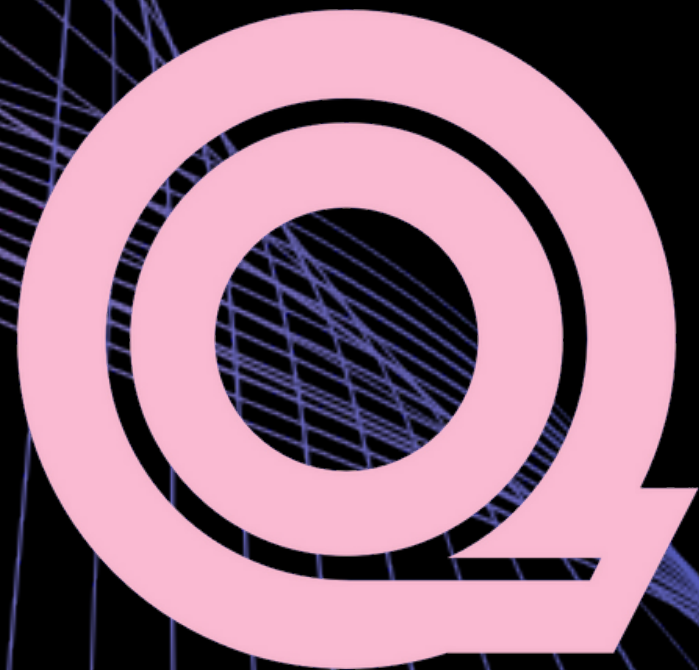




Cognitive

Health, Safety &
Environment

Scaling HSE AI Solutions

From complex data to confident action

Optimise performance through AI Adoption

Five Key Challenges in HSE



HSE leaders face AI's transformative promise amidst implementation complexities within diverse operational systems and evolving regulatory frameworks.

Organisations successfully leveraging AI gain decisive advantages – enhancing worker well-being, ensuring robust compliance, optimising environmental performance and driving the proactive risk management that underpins sustainable operations.

The path to effective AI adoption requires bridging technical gaps while protecting what matters most: your people's safety, regulatory integrity and operational resilience. In high-stakes environments, foresight and assurance are what define the most respected and resilient organisations.



Proactive risk blind spots

moving from reactive incident response to predictive prevention



Regulatory & audit burden

ensuring assurance across evolving compliance frameworks



Operational data silos

breaking down barriers between HSE, operations and sensor data



Sustainability reporting gaps

meeting stakeholder demands for data-driven ESG proof



Institutional knowledge gaps

capturing critical expertise and ensuring access for all teams

Achieve Predictive Resilience

Qognitive | Augment Human Intelligence

HubLibrary

Qognitive Solution Builder

A three-week planned shutdown for critical maintenance – replacing an ageing pump, inspecting a high-pressure vessel, and implementing control system safety upgrades.

Switch to another Factory Shut

To Do9Tasks that need to be started

Confined Space Entry into Vessel V-501

Perform internal inspection and minor repairs inside the vessel. Requires approved safety and isolat...

Jun 30

Visual inspection of Line-12B

Perform a standard visual inspection of the accessible pipework for Line-12B, checking for external ...

Commissioning of new pump P-101

Perform full commissioning sequence for the newly installed pump, including bump tests and performan...

Jul 2

System leak test (nitrogen purge)

Conduct a full system nitrogen purge and leak test for all of Unit 7B to confirm integrity before re...

Jul 2

+ Add a card

In Progress7Tasks currently being worked on

Install new pump P-101

Final mechanical installation and alignment of the new primary pump.

Assigned to: Mechanical Mainte...

Run new cabling for control system upgrade

Pull and terminate new instrumentation cables for the safety system upgrade.

Assigned to: Electrica...

Calibrate new pressure transmitter on V-502

Perform bench and field calibration of the new safety-critical pressure transmitter PT-502.

Assigne...

Weld repairs on Line-12C support

+ Add a card

Close

Consult AI Agent

Select Your Research AI

Q-Intel

Morning, thanks for giving me a moment to look over the Unit 7B board. At a glance, the teams are making solid progress on the physical work, with several major jobs in flight. However, I have picked up on a few things beneath the surface that we should probably get ahead of. I can see a critical path dependency that has created a schedule conflict for the vessel entry, a valuable lesson from a completed task that could impact upcoming pipework inspections, and a potential resource bottleneck forming in the review column.

Here is a more detailed breakdown.

Schedule & Dependency Analysis

There is a critical schedule conflict we need to address immediately. The task 'Confined Space Entry into Vessel V-501' was due yesterday, 29 June. Its description explicitly states that it requires an approved safety and isolation plan before work can begin.

