

aggregated through RASOR is

exposure sensor data in a single risk data in order to develop more

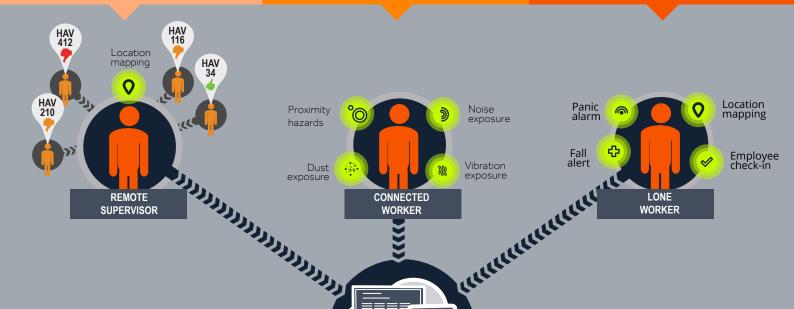
Lone worker

Lone workers can range from a construction worker alone for only a few minutes, a grounds maintenance crew member working out of **si**ght, or a utility worker responding to call outs.

RASOR can support these activities and and falls, man down alarms and panic situations for complete peace of mind.

Utilising mobile phone signals, RASOR can communicate an employee's GPS tracked location and, via Reactec's Analytics, trigger a range of response level service packages -24/7 coverage for a tailored suite of alarms;

- Check-in and Check-out Automatic Man-down
- User-driven Panic



As a multi-purpose device select which functions best support your organisation risk management needs.



REACTEC ANALYTICS

Reactec's Analytics

Reactec's Analytics is the heart of all Reactec's technologies. RASOR automatically collates and transmits data to the Reactec Analytics so organisations can benefit from receiving live, location determined health risk data from the field. RASOR turns the Reactec Analytics into a single analytics platform for viewing multiple risk data within a standardised interface removing the need to collate data from separate sensors and understand their individual reports.

Web hosted, the reports are designed to highlight what matters most in turning your gathered sensor risk data into actionable intelligence. Available 24/7, GDPR compliant and securely hosted by Reactec.

RASOR is a flexible multi-purpose device designed to improve risk management & compliance while enhancing the health and safety of high risk individuals.

If you have employees exposed to HAVS risk working in teams or alone, in construction, manufacturing, rail, utilities or facilities management then contact Reactec on how you can improve your work environment and occupational risk and compliance.





Real-time Personal Dust Monitoring

Dust is one of the biggest workplace health issues. In many industries workers can be exposed to high levels of dust causing breathing problems that could lead to life threatening respiratory diseases. Most serious occupational lung diseases are caused by repeated exposure to often invisible dust.

The good news is, recent advances in particulate monitoring technologies mean that it is now possible to cost effectively gather data regularly on the volume of dust your employees are exposed to. Armed with this data, you can intelligently assess if your risk assessments were valid and control measures are effective.

Reactec are collaborating with Trolex, a specialist in dust monitoring, to integrate their sensor technology into the Reactec eco-system to simplify dust monitoring and turn it into informed control of a serious workplace health risk.

Detecting real-life exposure is the first step towards prevention.

How it works

The Trolex **XCD1**⁺ is integrated into the Reactec Ecosystem using the Reactec RASOR as an IoT Gateway to Reactec's powerful Analytics software. There are two modes of working for the **XCD1**⁺ with RASOR.

- One to One where the RASOR accompanies a worker wearing the XCD1⁺. Assign a RASOR device to a worker and pair their RASOR device with their XCD1⁺ to personalize all data collected. The dust monitoring data will then be enriched with the RASOR's GPS location information and be provided live for you to view online. If the worker is also assigned a Reactec R-Link during monitoring there will be a precise overlay of noise and vibration and where it took place live.
- One to Many The RASOR remains at a fixed location within a powered charger in "hub" mode. A single RASOR device can then be used to allocate an unlimited number of **XCD1**⁺ devices to individual workers, again personalizing the collected data. The monitored dust data will be transmitted to the online Analytics at the end of the working day when the **XCD1**⁺ is returned for de-allocation or whenever **XCD1**⁺ comes within 30m of the RASOR.

