ILLUMINATED INTELLIGENCE

Turning industrial 3D scans into safer operations, faster competence, and the knowledge layer that compounds toward hazardous-area autonomy.

Concept · Business case · Security & safety · Pilot

An appreciating institutional-knowledge asset.

Operators already paid for the scans. Illuminated Intelligence turns dead geometry into live training, field guidance, and a knowledge asset that gets smarter with every shift.

EXISTING CAPEX

Activates reality-capture spend already made across laser scans, photogrammetry, and point clouds.

ONE PIPELINE

One decomposed twin trains workers today and guides field work tomorrow.

COMPOUNDING ASSET

Every guided procedure adds structured know-how instead of letting it walk out the gate.

Three problems hazardous industries can't out-hire.

The conditions to act are stacked: expert knowledge is retiring, high-consequence procedures punish mistakes, and new crews take too long to trust on critical equipment.

KNOWLEDGE IS WALKING OUT

Asset-specific know-how still lives in people's heads, and veteran crews are retiring.

PROCEDURES ARE UNFORGIVING

Isolation, lock-out, confined entry, and start-up failures become incidents in a single missed step.

COMPETENCE TAKES TOO LONG

New and rotating crews need months of supervised exposure before they are trusted on live equipment.

The crew change is a closing window.

API estimates that up to 50% of skilled energy workers may retire within 5–7 years, and 71% of the workforce is 50 or older. This is a one-time capture event.

50%

May retire within 5–7 years

API estimate for skilled energy workers

71%

Energy workforce age 50 or older

The window is measurable, not abstract

Now

Capture before it walks

Each guided procedure becomes replayable know-how

One pipeline, five stages, two surfaces.

The same decomposed twin powers both simulation and live field guidance. Author once, recover value twice.

1 SCAN
Existing capture in hand

›

2 DECOMPOSE
Split fused geometry into parts

›

3 SIMULATE
Make procedures operable

›

4 ILLUMINATE
Guide work on glasses

›

5 SCALE
Roll across assets and crews

SURFACE 1 — TRAIN

Practise the exact equipment safely before anyone touches the live asset.

SURFACE 2 — DO

Use the same twin to guide and verify the job on the real asset.

A single fused mesh becomes addressable parts.

This is the unlock. One scanned assembly becomes real sub-components the system can reason about, simulate, track, and attach knowledge to.

POINT AT ONE PART

Knowledge attaches to the valve or actuator, not to an undifferentiated blob of geometry.

FAIL ONE PART SAFELY

A stuck actuator or wrong state can be simulated on one component without breaking the whole model.

TRACK ONE PART OVER TIME

Maintenance, procedure history, and verification stay anchored to the component itself.

Genesis 3 turns parts into procedures you can run.

Once geometry is decomposed, Genesis 3 makes it behave: states change, faults can be injected, workers are guided step by step, and competence is measured.

OPERATE IT

Open, close, isolate, and start up the actual sequence on the actual asset model.

BREAK IT SAFELY

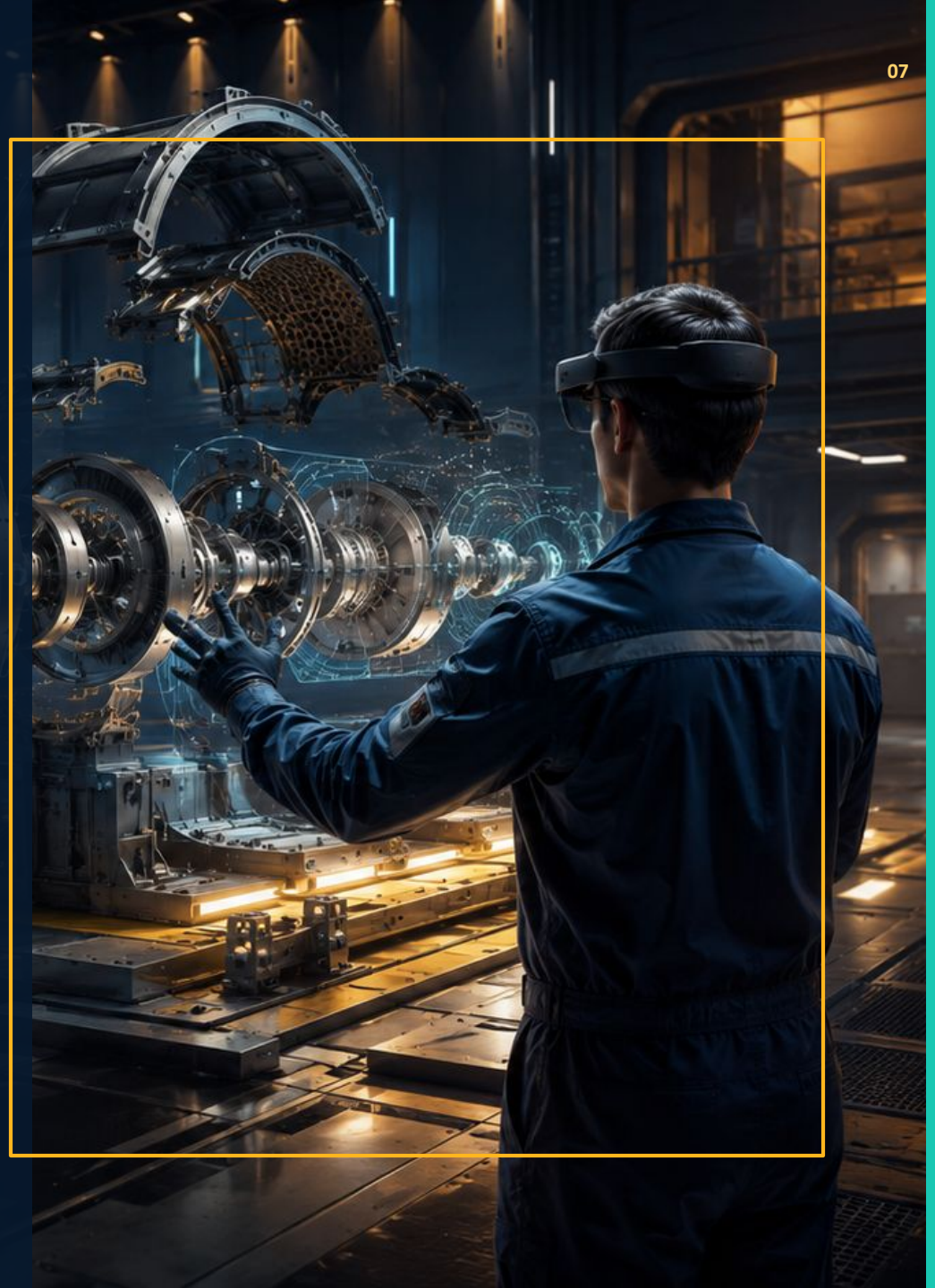
Inject the stuck valve or wrong-order step so people encounter failure in a controlled environment.

PROVE COMPETENCE

Each attempt is assessed and recorded against the required procedure.

AUTHOR ONCE

The same authored twin becomes the substrate for both training and field execution.



FieldIQ puts knowledge on the equipment itself.

On certified smart glasses, the worker sees the hazard, next step, asset history, and warning exactly where the task is happening, with AI verification as work is performed.

PREVENT

Live hazard and wrong-step warnings appear before the mistake becomes an incident.

GUIDE

Hands-free step cards keep the worker moving through the real procedure on the real equipment.

KNOW

Asset history and tacit know-how show up exactly where they are needed.

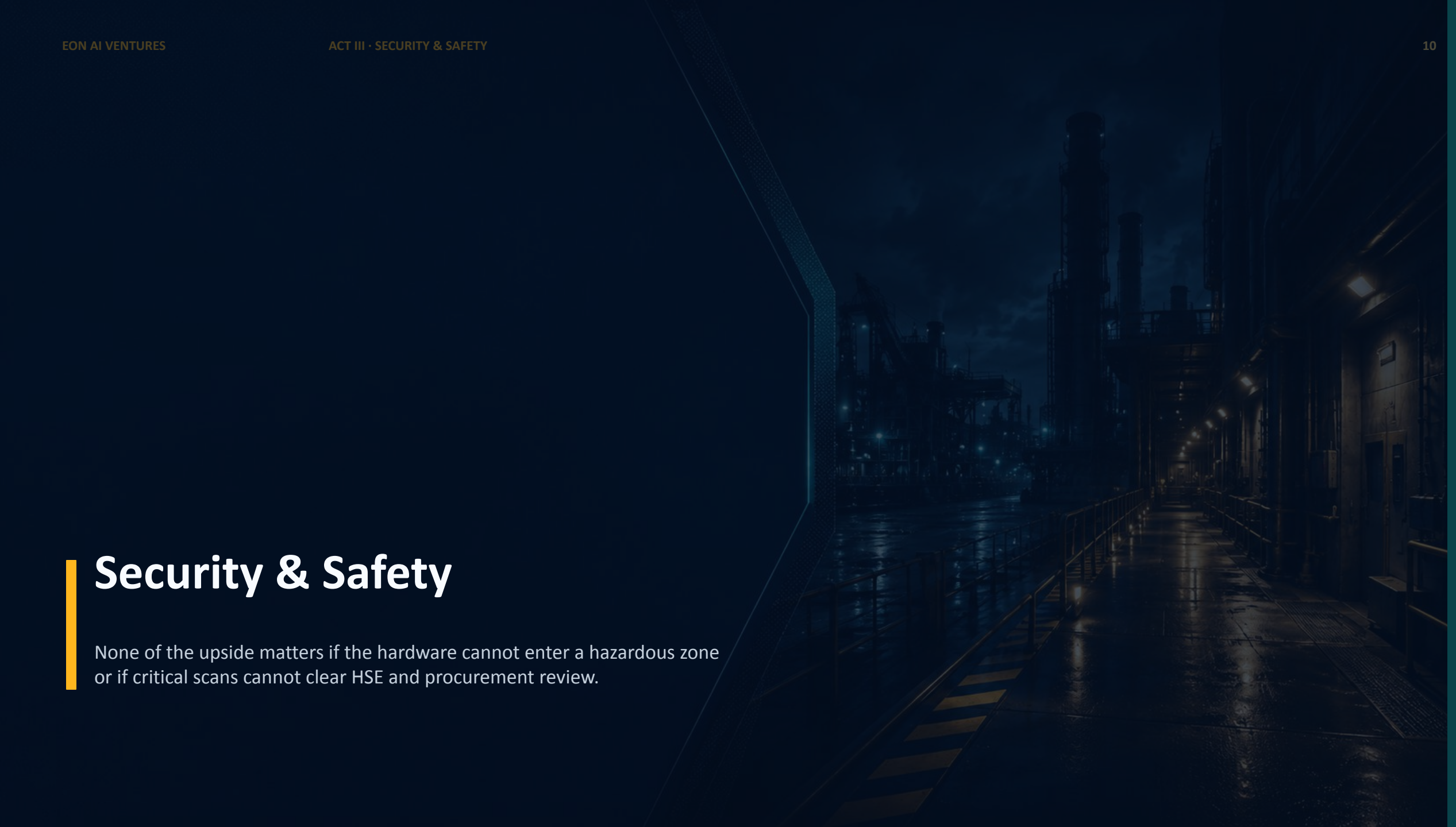
VERIFY

AI confirms each step was actually done and records the evidence chain.

