AI Agent Decision Authority Matrix

Which supply chain decisions AI agents can make alone, which need approval and which must stay with people

For supply chain managers, operations leaders, procurement heads and teams introducing AI agents into their control towers.

1. Why AI Agents Need Decision Boundaries

Agentic AI changes what a supply chain control tower can do. A traditional dashboard shows that a shipment is late. An AI agent can work out which orders are affected, check stock in other warehouses, compare options and act. That ability to act is where the value comes from, and also where the risk comes from.

Without clear boundaries, organisations usually fall into one of two traps:

- **Too little autonomy:** the agent is only allowed to send alerts. Every issue still waits for a person to investigate and decide, so the business has paid for an expensive dashboard.
- **Too much autonomy:** the agent is allowed to act broadly with no limits. Eventually it makes a costly or hard-to-reverse decision, such as cancelling a large order or moving volume to an unqualified supplier, and trust in the whole programme collapses.

> **Two real-world style examples**
>
> **Too little:** a retailer's AI agent spots a fast-selling product three weeks before it runs out, but can only raise an alert. The alert sits in a shared inbox over a long weekend and the product goes out of stock during a promotion.
>
> **Too much:** a manufacturer lets its agent switch carriers freely to cut costs. The agent moves temperature-sensitive goods to a cheaper carrier without cold-chain capability, and a full shipment is spoiled.

The solution is a **decision authority matrix**. Most companies already have a delegation-of-authority policy that sets out which managers can approve which spending and decisions. A decision authority matrix does the same for AI agents. It makes clear, in writing, what the agent can do alone, what needs approval and what must stay with people.

A good matrix delivers three benefits at once:

- **Speed:** routine decisions are made in minutes instead of hours or days.
- **Control:** high-impact decisions always involve the right person.

- **Trust:** teams, auditors and leadership can see exactly what the agent is allowed to do and why.

2. The Three Autonomy Levels

Every decision in this toolkit is assigned to one of three levels. The levels describe who decides and how fast action happens, not how intelligent the agent is. The same agent can work at Level 1 for one decision and Level 3 for another.

Level 1: Autonomous

The agent decides and acts on its own within defined limits, then records what it did. People review the log periodically rather than approving each action. This level suits decisions that are frequent, low-cost and easy to reverse.

- **Example:** a carrier feed shows a 6-hour delay. The agent updates the ETA in the order system and notifies the customer automatically.

Level 2: Approval-based

The agent analyses the situation, prepares a recommendation and either waits for a named person to approve it or acts automatically if the action falls inside a pre-approved limit. Approval should take one click, with the agent's reasoning and cost shown alongside.

- **Example:** the agent recommends moving 400 units from another region's warehouse at a freight cost of ₹38,000. The warehouse manager approves it from a mobile notification in under ten minutes.

Level 3: Human decision

The agent's role is to analyse, model options and present trade-offs. A person makes the decision and the agent then helps carry it out. This level is for decisions that are expensive, hard to reverse, strategic or carry compliance risk.

- **Example:** a supplier has missed four deliveries in a row. The agent compares three alternative suppliers on cost, quality history and lead time, but the procurement head decides whether to switch.



Who decides	AI agent	AI agent recommends, person approves (or auto within limit)	Person, supported by AI analysis
Typical response time	Seconds to minutes	Minutes to a few hours	Hours to days
Example actions	Notifications, ETA updates, standard reorders	Reroutes with extra cost, PO changes, stock transfers	Supplier changes, contract terms, price changes
Audit requirement	Automatic log, weekly sampling	Log plus named approver for each action	Documented decision with rationale
Share of decisions (typical)	60–70%	20–30%	5–10%

Autonomy is a dial, not a switch

Decisions should move between levels over time. A decision might start at Level 2 while the team builds confidence and move to Level 1 after 90 days of accurate recommendations. Equally, a Level 1 decision should move back up if errors start appearing. Section 8 explains how to manage these changes.

