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R-Link manager HAV awareness training

Why HAV is important and how Ideagen Wearable Safety can help

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What is HAVS?

01



HAVS

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Hand-arm vibration syndrome

Health effects

- Hand-Arm Vibration Syndrome (HAVS) - causes white fingers, loss of grip strength, sensory loss
- Carpal Tunnel Syndrome (CTS) - causes numbness, tingling, motor function loss

Quality of life impact

- Loss of dexterity and strength affecting work performance
- Increased difficulty in cold or damp environments
- Pain and trouble performing fine motor tasks
- Sleep disruption

Symptoms may be intermittent but can become permanent; damage can begin within 6 months of exposure.

In the UK alone, over 2 Million workers are at risk & over 300 thousand are already affected



How likely are you to develop HAVS?

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1 in 10 people exposed to 100 points a day, will develop HAVS within **12 years***

1 in 10 people exposed to 400 points a day, will develop HAVS within 6 years*

10% worker risk



*Data source here

HAV exposure limits

Globally recognized vibration exposure thresholds

Vibration magnitude a_{hw} (m/s²)	5 min	15 min	30 min	1 hr	1.5 hr	2 hr	3 hr	4 hr	5 hr	6 hr
40	265	800								
30	150	450	900							
25	105	315	825	1250						
20	67	200	400	800	1200					
19	60	180	360	720	1100	1450				
18	54	160	325	650	970	1300				
17	48	145	290	580	865	1150				
16	43	130	255	510	770	1000				
15	38	115	225	450	675	900	1350			
14	33	98	195	390	590	785	1200			
13	28	85	170	340	505	675	1000	1350		
12	24	72	145	290	430	575	885	1150	1450	
11	20	61	120	240	365	485	725	970	1200	1450
10	17	50	100	200	300	400	600	800	1000	1200
9	14	41	81	160	245	325	485	660	810	970
8	11	32	64	130	190	255	385	510	640	770
7	8	25	49	98	145	195	295	390	490	500
6	6	18	36	72	110	145	215	290	360	455
5.5	5	15	31	61	91	120	180	240	395	365
5	4	13	25	50	75	100	150	200	250	300
4.5	3	10	21	41	61	81	120	160	205	245
4	3	8	16	32	48	64	96	130	160	190
3.5	2	6	13	25	37	49	74	98	125	145
3	2	5	9	18	27	36	54	72	90	110
2.5	1	3	6	13	19	25	38	50	63	75
2	1	2	4	8	12	16	24	32	40	48
1.5	0	1	2	5	7	9	14	18	23	27
1	0	1	1	2	3	4	6	8	10	12

Exposure Time (T)

- Above exposure limit
- Likely at/above exposure limit
- Above exposure action value
- Likely at/above action value
- Below exposure action value

Action Value (EAV) – 100 points - Take Actions

100 points = 8 hours of trigger time on a tool with 2.5m/s²
1 in 10 develop HAVS in 12 years at this level

Limit Value (ELV) – 400 points - Don't work above this

400 points = 8 hours of trigger time on a tool with 5m/s²
1 in 10 develop HAVS in 6 years at this level



Drill
2 - 5m/s²



Angle Grinder
3 - 11m/s²



Recip Saw
7 - 27m/s²



Jack hammer
11-22m/s²



Chipping hammer
10 - 21m/s²

Typical trigger times to reach limits

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Battery drill		2 hrs 8 hrs
Angle grinder		1 hr 4 hrs.
Reciprocating saw		10 mins 40 mins
Jack hammer		20 mins 1 hr 20 mins
Chipping hammer		5 mins 20 mins

How do we monitor

02



Legal obligations

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The Control of Vibration at Work Regulations 2005 and associated guidance requires the following;

- Elimination or control of vibration exposure risk to As Low As Reasonably Practicable (ALARP)
- An **assessment of the risks to employees from exposure to vibration**, including assessment of employees' daily exposure to vibration
- Information, instruction and training to tool users and their managers

A suitable and sufficient assessment of HAV exposure risk requires a determination of;

- duration of exposure
- probable vibration magnitude during exposure

Why does HAVS still dominate RIDDORS?