One twin. Train on it, then do the job from it.

The simulator and the glasses are not two projects. They are the same decomposed twin used twice, with field execution improving the same knowledge base that trains the next worker.

Authored once · improves both · cost paid once, value recovered twice



Security & Safety

None of the upside matters if the hardware cannot enter a hazardous zone or if critical scans cannot clear HSE and procurement review.

Solve intrinsic safety by matching the device to the zone.

The intelligence never enters the hazardous area as uncertified hardware. Each site is served through the device class that is safe for that zone.

SAFE / GREEN ZONE

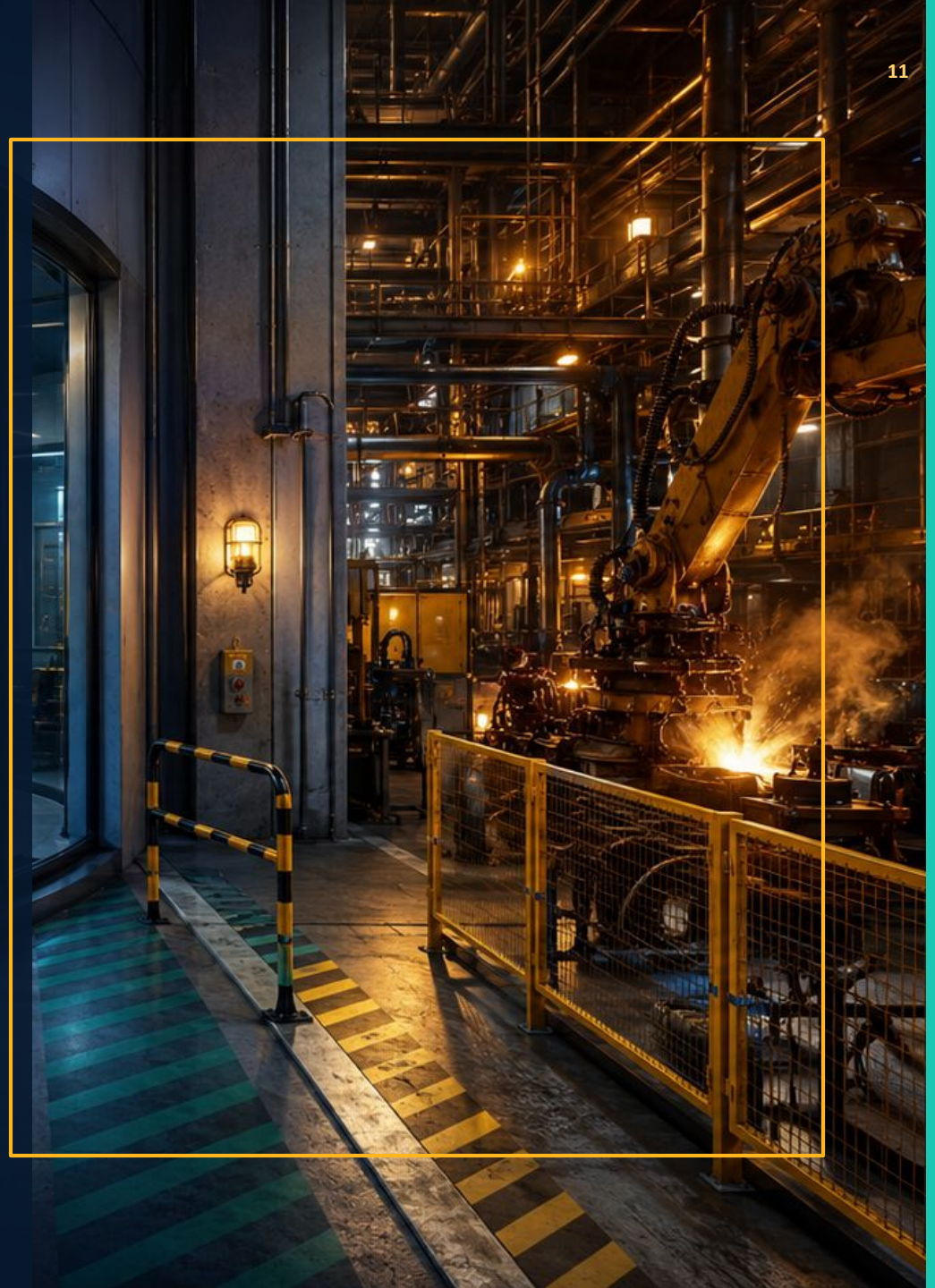
Training rooms, control rooms, workshops, and offices use consumer glasses and headsets for full simulation.

HAZARDOUS / RED ZONE

ATEX Zone 1 / IECEx-certified RealWear devices handle live process work hands-free in the field.

BRIDGE / BOUNDARY

Borderline tasks can be verified from the zone edge or escalated through remote expert workflows.



The certified field device: RealWear Navigator Z1.

A rugged, voice-controlled wearable computer already proven in oil and gas. FieldIQ runs on it as assisted reality today, without waiting for speculative hardware.

Zone 1

ATEX · IECEx · CSA C1-D1

Certified for the red zone

Voice

4 noise-canceling mics

Works in plant noise to about 100 dBA

FLIR

Thermal option

Gas leak, temperature, and pipeline use cases

IP66

Drop-tested and PPE-ready

Built for full-shift field work

Android

Deploys as-is

FieldIQ runs with no redesign

Pooled

Shared per shift

Fleet cost stays controlled

Secure the data, not just the device.

The platform is built to pass operator-grade security and HSE review, with governance designed around critical infrastructure rather than consumer software assumptions.

DEVICE-AGNOSTIC VALUE

The moat is the twin and the platform. Certified hardware is a swappable component, not the product.

ZONE-AWARE GOVERNANCE

Each task maps to area classification so only a certified modality is enabled.

FLEET-MANAGED CONTROL

Provisioning, remote wipe, app allow-listing, and no sideloading on the field fleet.

DATA RESIDENCY & IP

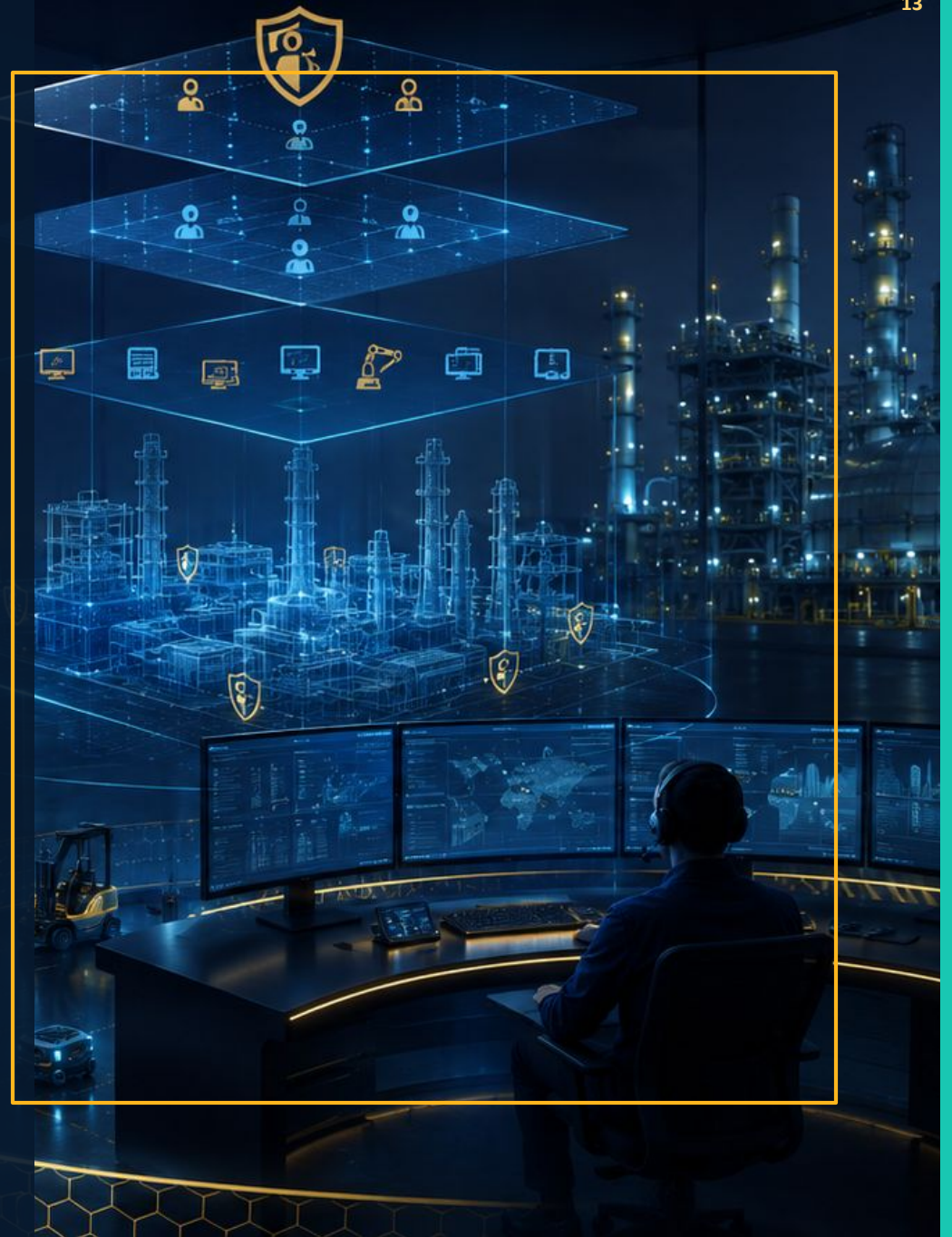
The customer owns the decomposed twin and verification corpus in exportable formats.

