

# The Symbiosis Architecture

How seven interlocking products close the loop between the digital twin and the frontline — and compound experience into fewer accidents and lower cost.



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## 1. Executive summary

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Every vendor in heavy industry makes the same promise: fewer accidents, lower cost. It has become background noise, because a promise is not a mechanism. This paper describes the mechanism.

Symbiosis is the complete picture of EON's Work Intelligence system: seven products that interlock into a single, self-improving loop. Together they build a smart, physics-true digital twin of a facility, carry it into the worker's hands on-site, capture what actually happens, and compound that experience back into the twin. **The result is a system that gets safer and cheaper with every job.**

The claim of this paper is specific and, we believe, unique: the knowledge required to prevent most industrial incidents already exists — and for the first time, every element required to deliver it to the point of work has been assembled into one connected system.

## 2. The problem: the knowledge exists, but it doesn't connect

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When something goes wrong on an industrial site, the post-mortem almost never concludes that the knowledge to prevent it was missing. The procedure existed. An engineering model existed. The physics were understood. Similar accidents had happened before and were documented. Often, a veteran operator on another shift already knew the trick that would have avoided it.

The failure is one of connection, not knowledge. That knowledge sits in separate silos — a document management system, a CAD file, a simulation package, an incident database, and the unwritten experience in people's heads — and none of it reaches the right person at the moment of the task. Training is a classroom event, disconnected from the equipment. The digital twin lives in an engineering office, disconnected from the field. And the hard lessons the field learns every day rarely make it back to improve either.

**Closing that gap is the entire purpose of Work Intelligence.**

### 3. Work Intelligence: a new system of record

Enterprises already run on systems of record: ERP for resources, CRM for customers, PLM for products. None of them captures how skilled work is actually performed — the living, changing knowledge of how a specific facility is operated and maintained safely.

**Work Intelligence is that missing system of record.** It treats procedures, models, physics, accident history, and field experience as a single, compounding asset that belongs to the operator. EON's guiding principle is *"orchestrate the commodity, own the compound"*: the underlying AI models are interchangeable and will keep improving, but the intelligence a facility accumulates about its own work is the durable, defensible asset.

### 4. The architecture

Symbiosis is best understood as a flywheel. The left side builds the twin in the virtual world; it converges in Field IQ in the physical world; and the field feeds reality back to improve the twin. The figure below shows the whole system on one page.

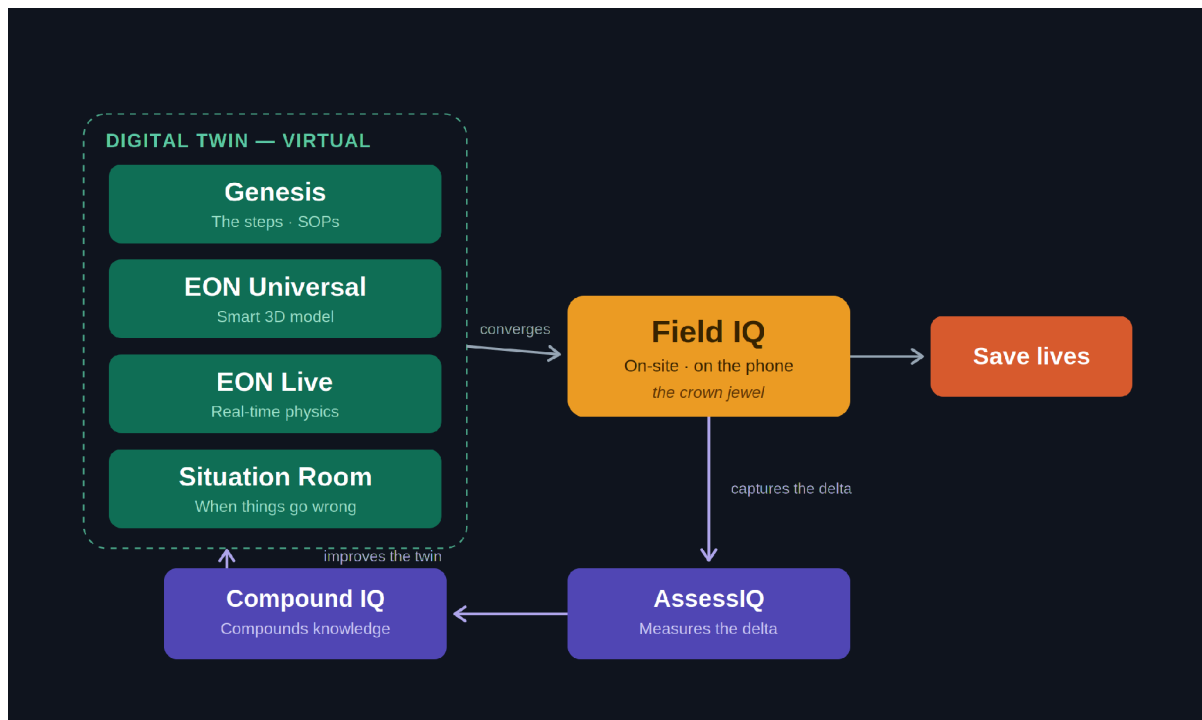


Figure 1. The Work Intelligence flywheel.

