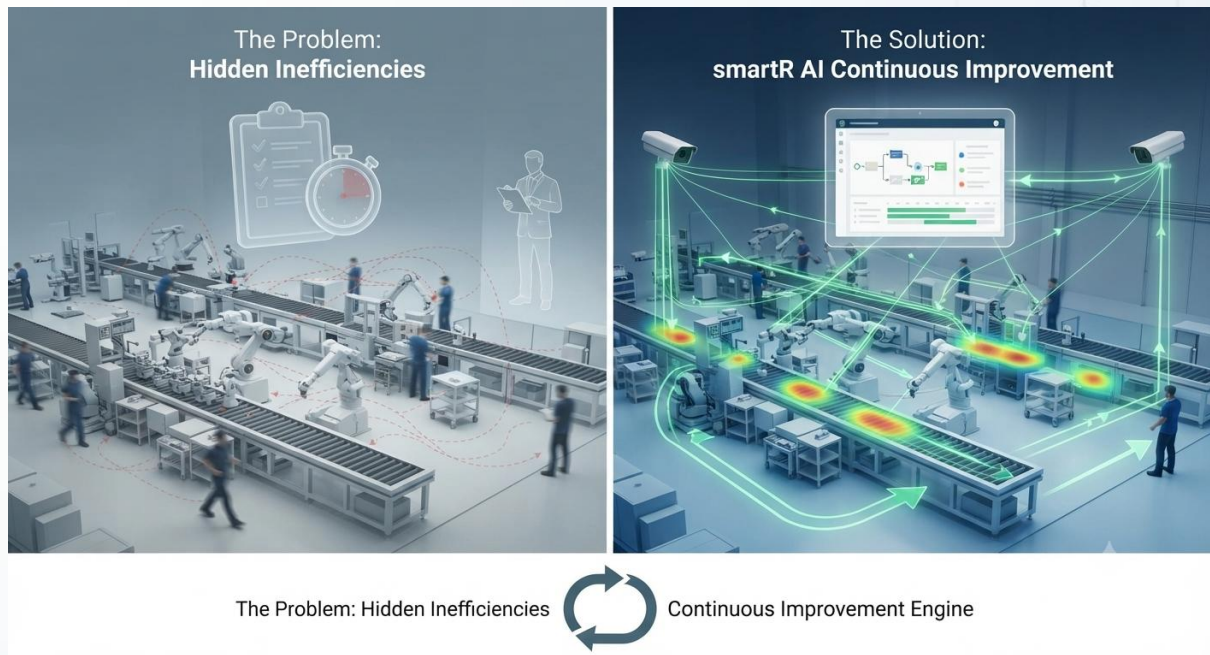


Business Use Case



See Your Factory the Way It Actually Runs

How smartR AI can turn ordinary cameras into a continuous improvement engine — for line managers, operations leaders, and quality teams.

The problem with knowing your own floor

Every operations manager knows the feeling. You walk the floor and see motion everywhere — but do you actually know how work flows? Where the wasted steps are? Where people wait, backtrack, or work around a bad layout?

Until now, the only answer was a manual time-and-motion study: a consultant with a clipboard, for a few days, once. And those studies carry a fatal flaw — the observer effect. The moment people know they're being watched, they perform the job the way they think management wants it done, not the way it actually gets done on a normal Tuesday. You end up optimizing a performance, not a process.

Then the consultant leaves, and you're back to anecdotes.

What if your factory could tell you the truth — every single day?

The breakthrough: precision tracking from the cameras you already have. Since 2021, smartR AI has been building machine vision systems that study how people and products actually move through production. Working with our subsidiary company **sSy.ai**, we



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developed a patented tracking system (allowed by the USPTO) that does something the industry said couldn't be done: it turns **ordinary, inexpensive cameras** into metrology-grade tracking instruments — **with no special calibration**.

The system handles the hard part automatically: perspective inference, lens-distortion correction, and continuous self-recalibration, converting every pixel into real-world meters with sub-pixel accuracy ($1 \text{ px} = 0.025 \text{ m}$). The output is a true 2D metrical map of your floor, where every person, forklift, pallet, and product is tracked in time and space.