AUDIT TRAIL

Every verified step becomes an immutable evidence chain for safety-critical work.

LEAST EXPOSURE

Only the geometry and procedures needed for the task are served to the worker.



One big setup, one steady yearly cost.

Illustrative 12,000-user deployment with roughly 250 priority assets and 2,000 pooled certified field units. Scaled to your footprint, the structure stays the same.

PAY ONCE — SET-UP

Consumer / training glasses 12,000 × $800	**$9.6M**
Certified field fleet (Z1) ~2,000 pooled × ~$3k	**$6.0M**
Content creation ~250 models × ~$17.5k	**$4.4M**
Total one-time	**≈ $20.0M**

PAY EVERY YEAR — RUN

Software license 12,000 × $1,200 / yr	**$14.4M**
Content refresh & new models Ongoing	**$0.6M**
Certified device service / refresh ~10% fleet / yr	**$0.6M**
Total per year	**≈ $15.6M**

Five cost reductions drive the return.

The floor case is deliberately conservative. The downtime line alone is sized below common benchmarks.

$2.8M

Fewer safety incidents

Human error is a factor in up to ~70% of O&G incidents

$5.0M

Less unplanned downtime

O&G downtime can run at roughly $125k–260k per hour

$5.0M

Faster time-to-competence

Months-long supervised ramp compressed

$3.0M

Knowledge retention

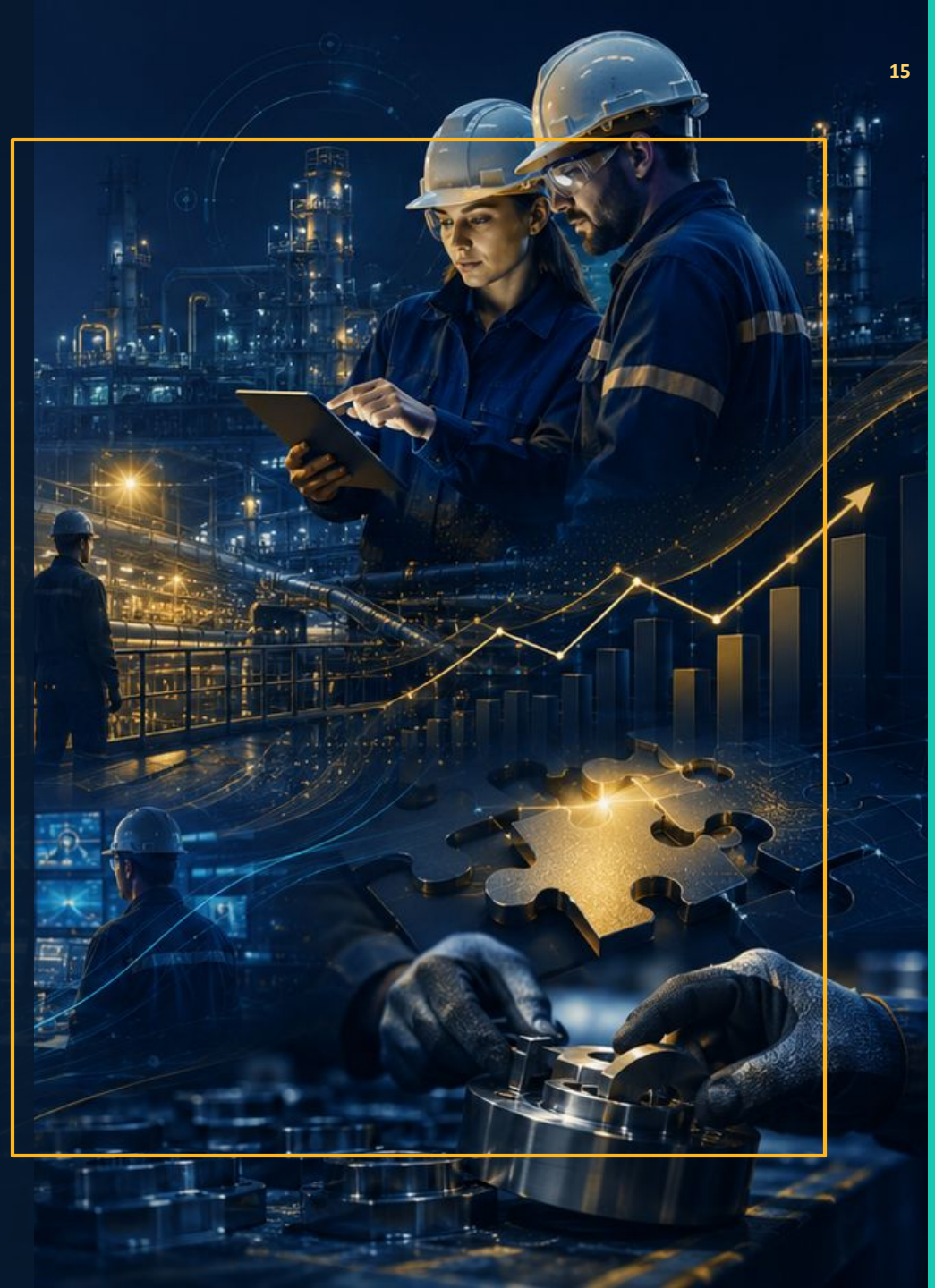
Retiring experts captured into the twin

$3.0M

Less rework

Guided, verified execution means fewer do-overs

Conservative annual total ≈ $18.8M / year



Every number anchors to public evidence.

The model is built from public safety, downtime, human-error, and training-effectiveness benchmarks. The pilot replaces the proxies with the operator's own measured numbers.

SAFETY

Recordable injury ≈ $48k direct; serious O&G claims ≈ $97k+; indirect cost often runs 2–5× direct.

DOWNTIME

Unplanned downtime is commonly cited around $125k–260k per hour, with offshore sites around $38M a year.

HUMAN ERROR

A factor in up to ~70% of O&G incidents, with knowledge-based mistakes prominent in major events.

TRAINING EFFECTIVENESS

PwC reported VR-trained workers 275% more confident and 4× faster than classroom learning.

When the money comes back.

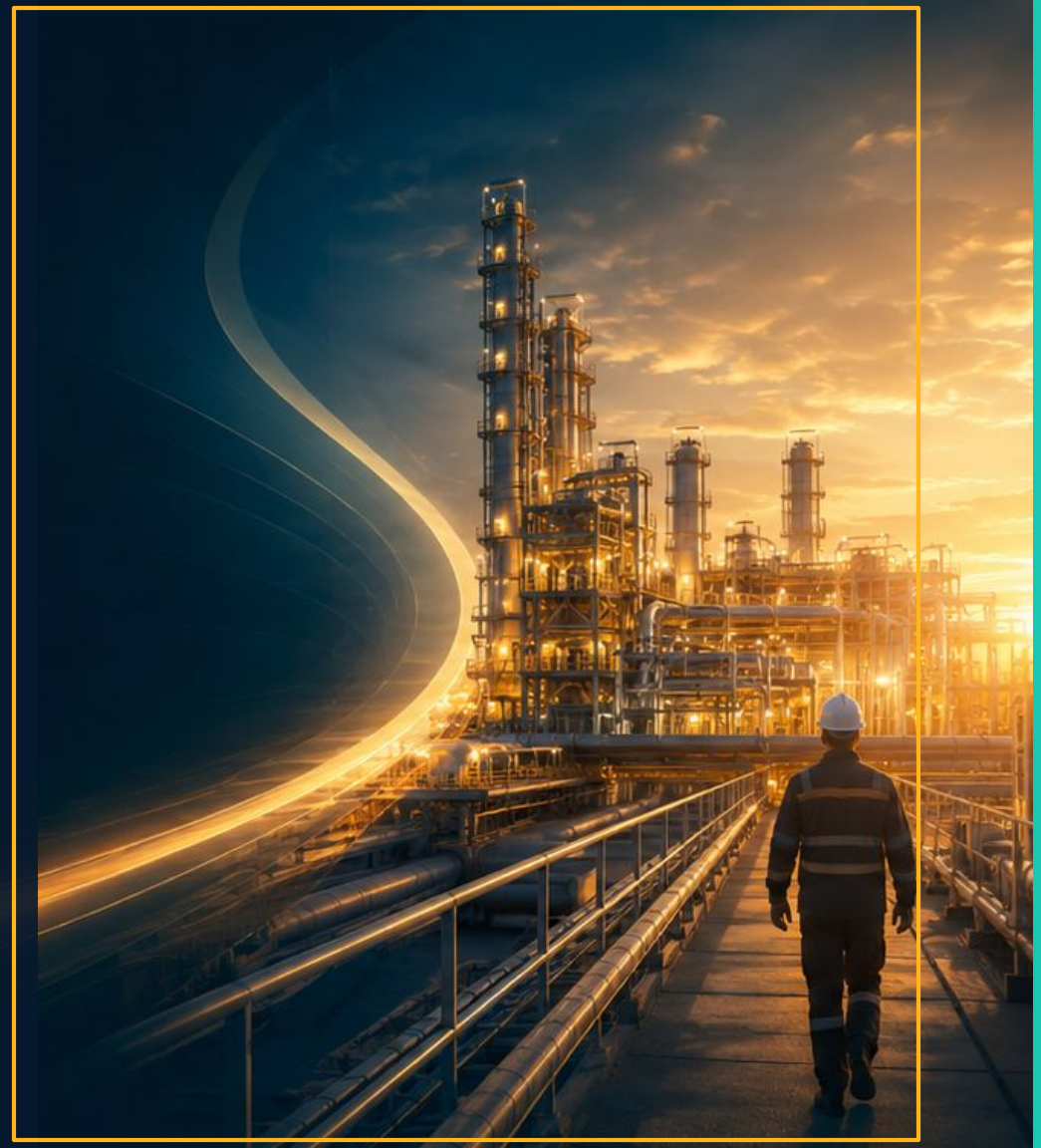
The realistic case clears quickly. The conservative floor is honest and shows why pricing structure matters.

