PREVENTION ENGINEERING FOR WORKPLACE HEALTH.

R-Link

Reactec

PREVENTION ENGINEERING

We believe that risks can be better managed when they are measured.

For over 20 years we have seen our clients easily and quickly achieve compliance, while gaining absolute control of their operations and improve their productivity

01 Compliance

02 Absolute control

03 Productivity

WHY PROXIMITY ALERTS

2021/22 Fatalities

23 Struck By Moving Vehicle

15 Contact with moving machinery

2021/22 RIDDOR Injuries

2,000 Struck Moving Machinery

1,000 Struck moving vehicle

People Plant Interface top fatal injury in construction

1,300 forklift accidents per day in the UK

3 trackside workers killed in 2020-21 (ORR)

REGULATIONS AND GOOD PRACTICE

The Workplace (Health, Safety and Welfare) Regulations 1992;

- These regulations require that workplaces are organised to ensure that vehicles and pedestrians can move around safely

Inadequate planning and control has shown to be the root cause of many of the failures to comply;

- Ensure visibility of people, mobile plant and vehicles.
- Adequately define working areas
- Adequately manage high risk areas

PROXIMITY - THE KEY COMPONENTS

1. R-Link watch

The watch module is independent to the strap. R-Link is electronically assigned to individuals using RFID cards

2. R-Link beacon

UWB and GPS enabled beacon to create configurable radius of exclusion

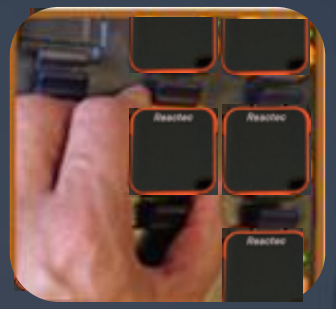
3. Charging Station & 2 Bay Gateway

Charging station exists to charge watches and the gateway automatically sends data back to the analytics (via GSM, NBIoT, CAT-M1 or Wi-Fi)

4. ID Cards

Each pedestrian would have an ID card to personalise data. RFID writer used to assign to individuals

HOW IT WORKS



1. Collect

Unclip any R-Link with a green LED, indicating it is ready for use

2. Assign

Follow the instructions on the screen and place an ID card against the screen to assign to the watch to a worker

3. Protect

Insert R-Link module into a holder, snugly fit the strap around the wrist

4. Detect

Position beacons on all equipment around which an exclusion zone is desired. Watch wearers automatically alerted.

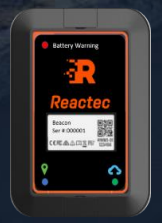
5. Return

At the end of a shift return the R-Link to a charging station to recharge. A gateway within 30m collects and transmits data

6. Reduce

View reports online or by email of individual and overall unsafe behaviour and work ways.