However, that prerequisite, the 'Safety & Isolation Plan for V-501', is currently sitting in the 'In Review' lane. This means a critical path activity is already overdue and cannot physically start until its dependency is cleared. The delay in approving this plan is now directly impacting the project's critical path and will have knock-on effects for subsequent tasks like scaffolding removal.

Latent Risk & Historical Learning

I have noticed a very important comment on a completed task that we should act on. The card 'Replaced valve on Line-12A' in the 'Done' lane has a note stating, "Discovered significant internal corrosion on the valve body during removal. Suggests process fluid might be more aggressive than specified."

This is a crucial piece of intelligence. Looking at the upcoming work, we have a 'Visual inspection of Line-12B' in the 'To Do' list and 'Weld repairs on Line-12C support brackets' in progress. The corrosion found in Line-12A strongly suggests there is a latent risk of similar internal degradation in other sections of the same system. A standard external visual inspection of Line-12B might miss this entirely. We should consider expanding the scope of that inspection to include some form of non-destructive internal examination to ensure we are not leaving a hidden problem in place.

Reset

Report

+ Message

Send

Build Flexible AI Agents

Qognitive seamlessly ingests and analyses data from your regulatory frameworks, safety cases and operational systems, eliminating manual consolidation to reveal critical risks and hidden insights.

Upload

Restart

Please drop files here or

Select Files

Allowed file types: PDF, DOCX, XLSX, CSV, PPTX, JSON, TXT, GEOJSON.

CMMS_Critical_Equipment_Logs.json

COMAH_Regulation_Guidance.pdf

Emergency_Response_Drill_Records.pdf

Management_of_Change_Register.xlsx

Process_Hazard_Analysis_PHA_Reports_Q2.xlsx

Safety_Committee_Minutes_12_Months.docx

Site_Safety_Case_Grangemouth_v3.4.docx

Staff_Competency_Training_Matrix.csv



Raw data meets AI
run analytics on the fly

Qognitive | Augment Human Intelligence

Configure Document AI Agent

Name *

AuditReady Assure

Description

Transforming scattered evidence into audit confidence

Status *

Live

Model *

Gemini-...

Precision Mode

Analytical

Balanced

Creative

Custom

Temperature

0.5

System Prompt *

Act as an expert UK COMAH expert for high-hazard chemical sites. Analyse evidence against organisational documents with precision. Interpret complex legal claims. Identify and prioritise all non-conformances, partial compliance and systemic weaknesses by risk severity. Provide a clear assessment with actionable, risk-based recommendations.

☒ Enable Prompt Chaining

☒ Multistep Task Chain

☐ Iterative

Chain Steps

(7 steps defined)

☒ Enable Report Generation

☒ pdf

☐ docx

☐ xlsx

☐ csv

☐ pptx

☐ json

☐ txt

☐ geojson

Report Title

COMAH Audit Gap Analysis and Evidence Package

FinanceForecastIQ

Transforming treasury data into accurate cash forecasts

live



Deploy **Agentic** Workflows

From rapid incident investigations to comprehensive audit assurance, Qognitive applies the right AI approach to each HSE challenge, matching model sophistication to your specific needs and data.



Multi-model AI capability

select optimal AI models for peak performance



Intuitive control

guide AI with precision mode and system prompts



AI-ready knowledge library

connect your expertise for enhanced results



Multi-step refinement

break complex processes into manageable steps



Flexible outputs

generate results in your preferred formats

The screenshot displays the Qognitive 'Augment Human Intelligence' interface. At the top, the header reads 'Qognitive | Augment Human Intelligence'. Below the header, there are three radio button options: 'Enable Prompt Chaining' (checked), 'Multistep Task Chain' (selected), and 'Iterative'. The main section is titled 'Chain Steps (7 steps defined)' and lists seven steps, each with a dropdown arrow:

- Step 1: Data Discovery & Quality Assurance
- Step 2: Regulatory Requirement Deconstruction
- Step 3: Evidence Mapping & Gap Analysis
- Step 4: Gap Severity & Risk Assessment
- Step 5: Corrective Action Plan Generation
- Step 6: Pre-Audit Evidence Package Creation
- Step 7: Strategic Intelligence Briefing

Below the steps, there is a button with a plus sign and the text 'Increase total steps above to add more.'.

Underneath the steps, there are two checked radio button options: 'Enable Report Generation' and 'Enable Prompt Chaining'. Below these, there are several radio button options for report formats: pdf (selected), docx, xlsx, csv, pptx, json, txt, and gejson.