REALISTIC CASE

- Payback ≈ 1.1 years
- 5-year net ≈ +$72M
- Downtime and execution quality drive the upside

CONSERVATIVE FLOOR

- Thin at $1,200 flat licensing
- Positive, but slower
- The honest read points directly to pricing design



Conservative floor vs realistic case.

Two ways to read the same program: a conservative floor case and a more realistic operating case once downtime and execution benefits are sized properly.

CONSERVATIVE FLOOR

$18.8M
Annual gross savings

$3.2M / yr
Net of run cost

Slow
Payback

Modest
5-year net

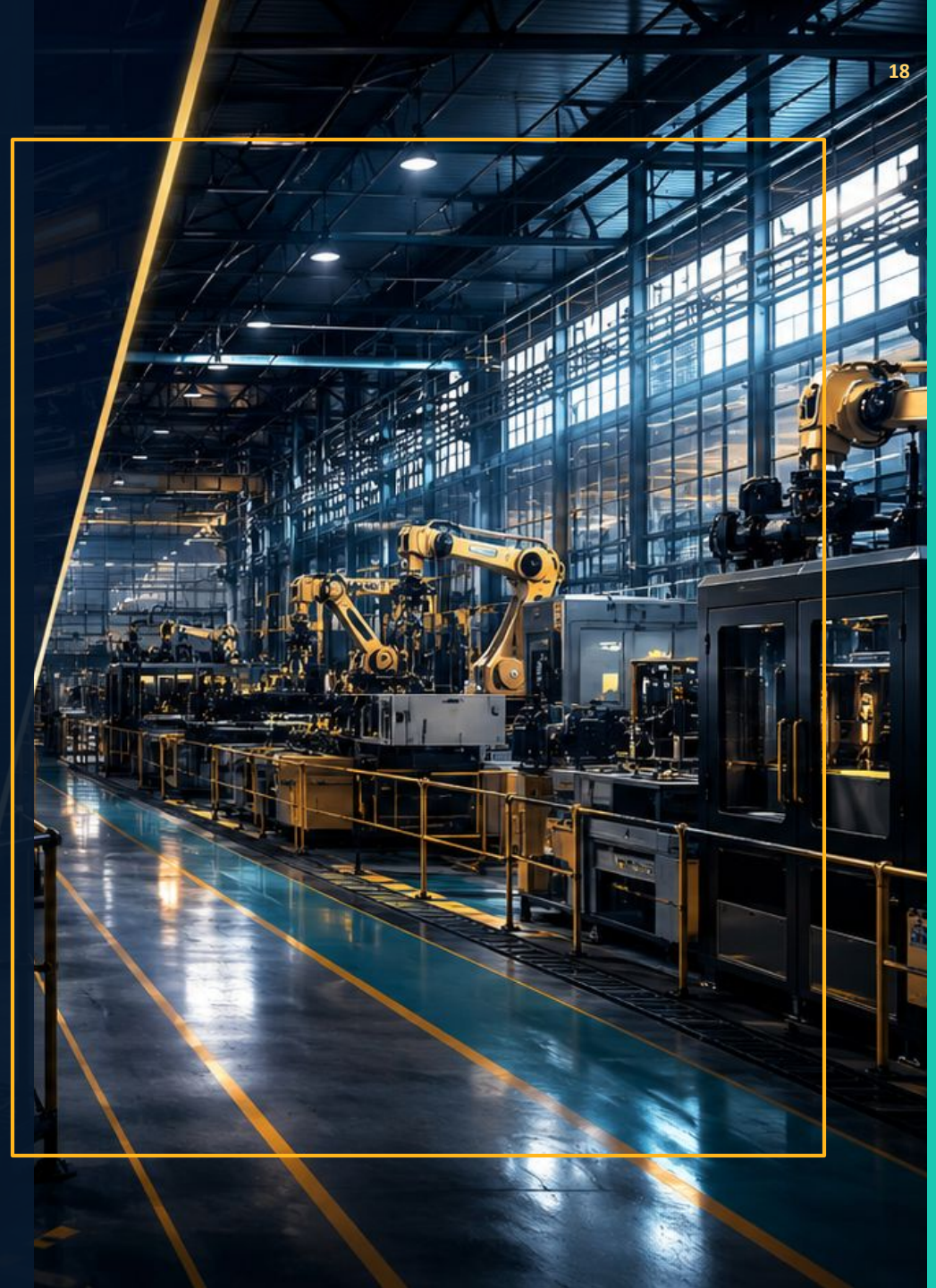
REALISTIC CASE

$34.0M
Annual gross savings

$18.4M / yr
Net of run cost

≈ 1.1 yr
Payback

≈ +$72M
5-year net



This is process-safety capital, not L&D.

The same $20M looks very different when it is judged against a major process-safety event and licence-to-operate risk instead of a training budget line.

THE L&D PITCH

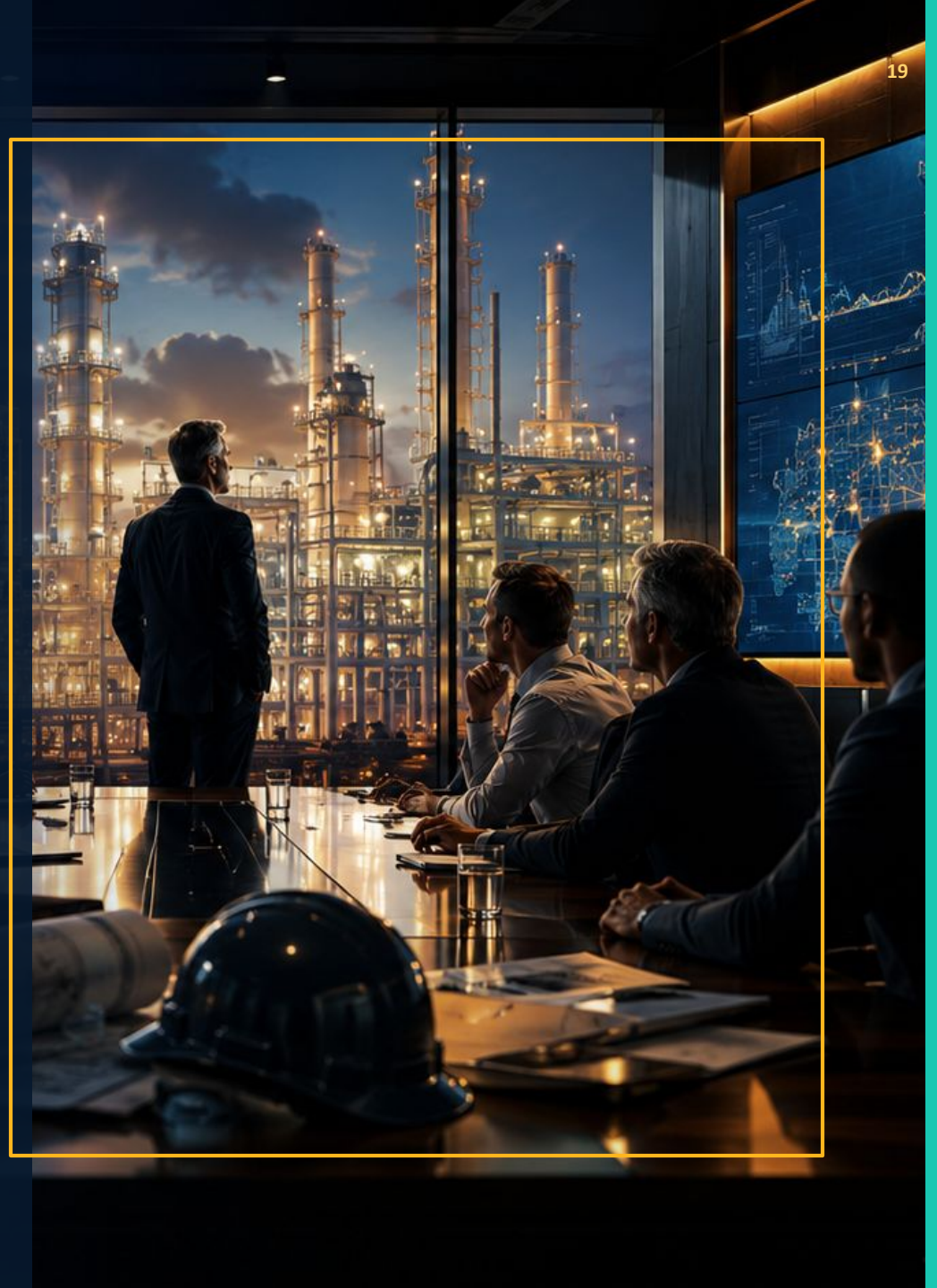
Training spend leads to seat-by-seat procurement haggling in the wrong room.