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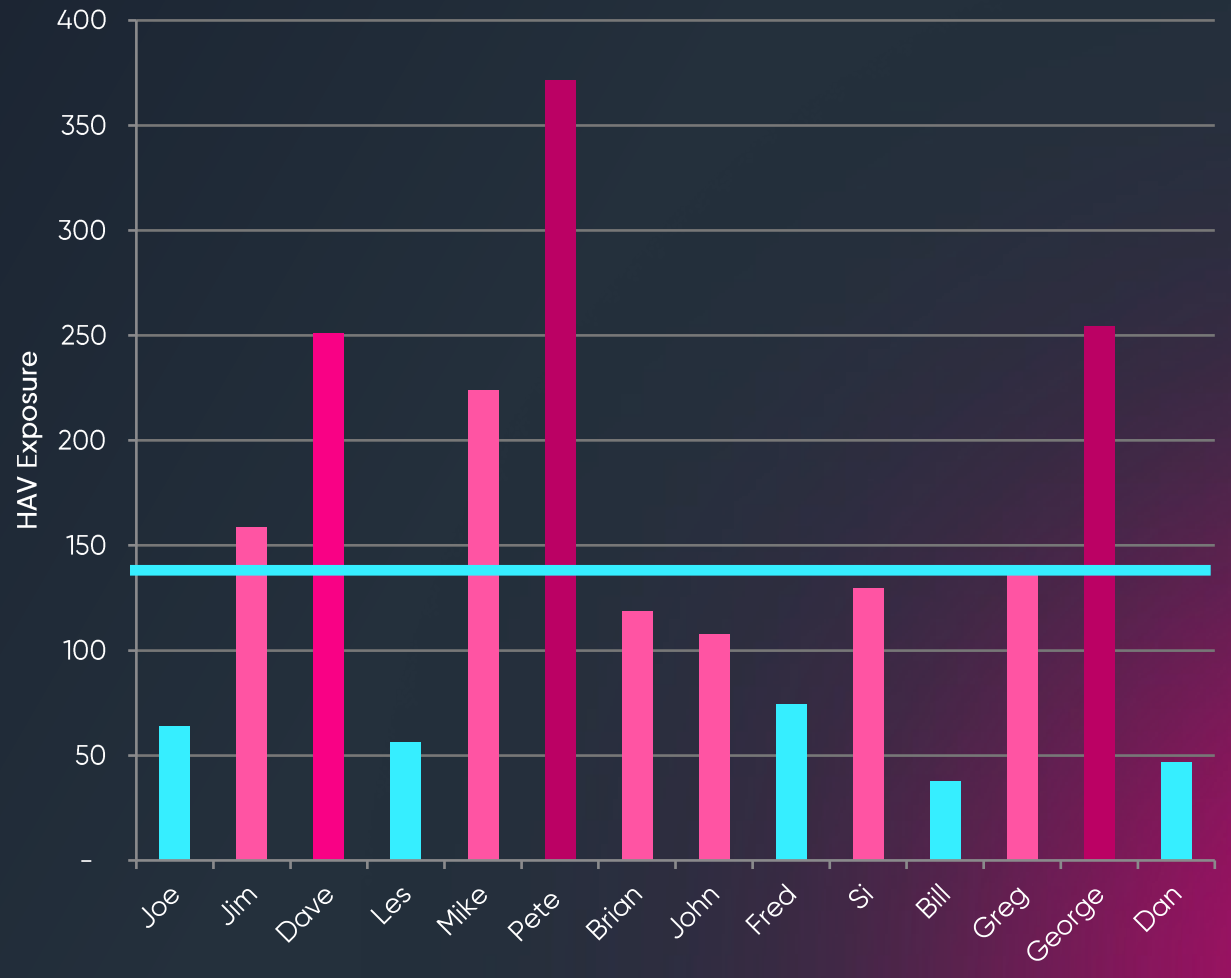
01 Does the risk assessment match the real tool use