PROXIMITY DETECTION



R-LINK BEACON

Creates an exclusion zone around plant

UWB technology with configurable detection range

Device can be hardwired or battery powered

Multiple detection zones can be created for vehicle extensions

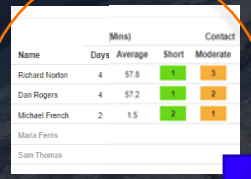
R-LINK WATCH

Alerts user in real time of proximity breach

Different access permissions through our personal watch allocation system

Connect to safe-zones for controller / banksman activity

Monitor multiple risks on one wearable



REACTEC ANALYTICS

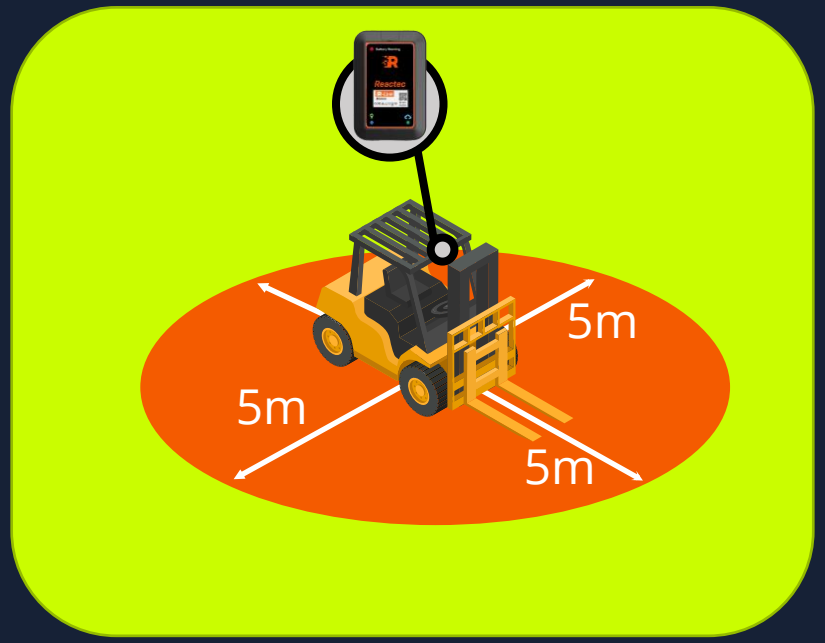
View near miss trends based on personalised data

Assess site hotspots on interactive map

View high risk machinery

Configure proximity time to eradicate false alerts

R-LINK BEAVON POSITIONING



Employee is alerted when he strays too close.