3. How to Classify a Decision: The 5-Factor Risk Score

Arguments about autonomy often become a matter of opinion: the operations team wants more automation and the finance team wants more control. A simple scoring method makes the discussion objective and consistent. Score each decision from 1 (low risk) to 5 (high risk) on the five factors below, then add up the scores.

Financial impact	Under ₹10,000 per decision	Over ₹25 lakh per decision
Reversibility	Easily undone within hours at no cost	Permanent or very costly to undo
Customer impact	No effect on any customer commitment	Affects key accounts or contractual commitments
Compliance exposure	No regulatory, legal or safety element	Regulatory, contractual, safety or legal implications
Novelty	Routine, happens daily with clear rules	Rare, unusual or never seen before

Score bands

5–10	Level 1: Autonomous	Let the agent act and log; review samples weekly
11–17	Level 2: Approval-based	Agent recommends; named approver or pre-set limit
18–25	Level 3: Human decision	Agent analyses and presents options; a person decides

Worked examples

Fin. = financial impact, Rev. = reversibility, Cust. = customer impact, Comp. = compliance exposure, Nov. = novelty.

Send a delay notification to a customer	1	1	2	1	1	6	Level 1
Reroute a delayed shipment at ₹40,000 extra cost	3	2	3	1	2	11	Level 2
Switch the primary supplier for a key component	5	4	4	4	5	22	Level 3

Notice how the reroute only just crosses into Level 2. If the extra cost were ₹8,000 instead of ₹40,000, its financial score would fall to 1 and the decision would become Level 1. This is why the matrix in Section 4 pairs each level with a specific limit: the limit is what keeps a decision in its band.

> **Override rule**
>
> Any decision with a score of 5 on **compliance** or **reversibility** goes to at least Level 2, whatever its total. A cheap decision that breaks a regulation or cannot be undone still needs a person to approve it.

4. The Decision Authority Matrix: 41 Decisions

The tables below cover the most common decisions an AI agent faces in a supply chain control tower, grouped by function. The limits shown are examples for a **mid-sized company** (annual revenue of roughly ₹100–1,000 crore). Section 5 shows how to scale them for smaller or larger businesses.

Use this matrix as a starting point, not a final policy. Review each row with the people who own the decision today, and adjust levels and limits to fit your risk appetite.

4.1 Inventory and replenishment (8 decisions)

Create a replenishment order at reorder point	L1	Approved supplier, standard quantity, value ≤ ₹5 lakh	Log; planner reviews weekly	SKU falls below reorder point
Increase replenishment quantity above standard	L2	Up to 150% of standard; above that becomes L3	Inventory planner	Sales 30% above forecast for 2 weeks
Transfer stock between warehouses	L1	Same region, value ≤ ₹2 lakh; otherwise L2 (warehouse manager)	Log; notify both sites	Stock-out risk at one site, surplus at another
Allocate stock to priority orders	L1	Must follow agreed customer priority rules	Log; sales ops sees daily summary	Available stock below committed orders
Adjust safety stock levels	L2	Changes within ±15% of current level	Inventory planner	Supplier lead-time variability increases
Change reorder policy parameters permanently	L3	Agent provides analysis only	Supply chain manager	Quarterly policy review
Trigger a cycle count	L1	Any location; no cost limit	Log; warehouse team actions	System vs scanned stock mismatch > 2%

Write off or dispose of obsolete stock	L3	Agent identifies candidates and value	Finance + supply chain head	No movement for 12 months

4.2 Procurement and suppliers (8 decisions)

Send PO reminders and follow-ups	L1	Standard templates only	Log	Supplier has not confirmed PO in 48 hours
Flag supplier risk and update risk score	L1	Alert and score change only, no commercial action	Notify procurement manager	Two late deliveries in 30 days
Adjust PO delivery date	L1	Within ±3 days, supplier confirmation required	Log; notify planner	Supplier requests a minor date change
Change PO quantity	L2	Within ±20% and ≤ ₹10 lakh	Procurement manager	Demand forecast changes
Pay an expedite fee	L2	≤ ₹50,000 per PO	Procurement manager	Critical material at risk of late arrival
Split an order to a qualified secondary supplier	L2	Pre-qualified supplier only, ≤ 30% of volume	Procurement head	Primary supplier capacity issue