THE RIGHT PITCH

Process-safety capital gets measured against incident cost, operational risk, and reliability.

WHAT IT UNLOCKS

Larger budgets, faster decisions, ESG framing, and a clearer insurance conversation.



Procedural failure becomes visible for the first time.

Every FieldIQ verification produces structured truth about where people get stuck, which assets create rework, and which precursors appear before incidents.

LEADING INDICATORS

See near-miss patterns and precursor behavior weeks before they cash out as incidents.

PROCEDURE OPTIMIZATION

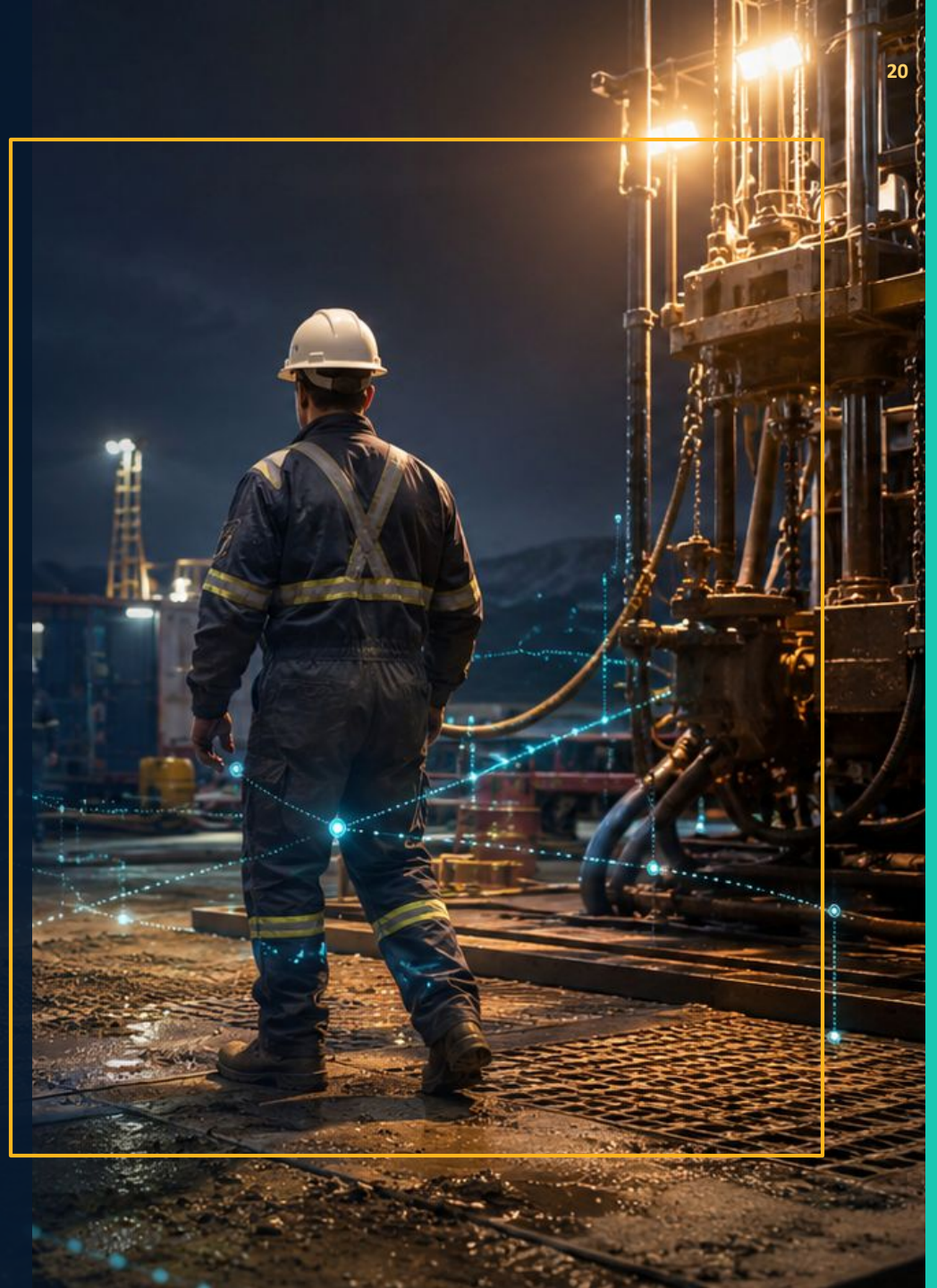
Fix the steps people consistently fail, not just the people who fail them.

ASSET INTELLIGENCE

Know which equipment creates the most overrun, rework, and operational friction.

OPERATOR-GRADE EVIDENCE

Build an audit chain that matters to regulators, insurers, and operations leaders.



The hazardous-work autonomy playbook.

Deploy humans with sensors at scale, tie the capture to the decomposed twin, and build the corpus that future autonomy actually needs.

01

CAPTURE

Thousands of sensors-on-people collecting real procedural work every shift.

›

02

STRUCTURE

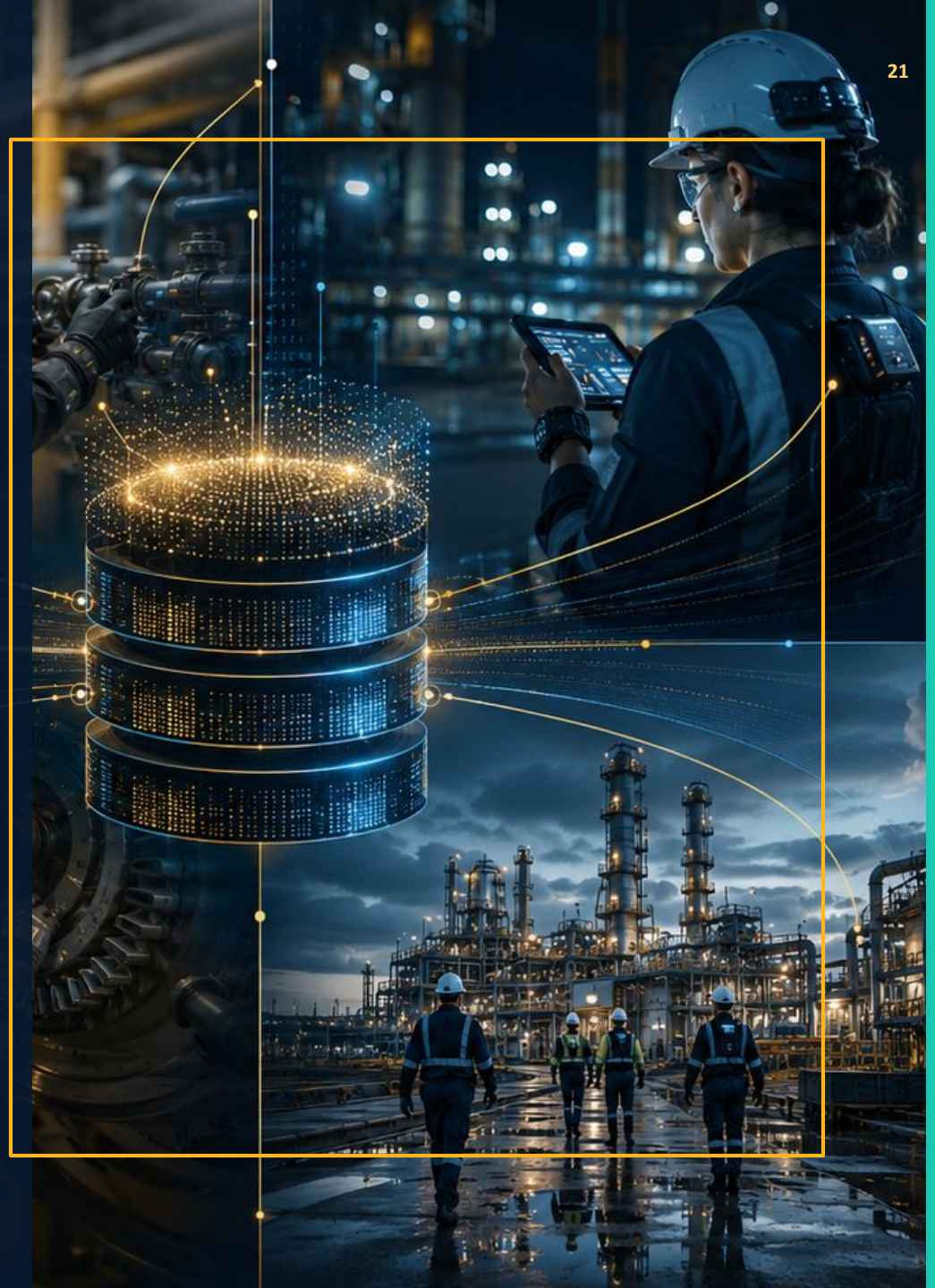
Data tied to the decomposed twin so the corpus is labeled, tagged, and machine-readable.

›

03

COMPOUND

The dataset that trains the next decade of hazardous-area autonomy.



Raw video is worthless. Twin-anchored data is the moat.

The glasses are just the capture layer. The decomposed twin is what turns footage into a trainable, outcome-tagged industrial corpus.

WITHOUT THE TWIN

- Raw video of people
- Unstructured pixels with no semantic anchor
- Surveillance optics and weak training value

WITH THE TWIN

- Structured, labeled data
- Anchored to the component and step
- Outcome-tagged corpus that compounds

Bank the data now. Remove people from danger later.

The safety programme pays back on its own. The robotics upside is a free call option that cashes out when certified hazardous-area autonomy matures.