The sSy.ai calibration engine: a live camera feed (left) is automatically de-warped and mapped into a metrical 2D floor plan (right), with tracked paths, object footprints, and exportable coordinates — no manual calibration required.

No wearables. No tags. No disruption to the line. You install cameras, and the floor starts telling its story.

Waste you can finally see — and two stories that prove it

Movement data is rendered as **spaghetti maps** and **heat maps** overlaid directly on your actual floor plan — every walk, every detour, every place time pools and stagnates. The value isn't the picture; it's what the picture makes impossible to ignore.



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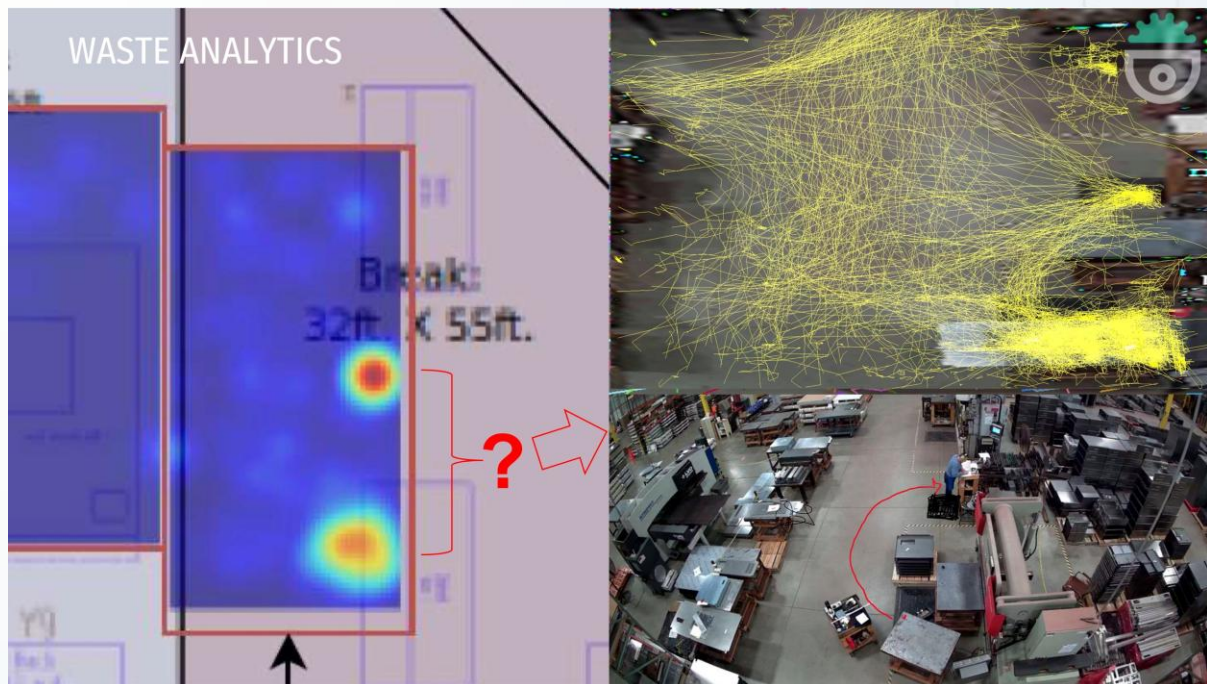
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Waste analytics in action: dwell-time heat maps (left) reveal exactly where hours accumulate, while spaghetti maps (right) trace every journey across the shift.

Story 1: The hotspot that wasn't a machine

At an uninterruptible power supply (UPS) system production facility, the heat map kept showing the same intense hotspot — and it wasn't at a workstation or a machine. **It was at a desk.** Operators were spending a remarkable share of their shifts on paperwork.

When the team dug in, the reason was almost absurd: much of that paperwork fed a **legacy software program installed ten years earlier — that nobody was monitoring anymore.** The data was being diligently typed in, shift after shift, and going nowhere. No one had set out to waste thousands of labor hours; the process had simply outlived its purpose, and no one could see it.

