

The path to AI implementation in aerospace and defense

A practical guide for programs, from engineering to delivery.



Run Smarter. Grow Faster.

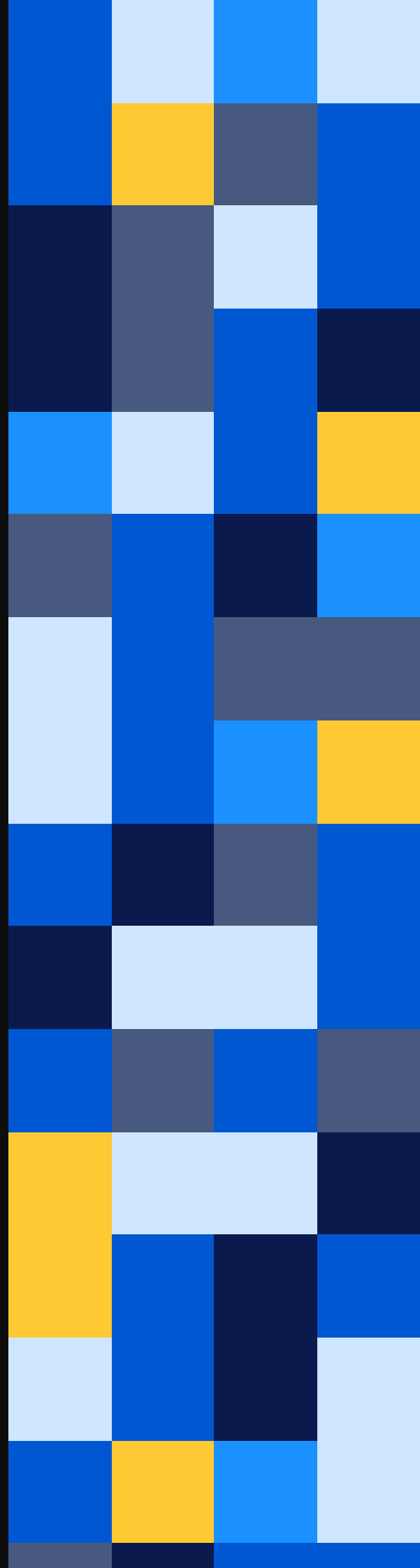


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In aerospace and defense the pressures are specific: long-cycle programs that cannot slip, exacting quality and traceability, secure data, and supply chains where one late part stops everything. AI can help with all of them, but only once you know where to begin. This guide lays out a practical path, from a first honest look at readiness to lasting value, written for programs from engineering to delivery.



Charting a clear course for AI in aerospace and defense

Ask a program manager, a production and quality lead, a supply chain lead, and a finance lead where AI should start, and you will hear four different answers: forecast program risk, hold cost and schedule, protect critical supply, keep quality and traceability airtight. The opportunity spans the program lifecycle, and so does the temptation to chase all of it at once.

What is usually missing is a route. Deciding to use AI is not the same as knowing which problem to solve first, which program, quality, and supply data to trust, or how you will recognise a result at the next review.

This guide gives aerospace and defense leaders that route. It moves through the journey in order, from a candid read of where you stand to the work of holding on to value once a programme is live. None of it is abstract. Each stage reflects how primes and suppliers actually run.

Along the way you will see where Hudace and Xenon AI fit across program management, engineering, production, supply, and finance, so the path stays practical rather than theoretical, with a qualified authority always in the loop.



Evaluating your AI readiness

Start with an honest picture of your programs, your supply, and your data.

AI rewards preparation. Before the first model or agent, understand how program, production, quality, and supply data flow, and how security and long cycles shape what is possible. A grounded readiness check turns interest into progress.

Find your starting point, not a score

Readiness is less about owning the newest tool and more about the conditions around it: leaders aligned on the goal, data you can rely on and defend, and teams, in the program office and on the line, willing to work in new ways. This is not a test to pass. It is a way to see where you are strong and where you still need to build.