Trolex XXD1⁺

If you have determined your hazard, the **XXD1**⁺ gives you the data to be certain that your recognised hazard is under control.

- Accurate, flexible, reliable
- Real-time, particulate sampling made simple
- Instant alarms for fully customizable STEL and TWA measurements for PM1, PM2.5, PM4.25 and PM10
- Almost zero maintenance

An automatic self-test routine and a maintenance cycle of around 2 minutes every 3 months. That's it. No return to base servicing, or complicated set-up, cleaning or calibration routines.



R Reactec



Personal dust monitoring to put you in control

With the **XCD1**⁺ and Reactec, dust monitoring can be integrated into a single analytics platform of multiple workplace risks - the Reactec Analytics.

This results in a more convenient and accessible way to monitor, measure and control occupational dust exposure, ensuring your workers aren't exposed to hazardous levels that could damage their health.

Gain an unprecedented perspective of workplace risk with Reactec's ability to overlay a range of workplace risk data.

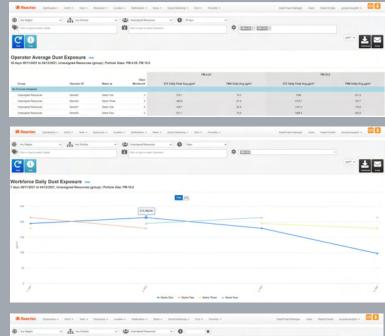
Using a dust monitor with Reactec Analytics includes:

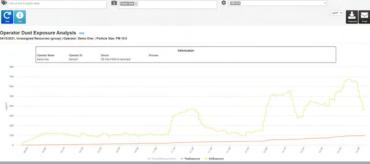
Effectiveness of Controls:

- Remove guesswork with real-time assessment of risk
- ldentify the source of exposure and prioritise high risk areas
- Tailored risk reports. Review controls and assess effectiveness

Efficient Risk Management:

- Automatic and seamless data analysis
- Automatic stakeholder engagement
- O GDPR compliant management of personal data
- Integrated records of controls and acknowledged interventions





We believe that risks can be better managed when they are measured. For over 20 years, we have seen our clients deliver best in class compliance through evidenced effective control and reduction of their workplace health risks.



The Control of Noise at Work Regulations 2005 (the 'Noise Regulations') require you to eliminate or reduce risks to health and safety from noise at work.

At Reactec, we have teamed up with experienced noise measurement experts to integrate their precision sensor technology into our ecosystem with automatic live data capture and cloud-based analytics to takes the guesswork out of workplace noise monitoring.

Apply Reactec Prevention Engineering thinking with adequate real world data to prioritise efforts to substitute or eliminate the most important risks. Moving out of the territory of guesswork and into the place where real change is affected.

How it works

There are two ways of integrating either the Cirrus dodesbadge5 or Pambry PED0828 into the Reactec ecosystem:

1. One-to-One

Where the RASOR accompanies an individual during monitoring.

Assign a RASOR device to a worker and pair their RASOR device with their noise monitor. The noise monitoring data will then be enriched with the RASOR's GPS location information and provided live for you to view online. If the worker is also assigned a Reactec R-Link device during monitoring there will be a precise overlay of noise and vibration and where it took place – live.

2. One-to-Many

The RASOR remains at a fixed location within a powered charger in "hub" mode. A single RASOR device can then be used to allocate an unlimited number of noise monitors to individual workers. The monitored noise data will be transmitted to the online analytics at the end of the working day when the noise monitor is returned for de-allocation or whenever the noise monitor comes within 30m of the RASOR.

Reactec offer two types of noise dosebadge to enable you to make a reliable, real-time assessment of your workers' daily personal exposure.



choose the Cirrus doseBadge5, with octave band measurements for the ultimate occupational noise measurements in a rugged and robust easy to use form factor.



Choose the lower cost
Pambry PED 0828
compact noise
dosebadge with real-time
feedback to the worker
of their accumulated
daily exposure.