The fix was cheap: eliminate the redundant data entry and streamline the paperwork that remained. The result: **a 37% improvement in efficiency — with higher worker satisfaction** (people don't enjoy pointless typing) and **no increase in cost.**

Story 2: Two machines, one long walk

In another facility, the spaghetti maps told a different story. Two infrequently used machines sat at **opposite corners of the factory** — fine on paper, since neither was a bottleneck. But the routing data showed that when one machine ran, the next operation was frequently on the other. And the workpieces on those machines were large: every job meant navigating bulky parts from one side of the floor to the other, cutting across everyone else's traffic and creating contention along the way.

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Moving the machines closer together — a one-time facilities decision — delivered a **~6% performance gain** and noticeably smoother flow across the whole floor.

The pattern matters: sometimes the win is 37%, sometimes it's 6%. Sometimes it's administrative waste, sometimes it's layout. What they have in common is that both were invisible until the floor itself showed them — and both fixes cost almost nothing once seen.

Ask your floor a question. SCOTi® answers

Because tracking runs continuously, analysis stops being an event and becomes a habit. Our **SCOTi Data Analytics** tools let you interrogate your operation in plain terms:

- How many trips happened between point A and point B - per shift, per day, per week?
- How far does the average operator walk on a shift?
- Where does congestion form, and how long do people wait?
- Where does dwell time pool - and is it value-adding?
- Did that layout change actually work? Compare before and after, objectively.

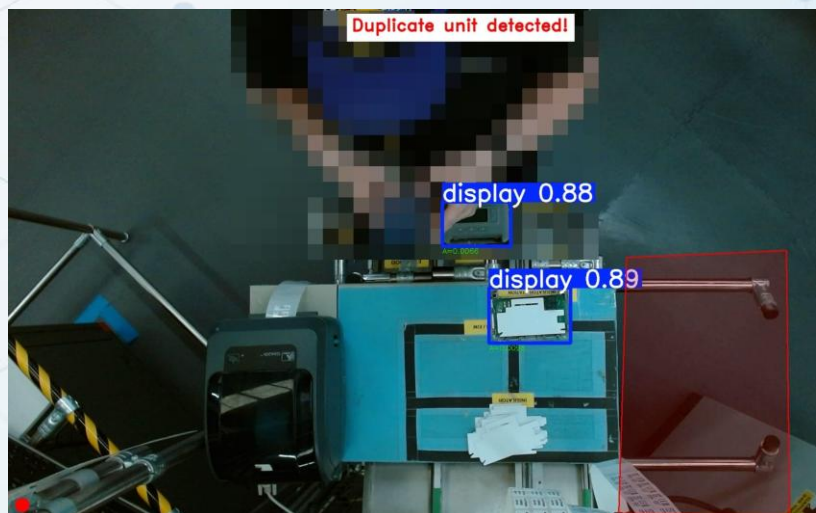
Traditional analysis gave you a snapshot once a year, filtered through the observer effect. SCOTi gives you the truth, every day, from the way people really work.

Quality: a line that watches itself

The same vision system that maps motion also **tracks products and enforces procedure** — and this is where quality leaders lean in.

A leading manufacturer of connected home controls needed assurance that a critical work-cell procedure was being followed. Their product ships as a **matched pair in one box** — a control unit and its receiver, paired to communicate with each other. If two units get switched during assembly, nobody notices on the line. They notice in the field: the installer fits the unit to the boiler, and it **simply doesn't work**.

Everyone believed the unit-separation procedure was being followed correctly. The vision system flagged **16 violations in the first week**.



Real-time procedural enforcement: the system detects a duplicate unit in the pairing zone and raises an alert at the moment it happens — not at final inspection, not in the installer's van.



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What one mis-pair actually costs (US estimate)

For a mis-paired unit that escapes, the installer's day looks like this: install, troubleshoot a "dead" unit, uninstall, drive back to the supplier, exchange, drive back, reinstall. A conservative US cost model:

Cost component	Assumption	Low	High
Failed install + troubleshooting	~2.0 hrs.		
Uninstall	~0.5 hr.		
Round trip to supplier	~1.0–1.5 hrs.		
Reinstall + test	~1.0–1.5 hr.		
Technician time	~4.5–5.5 hrs. @ US\$75–125/hr. loaded	US\$340	US\$690
Vehicle / fuel	per round trip	US\$25	US\$60
Rescheduling, admin, restock	per incident	US\$30	US\$75
Total per incident		~US\$400	~US\$800

Excludes the costs you can't put on an invoice: a frustrated installer, a delayed job, and a homeowner whose first experience of your brand is a product that "didn't work."

