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By Paul Turner, P.Eng., PMP

Establishing the Industry Baseline for Outcome Assurance

Major projects shape economies, organisations, and communities.
And yet, across industries and geographies, outcomes remain far less predictable than they should be.
Delays, underperformance, and unrealized value persist, not for lack of effort, but because our profession has never had an independent, global reference point for what good truly looks like.

This is why the Institute of Commissioning and Assurance (ICxA) has initiated its international research program to establish that baseline – to understand where Outcome Assurance capabilities exist today, and where opportunity remains to strengthen outcome reliability across the industry.

ICxA is conducting a structured, international benchmarking study examining how project organizations prepare for, verify, and authorize their intended outcomes.
This is the first effort of its kind, spanning sectors, regions, and project types, with the objective of establishing the initial global baseline relative to the Outcome Assurance standards.

Organizations that participate contribute directly to building this foundation.
As part of the research process, each participating organization receives a confidential

Outcome Assurance Index (OAI) Score - an independent reference point showing where they stand relative to the emerging global benchmark and their peer group.

This is part of ICxA's non-profit mission to bring transparency, structure, and rigour to how major project outcomes are assured.

This research will enable ICxA to publish anonymized reports of industry findings, identify systemic patterns, and support the advancement of Outcome Assurance as a recognised leadership discipline.

If your organisation is involved in delivering major capital projects, I encourage you to participate.

Further information and registration:

www.icxa.net/benchmark

Paul Turner, P.Eng, PMP

Paul Turner
Founder & CEO
Institute of Commissioning & Assurance

CONTRIBUTE TO THE GLOBAL OUTCOME ASSURANCE BENCHMARK

For the first time, the Institute of Commissioning and Assurance (ICxA) is establishing an independent global baseline for Outcome Assurance capability across major project organizations.

This international research initiative spans sectors, regions, and project types.

Organisations selected to participate receive their confidential Outcome Assurance Index (OAI) Score, providing an independent reference point reflecting their position relative to the Outcome Assurance Standards, the emerging global benchmark, as well as peer organisations.

Participation contributes to advancing professional standards and improving project outcome reliability worldwide.

**PARTICIPATION IN THE INITIAL BENCHMARK COHORT IS CURRENTLY UNDERWAY.
TO LEARN MORE AND PARTICIPATE IN THIS RESEARCH INITIATIVE, PLEASE VISIT:**

ICXA.NET/BENCHMARK

THE ANALOGY CORNER

Distilling key ICxA themes into clear, concise, and engaging perspectives

by Peter Foxley
ICxA *Commissioning Governance & Policy Director*

Welcome to ICxA's Analogy Corner - where complex ideas in infrastructure performance are decoded through vivid analogies. Each month, we bridge technical detail with institutional vision, helping practitioners, policymakers, and the public see how governance can evolve into a licensed profession of public trust.

YOU WERE ALREADY DOING THE WORK

ON PROFESSIONAL IDENTITY, INTEGRATED PRACTICE, AND WHY REQUIREMENTS ENGINEERING, COMMISSIONING AND OUTCOME ASSURANCE BELONG TOGETHER – AND BELONG TO A PROFESSION

If you have spent any part of your career in requirements engineering, commissioning or outcome assurance, you will recognise a particular kind of conversation. Someone asks what you do. You explain it carefully, with examples, adjusting as you go - because the job title on your business card does not quite capture it, and you know it. Eventually they say something like: So, you're the person who makes sure it actually works. And you say yes. More or less. That's it.