Both devices can be allocated personally to a worker with the Reactec RASOR to allow data gathered by the devices to be personalised and transmitted to the Reactec Analytics for automatic consolidation and reporting. Gain an unprecedented perspective of workplace risk with Reactec's ability to overlay a range of workplace risk data.



All data gathered by the noise dosebadges is personalised by the RASOR allocation and securely transmitted to the Reactec Analytics for intelligent reporting. Gain an unprecedented perspective of workplace risk with Reactec's ability to overlay a range of workplace risk data.

Benefits

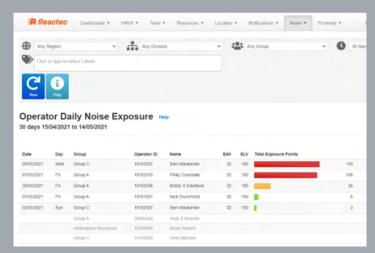
Using a dosebadge with Reactec Analytics include:

Effectiveness of Controls:

- Automatic and seamless data collection and dissemination through e-mailed alerts and reports
- Remove guesswork with real-time assessment of risk
- Identify the source of exposure and prioritise high risk areas
- Ensures compliance with the Control of Noise at Work Regulations 2005
- ▼ Tailored risk reports. Review controls and assess effectiveness
- GDPR compliant management of personal data

Credible evidence to assist defence claims:

- Personal instead of generic risk management
- Real-time noise exposure monitoring
- Adjust monitored data for hearing protection supplied to each worker







Preventing exposure to excessive noise in the workplace

In the UK, the HSE estimates over 2 million workers are exposed to levels of noise that put their hearing at risk. In many sectors, such as manufacturing, engineering and construction, workers are exposed to noise that frequently surpasses 'normal' or 'safe' levels and durations.

But noise-induced hearing loss is 100% preventable.

Reactec has teamed up with hearing protection technology specialists, Minuendo, to help companies actively prevent hearing damage in their workforce.

Minuendo has developed a revolutionary ear plug called Smart Alert which not only provides protection from noise but also monitors the level of noise entering the ear. The Smart Alert earplugs have listen-through technology, meaning you don't have to remove your hearing protection in order to maintain situational awareness and the ability to communicate effectively with co-workers.

Smart Alert informs a worker in real-time of their noise exposure based on the noise entering the ear and proactively warns them if they are inadequately protected against that noise.

About Smart Alert

Smart Alert earplugs offer an automated and integrated approach to hearing loss prevention.

Benefits

- 1 Exposure alerts offer real-time feedback, encouraging safe behaviour
- Listen-through technology allows users to maintain situational awareness, whilst having the ability to communicate with colleagues verbally ,or when using hand-held radios
- Noise exposure data for each ear, and the ambient noise at the collar, is collected continuously
- 4 Promotes a collaborative approach to hearing loss prevention





How it works

With patented acoustic membrane technology, there is no sound degradation with Smart Alert, meaning that users maintain situational awareness and the ability to communicate effectively with co-workers. The unmatched in-ear comfort and convenient neck cable with security clip allows users to easily combine Smart Alert earplugs with earmuffs and other PPE.

Continuous monitoring of noise levels and real-time alerts 'at the ear' means workers are able to take corrective action if noise levels are too high. At the end of each shift, the earplugs are docked for charging and noise data is automatically streamed to secure servers for analysis.

Integrate with Reactec's powerful Analytics platform

The collaboration with Reactec means that the data gathered by the Smart Alert earplug will be seamlessly integrated into the powerful Reactec Analytics software. All that is required is to connect your Smart Alert dock to a local wi-fi network. With data seamlessly gathered into the Reactec Analytics you can readily assign the data to specific workers and take advantage of the robust feature set developed by Reactec over the last 10 years.

- 1 Robust scalable Microsoft Azure databases with strict GDPR compliant protocols
- 2 Intuitive intelligent reports which turn gathered data into actionable intelligence
- 3 Automatically distribute regular or event-driven reports to a hierarchy of duty holders
- 4 Evidence your employee protection with "wear rate" reporting

By combining the noise exposure data gathered by Smart Alert with data on other risk agents within the Reactec Analytics platform, you can gain unparalleled insights to your workers' risk profiles.