## 4.1 Genesis — the procedure engine

Genesis turns a written procedure into an interactive, step-by-step simulation. It applies the standard operating procedure — the recipe — labels every component and interaction, and lets a person practice the job and be evaluated on it. Genesis is deliberately literal: it follows the recipe exactly and does not deviate. It runs the “*everything-goes-right*” path extremely well, but it does not, on its own, understand the equipment. For that, it needs a smart model.

## 4.2 EON Universal — the smart 3D model

EON Universal builds the smart 3D twin — either from photographs of an existing site or from a P&ID fed through a configurator. Its components are not dumb geometry. They are drawn from the world’s largest library of intelligent components — roughly 8,000 parts across 50 equipment classes and ~350 subcomponents, anchored on the ISO 14224 taxonomy. A pump modeled in Universal knows that it is a pump, knows its function, and can be opened to reveal its internals. Each component carries a six-layer competence record: identity, geometry, anatomy, function, behavior, and procedure. Because Universal understands what each part is and does, it can run *conditional* procedures that branch on real conditions — and it delivers across multiple surfaces: phone, AR glasses, tablet, desktop, and immersive CAVE.

## 4.3 EON Live — real-time physics

EON Live puts a real-time physics engine on top of Universal. Pressure, flow, torque, and heat become a live, integrated state. The twin stops merely describing itself and starts behaving: act on it, and it reacts the way the real equipment would. This is what elevates a procedure into a full working plant that can be operated — and, critically, one that can fail realistically.

## 4.4 The Situation Room — train on danger, safely

The Situation Room is a library of 120 major real-world accidents — the most frequent and the deadliest, organized by frequency, severity, curated “top picks,” and theme (safety isolations, stored energy, start-up and shut-down, and more). Because EON Live is an engine, an accident is not scripted step by step as in Genesis; the scenario is fed in and the engine enacts the failure against real geometry. Around the simulation sits the human layer: an AI assistant, detailed accident write-ups, oral “what would you do” interviews, the Virtual Builder, and certification. Teams learn what happens when things go wrong — and how to avoid it —

without the consequences.

#### 4.5 Field IQ — the crown jewel

Field IQ carries the entire system to the point of work. Using a phone or AR glasses, it recognizes any real site and overlays symbols and guidance directly onto the equipment — with no 3D modeling required in the field, because the real geometry is already there. Behind that thin overlay it carries everything: Universal’s understanding of each part, EON Live’s physics, Genesis’s procedures, and the Situation Room’s foresight about failure. Field IQ is at once an **actuator**, guiding and assisting the worker to do the right thing, and a **sensor**, capturing what actually happened. It cannot exist without the other products — it is the whole system, pointed at reality.

#### 4.6 Assess IQ and Compound IQ — closing the loop

What Field IQ captures is the **delta**: the difference between the plan and what really happened. Assess IQ measures that delta against what the twin expected. A **positive** delta means the field did the job better than the office knew — tacit knowledge that is pure gold, and worth capturing. A **negative** delta means something went wrong and needs fixing. Compound IQ turns both into durable knowledge and feeds it back into the digital twin — and the loop begins again, sharper than before.

### 5. The flywheel: how experience compounds

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Read as a sequence, the loop is simple: Genesis replays, Universal understands, EON Live runs, the Situation Room warns, Field IQ guides and senses, Assess IQ measures, Compound IQ compounds — and the improved twin flows back to Genesis and Universal. Read as a business, it is powerful: every shift a facility works becomes an input that makes the next shift safer and cheaper. Unlike a static software deployment, the asset appreciates with use.

- **Genesis replays** — turns procedures into practice.
- **Universal understands** — makes the model know what each part is and does.
- **EON Live runs** — gives the twin real physics.
- **Field IQ acts and senses** — guides the worker and captures reality.
- **Assess IQ + Compound IQ compound** — turn the delta into a better twin.

## 6. Why this is different

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Point solutions exist for every part of this loop — e-learning tools, CAD and simulation, incident databases, AR guidance. What has never existed is the complete, connected loop, where the output of the field automatically improves the twin that trains and guides the field. The value is not in any single product; it is in the symbiosis between them. Remove any one element and the loop breaks: Genesis without a model, a model without physics, physics without failure scenarios, or guidance without capture.

This is also why the strategy is durable. Foundation models are a commodity and will keep changing; EON keeps them interchangeable. The compounding intelligence a facility builds about its own work — its procedures, its equipment, its accidents, its hard-won field corrections — is unique to that operator and cannot be bought off a shelf. ***Orchestrate the commodity; own the compound.***

## 7. Proof and readiness

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Symbiosis is not a roadmap of things to be built. Every element described here already exists and is in customers' hands. It draws on a technology heritage of more than 25 years, 4,400+ institutional customers across 80+ countries, and 136 million+ platform downloads. It is available now to global energy, industrial, and heavy-asset operators.

## 8. Conclusion

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Anyone can promise fewer accidents and lower costs. Symbiosis is the evidence that the elements required to deliver it — the twin, the physics, the failure library, the on-site guidance, and the loop that learns from reality — finally exist as one connected system. The knowledge to keep people safe is already in the building. Work Intelligence is how it finally reaches the person doing the work, and gets better every time they do it.