A few signs you are ready to take the next step:

- You can tell apart what your people are ready for and what your systems are ready for.
- You can name specific tasks AI could take on: risk forecasting, schedule re-planning, compliance checks.
- You know whether program, quality, and supply data are reachable, accurate, and current.
- You have a real sense of the skills you hold, from program management to data, and the ones to add.
- You can put rough numbers on the time and budget, including security.

Done early, this spares you stalled projects later, and lets you scope from facts rather than hope.



How Hudace helps

Running engineering, production, and supply on Hudace means you already have a connected, traceable view of every program, which is a real head start in spotting where AI adds value.

A short readiness session with our team ranks AI opportunities by program, milestone, and risk, so your first projects are the ones most likely to pay off. [Talk to Hudace.](#)



Defining strategic AI goals and expected ROI

Tie every AI effort to a number every program answers to.

AI earns its place when it moves a number that matters: on-time delivery, schedule and cost performance, nonconformance, supplier reliability. Set goals that are specific, owned, and measurable before the work starts.

Clear goals turn effort into outcomes

The most useful projects open with a plain statement of what should change and by how much: fewer milestone slips, a tighter cost variance, fewer nonconformances on a critical part. Anchor it to a priority, name who owns it, and the work stays focused.

The question is rarely whether AI can do the task. It is whether you have decided what a good result looks like, in schedule, in cost, in quality, before you start.

Worth settling early:

- The outcome you are after, written as a number you can track by program or milestone.
- The specific problem, not the broad theme, you are solving.
- A shared view across program, production, supply, and finance on what is feasible.
- Metrics you are willing to revisit at each review.
- A first ROI range, held loosely enough to adjust.



How Hudace helps

Hudace helps you put numbers behind the ambition. Because program, production, and supply data already live in the platform, goals and ROI ranges come from what is really happening across your programs.

That makes the case for investment far easier to stand behind, and to revisit at each review.

22% higher

on-time delivery at Stratos Aero, after connecting engineering, production, and supply on one platform. [Read the story.](#)



Building your internal AI coalition

Adoption runs through program, production, supply, and finance alike.

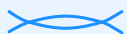
The best model in the world stalls without owners. Progress depends on a small group, drawn from across the program, who share both the goal and the responsibility for reaching it.

Early on, gather a group that reaches well beyond IT: program management, engineering, production and quality, supply and contracts, and finance and controls. Their job is not only to comment. It is to own a piece of the change, so it never rests on one team.

This is the group that connects intent to execution. They know which problems are worth solving on the program, and their involvement carries a project past the first review.

What a strong coalition gets right

- It brings the right people in at the start, with a real stake in the outcome.
- It agrees how decisions, risk, and oversight will work before issues arise.
- It leaves room to question, test, and learn out loud.
- It funds the unglamorous parts: enablement, communication, and time.



How Hudace helps

If alignment is the hard part, a Hudace discovery session gives your group a structured place to surface use cases across the program and agree on priorities, turning scattered opinions into a shared plan.

When the focus shifts to skills, [Hudace Learning](#) offers practical paths so everyone, from the program office to finance, feels ready for the change rather than unsettled by it.

Data, traceability, and infrastructure

Good AI depends on good data, and on a trail you can prove for every part.

AI is only as good as what it runs on. Real-time, trustworthy data, joined across program, production, quality, and supply, is what separates a promising pilot from something dependable. In this sector, that data also has to be traceable, controlled, and secure.

Lay the groundwork for intelligent action

Xenon AI can only reason over what it can reach and trust. That means moving away from data trapped in separate systems toward a connected foundation: program plans, production and quality records, configuration, and supply, unified and current enough to act on.

Where to focus:

- Data quality: are program, quality, and supply records clean enough to use without heavy rework?
- Traceability: can you follow a part and a requirement end to end, and prove it on demand?
- Security: are controlled and sensitive data protected, with access controlled and logged?
- Infrastructure: can your environment scale while staying secure and accredited?
- Budget: plan for integration, migration, data quality, security, and training.

