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IAF SUPPLY CHAIN & LOGISTICS MANUAL

Reliable supply and
controlled material movement

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Factory replenishment and mobile robots
Trade controls, continuity and traceability

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Publication identity and use

IAF Supply Chain & Logistics Manual

This manual provides the requirements, operating procedures and evidence framework for its defined automotive supply, distribution and packaging activities. Apply it through a controlled site implementation plan and equipment-specific work instructions.

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Reading and applying requirements

“Shall” identifies a requirement when adopted by a site, programme or agreement. “Should” identifies a recommendation. An example is illustrative; it is not a machine setting, test acceptance limit or completed operating record. Annex worksheets may be reproduced for controlled internal use.

Controlled implementation

Stable Release identifies the completed publication text. Site approval, process validation, competence authorization and equipment release are recorded when performed. A missing safety limit, test criterion or release authority prevents activation of the affected operation. Mandatory law, product requirements and validated equipment instructions remain applicable.

Relationship to IAF recognition

Use of this manual does not by itself confer membership, Corporate Recognised status, accreditation, certification or a licence to use IAF marks. Those decisions follow the applicable IAF guides, independent evaluation and recorded scope.

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Enter actual values, evidence references, names and dates in the worksheets. A blank, unsigned or illustrative record is not proof of completion. Retain the record with its governing instruction and revision.

1 Purpose, scope and supply objectives

1.1 This manual controls automotive material and information flows from supplier tiers through international transport, receiving, warehousing and production-line delivery. It applies to manufacturers, component suppliers, logistics providers, consolidation centres and controlled internal transport. Each adopting organization shall identify its legal entities, sites, products, lanes, service partners and operating hours.

1.2 The objective is to deliver the correct, released part, in the correct quantity and condition, to the agreed location and time, with traceable custody and truthful trade records. A delivery is not conforming merely because a vehicle arrived on time. Quality status, identity, documentation and safe handling remain acceptance conditions.

1.3 Scope shall include production materials, bought-in assemblies, tooling, samples, returnable containers, repair flows and service parts when handled by the same network. The responsible owner shall identify additional controls for batteries, chemicals, high-value electronics, oversized loads, temperature-sensitive goods and controlled technical information.

1.4 This manual establishes operating requirements. Route-specific legal obligations, product specifications, equipment instructions and customer commitments establish actual limits and required permissions. No universal vehicle speed, buffer quantity, customs treatment or transit guarantee is created by this publication.

1.5 The organization shall maintain one connected control system with IAF-MAN-LMS-001 for production, IAF-MAN-GAA-001 for battery and EV handling, IAF-MAN-OTC-001 for connected systems, IAF-MAN-ASI-001 for aftermarket inventory and IAF-MAN-IPC-001 for packaging. Outsourced work remains within the contracting organization's oversight.

2 Terms, states and measurement boundaries

2.1 Tier-1 identifies a supplier that directly supplies the defined receiving manufacturer. Tier-2 supplies that Tier-1 for the relevant product; further tiers follow the same relationship. Tier is a position in a specific supply chain, not a universal measure of competence. One company can occupy different tiers for different contracts.

2.2 Lead time shall identify its start and finish. Order lead time, production lead time, port dwell, transit time, customs clearance and dock-to-stock time are separate measures. A planning lead time shall include the time until material becomes usable, including agreed inspections and system release, rather than ending at physical arrival.

2.3 An advance shipping notice (ASN) is a structured notification of a planned or completed dispatch. It shall distinguish planned, loaded, departed, received and reconciled states. An ASN is not proof of carrier acceptance, customs release or product quality. A shipment may contain several handling units and several part lots.

2.4 An automated guided vehicle (AGV) follows its configured guidance system. An autonomous mobile robot (AMR) can plan movement within its permitted operating environment. Both require an assessed complete application, including load, attachments, transfers, human interaction and recovery. Navigation capability does not eliminate the need for traffic controls.

2.5 Inventory status shall distinguish available, allocated, in transit, inspection hold, quarantined, rejected and returned. Ownership and customs status are separate attributes. Stock in transit or under hold shall not be reported as immediately available at the line. Every metric shall state its unit, time window, data source and treatment of exceptions.