02 How representative is vibration data used for risk assessments

03 Inadequate or ineffective controls.

04 Operator competency

05 Tool condition & accessory used



The Ideagen Wearable Safety prevention engineering approach - WHY

Regulations & the HSE	Civil litigation	Employee care
Prioritise and verify the effectiveness of your controls	Robust and credible evidence to assist in defence of claims	Real life assessments of individual HAV exposure
Enhanced real-time HAV exposure risk assessments.	Reduce defence preparation costs	Personal instead of generic risk.
Design, prioritise and record controls based on data analytics.	Auditable and tamper proof	Ensure individuals are not at increased risk of developing HAVS
Evidence of control Effectiveness	GDPR compliant data management	Consolidate employee H&S monitored data

How we can help - hardware

03



Ideagen Wearable Safety

The key components



1. R-Link watch

Watch module independent of strap. R-Link is electronically assigned to individuals using RFID cards.



2. Charging Station & Gateway

Charging station charges watches & Gateway automatically sends data to the Analytics.



3. ID Cards

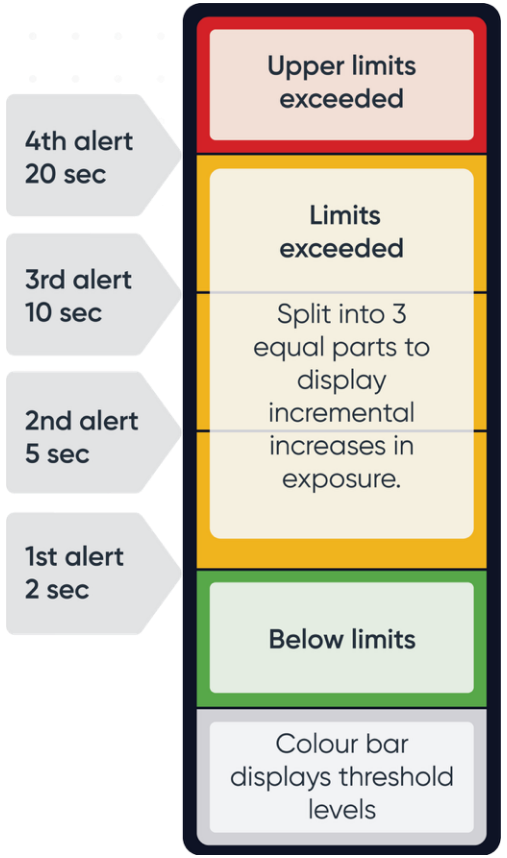
ID cards are assigned to workers to personalise data.



4. Tool tags

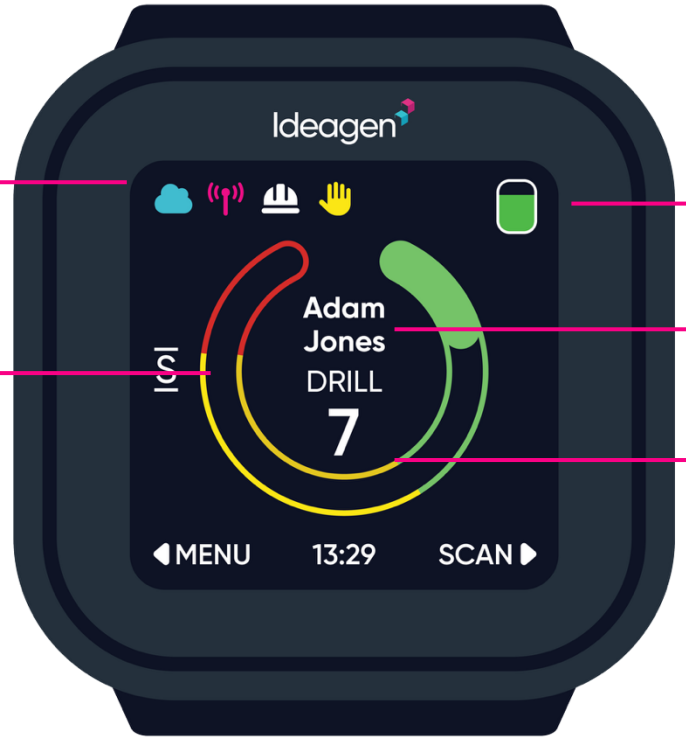
RFID tags are programmed with tool information to support tool performance & utilisation insight.