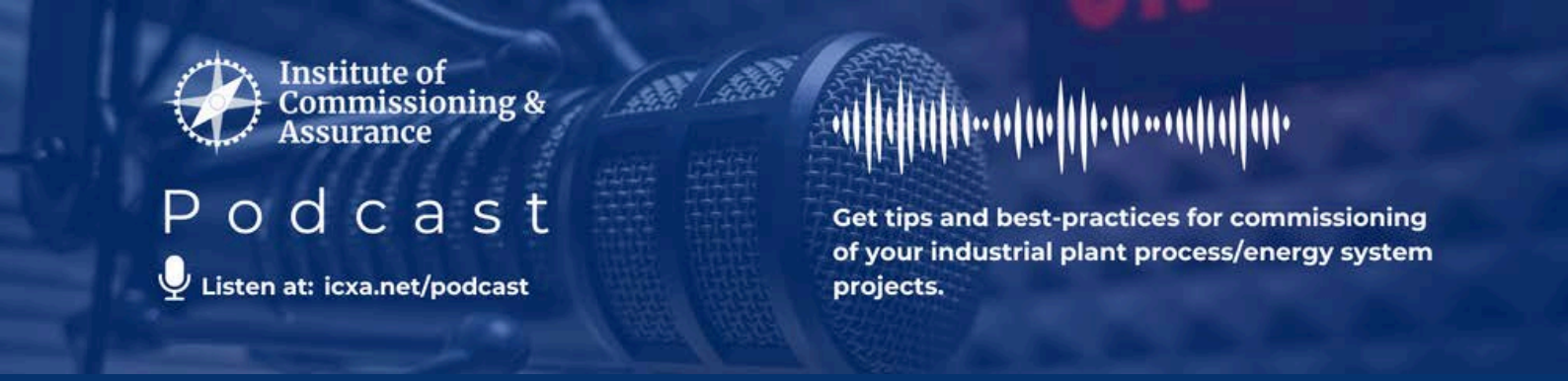
That gap - the between the work you do and the language available to describe it - is not a communications problem. It is the absence of a defined profession. And it is the problem ICxA exists to solve.

The Invisible Profession

There is a particular kind of professional invisibility that afflicts disciplines which are essential but unnamed. The work gets done, or it does not, and something complex, expensive and visible fails, but the people doing it carry no common identity, no shared vocabulary, no conduct framework, and nobody standing behind them when accountability is sought.

Requirements engineering, commissioning and outcome assurance have lived in that space. Not because the work is marginal. Precisely because it is so central that organisations have always found someone to do it, under whatever title was available: project engineer, handover manager, validation lead, systems integrator, compliance officer, BIM coordinator. The function happened because it had to. The profession did not exist.

You may have come to this work from



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engineering or operations, from a client-side role or a technical specialism, from a socio-technical discipline or from construction or project management. What you will share with everyone else in ICxA is the recognition that somewhere in your career you crossed a threshold - from executing a defined task to being responsible for the coherence between what was intended and what was delivered. That is a different kind of work. It requires a different kind of thinking. And it deserves a professional identity that reflects what it actually is.

What RICS Understood

There is a professional analogy worth taking seriously here - not for the status it confers, but for what it explains.

In the mid-twentieth century, the commercial management of construction projects was essential, ubiquitous, and professionally invisible in exactly the same way. Someone had always measured work, valued change, and certified payment. Clients needed cost control. Contractors needed fair valuation. The function had existed as long as construction had. But the practice was inconsistent, the terminology was disputed, and the standing of practitioners varied enormously. A rigorous commercial manager and a well-dressed estimator with a confident manner could occupy the same role on adjacent programmes with no reliable way for clients to tell them apart.

The Royal Institution of Chartered Surveyors did not invent the discipline. What it did was anchor it. The Red Book did not create valuation methodology - it gave it a fixed professional point of reference: consistent, defensible, and accountable. Practitioners could be credentialed against it. Clients could specify it. And when something went wrong, there was a conduct framework and a professional body that meant the accountability was real. The profession made itself legible to the market it served, not by doing new work, but by making existing work trustworthy.

That is precisely what ICxA exists to do for requirements engineering, commissioning and outcome assurance. The methodology exists. The international frameworks exist. What has been missing is the professional anchor - the body that says this is what competent practice looks like, this is the standard practitioners are held to, and this is who stands behind them when it matters.

The dynamic is identical. The stakes are not.

The Case for Integration

Here is the question that matters most for how

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you understand your own professional identity: are requirements engineering, commissioning and outcome assurance three disciplines that happen to sit near each other, or are they one integrated practice that has been artificially separated by the way organisations are structured?

The answer ICxA gives is the second. And it is worth being precise about why.

Requirements engineering without commissioning is specification that has nowhere to go. You can define what an asset must do with rigour and clarity, but if the process by which it is brought into service is not managed against those requirements - if commissioning is treated as a construction phase activity rather than a verification process - then the specification becomes a historical document, referenced in dispute, rather than a live accountability framework. The requirements were written. They were not used.

Commissioning without requirements engineering is verification without a baseline. You can manage an extraordinarily thorough commissioning process - integrated testing, system validation, operator training, performance demonstration - but if the requirements against which you are commissioning were never rigorously defined, you are checking that systems work, not that they deliver what was needed.

That is a different thing.
And it is often how programmes produce assets that pass every test and still disappoint every user.