3 Accountability and operational authority

3.1 The Supply Chain Director owns network design, service commitments, resources and continuity decisions. Procurement owns supplier agreements and commercial escalation. Supplier Quality owns technical supplier acceptance, nonconforming-material disposition and quality recovery. Planning owns demand translation, scheduling and authorized allocation of constrained material.

3.2 Logistics owns freight execution, route performance, custody records and receiving coordination. Warehouse Management owns physical stock, locations, handling condition and transaction accuracy. Production Logistics owns line-side delivery, sequence integrity and empty-container removal. Each shift shall have identified absence cover and escalation contacts.

3.3 The Trade Compliance lead determines applicable customs, import, export and transit obligations with competent local support. Authorized declarants or brokers submit approved data within their documented mandate. Appointing a broker does not transfer every legal responsibility. Finance owns payment verification, valuation inputs and reconciliation with the accounting records.

3.4 The designated transport safety lead owns the traffic management plan. Engineering owns AGV/AMR application validation and approved configurations. Maintenance owns equipment condition and recovery within its competence. OT Security controls fleet-system access and connected changes. Dispatch pressure shall not permit an unapproved route, load or software change.

3.5 Any worker may stop an unsafe movement or report an identity or quality concern. Product release, trade release and transport readiness are separate gates; one signature shall not silently substitute for all three. Record delegated authority, transaction limits and conflicts of interest. Changes to supplier banking details require independent verification through an established contact.

4 Supplier tier mapping and dependency analysis

4.1 Procurement shall map each critical part to the actual manufacturing location, contracted supplier, relevant sub-tier process and receiving site. Record capacity, tooling ownership, material source, special processes, transport lanes and single points of failure. A corporate address is insufficient when production occurs elsewhere.

4.2 The risk assessment shall consider safety and quality criticality, replacement difficulty, shared tooling, material concentration, utilities, geopolitical exposure, financial distress, natural hazards and common logistics nodes. Two approved suppliers may still share the same sub-tier, port, raw material or infrastructure dependency; record this correlated exposure.

4.3 Supplier agreements shall require timely notification of significant sub-tier, site, process, ownership and capacity changes. Verification depth shall be proportionate to consequence and evidence quality. Where commercial confidentiality limits disclosure, agree a controlled assurance route and record remaining uncertainty instead of inventing visibility.

4.4 For each critical dependency, assign an owner, plausible disruption scenario, time to material shortage and expected recovery options. Compare usable stock with recovery time under realistic demand. Do not treat an unqualified alternative, untested tool transfer or inaccessible stock as an available mitigation.

4.5 Review the map at sourcing, launch, major change and the scheduled risk review. Preserve prior versions so that incident teams can reconstruct which source supplied affected production. Annex A provides the minimum dependency record; supporting detail may reside in approved supplier systems with controlled access.

5 Supplier and logistics partner onboarding

Owner: Procurement, supported by Quality, Logistics and Trade Compliance. Trigger: a new source, new site, new lane or material expansion of scope. Outcome: approval for a defined activity and product range.

Step / owner	Required action and evidence
1 Establish identity	Verify legal entity, actual operating location, authorized representative and relevant operating permissions. Independently confirm financial and contact details. Identify subcontracted production, transport and storage activities.
2 Define capability	Review equipment, personnel, capacity, process controls, quality history, traceability, packaging, security and continuity. Assess the capability at the proposed site; a group-level presentation does not establish local readiness.
3 Set evidence	Specify product acceptance, required lot data, test or inspection records, change notification, shipment data, emergency contacts and audit access. Agree language, response windows and escalation based on the actual operational risk.
4 Trial the flow	Execute a representative trial covering order receipt, manufacturing release, packing, ASN, transport, receiving and invoice reconciliation. Include the intended unit of measure, container and label. Record defects and corrective actions.
5 Approve scope	Quality accepts technical capability; Logistics accepts the route and handling flow; Trade Compliance clears relevant trade arrangements. Procurement records the approved scope and restrictions before routine orders are released.
6 Monitor entry	Apply defined launch monitoring and review the first operating period. Close trial findings, verify recovery arrangements and record the decision to continue, restrict or suspend the supplier or service partner.