Amount of time he is too close is recorded

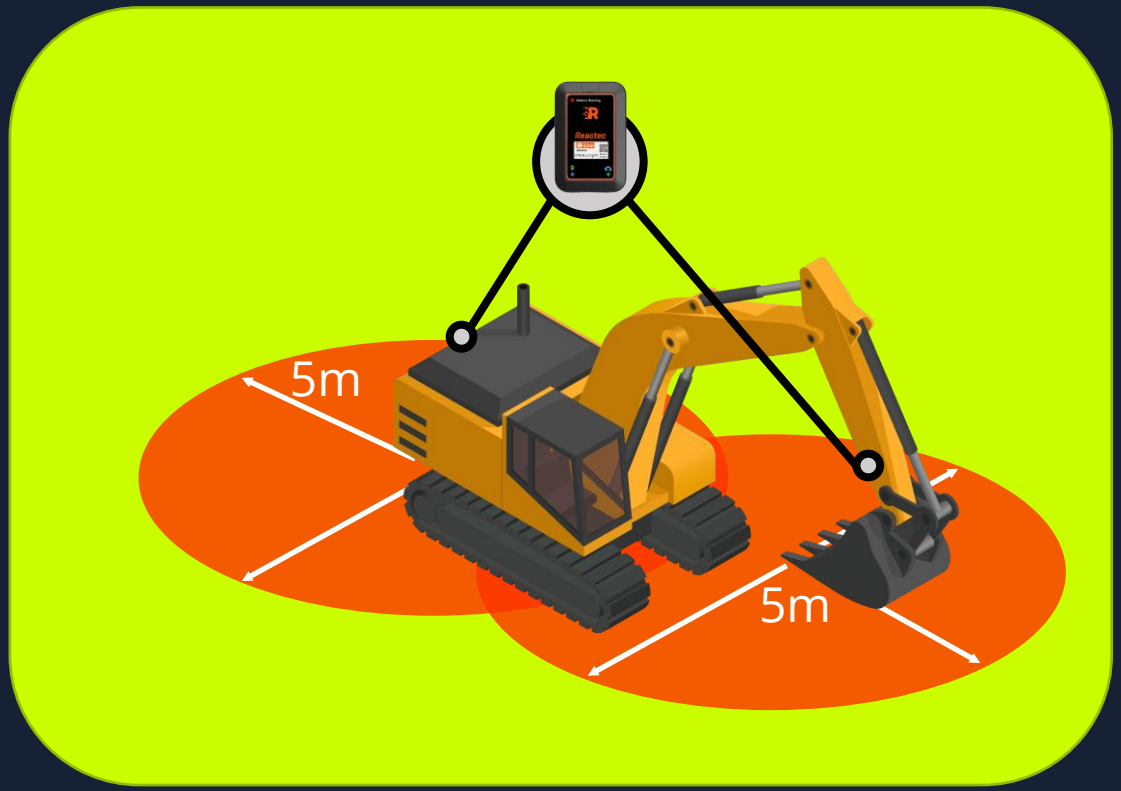
Location of his alert is recorded

RAG unacceptable periods of proximity

For large vehicles use multiple beacons to give adequate coverage

For vehicles like forklifts one centrally would be adequate

Beacon R flashes to notify those around that someone is too close



DRIVER WATCH – MANAGE CLOSE PROXIMITY

DRIVER WATCH

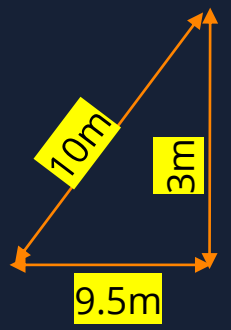
- Driver can digitally acknowledge workers in visible proximity
- This is done by pushing watch button **(<u>Digital thumbs up</u>)**
- Operator alarm would then be silenced
- Acknowledged permitted proximity is filtered in separate reports