Outcome assurance without both of the above is not assurance. It is documentation - however

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voluminous, however automated - that calls itself assurance. You cannot demonstrate that an asset has delivered its intended outcomes if those outcomes were never defined, in a form that could be verified, and if the commissioning process never connected what was built back to what was needed. In that situation, the practitioner is not signing off on performance. They are signing off on the fact that an asset exists. That is not a professional failure on their part. It is a systemic one. But the signature still makes a claim it cannot support, and everyone downstream, from the operator to the asset owner to the public relying on the service, is exposed by that void.

This is why the three disciplines are inseparable: not administratively, not organisationally, but intellectually. They form a continuous thread of professional accountability from the first articulation of what an asset must achieve to the final demonstration that it has achieved it. Pulling on any part of that thread pulls on all of it.

The practitioner who understands this - who can hold the whole thread in view, even when their immediate role is in one part of it - is not a specialist operating within a discipline. They are the discipline.

That is the practice ICxA exists to recognise, name and protect.

The Framework Beneath Your Feet

Building a profession from scratch is a daunting prospect. The good news is that ICxA is not doing that. The competence constructs, the methodology, the vocabulary, the standards - they already exist. What ICxA provides is the professional layer that makes them actionable: the credentialing, the conduct framework, and the accountability that turns internationally agreed principles into trusted professional practice.

The ISO 55000 family of standards - published in 2014 and revised in 2024 - provides the most comprehensive internationally agreed framework for asset lifecycle management that has ever existed. ISO 55001 defines what an asset management system must contain: the planning logic, the operational requirements, the performance evaluation framework. ISO 55011 addresses how policy should direct asset management. Together, they provide precisely the vocabulary that requirements engineering, commissioning and outcome assurance practitioners need: Strategic Asset Management Plans, Asset Management Objectives, lifecycle activities and performance indicators connected to organisational goals.

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This is not abstract theory. It is a codified, internationally agreed description of what disciplined asset lifecycle practice looks like. And the standard does not implement itself. ISO 55001 tells you what your management system must achieve. It does not describe the competencies a practitioner needs, the conduct expected of them, or the accountability they carry when things go wrong.

That gap, between what the standard requires and what professional practice must deliver, is precisely the space ICxA occupies. ISO 55000 is not the Red Book. It is more foundational: the

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Our readers love hearing about real-world experiences and fresh perspective.
Ready to contribute your knowledge? Send us your idea for an article at info@icxa.net and let's inspire and inform together!

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internationally agreed articulation of what asset lifecycle management must achieve.
ICxA's role is comparable to what RICS did with valuation methodology: take the framework, build the professional layer, and create the conditions under which the market can specify, trust, and hold accountable the people doing the work.

What the Credential Means

An ICxA credential is not a record of attendance. It is not a compliance certificate. It is a statement about professional practice.

It says that the person holding it has demonstrated competence in the integrated practice of requirements engineering, commissioning and outcome assurance - not as three adjacent skills, but as a coherent discipline applied to the specific complexity of real programmes. It says they are accountable to a professional body, with a conduct framework, for the quality of that work. And it says that there is an institution standing behind them whose purpose is to develop and protect the standards of the profession, in the public interest.

That last part matters more than it might appear. The best professional bodies are not membership clubs. They are accountability structures. Their primary function is not to protect their members but to protect the public's ability to rely on the service their members provide. By doing that well, they create the conditions under which practitioners are trusted, sought out, and valued for the outcomes they deliver.

You have been carrying professional liability without professional recognition.

If you are a practitioner in these disciplines, you have been doing work that matters enormously - work that determines whether complex assets deliver the outcomes that justify their existence - without a body that argues for what that work is worth, trains the next generation to do it better, or holds the line when it is done badly.

That is changing. The profession is being built. And it is being built on the work you were already doing.

COMMISSIONING VS GOVERNANCE: WHAT THEY ARE, WHY IT MATTERS, AND WHERE TO START

by Darren Sangster,
Project Manager, Project Completions / Commissioning & Startup, Px Group

If you've ever heard "we'll sort it out in commissioning," you've already met the problem this article is about.

Commissioning is often misunderstood as a late-stage activity. Governance is often misunderstood as meetings and spreadsheets. In practical terms, commissioning is the work of proving a facility can operate, and governance is how the project makes and enforces decisions so that proof is possible.

This article answers two questions in plain terms:

1. What is commissioning?
2. What is governance?

...and gives practical signs governance is missing, plus simple steps to implement it.

1) What is commissioning?

Commissioning is the structured process of proving that systems are safe, functional, and ready to be operated and maintained.