R-Link worker information



Interactive display
View enabled watch functions via icons

Real-time exposure
Calculated by the watch with alerts for user when limits have been exceeded



Battery Level
Indicates battery level

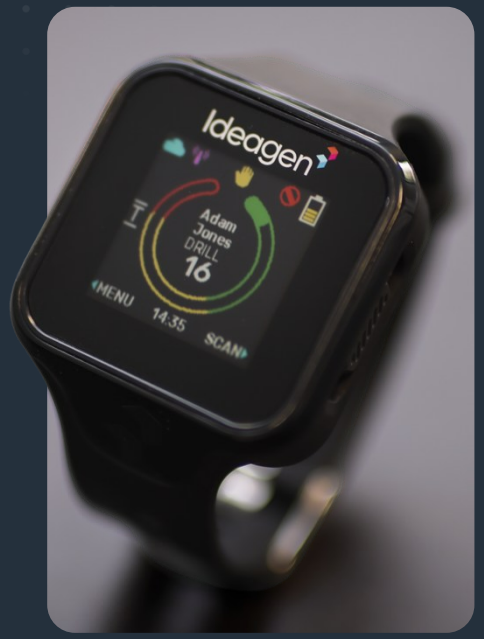
Operator details
Full name of operator and tool being used

Vibration Points
Track number of vibration points accumulated

Two Concurrent Assessments

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R-Link Watch calculates HAV exposure points based on two vibration magnitudes



Pre-determined expected vibration magnitude **X** Trigger time of tool use **=** Tool Exposure Points (TEP)

Real use sensed vibration magnitude **X** Trigger time of tool use **=** Sensed Exposure Points (SEP) Meets the requirements

Switching the watch off

When not using vibrating tools the watch can be put into OFF mode

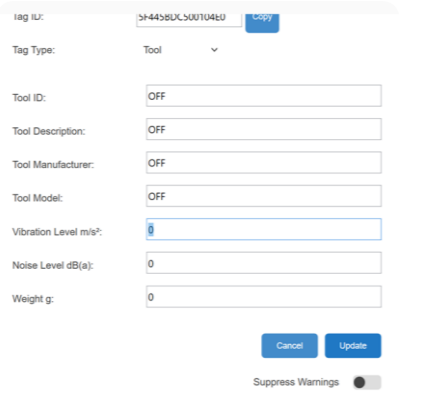
1. This is to avoid collecting erroneous data
2. If left tagged to a high m/s2 tool when driving, high points can be accumulated quickly
3. Important behavior to embed

TIP: Messaging feature is a good tool to remind workers at end of shift before driving

Press & release to confirm **OFF** mode

You can create an **OFF** Tool Tag with a vibration value of 0.0m/s2





What you should know

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01

Pay attention to watch warnings!



02

If tools have RFID tags – connect to tags!



03

If moving off tools, switch watch “off ”

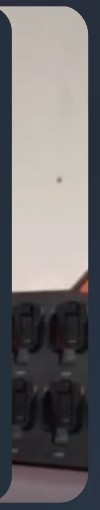
04

Wear the watch until the end of your shift



05

Return watch to charger at the end of the day



How we can help - analytics

07



Ideagen wearable safety analytics – platform overview

A comprehensive software platform to manage workplace occupational health & safety,
Data is seamlessly transmitted via R Link Watch to provide automated actionable insights

Automated online & email reports to drive risk reduction activity & identify hidden risks.