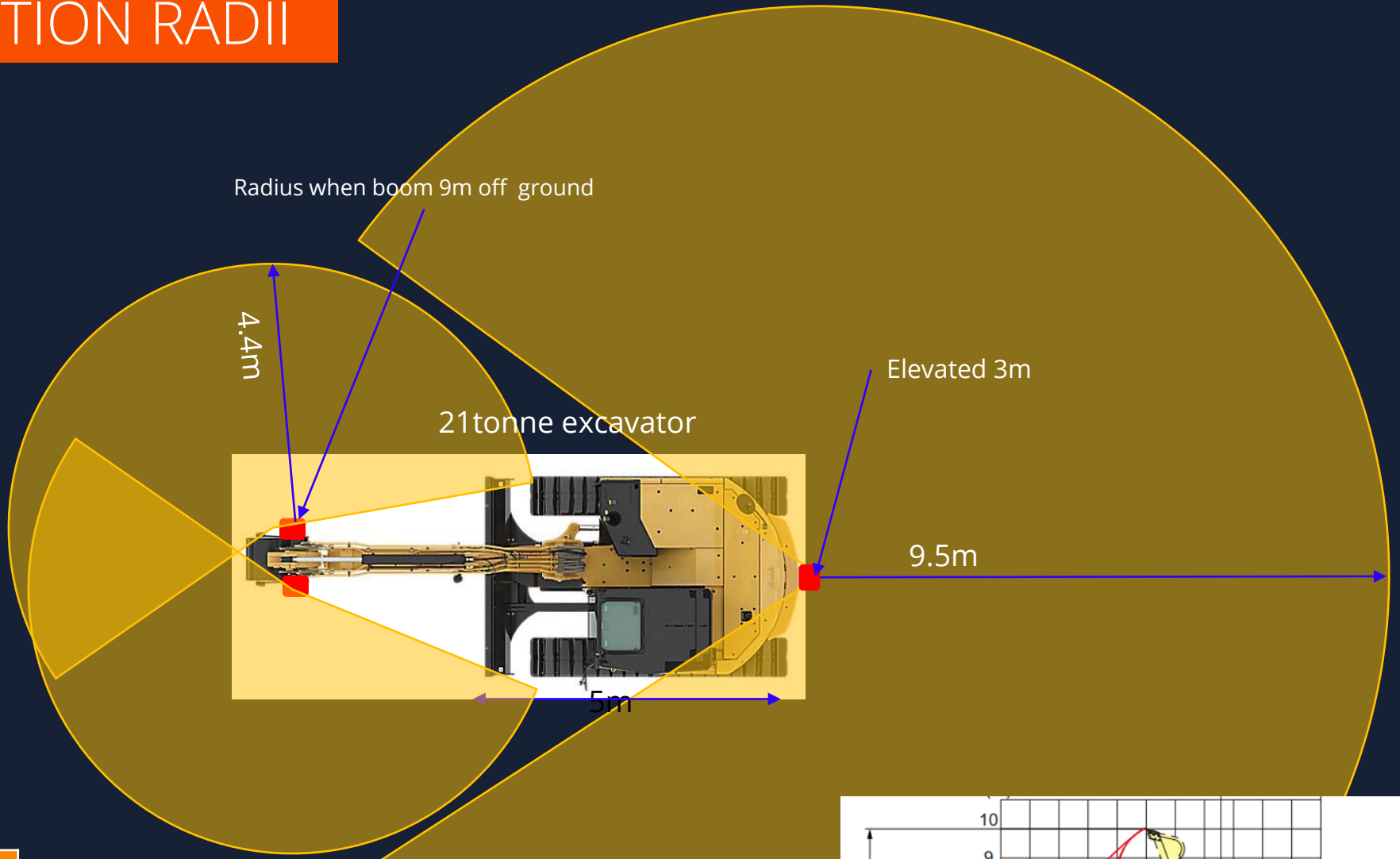
BEACON DETECTION RADII

Detection radii will alter with position height.

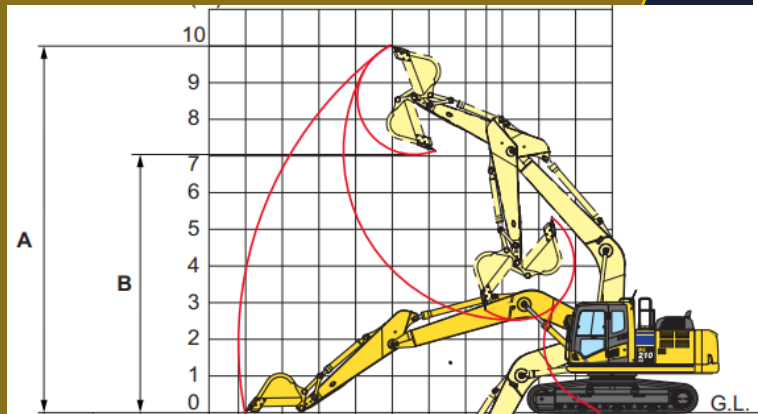
Mounting above head height important to avoid blockage

After installation – walk the perimeter to validate detection





10m Beacon @ Boom Height	Detection Radii at G.L.
9m	4.4m
6m	8.0m
3m	9.5m



01

Easily Share with all stakeholders with readily accessible on-line and auto e-mailed reports and alerts

02

Granular detail on unsafe behaviour: who was too close to what, where it happened and for how long

03

Clear and pertinent information to prioritise efforts on the hierarchy of controls