None of this slows you down in the end. It is the difference between AI that demos well and AI you can stand behind at a program review.



How Hudace helps

Hudace gives Xenon AI one governed, real-time view across program, production, and supply, so forecasting, re-planning, and reporting work from a single source of truth.

Still untangling legacy systems? [ACE with Hudace](#) shortens the path to a modern, connected core.



Navigating change across programs and production

Bring people with you, from the program office to the line.

AI changes the shape of work, not only the tools. The organisations that get the most from it treat the human side as the main event: building skills, adjusting how work is done, and giving people a reason to lean in.

The technology shift rides on a human one

New capability brings honest questions. Will my role change? What happens to the judgement I bring on a schedule, a risk, a quality call? Will I keep up? Left unanswered, those questions quietly turn into resistance.

Handled well, this stage is where a program manager or an engineer stops bracing against AI and starts using it, because it makes their own call sharper and better evidenced.

What helps the shift land:

- Map the skills that are changing and offer real paths to build them.
- Talk early and often, especially where daily work in the program office or on the line will look different.
- Be straight about changing roles, with AI assisting expertise rather than replacing it.
- Set expectations on pace, review by review.
- Back it with budget for learning, champions, and the culture work that sticks.



How Hudace helps

[Hudace Learning](#) gives your teams structured, hands-on paths to grow confident with Xenon AI, from the why through to daily use in the program office, on the line, and in supply.

The result is people who feel ready for the change instead of caught out by it, whatever their role.

Measuring success and scaling AI

A pilot proves the idea. Measurement decides what scales across programs and sites.

Getting one thing working, on one program or one work package, is the start, not the finish. The organisations that scale well look hard at what worked and why, then carry that evidence into the next program and the next review.

Let the evidence choose your next move

Useful measurement is not a box-ticking exercise. It is how you learn what really happened, build the confidence to expand, and avoid scaling something for the wrong reasons.

What to track once a pilot lands:

- Measures that reflect real use: on-time delivery, schedule and cost performance, nonconformance, supplier reliability.
- Actual ROI against what you expected, and the surprises along the way.
- Whether the approach travels to other programs and sites.
- The resourcing, so people and systems are ready for more scope.
- What you learned, written down, so the next rollout starts further ahead.

Scaling is not simply doing more. It is doing more of what is proven, with a clear idea of what good looks like.



How Hudace helps

Hudace shows you how Xenon AI is used across the business: which programs, which sites, how often, and to what effect.

That visibility keeps your attention on the work that pays back, and makes the case for the next investment concrete.

Risk, security, and responsible AI

Value and trust have to grow together, with security and safety first.

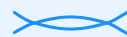
AI does not remove human responsibility. In aerospace and defense it raises the stakes on it. Bias, errors, exposed data, and uncontrolled decisions are safety, security, and program risks. As AI spreads, the guardrails have to spread with it, and a qualified authority stays in the loop.

Make trust part of the design

Whether AI is forecasting risk, re-planning a schedule, or flagging a nonconformance, the same questions apply: is it secure, is it controlled, can you explain the call? Answering them is the job of clear governance, with program, quality, security, and IT deciding together how AI is run and watched.

Worth getting right:

- Naming the risks plainly: unsafe automation, biased data, data exposure, unexplained decisions.
- Keeping a qualified authority in the loop on safety- and mission-critical decisions.
- Meeting the rules on security, export control, quality, and data that apply to you.
- Giving security, quality, and model checks a clear owner.
- Treating controlled and supplier data with the highest standard of care.



How Hudace helps

Keeping operations on one platform means less controlled data scattered across systems to defend, and a cleaner trail at a review or audit. Hudace adds granular access controls and built-in compliance.

[AI Agent Governance](#) gives you the policies, monitoring, and oversight to keep Xenon AI safe, controlled, and accountable as it grows.



Sustaining value across the program lifecycle

Launch is a milestone. Lasting value is the work that follows it.