Onboard a new supplier or switch primary supplier	L3	Agent shortlists and compares options	CPO + quality head	Repeated failures or major risk event
Change contract terms or prices	L3	Agent provides benchmarks and scenarios	CPO + legal + finance	Contract renewal or market price shift

4.3 Logistics and transportation (8 decisions)

Update ETAs and send delay notifications	L1	No limit	Log	Carrier or GPS feed shows delay
Re-optimise a route with the same carrier	L1	No extra cost, same delivery promise	Log	Traffic or road closure on planned route
Book a carrier within the approved rate card	L1	Contracted carriers, rate ≤ rate card	Log; logistics team sees daily	New shipment ready for dispatch
Hold a shipment due to a compliance flag	L1	Protective action; release needs a person	Immediately notify compliance team	Missing export document or failed check

Reroute with extra cost	L2	≤ ₹50,000 or ≤ 10% of freight value	Logistics manager	Port congestion, weather or strike
Reschedule customer delivery slots	L2	Within 24 hours of original slot	Customer service lead	Inbound delay affects outbound loads
Upgrade to express or air freight	L2	≤ ₹1 lakh; above that becomes L3	Logistics head	Production line at risk of stopping
Engage a new, non-contracted carrier	L3	Agent compares available carriers	Logistics head + procurement	Contracted carriers have no capacity

Note on protective actions

Holding a shipment is a Level 1 decision even though compliance matters, because the action reduces risk and is easy to reverse. Releasing the shipment is the risky step, so it always needs a person. Apply the same logic elsewhere: agents can usually take protective actions alone, but not actions that remove a safeguard.

4.4 Production planning (6 decisions)

Resequence jobs within a shift	L1	Same total output, no changeover cost increase	Log; shift supervisor notified	Material for next job arrives late
Alert planners to a material shortage	L1	Alert only	Production planner	Projected shortage in next 72 hours
Move production between lines in the same plant	L2	Qualified lines only, within current week	Production planner	Line breakdown or capacity imbalance
Approve overtime	L2	≤ 8 hours per line per week, within budget	Plant manager	Backlog exceeds 2 days of capacity
Change the weekly master production schedule	L3	Agent models impact of options	Head of planning	Major supply disruption or demand shift
Stop a production line	L3	Agent recommends; safety systems excluded	Plant manager	Critical material unavailable

4.5 Customer orders and communication (6 decisions)

Send order status and delay updates	L1	Approved message templates	Log	Order status or ETA changes

Ship a partial order	L2	Automatic only if customer has agreed to partial shipments	Customer service lead	Part of order unavailable
Allocate scarce stock across customers	L2	Must follow allocation rules; any exception becomes L3	Sales operations manager	Demand exceeds available stock
Offer delivery credit or compensation	L2	≤ ₹10,000 per order	Customer service manager	Delivery more than 3 days late
Change committed delivery date for a key account	L3	Agent drafts options and messaging	Account manager	Major delay affecting a top-20 customer
Cancel a customer order	L3	Agent provides impact analysis	Sales head	Product discontinued or unfulfillable

4.6 Demand planning and pricing (5 decisions)

Update short-term forecast from live sales	L1	Within ±10% of approved forecast	Log; demand planner reviews weekly	Daily sales data received

Override forecast beyond ±10%	L2	Agent shows evidence for the change	Demand planner	Unexpected spike or drop in demand
Adjust replenishment for a promotion	L2	Within approved promotion plan	Demand planner + category manager	Promotion confirmed by marketing
Change the annual demand plan or S&OP numbers	L3	Agent provides scenarios	S&OP committee	Monthly S&OP cycle
Change selling prices	L3	Agent models margin and volume impact	Commercial head	Cost increases or competitor moves