What do our customers say?



"We have been able to apply resources and measures more effectively to address our vibration risk. One of the key benefits of introducing a wearable monitor was that it raised awareness of HAVS at source while also providing a good investment in the long-term health of employees. It is testament to Murphy proactively investing in HAVS technology that Murphy has been given a bursary from its insurance company. Ultimately the introduction of HAVS wrist monitoring is an investment in the long-term health of employees. They can react in real-time before thresholds are breached." Morgan Sindall, BBMV Cross rail project

"Nottingham City Council is a large and varied organisation with staff based all around the city. We needed a more accurate way of managing our vibration exposure levels, whilst keeping the methods straight forward and user friendly - Reactec has provided the solution. We can see that the data we are able to obtain will help us manage services and work activities in a much more sophisticated way than before. It also has the potential for additional benefits such as identifying business cases for tool purchasing and other workforce investments." Vicky Cook Safety Adviser, Corporate Safety Advice, Nottingham City Council

"I have found the Reactec analytics platform very intuitive to use, it has been a great help in reducing the vibration exposure to my workforce. I have found it invaluable source of information and very helpful."

Barry Leigh Deputy Gardens and Grounds Manager, Precision Investment Castings Ltd

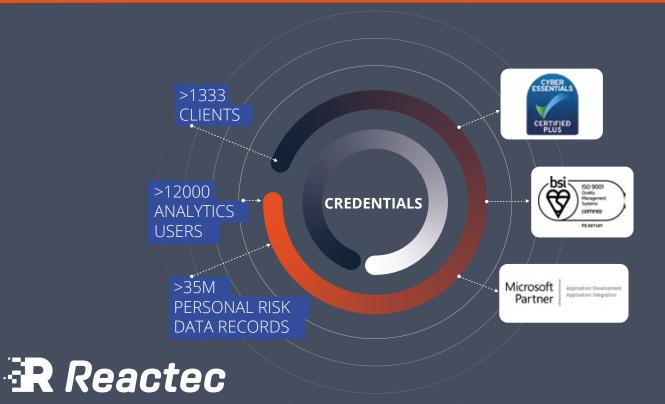
"While we were using R-Link, I found the system very easy to use, the information received indicated the need to alter working methods & choice of tools to be used, it also highlighted that the tools we thought would be the highest values were not because of the use of clamps. Using the system showed that generally we were under the HSE calculator levels". Supervisor, Tilbury Douglas

"We performed a trial of Reactec's new proximity warning system, R-Link, to further enhance the safety of our operations at an insulation manufacturing facility managed by Mayplas in the UK. In one scenario, R-Link proximity warnings were switched-off allowing forklift drivers and pedestrian workers to operate as normal. In a second scenario, we switched on R-Link's proximity alerts and both forklift drivers and pedestrian workers were instructed to respond to proximity warnings by moving safely away from the operating hazard. Data on near-miss occurrences were recorded for both scenarios in Reactec's analytics software. Comparing the two scenarios, we found a 54% reduction in incursions from the team that responded to R-Link's proximity alerts, which meant that near-miss occurrences had reduced by half for teams using the technology."

Operations Manager, SIG plc

"Ferrovial's commitment to the digitalisation and virtualisation of its infrastructure is delivered via its open innovation strategy. The health and safety of its people, stakeholders and end users is at the core of these developments. We have previously used Reactec technology HAVWEAR to support the management of Hand Arm Vibration. Our deployment of R-Link will bolster our safety procedures and will reduce our risk of incident and accidents".

Ignacio Lopez Araiz, Ferrovial Construction Heathrow Project Director



What we are about

The one unifying ambition that drives our work is to actively protect workers' health in smarter ways through the application of leading edge technology.

With advanced technology on your side to measure data and transmit from the field automatically, our aim is to bring you the kind of real-world evidence you need to make a difference to workplace health.

Speak to our Reactec experts to see how easily you can create your connected workplace.

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