TODAY

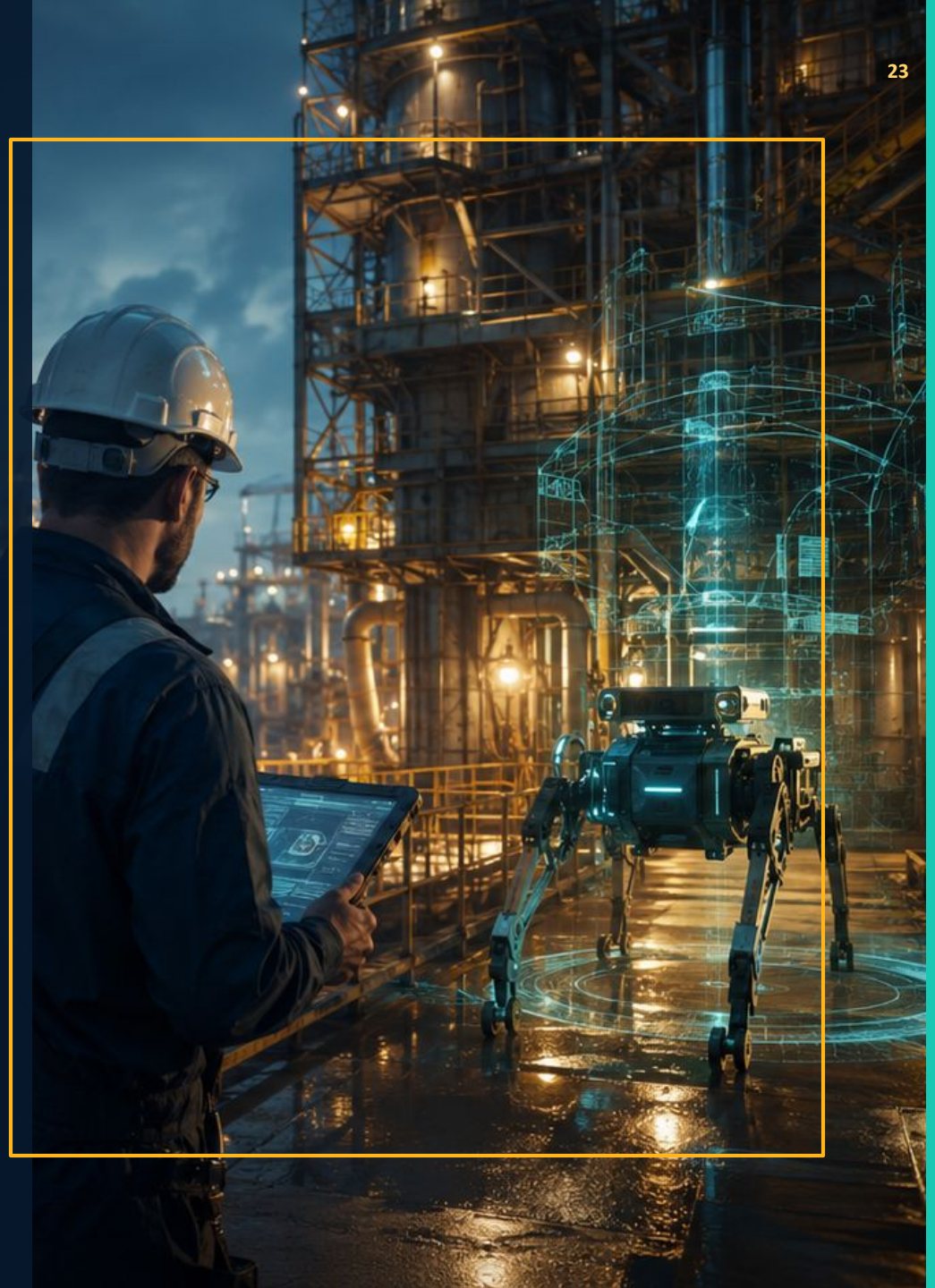
Humans are guided, errors are prevented, and knowledge is captured as part of safer work.

TOMORROW

The same verification stream becomes operations intelligence and procedure optimization.

THE OPTION

Once the corpus exists, industrial agents and certified robotics can take over dangerous work first.



Strong thesis. Four things the pilot must retire.

The reframe and flywheel are powerful. The risks are real, but each one can be retired inside the pilot instead of hand-waved away.

HAZARDOUS-AREA HARDWARE

Consumer glasses stay out of Zone 1. Use the three-zone model and certified Z1 units pooled per shift.

DECOMPOSITION FIDELITY

Prove the partner on real assets with an SME-scored accuracy gate before any scale commitment.

KNOWLEDGE AUTHORING EFFORT

Geometry is not knowledge. Start with one or two procedures and treat the authored library as the asset.

DATA & SECURITY GOVERNANCE

Engage security and procurement early, and settle residency, access, and IP terms up front.

Pricing structure is the commercial lever.

At a flat seat license, recurring cost can absorb too much of the conservative floor case. Structure changes everything.

OPTION A — FLAT

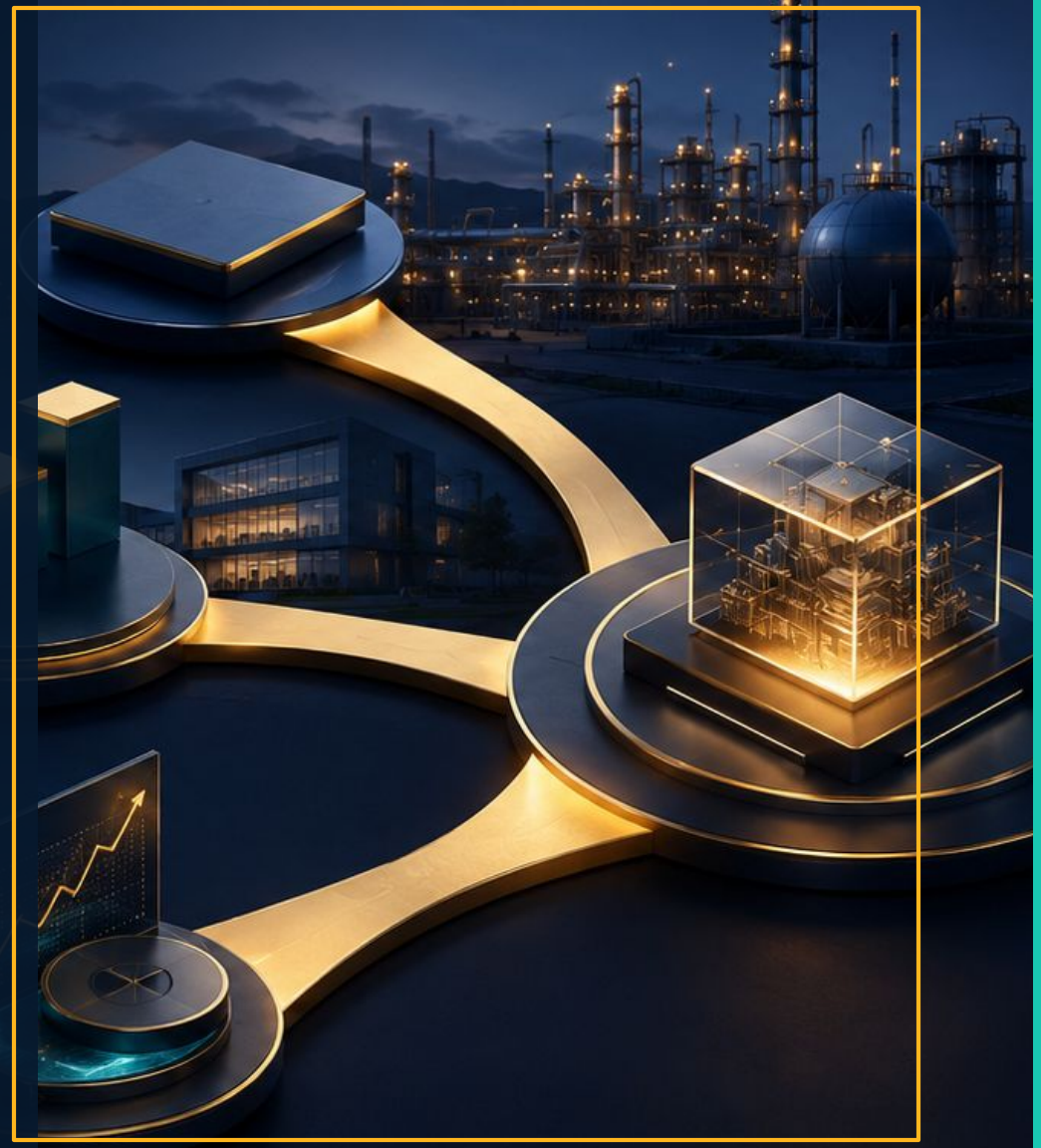
Per-seat / per-year.
Maximum vendor ARR.
Requires the realistic case to clear procurement.

OPTION B — TIERED

Full price for authors and trainees, lighter field pricing for the broader workforce.
Recommended land-and-expand.

OPTION C — OUTCOME

Gain-share on measured avoided cost.
Most differentiated and the most aggressive upside.



Pilot the sharpest operational moment.

Every operator has one concentrated event with dense procedures, clear exposure, and measurable overrun. That is where the pilot should live.

OIL & GAS

Planned turnaround (TAR)

REFINING / CHEMICALS

Planned shutdown or unit revamp

MINING

Scheduled maintenance window or stope move

POWER / UTILITIES

Planned outage or boiler inspection

PHARMA

Validation campaign on a critical line

DEFENCE

Scheduled overhaul or commissioning

The trajectory: one pilot to category ownership.

The first win is one moment. The bigger play is an intelligence layer that becomes the substrate for semi-autonomous operations.

YEAR 1

Prove one moment

One named pilot in the operator's sharpest window, measured against the operator's own numbers.

YEARS 2–3

Estate + intelligence

Scale across assets and workforce. The data exhaust becomes a standalone safety-analytics layer.