04

Record and monitor the impact of control measures and interventions

05

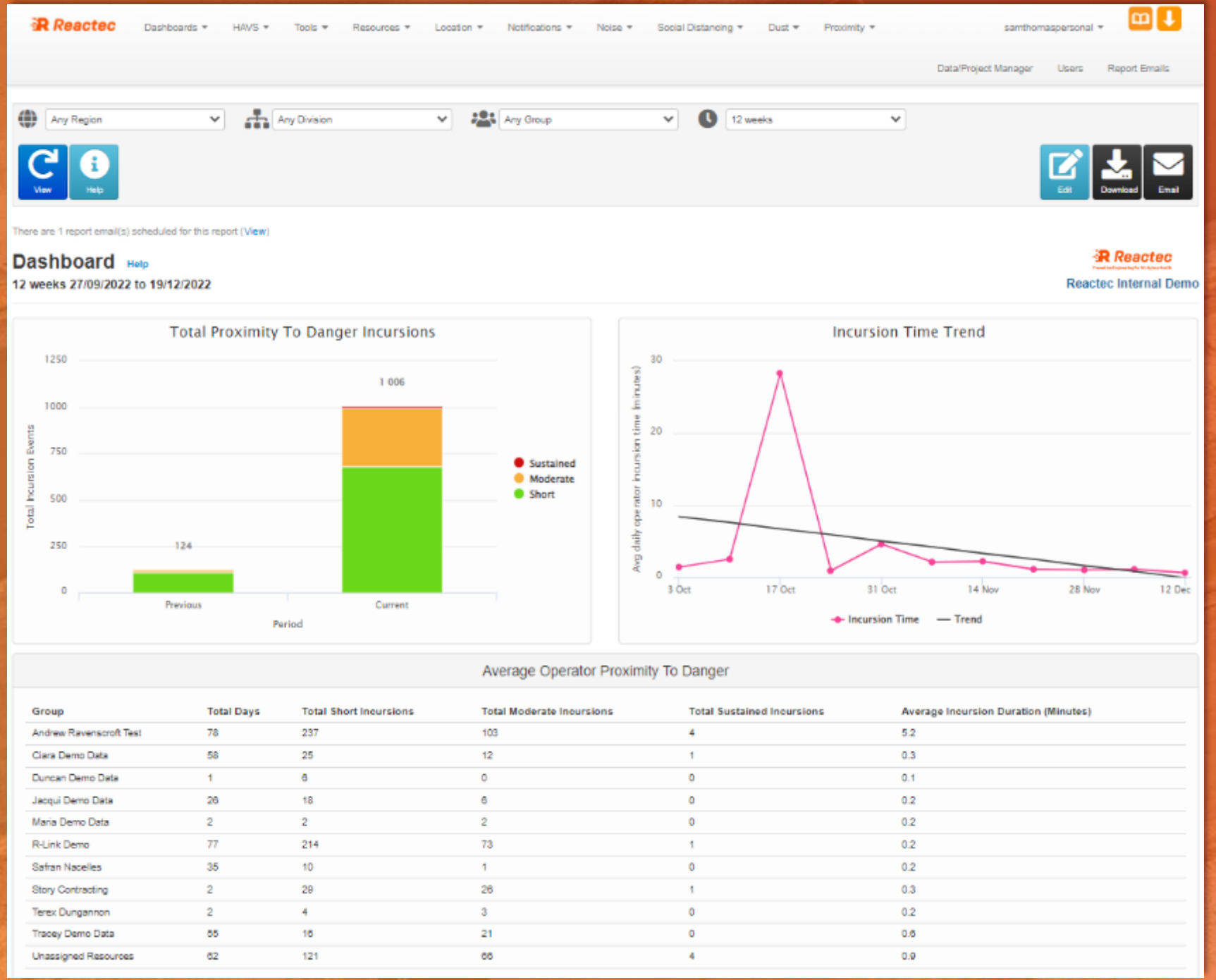
Secure access to intuitive analytics hosted on a robust and GDPR compliant scalable cloud platform

VIBRATION NOISE DUST PROXIMITY

Manage multiple risks in a single location

View trend data on total proximity exposure over time

League table on proximity events by operational location

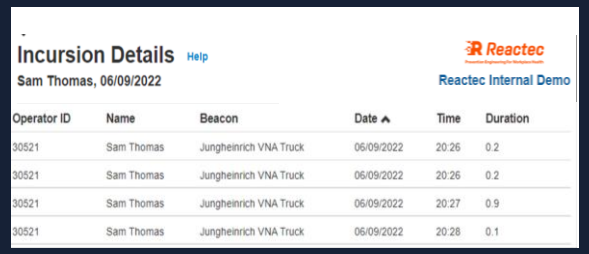


Average Operator Proximity To Danger

Group	Total Days	Total Short Incursions	Total Moderate Incursions	Total Sustained Incursions	Average Incursion Duration (Minutes)
Andrew Ravenscroft Test	78	237	103	4	5.2
Clara Demo Data	58	25	12	1	0.3
Duncan Demo Data	1	6	0	0	0.1
Jacqui Demo Data	26	18	6	0	0.2
Maria Demo Data	2	2	2	0	0.2
R-Link Demo	77	214	73	1	0.2
Safran Nacelles	35	10	1	0	0.2
Story Contracting	2	29	26	1	0.3
Terex Dungannon	2	4	3	0	0.2
Tracey Demo Data	55	16	21	0	0.6
Unassigned Resources	62	121	66	4	0.9