Commercial nomination alone is not production or logistics approval. Temporary acceptance shall name the affected parts, volumes, controls, accountable approver and expiry. Use Annex B to record the operational readiness decision.

6 Contracts, master data and delivery commitments

6.1 The part master shall identify internal and supplier part numbers, revision, description, base and purchasing units, conversion factors, pack quantity, dimensions, mass, shelf-life rules and handling restrictions. Dual approval is required for changes that affect ordering, receiving, trade declarations or product identity.

6.2 The supply agreement shall define order acceptance, forecast status, firm commitments, flexibility limits, cancellation, minimum quantities, lead times, shortage notification and record access. State the precise named delivery point, version of agreed delivery terms and allocation of carriage, insurance, loading, customs tasks and risk.

6.3 Ownership transfer, risk transfer, payment and delivery completion shall be explicit; they may occur at different points. The dispatch team shall not infer ownership from the delivery term alone. Document the importer and exporter roles, broker authority, country-specific limitations and who bears demurrage, detention and failed-delivery costs.

6.4 Packaging specifications shall identify the approved container, part orientation, protection, labels, stacking and return arrangements. Production schedules shall use the same unit as acknowledgements and ASN data or an approved conversion. A box, kit, pair and individual part shall not share an ambiguous quantity field.

6.5 Changes to master data shall retain requester, evidence, reviewer, effective date and affected open transactions. Test electronic exchanges before deployment. Preserve historic revisions for shipments already dispatched; do not rewrite their identity merely because the current catalogue or supplier code changes.

7 Demand planning and supplier communication

7.1 Planning shall reconcile customer demand, production schedules, service requirements, engineering changes and inventory policy into one authorized demand view. Separate firm orders, forecast demand, trial quantities and contingency stock. Prevent the same requirement from being counted as both customer demand and an internal replenishment order.

7.2 The planning calendar shall define a regular cross-functional review, forecast publication, supplier acknowledgement and exception cut-off. State the horizon, time buckets, frozen period and permitted changes. Supplier acknowledgements shall identify accepted quantities and dates; silence shall not be assumed to mean acceptance.

7.3 Scheduled quantities shall account for approved yield, consumption, scrap, changeover and replenishment conditions. Use measured loss assumptions with owners and review dates. Increasing demand to conceal missing stock or unreported scrap corrupts the planning baseline and shall trigger investigation.

7.4 Sharing information with suppliers shall be sufficient for capacity and material planning while protecting customer, pricing and proprietary data. Supplier access shall be limited to the relevant products and horizons. Record forecast versions and subsequent overrides so that shortfalls can be assessed against the information available at the time.

7.5 When demand changes materially, assess sub-tier commitments, finished goods, WIP, transport reservations and obsolete stock exposure before releasing a revised schedule. Planning, Procurement and Finance shall approve exceptional liability. Service parts planning follows IAF-MAN-ASI-001 where installed-base demand differs from current production.

8 Capacity, launch and change readiness

8.1 The capacity plan shall cover the limiting resource across the relevant tiers, including tooling, people, maintenance, utilities, packaging availability and transport slots. Demonstrated output shall reflect the intended product mix, quality yield and operating pattern. A supplier's nameplate capacity is not a delivery commitment.

8.2 Launch readiness shall verify technical approval, supplier inventory, packaging trials, labels, electronic messages, route timing and receiving capacity. Include the first production shift, weekends, holidays, seasonal constraints and emergency contacts. Pilot material shall remain distinguishable from released production stock.

8.3 Engineering changes shall link the old and new part revisions, effective units or dates, approved interchangeability and disposition of residual inventory. Quarantine uncertain mixed stock. Do not make an old part acceptable by printing the new label unless Engineering has approved a documented conversion and Quality has verified it.