YEARS 3–5

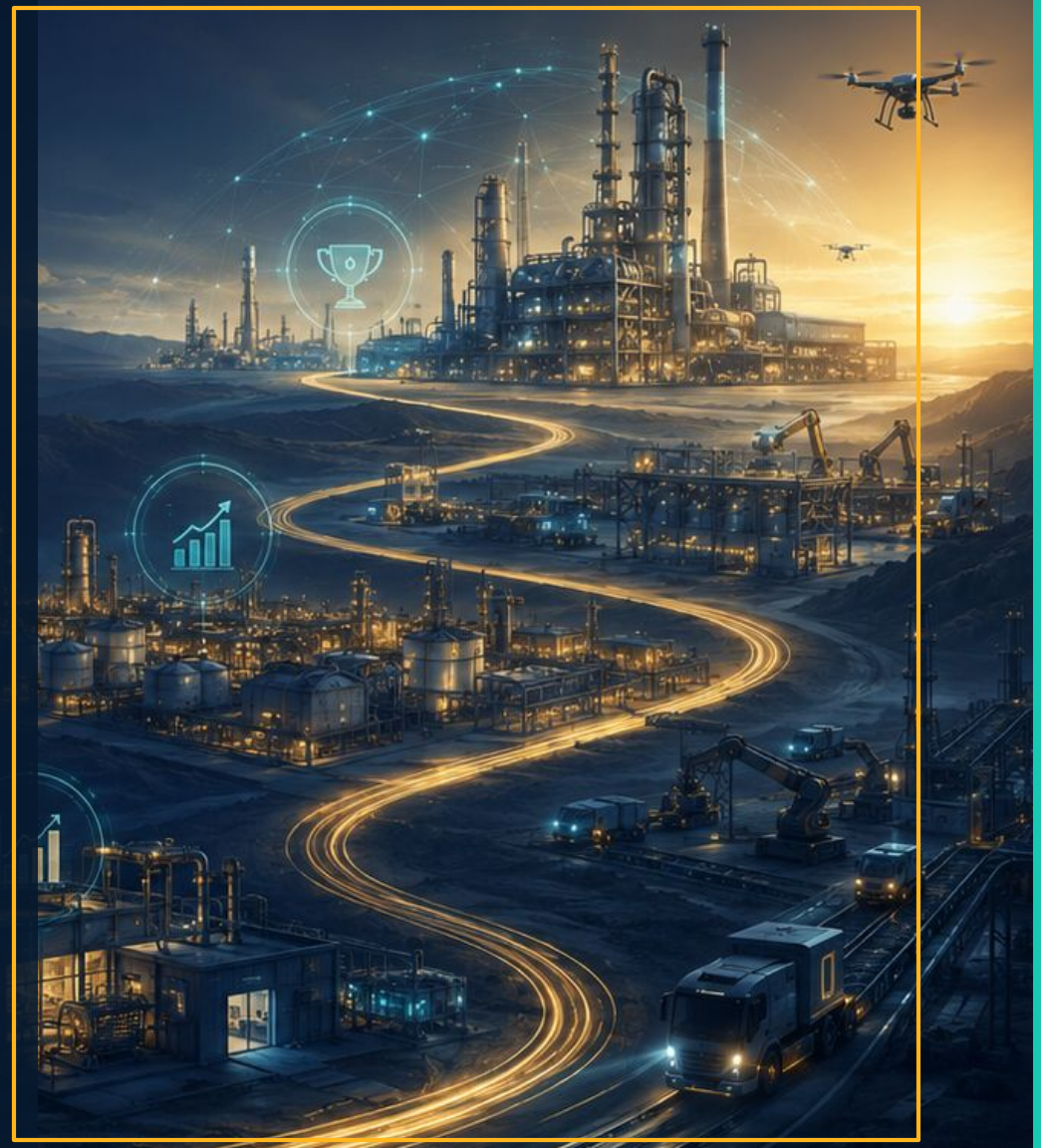
Category ownership

Anchor operator references open the rest of the industry and adjacent verticals.

YEAR 5+

Agentic platform

The decomposed knowledge twin becomes the substrate for semi-autonomous hazardous-area work.



Greenlight a first-deployment pilot.

The ask is simple: align on the moment, the sponsor, the data, and the commercial gate.

01 Pick the moment

Choose the upcoming window with the highest exposure and the clearest baseline.

02 Name the sponsor

Identify the senior operations or process-safety executive who owns the outcome.

03 Open the data

Give access to in-scope scans, procedures, SMEs, and the crews working the pilot.

04 Lock the commercial

Agree the success gate and pricing structure on real evidence.

Detail for the reviewers

Backing detail for technical, financial, and security reviewers, using the same logic as the main story with assumptions made explicit.

Financial model detail — every line, every assumption.

Illustrative deployment economics shown explicitly so the reviewer can inspect both setup and recurring assumptions.

ONE-TIME (SET-UP)

Consumer / training glasses 12,000 users × $800	$9.6M
Certified field fleet (RealWear Z1) ~2,000 pooled × ~$3,000	$6.0M
Content creation ~250 priority models × ~$17,500	$4.4M
Total one-time	$20.0M

RECURRING (PER YEAR)

Software license 12,000 × $1,200 / yr	$14.4M
Content refresh & new models ~15% of content / yr	$0.6M
Certified device service / refresh ~10% of fleet / yr	$0.6M
Total per year	$15.6M

Savings build — conservative vs realistic.

The floor case stays deliberately low. The realistic case is driven primarily by downtime and execution quality.

FLOOR CASE

$18.8M
Annual savings

Deliberately low
Sizing

Thin
At flat licensing

Honest
Useful for procurement

REALISTIC CASE

$34M
Annual savings

Downtime-led
Upside driver

Fast
Payback profile

Stronger
5-year value creation

Public benchmarks behind the model.

The anchors are public and conservative. The pilot replaces them with the operator's own baselines.

SAFETY INCIDENTS

NSC, NCCI, OSHA, and Concentra anchor injury and claim-cost ranges.

UNPLANNED DOWNTIME

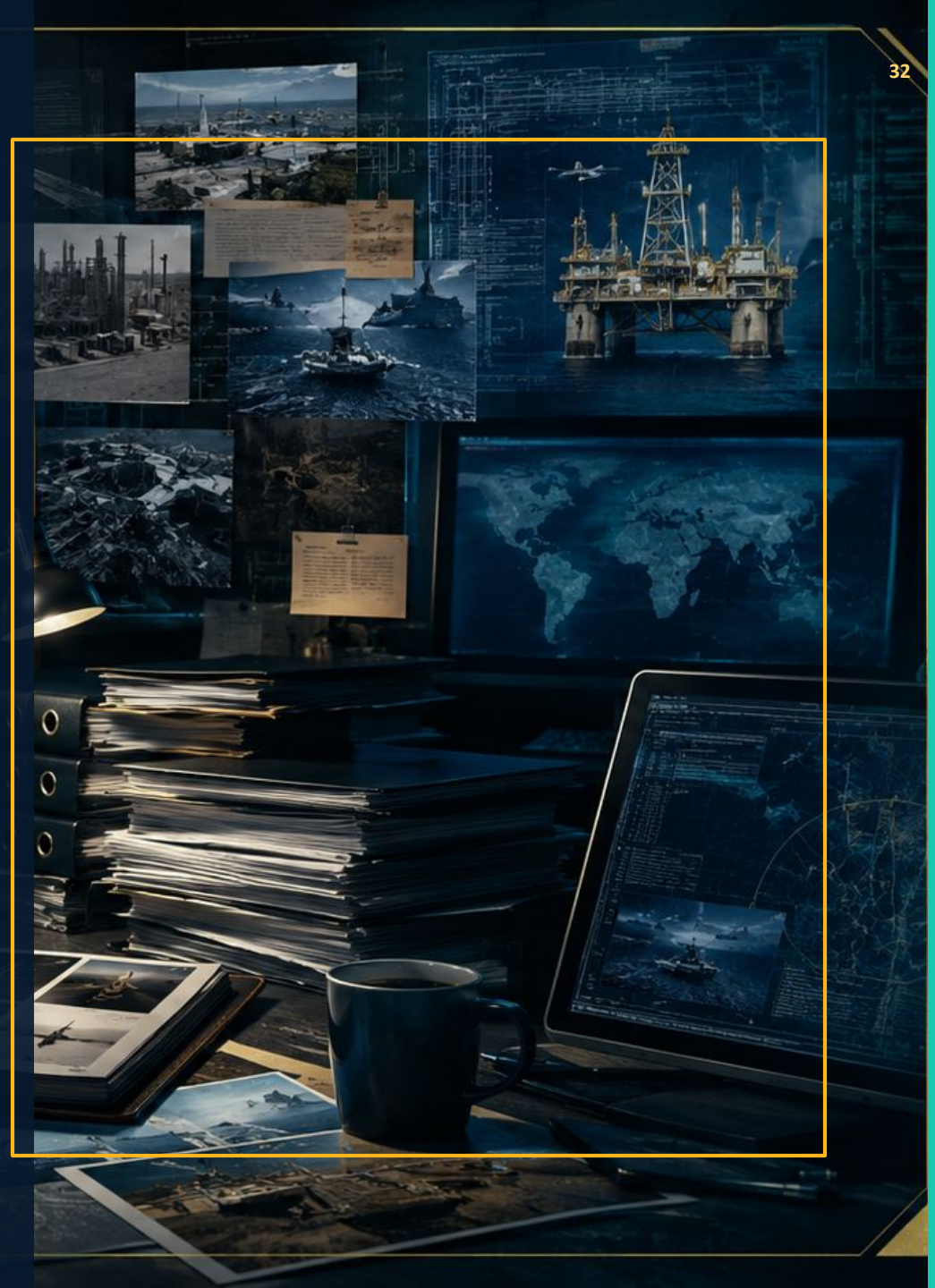
ABB, Aberdeen, and Kimberlite / GE anchor outage and offshore downtime values.

TRAINING EFFECTIVENESS

PwC and related studies anchor the speed and confidence gains from immersive training.

TWIN / ROBOTICS PRECEDENT

Equinor, BP, Aker BP, and Woodside show the operational direction of travel.



Sensitivity — downside, base, and realistic.