At the bottom, there is a text input field labeled 'Report Title' with the value 'COMAH Audit Gap Analysis and Evidence Package'.

The bottom of the interface shows a status bar with the text 'FinanceForecastIQ Transforming treasury data into accurate cash forecasts' and a 'live' indicator.



AI-Ready Knowledge Library



Create AI-ready knowledge libraries from your HSE documents, such as Incident Reports and JSAs. This enables sophisticated analysis that captures your unique expertise and turns historical data into preventative insights.

IncidentInsightPro Library

- Incident Investigation Database (JSON)
- Job Safety Analysis (JSA) Library (PDF)
- Corrective Action Preventive Action (XLSX)
- Equipment Maintenance History (CSV)
- Master Incident Report Template (DOCX)



Intelligent
processing



Semantic
mapping

Qognitive | Augment Human Intelligence

Back to List

Delete Corpus

IncidentInsightPro

HSE Investigation Knowledge Hub

Started by team@qognitive.app on 01 Jul 2025

Status: Published

Number of RAG Vectors: 5

Back to Review

Disable Corpus

Title	Description	Status	Action
Incident Investigation Database (JSON)		embedded	
Job Safety Analysis (JSA) Library (PDF)		embedded	
Corrective Action Preventive Action (CAPA) Tracker (XLSX)		embedded	
Equipment Maintenance & Work Order History (CSV)		embedded	
Master Incident Report Template (DOCX)		embedded	

Multi-Step Refinement

Break down complex incident investigations into manageable steps with iterative refinement. This ensures precise control over the root cause analysis, guiding teams to identify systemic risks and implement robust preventative actions.

Workflow Steps (7 steps defined)

Step 1: Incident Description

Step 2: Immediate Actions & Scene Security

Step 3: Initial Causal Factor Identification

Step 4: First Level Root Cause Analysis

Step 5: Historical Context & Pattern Analysis

Step 6: Systemic & Organisational Factors

Step 7: Corrective & Preventive Action (CAPA) Development

Step 7 Title *

Corrective & Preventive Action (CAPA) Develop

Step 7 Question *

IF [root_causes_identified] AND [incident_sev

Placeholder (Optional)

E.g., Install interlocked guards, update JSAs w

☒ Required

☒ Adaptive

☐ Enable RAG for this



Fine-grained control
refine every step

Qognitive | Augment Human Intelligence

Transforming incident response into predictive safety intelligence

Incident Description

Immediate Actions & Scene Security

Initial Causal Factor Identification

First Level Root Cause Analysis

5

Historical Context & Pattern Analysis

Thank you. The fact that the hose was original equipment and the maintenance schedule lacked a specific replacement interval is a critical finding. I have searched our `Historical Incident Reports` and `Equipment Maintenance Logs`. I found **2 other incidents in the last 4 years involving flexible hose failures in chemical service.** The pattern suggests that while inspections are performed, we have a systemic issue with not defining a mandatory replacement lifecycle for components exposed to corrosive materials like sodium hypochlorite. This indicates our previous corrective actions may have been insufficient. **Shall I retrieve the full reports for these past incidents and analyse the effectiveness of their corrective actions? This will help us understand why this failure was allowed to happen again.**

Yes, please retrieve them. I wasn't aware we had this pattern of hose failures. It sounds like our maintenance program may have a systematic gap for chemical-resistant flexible connections.

Back

Next

Scaling Success

HSE leaders can leverage Qognitive's AI to transform incident response into a proactive learning cycle, enhancing investigation quality, reducing operational risks, and embedding knowledge to prevent recurrence.