8.4 Run-out and run-in plans shall coordinate sub-tier commitments, pipeline stock, rework, tooling changes and last deliveries. Where both revisions remain valid, receiving and line-side controls shall prevent unintended substitution. The change owner shall define when the old revision is no longer orderable or usable.

8.5 Readiness decisions shall record evidence, remaining gaps and restricted conditions. Missing product approval, unvalidated critical packaging or an unsafe transport application prevents routine release. After a location, process, fleet or route change, revalidate the affected controls before returning to the planned service level.

9 Schedule release, ASN and shipment confirmation

Owner: Planning and supplier dispatch. Use this sequence for each delivery call-off or shipment event. Each record shall remain linked to the approved part revision and order.

Step / owner	Required action and evidence
1 Release demand	Issue the authorized quantity, unit, due time, delivery point and revision. State whether the instruction is firm or forecast. Confirm receipt through the agreed electronic or controlled fallback channel.
2 Acknowledge supply	Supplier confirms quantity, readiness, dispatch date and constraints. Planning resolves gaps before the transport cut-off. Partial confirmation shall remain visible; do not overwrite the original requested date.
3 Assign stock	Allocate released lots and approved containers. Verify remaining life, quantity, product status and destination. Create unique handling-unit identities without losing the underlying lot or serial mapping.
4 Issue the ASN	Transmit order, part, revision, quantities, pack hierarchy, lots, shipment identity, departure estimate and carrier data. State the notice status. Validate mandatory fields and reject duplicate or inconsistent messages.
5 Confirm departure	After loading acceptance, record actual quantity, seal where used, carrier custody and actual departure. Amend differences through an auditable message; do not leave planned data presented as actual.
6 Reconcile receipt	Receiving confirms accepted, short, over, damaged and held quantities. Resolve discrepancy ownership and close the shipment only after physical and system records agree. Keep financial settlement distinct from quality acceptance.

If electronic exchange fails, use uniquely numbered fallback records and reconcile them after recovery. Replayed messages shall not duplicate inventory, receipts or payment obligations.

10 Transport network and lane design

10.1 The logistics owner shall maintain a lane specification from actual pickup to final delivery, including consolidation, ports, terminals, cross-docks and subcontracted legs. State product risks, carrier scope, capacity, equipment suitability, transit distribution, cut-offs, custody changes and proof-of-delivery requirements.

10.2 Select mode and route using service reliability, product protection, safety, total landed cost and environmental burden. Evaluate damage, theft, congestion, route restrictions, border variability and empty returns. The lowest freight quotation may exclude handling, customs services, storage, surcharges or recovery costs.

10.3 For each lane, define standard and contingency routes with approved transfer points and contacts. Confirm whether insurance applies to the actual commodity, value, condition, route and subcontracting arrangement. A carrier's liability limit shall not be assumed to equal cargo replacement value.

10.4 Consolidation and milk-run designs shall protect pickup sequencing, container segregation, remaining payload and timely delivery. Validate vehicle dimensions, axle and load limits, unloading access and stacking restrictions using competent route-specific assessment. Do not use this manual to infer legal mass limits.

10.5 Lane changes shall be assessed for new handling events, climatic exposure, customs treatment and packaging suitability. A switch from direct road delivery to multi-leg sea transport can require new protection and acceptance evidence. Record actual performance and revise lead-time assumptions when the route no longer behaves as planned.

11 Dispatch, loading and custody transfer

Owner: Dispatch Supervisor. The carrier and loading site shall agree their respective tasks. Only trained personnel may operate lifting equipment or secure loads using the approved method.