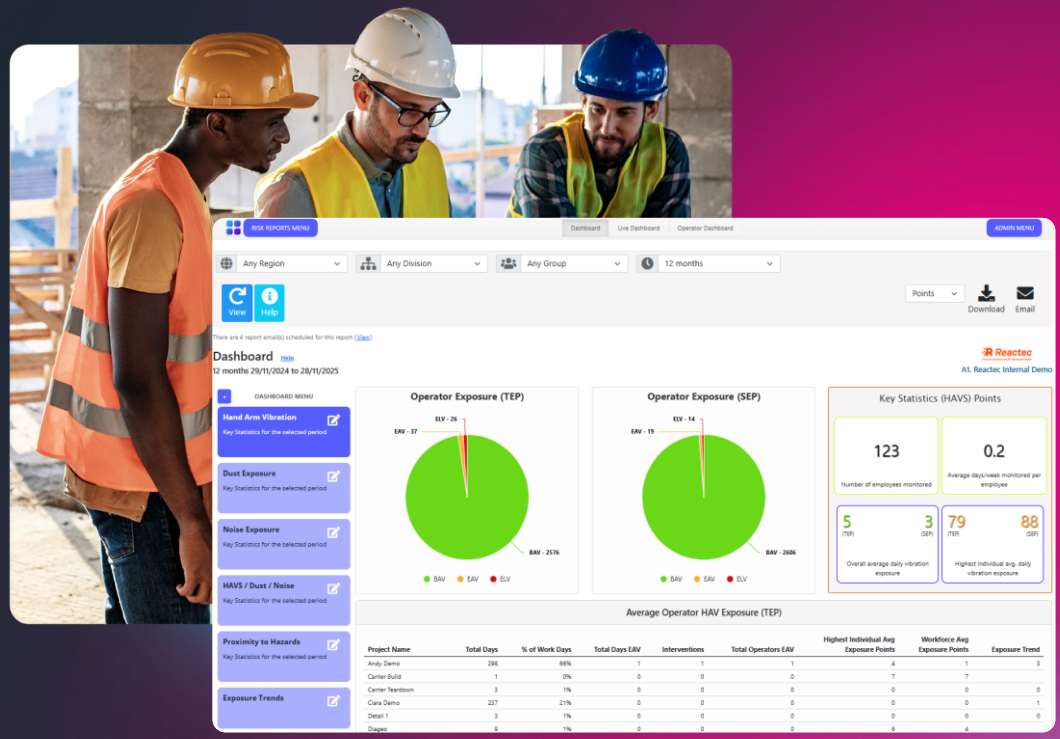
Easy to understand reports empower employers to;

- Prioritise risk management
- Design and record controls and interventions
- Review controls and assess effectiveness

The Reactec Analytics data can inform decisions on:

- Alternative work methods
- Equipment selection
- Maintenance & purchasing policy
- Work schedules

Let's log in and take a look now...