AI validation engine
automated quality assurance across all investigations



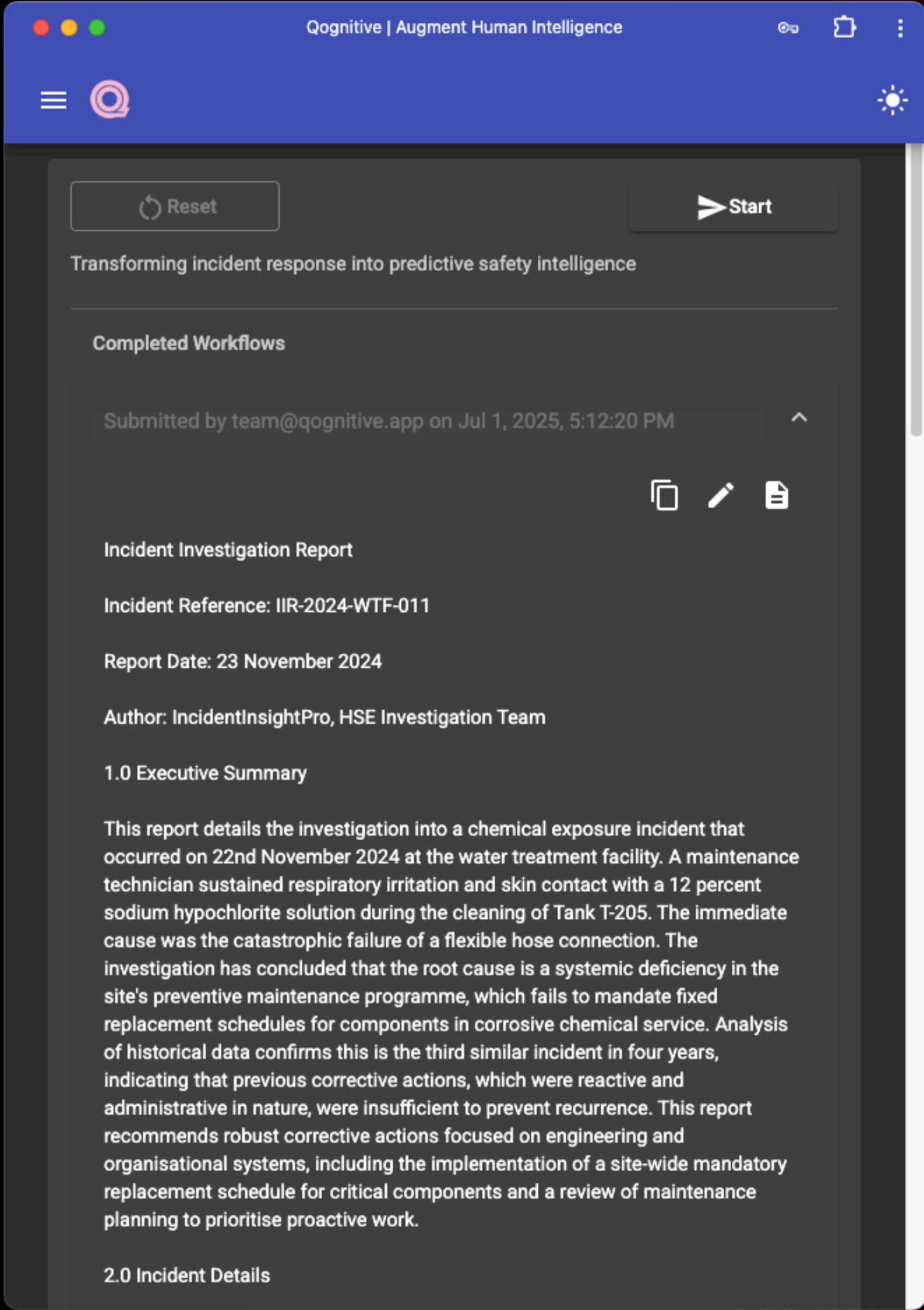
AI learning loop
system refinement through investigator feedback



AI knowledge hub
firm-wide safety expertise instantly accessible



AI project management
intelligent tracking of corrective and preventive actions



Move from legacy to intelligence with expert support

Achieving Predictive Resilience



Legacy

- Siloed data
- Manual audits
- Reactive response
- Static reports



Transition

- Connected data
- Digital forms
- Automated alerts
- Live dashboards



Future

- Unified intelligence
- Predictive models
- Automated assurance
- Proactive detection



In high-stakes industries, the shift from reactive measures to predictive resilience is essential for growth. This move isn't just a technical upgrade – it's the foundation of operational integrity.



Operational integrity

from manual checks to intelligent assurance



Risk management

from reactive response to predictive prevention



Situational awareness

from historical reports to real-time risk sensing



Unified intelligence

from siloed data to shared institutional knowledge



Let's start a conversation

Qognitive transforms expertise into intelligent workflows, enabling teams of all sizes to work smarter. Our intuitive AI solutions streamline complex processes while enhancing human capabilities, ensuring your people focus on what truly matters.

Enterprise AI Solutions

The best AI solutions aren't created in isolation, but through collaboration with visionaries who understand their domain deeply. My greatest satisfaction comes from seeing clients excel beyond their expectations when we transform their expertise into intelligent workflows that redefine what's possible.

Shawkat Ali, CFA
Founder, Qognitive



Business Modelling Expert

Having led technology transformations at global banks and energy traders, I've witnessed the persistent gap between systems and business value. Qognitive bridges this divide, turning complex technical environments into intelligent ecosystems where expertise is amplified and operational barriers dissolve.

Alex Baker
Managing Partner, MapleRisk



Submit a use case for design analysis



Contact us to arrange an introductory call

 team@qognitive.app