Step / owner	Required action and evidence
1 Release the load	Confirm quality status, order, destination, part revision, quantity, packaging approval and required transport or trade permissions. Hold unidentified, damaged or legally restricted consignments.
2 Inspect the vehicle	Check the approved equipment type, cleanliness, dryness, damage, securing points and suitability for the load. Confirm safe access, immobilization and dock arrangements before loading begins.
3 Build the load	Follow the approved load plan for mass distribution, centre of gravity, stacking, segregation and delivery sequence. Use rated handling and securing equipment. Protect people from suspended or unstable loads.
4 Verify identity	Scan each handling unit against the shipment. Resolve missing, extra or duplicate units. Apply required shipping labels and preserve product labels; remove obsolete destination information that could cause misrouting.
5 Secure and release	Competent staff verify restraint, doors, seal where required and completed documents. Record load evidence proportionate to risk. Carrier acceptance and time shall identify the actual person or authenticated transaction.
6 Track movement	Monitor agreed milestones and exceptions. Unplanned transfer, broken seal, unexplained delay or location deviation requires assessment. Preserve custody history and notify the receiving site of material changes.

A photograph alone is not a load-security assessment. A driver or site worker shall not enter a loading danger zone to resolve a scheduling dispute. Unsafe equipment or missing critical release evidence prevents departure.

12 Receiving, discrepancy and dock-to-stock release

Owner: Receiving Supervisor with Quality. Separate physical receipt from acceptance for production. A vehicle arrival shall not automatically increase usable inventory.

Step / owner	Required action and evidence
1 Prepare the dock	Match the appointment and expected shipment. Verify safe parking, trailer restraint, loading equipment, trained personnel and segregation space. Keep pedestrians clear of vehicle manoeuvring and unloading zones.
2 Check custody	Record arrival, vehicle, shipment, documents and seal condition where used. Photograph relevant damage safely. Notify the carrier and Logistics promptly using the applicable claim and incident procedure.
3 Identify and count	Reconcile handling units, part numbers, revisions, lots and quantities to the order and ASN. Use controlled counting or weighing methods with verified conversion factors. Record overages and shortages explicitly.
4 Assess condition	Check packaging, contamination, environmental evidence and remaining life. Apply incoming inspection requirements. Place affected units on hold; receipt of a certificate does not override visible damage or an identity mismatch.
5 Release and locate	Quality or delegated receiving authority records acceptance. Post quantities by actual status, owner and location. Put away using the approved route and storage conditions; verify the destination scan.
6 Resolve exceptions	Assign discrepancy cause, owner and disposition. Retain original records and reconcile supplier, carrier, inventory and financial transactions. Authorize return, rework, concession or rejection through the correct decision route.

Cross-docking may bypass storage but shall not bypass necessary identity, quality or trade-release checks. Annex D captures the minimum receiving and discrepancy evidence.

13 Storage, preservation and inventory integrity

13.1 The warehouse layout shall distinguish receiving, released stock, inspection hold, returns, damaged goods and restricted materials. Location capacity shall match structural, handling and fire-protection constraints. A rack label shall identify its approved load arrangement; visual appearance alone does not establish capacity.

13.2 Control temperature, moisture, cleanliness, electrostatic exposure, corrosion, light and shelf life according to the product and packaging specification. Monitor at locations representative of the stored goods. An excursion shall trigger affected-stock identification and technical disposition, not simply a reset of the alarm.

13.3 Use FIFO unless expiry or remaining-life rules require earlier-expiring stock first. Keep receipt date, manufacture date, expiry and retest date distinct. Repacking, inspection or relocation shall not reset product age. Extension of life requires competent product-specific approval and preserved evidence.

13.4 Every movement shall record item, quantity, unit, source, destination, status, owner and operator or system identity. WMS balances shall be reconciled through risk-based cycle counts and controlled adjustments. Prevent the same stock from appearing simultaneously at the supplier, in transit and at the receiving plant.

13.5 Protect high-value and safety-critical stock against substitution, theft and unauthorized release. Investigate tamper evidence and unexplained location changes. Store hazardous materials under the applicable specialist arrangements; general warehouse acceptance does not authorize incompatible chemicals, suspect batteries or unknown returned products.

14 Line-side replenishment and sequence integrity

14.1 Production Logistics shall define the replenishment method for every part family: scheduled route, pull signal, sequenced delivery, kit or controlled bulk issue. The plan shall identify source, point of use, container, quantity, frequency, buffer, return flow and shortage trigger. Material flow shall support the approved production mix.