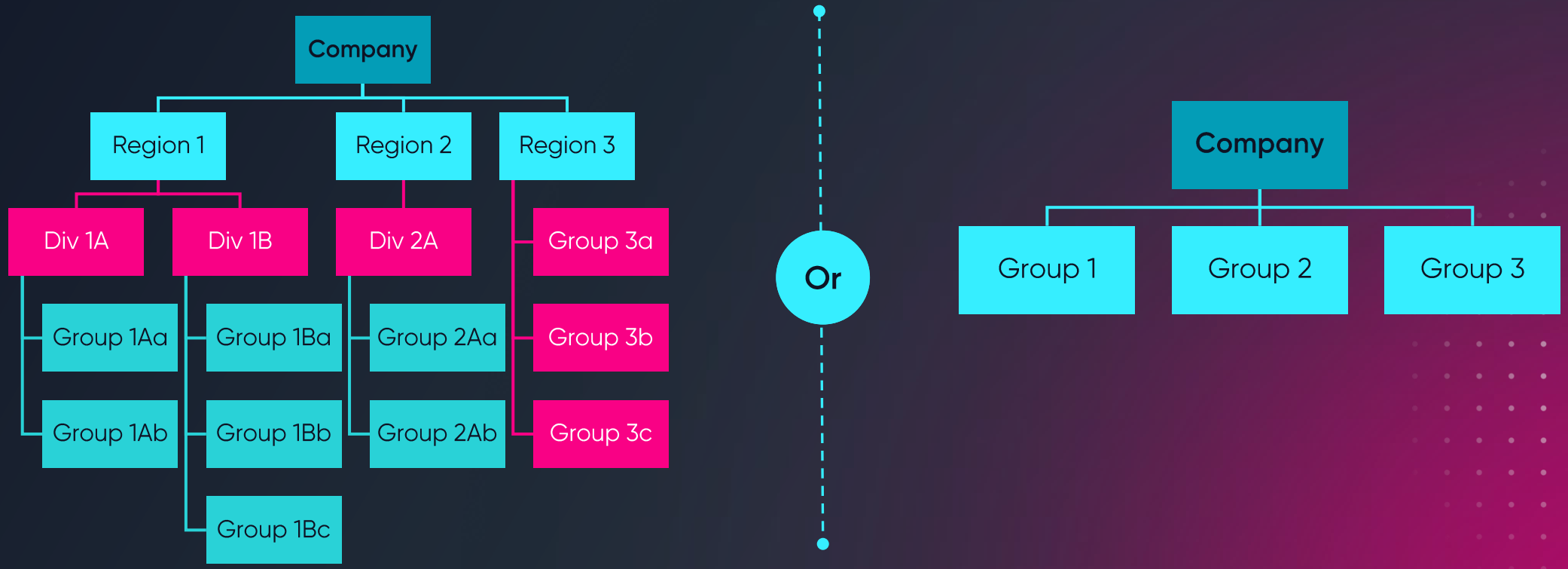
Using Groups allows bespoke data structure

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Organising workers into groups creates a structured framework that enhances access control and streamlines reporting.

Access control: Assign users to only the groups they are responsible for, ensuring minimal and secure access aligned with their roles.

Streamlined reporting: With data organised by groups, analytics reports can be easily filtered using the group hierarchy, improving efficiency and relevance.



Evidence your prevention engineering

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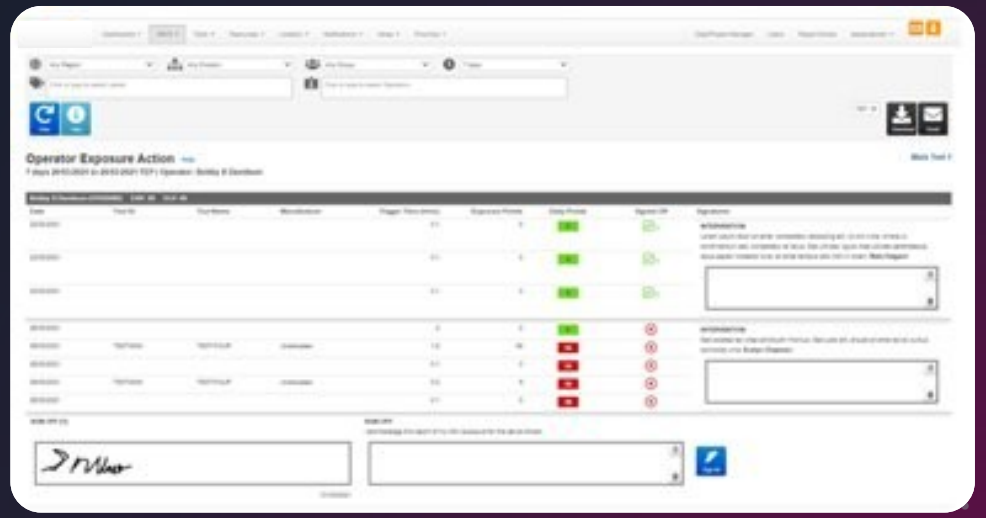
Record & monitor control measure success

Log applied control measures and track their effectiveness in reducing risk by the impact on workforce average daily HAV exposure.