Against that backdrop, 16 prevented escapes in a single week isn't a quality statistic — it's a payback calculation.

Crucially, the system doesn't just catch errors — it helps you **eliminate their causes**:

- **Real-time alerts** at the moment of deviation, so the line corrects before the defect escapes.
- **Tagged video** of every violation, letting you replay the moments *leading up to* the event and understand *why* it happened.
- **Root-cause insight** to redesign the workstation or flow so the correct procedure becomes the easy procedure — true poka-yoke, supported by evidence.

This shifts quality from *inspecting failures out* to *engineering failures out* — and gives you an objective, auditable record that the process ran as designed.

Privacy by design — measure the process, not the person

We know what your workforce — and your works council — will ask. Our **ID Guard** technology automatically blurs people on the line, and the platform is built for **GDPR compliance** with on-premise or edge deployment so your data stays under your control. The system was designed to improve *processes*, not to police *people* — which is exactly why it surfaces the truth instead of triggering the observer effect.



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Why it wins with both managers and quality teams

	Traditional study	smartR AI + sSy.ai
Coverage	A few days, once	Every shift, continuously
Data quality	Distorted by observer effect	Objective — work as it really happens
Cost	Consultants, repeat engagements	Inexpensive cameras, no calibration
Speed to insight	Weeks of manual analysis	Daily answers via SCOTi
Quality assurance	Sampling, end-of-line inspection	100% procedural monitoring, real-time alerts
Evidence	Notes and spreadsheets	Tagged, replayable video and audit trail

The bottom-line

Factories run on flow, and quality runs on discipline. For the first time, you can see both — continuously, objectively, and affordably — using cameras you already own. A 37% efficiency gain hiding in a desk nobody questioned. A 6% gain hiding in a floor plan nobody had reconsidered. Sixteen field failures prevented in the first week alone.

Your floor already knows where the waste is. It's time someone listened.

Ready to see what your factory is actually doing? Let's put your floor on the map.

smartR × sSy.ai — Built for enterprise. Engineered for trust.

About smartR AI

We believe that data and AI play a key part in a sustainable world. smartR AI™ is a multi-award-winning, Edinburgh-based technology firm delivering the first "Master Builder" Agentic AI platform for the \$100B+ Aerospace & Defense (A&D) engineering market. As active members of Scottish Engineering and UK Space, we provide secure "Assistive Intelligence" that bridges the "Complexity Gap" in large-scale programs. We believe successful technology starts with people, not code; we don't just deploy algorithms, we solve real-world engineering bottlenecks by working from ideation through implementation.

Our flagship platform, SCOTi®, acts as an AI Autopilot for PLM, solving the industry's critical problem of "Organizational Amnesia"—the loss of 40+ years of institutional knowledge caused by siloed legacy data and a retiring expert workforce. By digitizing expert knowledge



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and automating requirements traceability 4,800x faster than manual review, we eliminate the need for teams to "start from scratch," transforming error-prone processes into a scalable competitive advantage. SCOTi® integrates seamlessly with industry-standard tools ensuring non-disruptive deployment into the world's most complex engineering workflows.

Our Mission: We eliminate project failure through the fusion of human critical thinking and machine-scale experience, empowering organizations to extract value from their data in an ethical, responsible, and sustainable manner.

Our Vision: The Human Face of Innovation In an era of AI complexity, we are the human-centric bridge between cutting-edge technology and real-world business impact. Our vision is to provide risk-free, controllable, and financially viable solutions for the challengers and innovators who are shaping the future of our world.

- Empowering businesses with AI-Powered Efficiency, Accuracy, and Trust.
- Revolutionizing product lifecycle management through human-critical thinking.
- Leading the competition with specialized, ethically-deployed Assistive Intelligence.



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