14.2 Size buffers from actual consumption during replenishment time and an explicit variability allowance. Include pick, queue, travel, transfer and confirmation time. Annex G illustrates a simple sizing calculation; operational quantities require validation for demand peaks, route interruption, ergonomics and available space.

14.3 Sequenced material shall match the specific build identifier and approved sequence revision. Record sequence changes and the affected racks or kits. A missing sequence position shall not be silently filled with a similar-looking part. Authorized resequencing must preserve unit-to-part traceability.

14.4 At handover, verify item, revision, quality status, quantity and destination. Keep replenishment vehicles and empty-container removal clear of operator work zones and emergency routes. The last container shall not be consumed without the defined shortage signal and response ownership.

14.5 When replenishment fails, Production decides the safe line response with Quality and Logistics. Temporary manual delivery requires its own traffic and handling controls. Do not introduce unidentified parts, defeat line interlocks or overcrowd the work area to hide a shortage. Reconcile every emergency issue after normal flow is restored.

15 AGV and AMR application qualification

15.1 Engineering shall assess the complete vehicle application before deployment: base platform, payload, attachment, docking mechanism, charging, traffic routes, pedestrian access, transfers and foreseeable misuse. Record the permitted operating envelope for mass, load stability, overhang, floor condition, slopes, clearances, speed and stopping performance.

15.2 Validate protective functions with representative worst-case permitted loads and relevant floor conditions. Consider obscured sensors, protruding loads, reflective surfaces, blind corners, trapping against fixed structures and simultaneous vehicle movements. A supplier statement about the base robot does not validate a custom top module or the installed route.

15.3 The traffic plan shall define segregated routes where needed, crossing points, priority, restricted zones, door and lift interfaces, docking areas and safe refuges. Warnings and training supplement physical risk controls; a floor line alone is not sufficient protection where the assessed consequence requires separation.

15.4 Maps, protective settings, fleet rules and transfer handshakes shall be controlled configurations. Loss of localization, network, power, time synchronization or destination availability shall result in the validated safe response. A wireless connection or fleet dashboard is not proof that a safety function is operating.

15.5 Acceptance shall include representative production trials, blocked-route handling, human interaction, loading and unloading interlocks, emergency response and safe recovery. Record limitations and revalidation triggers. Changes to payload, speed, layout, flooring, software or top module require impact assessment before use.

16 AGV and AMR daily dispatch and handover

Owner: authorized Fleet Operator. The equipment-specific instruction governs checks and operating limits. Use Annex E to record configuration, readiness and abnormal events.

Step / owner	Required action and evidence
1 Confirm readiness	Verify vehicle identity, released configuration, maintenance status and the required pre-use checks. Check visible damage, sensors, wheels, attachment and permitted charge condition without entering hazardous areas.
2 Inspect the route	Check aisles, crossings, docking points, floor condition, temporary obstructions and emergency access. Report altered layouts or protective arrangements. Block affected missions until the route is accepted.
3 Authorize the load	Confirm the approved container, mass, stability, overhang, retention and part status. Identify source and destination. An empty-looking rack may still carry an unbalanced or concealed load.
4 Execute the mission	Release only authorized jobs. Confirm the transfer handshake and clear danger zones. Monitor exceptions through the assigned role; do not ride on a vehicle or manually push a load during automated transfer.
5 Verify delivery	Reconcile the handling-unit identity, receiving position and physical transfer. Record completed, failed or partially completed missions distinctly. An arrival message alone does not establish successful material handover.
6 Close the shift	Handover unresolved faults, blocked routes, charging restrictions and incomplete transactions. Park and charge only in the approved arrangement. Reconcile manual movements before the next shift relies on stock visibility.

If a safeguard check fails, the vehicle shall not run production missions. Never test obstacle detection by placing a person in the travel path. Verification uses the approved test method and controlled test objects.

17 Mobile robot fault recovery and controlled restart

Owner: Maintenance and Engineering, with Logistics and OT support as relevant. Trigger: protective stop, collision, dropped load, lost localization, transfer failure or unexpected behaviour.