Summary

Inventory and replenishment	4	2	2	8
Procurement and suppliers	3	3	2	8
Logistics and transportation	4	3	1	8
Production planning	2	2	2	6
Customer orders and communication	1	3	2	6
Demand planning and pricing	1	2	2	5
Total	15	15	11	41

Because this matrix lists the most common types of decision rather than every single event, the split looks more even than in practice. Level 1 decisions such as ETA updates and standard reorders happen hundreds of times a day, so by volume they typically make up 60–70% of all agent actions.

5. Setting Approval Limits by Company Size

A ₹50,000 reroute is a routine cost for a large distributor but a significant expense for a small manufacturer. Limits should reflect what is material to your business. The table below gives example starting points for three company sizes.

Autonomous replenishment order value	≤ ₹1 lakh	≤ ₹5 lakh	≤ ₹25 lakh
Autonomous stock transfer value	≤ ₹50,000	≤ ₹2 lakh	≤ ₹10 lakh

Reroute extra cost (L2 limit)	≤ ₹10,000	≤ ₹50,000	≤ ₹2 lakh
Expedite fee per PO (L2 limit)	≤ ₹10,000	≤ ₹50,000	≤ ₹2 lakh
PO quantity change (L2 limit)	±10%	±20%	±25%
Customer compensation per order	≤ ₹2,000	≤ ₹10,000	≤ ₹50,000
Target approval response time	8 hours	4 hours	2 hours

How to set your first limits

1. **Start with your existing delegation-of-authority policy.** If a junior buyer can approve POs up to ₹5 lakh, that is a sensible ceiling for agent autonomy on the same decision.
2. **Start conservative.** Set initial limits at about half of what you think is reasonable. It is much easier to widen limits after success than to narrow them after a mistake.
3. **Add volume caps as well as value caps.** For example, the agent may approve reroutes up to ₹50,000 each, but no more than ₹3 lakh in total per day.
4. **Review limits quarterly** using the agent's decision log, and widen them where accuracy has been consistently high.

Example

A mid-sized FMCG distributor starts with an autonomous replenishment limit of ₹2.5 lakh rather than the ₹5 lakh in the table. After one quarter, 97% of the agent's orders needed no correction and none caused excess stock, so the limit is raised to ₹5 lakh. Orders needing a planner's attention fall by about 40%.

6. Worked Scenario: A Delayed Shipment, Handled End to End

To see how the three levels work together, follow a single disruption through a mid-sized appliance manufacturer's AI control tower.

The situation

A container of compressors from an overseas supplier is delayed by four days at the port because of a storm. Two assembly lines at the Pune plant need these compressors within three days. Orders for 1,200 units across three customers depend on them.

09:00	L1	The agent detects the revised ETA from the carrier feed and updates the inbound schedule.
09:02	L1	Impact analysis: Line 1 and Line 2 will run short of compressors in 3 days; orders for three customers are at risk.
09:05	L1	The agent updates order ETAs, alerts the three account managers and triggers a cycle count at the Pune warehouse to confirm actual stock.
09:20	L2	The agent finds 400 surplus compressors at the Chennai warehouse and recommends a transfer: stock value ₹3.2 lakh, freight ₹38,000. Because this is a cross-region transfer, it needs approval.
09:30	L2	The warehouse manager approves from a mobile notification. The agent books a contracted carrier and the stock arrives in 2 days.
10:00	L3	Line 2 still has a 2-day gap. The agent presents three options to the head of planning: (a) switch Line 2 to models without compressors, (b) Saturday overtime after the container arrives at about ₹1.8 lakh, (c) delay 300 units for one customer.
11:30	L3	The head of planning chooses a combination of (a) and (b). The agent updates the schedule, books overtime and confirms dates to customers.