Risk profile insight per individual on a Red-Amber-Green basis

Use on a sampling basis to get a view of typical plant interactions



Drill into granular detail to understand **near hit** analytics

Any Region | Any Division | Any Group | 12 weeks

Operations: Forklifts ×

Click or type to select Operators

View | Help | Download | Email

Workforce Incursions Help

12 weeks 20/06/2022 to 11/09/2022 | Label: Operations: Forklifts

Reactec

Reactec Internal Demo

	Contact Time (Mins)			Contact				Actions	Analysis		Intervention
Name	Days	Total	Average	Short	Moderate	Sustained	Last Seen				
Maria Ferris	22	561.6	25.5	4	40	5	09/09/2022	View	By Date	By Beacon	+
Hannah Gibbings	6	59.2	9.9		4	2	07/04/2021	View	By Date	By Beacon	+
Dan Rogers	8	307	38.4	4	4	2	08/09/2022	View	By Date	By Beacon	+
Michael French	7	80	11.4	5	3	1	10/09/2022	View	By Date	By Beacon	+
Richard Norton	8	237.3	29.7	2	7	1	08/09/2022	View	By Date	By Beacon	+
Ciara Gedik	3	3.1	1		3		23/06/2022	View	By Date	By Beacon	+
Duncan Reid	3	0.9	0.3	3			18/07/2022	View	By Date	By Beacon	+
Operator E	1	8.4	8.4	1	8		09/04/2021	View	By Date	By Beacon	+
Operator D	1	9.7	9.7	1	8		09/04/2021	View	By Date	By Beacon	+

Add Intervention

Category: General

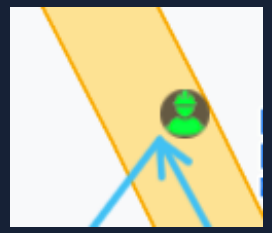
Detail: Following investigation of near hit proximity data, it was identified that pedestrian segregation barrier had been moved to accommodate material loading. Operator acknowledged that they ignored proximity alert to forklift and agreed to be more cautious in future when temp walkway modification happens.