Three cases make the commercial logic visible: one that misses, one that clears slowly, and one that behaves like the stronger operating case.

DOWNSIDE

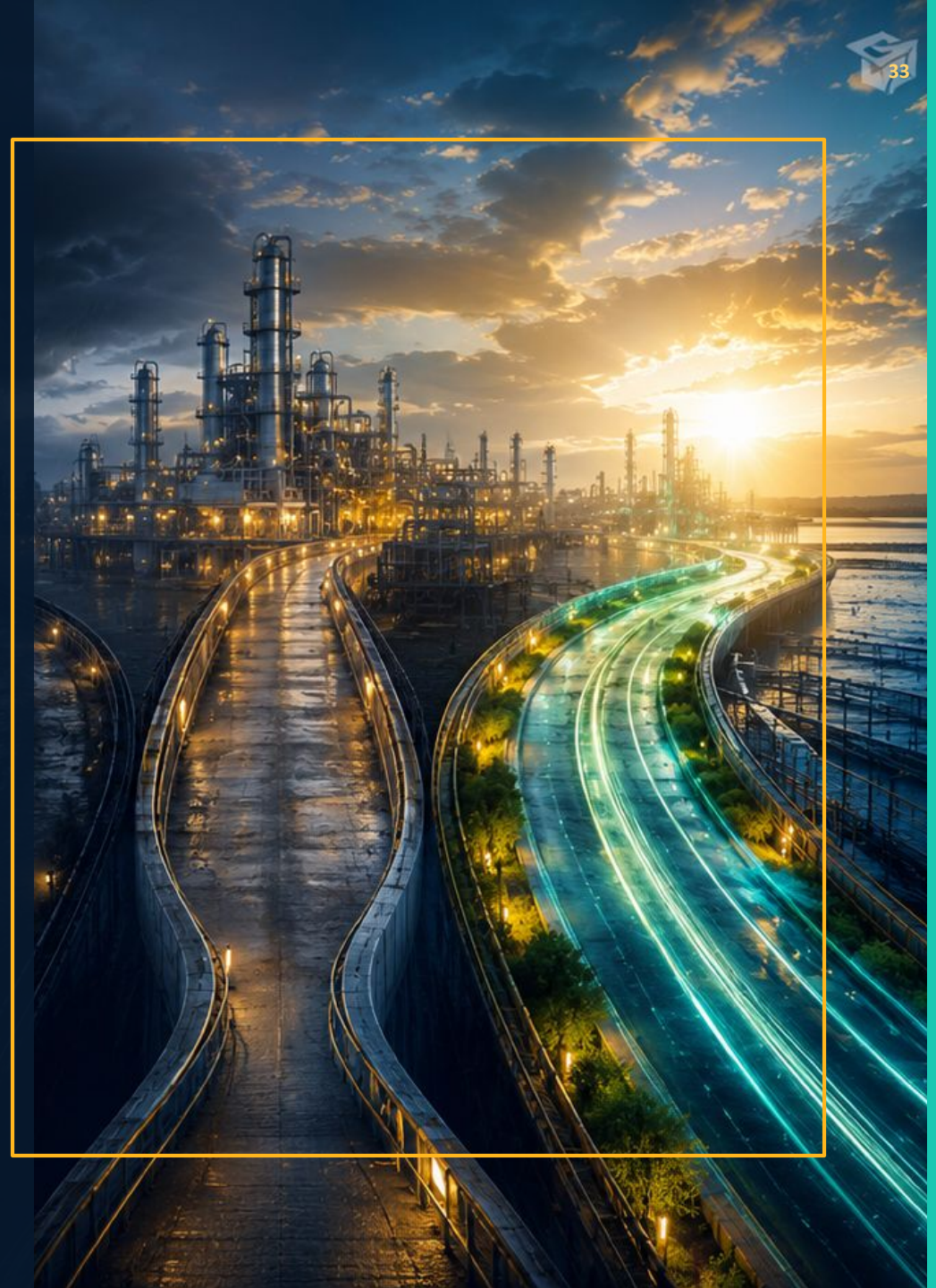
−40% savings
Annual gross: $11.3M
Net of run: –$4.3M / yr
Pricing must move.

BASE FLOOR

As modeled
Annual gross: $18.8M
Net of run: $3.2M / yr
Positive, but slower.

REALISTIC

Downtime sized to benchmark
Annual gross: $34.0M
Net of run: $18.4M / yr
Payback ≈ 1.1 years.



The reviewer-grade security and governance picture.

The operating model is designed to satisfy field safety, fleet control, data sovereignty, and evidentiary review at the same time.

HARDWARE CERTIFICATION

RealWear Z1 supports ATEX Zone 1, IECEx, CSA Class I-Div 1, UKCA, PPE fit, and field ruggedness.

DEVICE & FLEET MANAGEMENT

Locked MDM fleet, provisioning, remote wipe, and approved application control.

ZONE GOVERNANCE

Permit-to-work and area classification determine what modality can be used where.

DATA RESIDENCY & IP

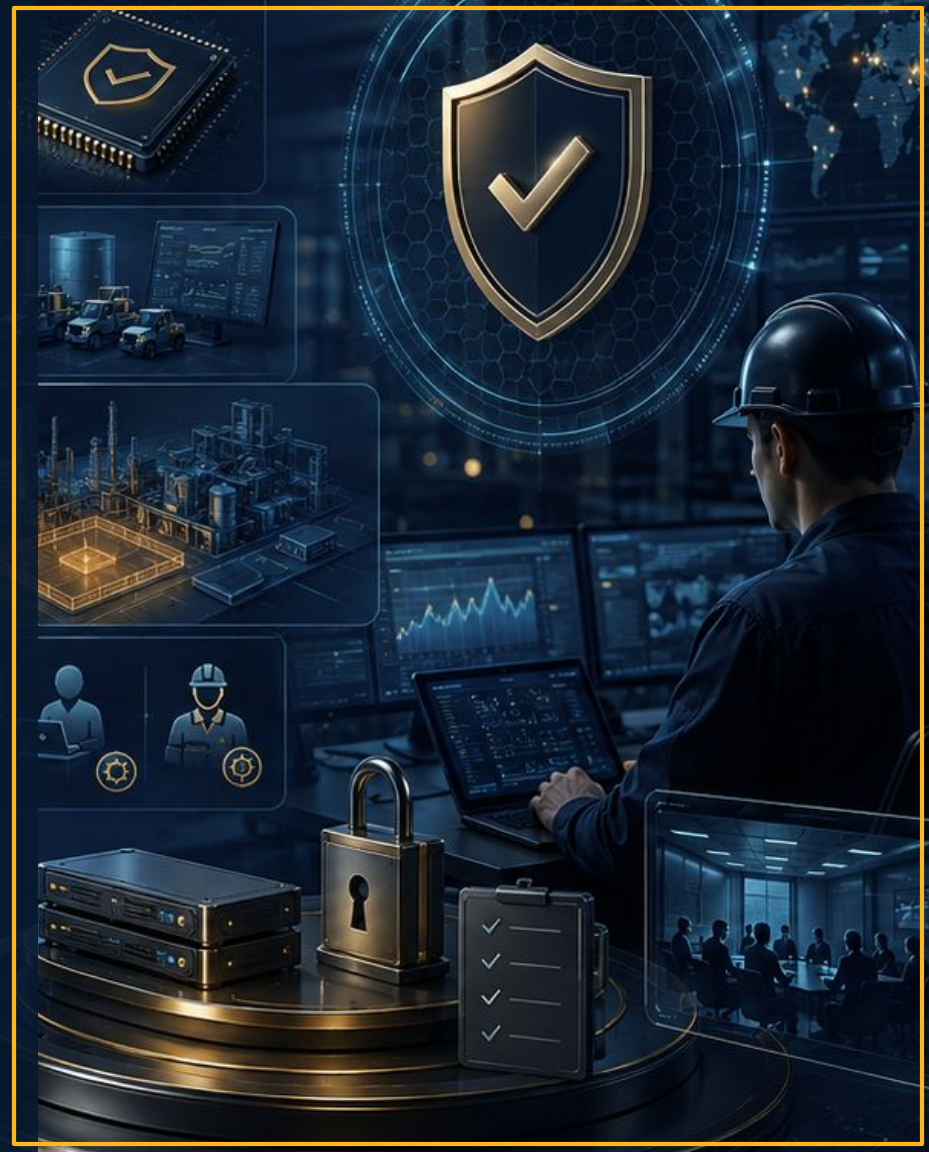
Customer-region residency and customer ownership of twin plus verification corpus.

AUDIT TRAIL

Immutable verification outcomes for safety-critical work, defensible to regulator and insurer.

LEAST EXPOSURE

Only required geometry and procedures are served, with role-based access throughout.



How the scan-decomposition partner is qualified.

The scanning partner is the single truly unproven dependency, so scale only happens after a measured gate on real customer assets.

ACCURACY GATE

SME-scored component-separation accuracy on a representative asset sample. Pass or no scale.

TURNAROUND TIME

Throughput per asset must support the content velocity the program needs.

COMPONENT FIDELITY

Sub-components must be named, oriented, and addressable — not just visually separated.

REPEATABILITY

Results have to hold across wellheads, pump skids, separators, vessels, and reactors.

DATA HANDLING

Security, residency, and IP terms must clear the same governance bar as the platform.

COMMERCIAL ALIGNMENT

Outcome-linked pricing keeps incentives tied to the measured gate.

Why EON AI Ventures is credible now.

This is not a proposal to invent missing parts. The scans exist, the platform exists, the certified hardware exists, and the workforce window is closing.

25 years

Immersive industrial training

Not a startup demo

4,400+

Partners

Across a broad installed base

80+ / 136M+

Countries / downloads

Global distribution already exists

Genesis 3

World-centric simulation engine

In market today

FieldIQ

Glasses-ready field guidance

Assisted-reality spec for the field

In motion

Supermajor operator programmes

OTC 2026 and parallel industrial deployments