Dashboard-only vs AI control tower (illustrative)

Delay detected	Next morning's report (about 18 hours)	About 2 minutes
Impact analysis	3–4 hours of manual checks	About 5 minutes
Stock transfer decided	About 1 day (emails and calls)	30 minutes (one approval)
Full response plan agreed	About 2 days	About 2.5 hours
Outcome	Line 2 stops for one day; one customer delivery missed	No line stoppage; all customers informed and delivered

The people involved still made the important decisions. The difference is that they spent their time choosing between well-prepared options instead of collecting data, and routine actions happened without waiting for anyone.

7. Guardrails Every AI Agent Needs

A decision authority matrix sets out what the agent should do. Guardrails make sure it cannot go beyond that, even if data is wrong or a situation is unusual. Put these in place before moving any decision to Level 1.

1. Hard limits

Build value, volume and frequency limits into the system itself, not just into the policy document. The agent should be technically unable to exceed them.

> **Risky setup**
>
> The policy says the agent may approve reroutes up to ₹50,000, but the system has no check. A data error creates a ₹5 lakh reroute that goes through.

> **Safe setup**
>
> The system blocks any reroute above ₹50,000 per shipment or ₹3 lakh per day, and automatically sends it for approval.

2. Kill switch and override rights

Named people must be able to pause the agent, for a single decision type or entirely, in one step. Any authorised user should be able to reverse an agent's action, and every override should be logged.

3. Audit trail and decision logs

For every action, record what the agent saw, what options it considered, what it chose, why, and who approved it if anyone did. This is essential for audits, for investigating mistakes and for deciding when to widen autonomy.

4. Escalation timeouts

Decide in advance what happens when an approver does not respond.

> **Risky setup**
>
> A Level 2 reroute waits for the logistics manager, who is on leave. The approval sits for two days and the delivery is missed.

> **Safe setup**
>
> If there is no response within 4 hours, the request goes to a named deputy. After 8 hours, it goes to the function head, and the agent sends a reminder at each stage.

5. Exception handling for new situations

When the agent faces something it has not seen before, such as a new type of disruption or data that conflicts across systems, it should move the

decision up one level automatically rather than guess. Agents should be confident only within the situations they have been designed and tested for.

8. When to Move a Decision to a Higher Autonomy Level

Autonomy should be earned through evidence. Review each Level 2 decision every 90 days against clear criteria, and promote it to Level 1 only when all of them are met.

Promotion criteria (Level 2 to Level 1)

- At least **50 decisions** of this type made in the review period, so the evidence is meaningful
- At least **95% of recommendations approved** without changes
- **Override rate below 5%** after approval
- **No high-severity incidents** caused by the agent's recommendations
- The decision owner and the risk or finance team both agree

Example

A logistics team reviews the 'reroute with extra cost' decision after 90 days. The agent made 180 recommendations, 176 were approved as proposed (97.8%), and none caused a customer complaint. The team moves reroutes up to ₹15,000 to Level 1, while reroutes between ₹15,000 and ₹50,000 stay at Level 2.

Demotion triggers (move a decision back up a level)

- Any incident that causes a significant financial loss or a missed key-account commitment
- Override rate above 15% in any month
- A major change to the data sources the agent relies on, such as a new ERP or a new carrier integration
- New regulations or contract terms that affect the decision

Review ownership

Sample Level 1 decision logs	Weekly	Function lead (for example, inventory planner)
Review overrides and incidents	Monthly	Control tower manager
Promotion and demotion decisions	Quarterly	Supply chain head with finance and risk
Full matrix review	Annually	Operations leadership team

9. Your Decision Authority Worksheet

Use this worksheet to build your own matrix. List the decisions your control tower handles, score each one on the five factors (1 to 5), add the totals and assign a level using the bands in Section 3. Then set a limit and name an owner for each decision.

Example: reroute with extra cost	3	2	3	1	2	11	L2	≤ ₹50,000	Logistics manager

Sign-off

Operations / supply chain lead			
Finance			
Risk / compliance			

10. 30-Day Rollout Plan

You do not need to implement the whole matrix at once. Start with one function, prove that it works and expand from there.