Not "checking boxes." Not "being there at startup." Not "helping construction finish." The core purpose is simple:

Commissioning turns a built asset into an operating asset using evidence.

In everyday commissioning terms, that means:

- Verifying the system is installed correctly and safe to energize / introduce fluids
- Confirming instruments, controls, interlocks, and trips work as intended
- Proving equipment runs in its normal and abnormal conditions
- Confirming operators can operate and maintain it, not just watch it run once
- Handing over with clarity on what's complete, what's open, and what limits exist

A good commissioning team doesn't just "run tests." They make sure the project can answer with confidence: "Can we operate this tomorrow safely and continuously?"

2) What is governance?

Forget the corporate definition.

Governance is how a project makes decisions and enforces them, so the right work happens in the right order with the right proof.

Governance answers questions like:

- Who is allowed to say "we are ready"?
- What evidence is required before we energize, introduce fluids, start up?
- What does "ready" actually mean for this system?
- Who owns what work and what happens if it's not done?
- What gets escalated, to whom, and when?

If commissioning is the act of proving readiness, then governance is the rulebook and decision process that prevents readiness from being guessed.

Here's the key difference:

- Commissioning = proving
- Governance = deciding (based on proof)

Without governance, commissioning becomes late-stage firefighting because the project keeps pushing incomplete, potentially unsafe, or unclearly defined systems into testing "to keep the momentum."

The practical link: commissioning needs governance to work.

Commissioning doesn't fail because people don't know how to test.
It often fails because the project hasn't set, or enforced basic rules like:

- Prerequisites to test,
- Clear system boundaries,
- Who owns open items,
- What "good enough" looks like,
- Who can stop the train.

When those rules are missing, commissioning becomes the place where:

- Missing or incomplete scope shows up,
- Decisions are made too late,
- Operations can inherit unresolved risk.

Key signs governance is missing

If you recognize these, you're not alone.

1. *"Ready" means "we're tired of waiting":* Systems get pushed to commissioning because schedule pressure is high, not because prerequisites are met.
2. *Mechanical completion gets treated like operational readiness:* MC is important, but it is not proof the system is safe, functional, or stable.
3. *Scope isn't clearly defined:* If the project hasn't clearly spelled out what is in scope vs out of scope by system, discipline, contract, and turnover package, commissioning can become the catcher's mitt for every missing piece. Symptoms include late add-ons, missing tied-in interface, "who owns this?" disputes, and testing stalled by prerequisites that were never clearly assigned.
4. *System boundaries are fuzzy:* People disagree on what is included in the system, what interfaces exist, and what must be complete before testing can start.
5. *Sign-offs happen without evidence:* Check-sheets get signed as a paper exercise, instead of because proof exists and can be traced.
6. *Handover is treated as a document event:* Binders get delivered, but the system isn't maintainable, stable, or truly operable by Operations.

If 2–3 of these are happening, then commissioning likely isn't the problem.

Governance is.

Where to start: a simple governance starter kit for commissioning teams

You need a few repeatable controls that create order fast.

Step 1: Define "Ready to Test"
Create a short definition for what must be true before any system enters testing.
Examples:

- Boundaries agreed and marked up
- Hazards controlled (LOTO / PTW / SIMOPS, etc.)
- Construction complete enough to test safely
- Essential documentation available (procedures, cause & effect, setpoints, vendor requirements)
- Punch strategy defined (what must be closed before energization / fluids)

This becomes your first enforceable gate.

Step 2: Put decision rights on paper
Write down who can approve each transition:

- Ready to Energize
- Ready for First Fluid / First Gas
- Ready for Start-up
- Ready for Handover

If the answer is "everyone and no one," that's why you're stuck in churn. While leadership buying in of these rights will be essential, start by providing the expectations and work to negotiate the agreement.

Step 3: Make evidence the currency (no evidence = no credit)
If it isn't recorded, signed, and traceable, it doesn't count as readiness.

"Commissioning turns a built asset into an operating asset using evidence."

Step 4: Make system boundaries visible.
One diagram beats ten meetings.
For each system:

- What's inside the boundary
- What's outside
- What are the interfaces
- Who owns each interface prerequisite

Step 5: Use punch categories as risk control, not admin.
Define categories tied to the moment of risk:

- What must be cleared before energization?
- Before fluids?
- Before start?
- Before handover?

This stops the "we'll carry it" habit from quietly becoming an operations hazard.

