EXECUTIVE SUMMARY

Fund the control that removes the exposure. Then test what is left.

Safety technology is sold on what it detects. People are protected by what happens next: someone acts, in time, and the work reaches a safe state. The published evidence says a great deal about the first and very little about the second.

The decision

RECOMMENDATION Before approving a monitoring or AI system for a fatal risk, require the sponsor to pass five gates (page 13 of the full report). The first gate ends most proposals: if a layout change, a redesign or a different work method removes the exposure, fund that.

Where exposure remains, approve a bounded pilot only when the team can name the residual exposure, the decision the information would change, and the person able to act on the hardest shift.

Reject any proposal whose success measure is the number of devices installed.

Why

FACT In a NIOSH field study, a radar system on a mine haul truck raised an alarm on 94% of 618 reversing movements over seven days. It missed nothing. Only 235 of the 580 alarms, 41%, required immediate action or extra caution.[1]

INFERENCE A system can be technically right almost every time and still add little to the driver's decision.

Five findings

1. The outcome evidence is thin. FACT A 2023 mapping review screened 392 records on digital safety interventions in construction and kept 24. Most gave low to no evidence of better conditions or fewer injuries.[2]

2. Detection is one of four things to prove. INFERENCE Detection, timely action, reduced exposure and fewer injuries each need their own evidence. A result at one level cannot stand in for another.

3. Alarms have a deadline and a recipient. FACT UK regulator guidance: alarm settings must leave the operator time to respond, and each alarm needs a defined response.[11]

4. Investigations rarely find a missing signal. INFERENCE In five of the six cases reviewed here, an alarm sounded, damage was visible or a test was carried out before people were harmed. What failed was authority, competence or verification.[5, 6, 8, 23, 24]

5. Workers decide whether it works. FACT In one US survey, 59% of field labour respondents would not voluntarily use a location-tracking wearable.[4]

The question for the executive committee

Take the last control that failed on one of our sites. Did we lack a timely signal, someone qualified to act, or the authority and money to restore protection? Fund the answer.

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EXECUTIVE SUMMARY

What leaders must create

Technology can buy time. Whether anyone is placed, competent and authorised to use that time is decided by leaders, usually long before the day.

Three leadership lessons

1. The signal is rarely what is missing. INFERENCE In five of six official investigations, an alarm sounded, damage was visible or a test was carried out before people were harmed.[5, 6, 8, 23, 24]

2. Authority shared by everyone is held by no one. FACT At the Florida bridge, cracking was documented and five parties failed to stop work or close the road.[6]

3. Decisions far from the workface set the conditions at it. FACT At Texas City, budget cuts of 25% preceded the loss of a board operator. Operators had worked at least 29 consecutive 12–hour shifts.[23]

What the research adds

FACT In a randomised study, feedback to supervisors on their daily safety talk improved crew behaviour and audit scores.[26] In another, leadership visits lowered staff ratings of improvement unless senior managers took responsibility for fixing what they heard.[27]

No study has shown a leadership practice reduces fatalities. Page 32 of the full report sets out the limits.

Six conditions, six executive tests

CONDITION	ASK
1. Authority held by one named person	Who can stop this work at 02:00 on a Sunday? One name, one deputy.
2. Competent cover on the hardest shift	Which duty does this cut leave uncovered?
3. No penalty for stopping	Who absorbed the cost of the last stop?
4. Bad news travels	What did the executive committee last hear about a failed critical control?
5. Money to restore	Who can spend today to fix it?
6. Independent verification	How many re-checks found a false pass?

Evidence for each condition is on pages 34 and 35 of the full report.

The leader's own part

Ask which duty goes uncovered before every cut. Fix what you hear. Stop reading injury rates as proof of control. Check what you reward. Put names and deputies on every stop decision, rehearse it, and answer the first stop well.

By Bruno Hounkpati, CEO and former VP HSE. Gold numbers refer to the source register in the full report, "Time to act", Riskopilot Research, November 2026.

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EXECUTIVE SUMMARY

What to do in the next 90 days

Four decisions, each with an owner and a test of success. Page 40 of the full report gives the full plan.

DECISION	OWNER	WHEN	WHAT GOOD LOOKS LIKE
Reconstruct one failed control	Site director, with HSE	Days 1 to 15	One recent case, traced from first warning to verified restoration. The executive committee sees when exposure ended, who authorised the repair and what the next shift verified.
Put every live technology proposal through the five gates	Capital committee chair	Days 15 to 45	Each paper names the exposure, the best conventional alternative on the same boundary, the person who acts and the full-life cost. Proposals that fail gate 1 are converted into redesign budgets.
Test the six leadership conditions	CEO and executive committee	Days 1 to 90	The reconstructed case put through all six tests. An authority map with names and deputies for each fatal risk. One out-of-hours stop rehearsed and timed.
Run one bounded pilot, or none	Operations director, with the technical authority	Days 45 to 90	Acceptance criteria signed before testing. Results reported with denominators, misses, late warnings, nuisance alarms per hour and time in unknown state. A written decision: adopt for the tested use, redesign, or withdraw.

What this report will not tell you

Which product to buy. It names functions, not brands. Nor will it give an injury-reduction percentage. The research does not support one.

Where it fits in the Riskopilot method

CCHI asks, before work starts, whether every critical control on a fatal-energy pathway is verified.[20]

This report applies the same discipline to technology. A sensor that warns sits low in the hierarchy. It earns investment only after the higher options have been priced and found impractical.

What would change our advice

A controlled field study showing that a specified warning function reduces exposure at comparable work volume, on equipment and conditions like yours, would justify moving faster than this report recommends. We found none for the functions reviewed. Page 41 of the full report lists the other triggers.

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