Week 1	List decisions	Run a workshop with each function to list the decisions it makes repeatedly. Use Section 4 as a prompt. Aim for 30–50 decisions.
Week 2	Score and assign levels	Score each decision with the 5-factor method. Agree levels with decision owners and finance. Apply the compliance and reversibility override rule.
Week 3	Set limits and guardrails	Set conservative limits using Section 5. Build hard limits, escalation timeouts and logging into the system. Name approvers and deputies.
Week 4	Pilot one function	Go live in one function, usually logistics or inventory. Review the decision log daily for the first two weeks and adjust as needed.

Launch checklist

☐ Every decision has a level, a limit and a named owner

☐ Hard limits are enforced in the system, not just written in policy

☐ Approvers and deputies are named, with escalation timeouts

☐ A kill switch exists and named people know how to use it

☐ Every agent action is logged with its reasoning

☐ Protective actions are separated from actions that remove safeguards

☐ Promotion and demotion criteria are agreed and documented

☐ Finance and risk have signed off the matrix

☐ The first quarterly review date is in the calendar

Common mistakes to avoid

- **Automating everything at once:** start with one function and expand once it is working well.
- **Setting limits by guesswork:** base them on your existing delegation-of-authority policy and real decision data.
- **Forgetting the approver experience:** if approving takes ten clicks and three systems, Level 2 becomes a bottleneck. One-click approval with clear reasoning is essential.
- **Treating the matrix as finished:** it should evolve every quarter as the agent proves itself and as the business changes.

TAKE THE NEXT STEP

Design the Agents, Not Just the Rules

This toolkit helps you decide what AI agents should be allowed to do. The next step is learning how to build and run those agents across procurement, inventory, logistics and supplier management.

GSDC's **Agentic AI Supply Chain Professional Certification** helps you develop practical expertise in agentic AI for supply chain operations, through hands-on demonstrations, expert-led sessions and a capstone project.

What you will learn

- How AI agents support procurement, inventory planning, logistics and supplier coordination
- How to build demand-forecasting agents
- How to configure supplier-risk monitoring
- How to design intelligent supply chain control towers
- How to identify where intelligent automation can improve operational efficiency

Who it is for

Supply chain managers, procurement specialists, logistics professionals, demand planners and operations leaders looking to strengthen their AI capabilities.

> **Enrol in the Agentic AI Supply Chain Professional Certification**
>
> **[ENROLLMENT LINK]**
>
> Move your supply chain from dashboards to decisions.

About Us

[ABOUT US]

[BRAND/LOGO]

Disclaimer: This toolkit is for educational purposes. Decision levels, limits and timings are illustrative examples and should be adapted to your organisation's policies, risk appetite and regulatory requirements.

GSDC
Global Skill Development Council

AGENTIC AI SUPPLY CHAIN PROFESSIONAL CERTIFICATION

CONNECT WITH AI SPECIALISTS, SUPPLY CHAIN EXPERTS, AND DIGITAL TRANSFORMATION LEADERS ADVANCING AUTONOMOUS AI FOR SMARTER LOGISTICS AND BUSINESS OPERATIONS.



ABOUT GSDC CERTIFICATION

EBOOK

Extensive and exclusive Ebook created by world's experts to help you with understanding core concepts.

CREATED BY EXPERTS

GSDC certifications are created and authored by world's leading experts in the field.

EBOOK

Extensive and exclusive Ebook created by world's experts to help you with understanding core concepts.

LEARNING MATERIALS

Get access to learning materials such as videos, ebooks, templates, and practice exams, which will help you clear the certification exam.

LEARNING OBJECTIVE

- Ensure data quality, transparency, ethical AI, and responsible governance across supply chain operations.
- Lead AI-driven supply chain transformation and operational excellence across the entire value chain.

Enroll now with the code **LEARN20** To avail **20%** discount

Enroll Now

www.gsdcouncil.org