Step 6: Establish a simple weekly governance rhythm.
A 30–60 minute "Readiness" session, supporting your daily Commissioning Execution sessions that answers:

- What systems are planned to enter commissioning?
- What are the top 5 blockers (and who owns each)?
- What decisions are needed this week?
- What's being pushed into commissioning that shouldn't be?

This meeting should produce decisions and actions, not commentary.

The payoff: commissioning stops being the cleanup crew

When governance is in place:

- Systems arrive in commissioning in a testable condition
- Decisions happen earlier, with clearer accountability
- Evidence builds progressively instead of being scrambled at the end
- Handover becomes a controlled transfer, not a desperate dump

And most importantly, commissioning teams stop living in reaction mode.

So, at the beginning of every project.
Instead of "When do we start commissioning?" ask: "When do we start controlling readiness?"

Because readiness control is the real start of commissioning and it should happen long before the first loop check.

WHY SYSTEMIC CHANGE STARTS UPSTREAM OF PROJECTS

by Paul Turner, CEO| ICxA

Most project failure does not start during construction or delivery. It starts earlier. It starts before contracts are signed and before work begins. Early decisions define who has the authority to approve progress, how success is defined, and what evidence is required to move forward. These decisions establish the conditions that either protect outcomes or allow risk to pass unchecked.

Upstream governance sets the framework for outcome approval. It determines what outcomes must be achieved, what readiness conditions must be met, and what evidence is required before a project may advance. These decisions are often treated as secondary, but they are foundational. Once delivery begins, projects operate within the limits set by these early choices.

When upstream rules are unclear or incomplete, projects inherit risk they cannot control. Teams are directed to proceed without shared approval criteria. Progress is measured by activity rather than verified readiness. Decisions are driven by schedule pressure instead of objective evidence.

Stage-gates exist to prevent this failure. A stage-gate is not a reporting milestone or a coordination meeting. It is a formal authorization point. Work should not advance until defined evidence is reviewed and approval is granted by the assigned authority. Each gate exists to answer a single question: is the project ready to proceed without transferring unmanaged risk downstream?

When stage-gates are well defined and enforced, they protect owners, regulators, and delivery teams. They prevent premature handover of risk. They create consistent decision points. They establish a clear record of authorization. When stage-gates are informal, discretionary, or bypassed, these protections are lost.

Many issues labeled as execution failures are in fact authorization failures. Assets are declared ready without meeting stated conditions. Risk is accepted without clear authority. Decisions are made by default rather than design. When problems surface later, accountability becomes unclear and contested.

Project management frameworks do not resolve this gap. Planning tools and reporting systems help organize work, but they do not define who may authorize outcomes. They do not set approval thresholds. They cannot substitute for formal authority. In the absence of clear outcome authority, decisions are shaped by urgency, commercial pressure, or senior influence.

Systemic change begins upstream of projects. Before delivery starts, outcome authorities must be defined. These authorities are responsible for approving progress based on evidence, not for managing delivery activities. Their role is to protect the integrity of outcomes.

Upstream governance must also establish formal stage-gates. Each gate shall define readiness criteria, required evidence, and the authority responsible for approval. These requirements must be set in advance and applied consistently. They should not be negotiated during delivery.

Separation of delivery and approval is essential. The parties responsible for building and testing systems should not be the same parties authorizing readiness. This separation strengthens objectivity and trust. It ensures that approval decisions are based on evidence rather than effort or expectation.

When upstream authorization is clear, project behavior changes. Teams plan work around evidence requirements. Readiness is demonstrated, not assumed. Issues are identified earlier, when corrective action is still practical.

Owners benefit through defensible and repeatable decisions. Regulators benefit from transparent authorization records. Delivery teams benefit from stable and unambiguous expectations. Outcomes benefit because risk is addressed before it becomes embedded.

Strong upstream governance does not delay projects. It prevents false progress. False progress advances work without readiness and creates failure later. Disciplined authorization slows early decisions to accelerate reliable completion.

Organizations often respond to failure by increasing oversight during delivery. Additional reporting and controls may improve visibility, but they do not correct the root cause. The root cause is almost always inadequate outcome authorization upstream.

Lasting improvement requires changing how projects are governed before work begins. Outcome approval must be treated as a governance responsibility, not a delivery task. Authority, stage-gates, and evidence requirements must be designed first.

When outcomes are authorized upstream through clear authority and formal stage-gates, projects no longer absorb hidden risk. Decisions become consistent. Accountability becomes traceable.
Outcomes become predictable, repeatable, and defensible. This is where systemic change begins.

"Most project failure does not start during construction or delivery. It starts earlier. It starts before contracts are signed and before work begins. "