Going live is the easy thing to celebrate. Keeping value flowing as programs evolve, requirements change, and teams turn over is the harder, more rewarding work, and it favours organisations that stay curious and well-documented.

Keep the momentum, and the direction

Maturity does not arrive on launch day. It builds through small iterations, shared learning across programs, and a willingness to revisit what worked at the last review. Staying ready for what is next takes both the mindset and the systems to support it.

How to stay ahead:

- Watch how AI performs across programs and sites, and tune where the numbers point.
- Keep your processes loose enough to adopt what comes next, and accredited.
- Stay close to program and supply teams, and keep learning shared.
- Pair quick wins with the slower investments that make scale possible.
- Keep a habit of small, structured experiments as new options appear.

Lasting value comes from staying adaptable without losing the plot: programs delivered on time, on cost, to standard.



How Hudace helps

Hudace helps you keep sight of where Xenon AI earns its keep across programs, so your focus stays on the work that matters.

With [Xenon Studio and the wider Xenon AI platform](#), your teams extend AI at their own pace, and the [Hudace Community](#) keeps fresh practice within reach.

Metrics and formulas that matter

AI earns trust when it shows up in numbers you already report. These are the measures worth instrumenting from the first pilot, with the formulas behind them, so progress is easy to prove and easy to defend.

On-time delivery

$$\text{OTD \%} = (\text{milestones met on time} / \text{total milestones}) \times 100$$

Whether programs land when they are promised.

Schedule performance index

$$\text{SPI} = \text{earned value} / \text{planned value}$$

Above 1 is ahead of schedule, below 1 is behind.

Cost performance index

$$\text{CPI} = \text{earned value} / \text{actual cost}$$

Above 1 is under budget, below 1 is over.

First-pass yield

$$\text{FPY \%} = (\text{units passing first time} / \text{units started}) \times 100$$

How much you build right the first time, without rework.

Nonconformance rate

$$\text{Nonconformance \%} = (\text{nonconforming units} / \text{units inspected}) \times 100$$

Quality escapes that threaten delivery and trust.

Supplier on-time delivery

$$\text{Supplier OTD \%} = (\text{POs received on time} / \text{total POs}) \times 100$$

One late critical part can stop a whole program.

Pick two or three to start. Tie each AI pilot to one, set a baseline before you begin, and review it at each program review.



Putting Xenon AI to work

A workflow worth starting with, and the questions your teams can ask.

Keeping programs on cost and schedule: a continuous loop

- 1 Sense**
Xenon AI reads program, production, quality, and supply data into one view.

- 2 Forecast**
It projects cost and schedule, and flags risks to milestones before they slip.

- 3 Re-plan**
It proposes the lowest-risk way to recover schedule and protect compliance.

- 4 Act**
A qualified owner approves, the platform updates the plan, work orders, and supplier actions, and the loop learns.

Ask Xenon AI

- “ Which program milestones are at risk of slipping, and what is the lowest-risk recovery?”

- “ Show schedule and cost performance (SPI and CPI) by program, and where they are trending down.”

- “ Which suppliers are putting critical parts at risk, and what are the alternatives?”

- “ Show open nonconformances by program and their impact on delivery.”

- “ Draft a program status summary for the review, with risks and recovery actions.”

Every answer runs on your governed data, with access controlled and logged, so it reflects what is really happening.



Your AI journey starts with the program

The next step is closer than it looks.

You do not need every answer to begin. You need a sensible first move, the right people beside you, and support you can lean on. Followed in order, the steps in this guide take a program from a first honest look to results you can measure, in schedule, in cost, in quality.

One program or your whole portfolio, the shape is the same: a path that grows with you, where every review teaches you something worth carrying into the next.

Hudace stays with you across that path, from the first readiness conversation to AI working quietly across program management, engineering, production, supply, and finance, with Xenon AI built into the platform rather than added on, and a qualified authority always in the loop.

When your programs, your data, and your goals point the same way, the results tend to follow.



Learn more

See AI-native ERP for aerospace and defense at hudace.com/industries/aerospace-defense.



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