Date: 11/09/2022

Operator Selection: Michael French 30633 Sam Thomas Demo Data

Signature

11/09/2022



Beacon: Jungheinrich VNA Truck

Operator ID	Operator Name
30521	Sam Thomas

Breach Start	Duration	Range
07/09/2022 11:20:08	0.1	5 metres

Intelligent heat mapping to show high risk incursion zones

GPS data is logged via the plant beacon

Easily filter by worker or machine

Any Region | Any Division | Any Group | 1 day

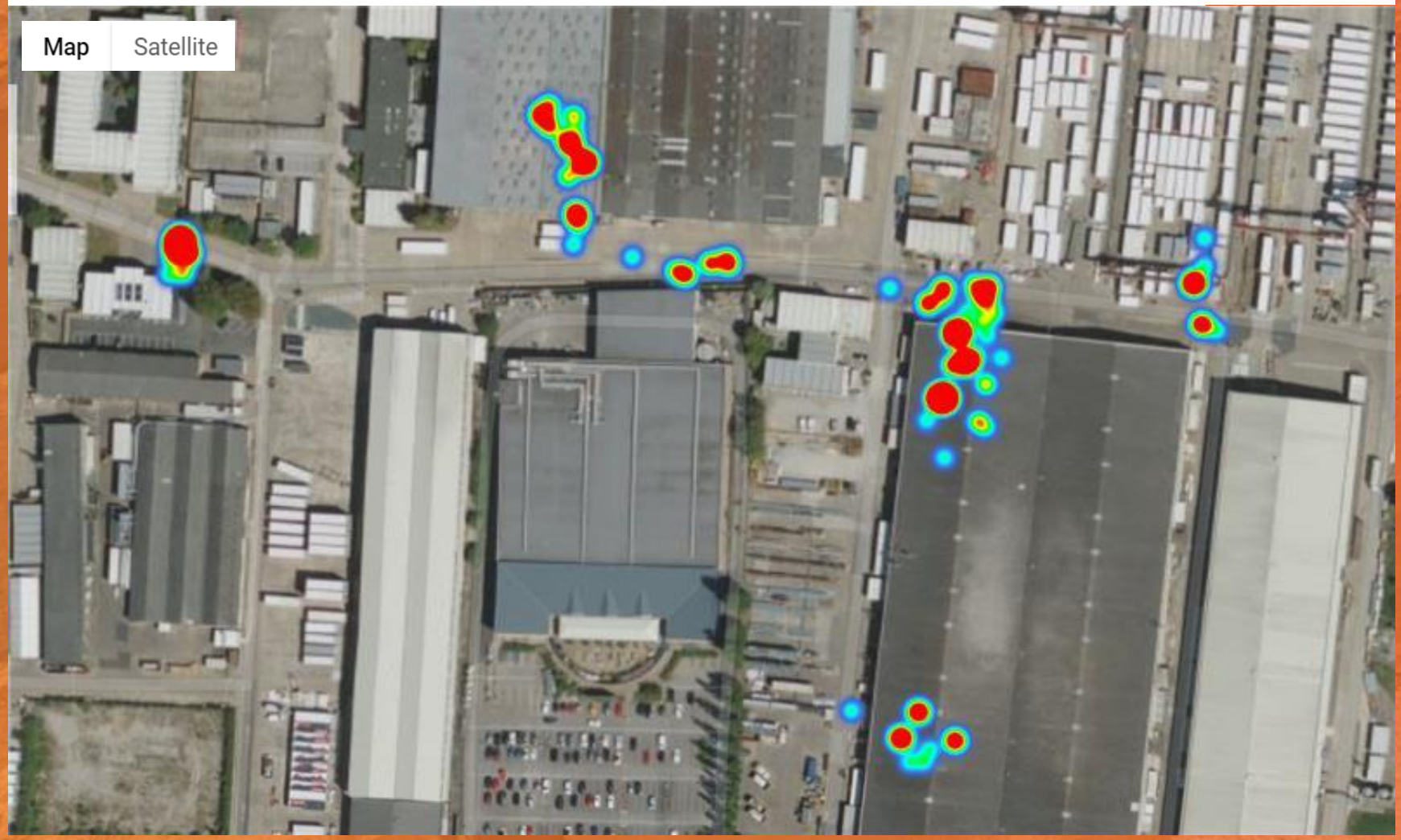
Operations: Forklifts | Dave Jones

View | Help | Download | Email

Beacon Location Help

1 day 11/09/2022 | Operator: Dave Jones | Label: Operations: Forklifts

Reactec Internal Demo



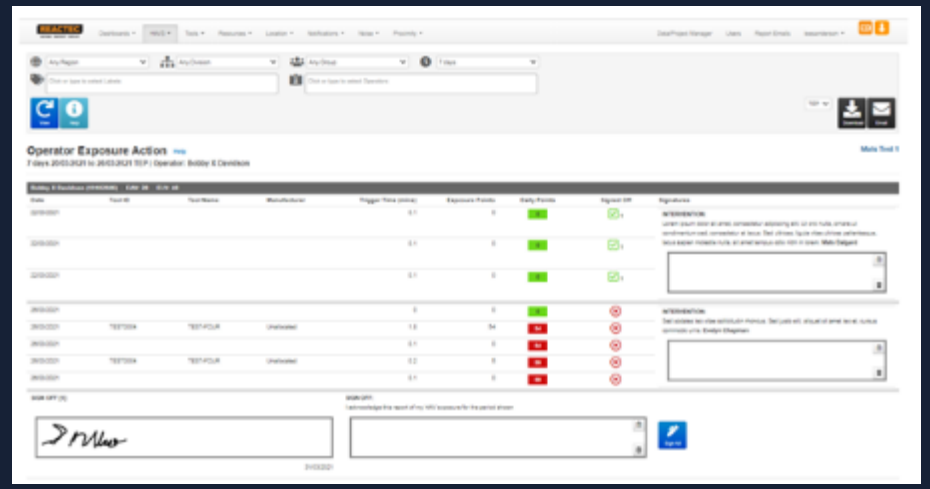
EVIDENCE YOUR PREVENTION ENGINEERING

Record & Monitor Control Measure Success

Log applied control measures and track their effectiveness against monitored risk data.

Log & Authenticate Interventions

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



REACTEC CREDENTIALS

Clients +900

Employees protected +100,000

Tool records +20M

Software users +9,000

Silver Microsoft Partner

Reactec