Log & authenticate interventions

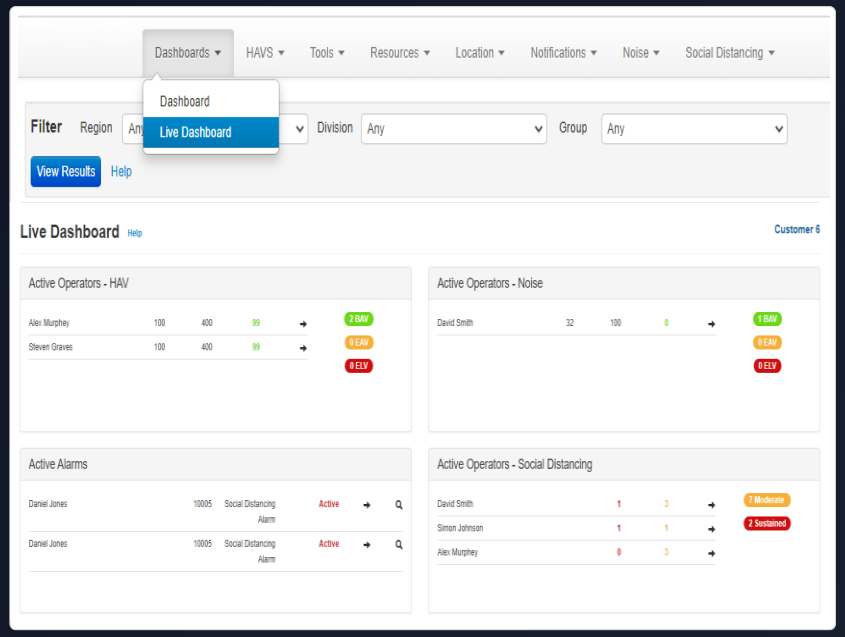
Log intervention notes allocated to individual employees and electronically sign to acknowledge.



Additional analytics functionality

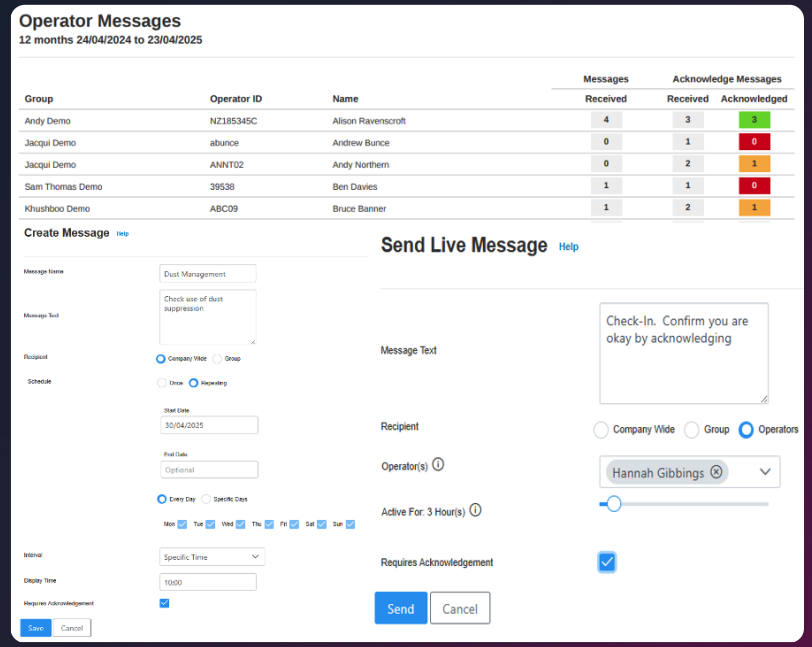
LIVE Dashboard

Monitor alerts and alarms in real time.



Operator messaging

Send both scheduled and live messages.



Let's get started!

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01 Set up group structure



02 Set up users & alerts



03 Set up HAV options



04 Set up scheduled reports



05 Set up operator cards and tool tags



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Questions?