Step / owner	Required action and evidence
1 Protect the area	Stop affected movements using the appropriate controls and keep people clear. Treat a suspended, shifted or trapped load as unstable. Assess nearby vehicles and connected conveyors or doors.
2 Preserve the state	Record vehicle, load, route, map version, mission and fault information. Identify material physically transferred before the fault. Do not erase logs or repeatedly reset to obtain a green status.
3 Establish safe access	Authorized personnel apply equipment-specific isolation, stored-energy and load-support arrangements. Emergency stop is not automatically energy isolation. Control towing, lifting and manual release through approved methods.
4 Diagnose and repair	Identify the cause and approved corrective action. Configuration, sensor, top-module or software changes require the appropriate technical review. A bypass shall not become an unrecorded production operating mode.
5 Revalidate locally	Verify affected protective functions, localization, route and transfer interfaces with a controlled trial. Confirm load stability and physical inventory. Resolve any product damage or uncertain custody through Quality.
6 Authorize restart	Record technical readiness, material disposition and operational acceptance. Re-enable the defined scope, monitor initial missions and reconcile duplicate or incomplete transactions. Escalate recurrence for systemic corrective action.

After a collision or injury, follow incident and evidence-preservation requirements before restarting. Schedule recovery does not supersede investigation restrictions or competent technical acceptance.

18 International trade governance and shipment roles

18.1 The trade owner shall establish a lane-specific compliance profile for the exporting, importing and transit jurisdictions, commodity, end use and transaction. Identify who acts as exporter, importer, declarant, representative and record custodian. Confirm that each party is legally able to perform its assigned role.

18.2 Before contracting or shipping, assess applicable restrictions on parties, destinations, goods, technology and end use through competent review. Keep the screening result and resolution of potential matches. A commercial request, customer instruction or broker suggestion shall not authorize circumvention of a restriction.

18.3 The profile shall identify licences, registrations, permits, product controls, advance data, temporary admission or other special procedures where relevant. Determine actual applicability rather than assuming all automotive goods follow one treatment. Escalate uncertainty to the designated trade specialist before dispatch.

18.4 Delegation to a broker shall define data ownership, authority, instruction channels, escalation, access to declarations and correction responsibilities. Review submitted declarations against approved instructions. The organization shall retain evidence sufficient to reconstruct the transaction and the basis for material trade decisions.

18.5 Changes to route, buyer, seller, destination, value, origin, commodity or product condition may alter the applicable treatment. The trade owner shall review these changes before reusing a prior clearance instruction. Staff shall not split, relabel, undervalue or misdescribe a consignment to avoid a required control.

19 Classification, origin and valuation data control

19.1 Classification shall be based on accurate technical description, composition, function, presentation and applicable jurisdictional rules. Record the classification decision, rationale, supporting technical data and review date. A supplier code may inform the analysis but shall not be copied automatically across countries or changed products.

19.2 Origin shall distinguish country of manufacture or qualifying production from country of dispatch, seller location and transshipment point. Determine non-preferential and preferential origin separately where relevant. Preferential treatment requires the actual product-specific conditions and supporting evidence; routing through a country does not itself confer origin.

19.3 Customs valuation shall use the applicable method and required adjustments for the transaction. Finance and Trade Compliance shall reconcile the invoice, payment arrangements, relevant assists, royalties, freight, insurance and related-party considerations as applicable. A transfer price or internal stock value is not automatically an acceptable customs value.

19.4 Samples, warranty replacements, tooling, returns and intercompany transfers shall have truthful descriptions and an appropriate valuation basis even when no sale occurs. Zero invoice charge does not automatically mean zero customs value. Record the reason for the shipment and the basis for any special treatment.

19.5 Maintain a controlled decision register linking part, revision, jurisdiction, origin basis, valuation method, evidence and authorized reviewer. Review after product, sourcing, transaction or rule changes. If evidence is missing, use an approved lawful treatment or hold the shipment; do not invent a declaration statement.

20 Export, transit and import clearance

Owner: Trade Compliance and Logistics. This sequence is a control framework; the responsible specialist shall determine the actual documents and procedures for the specific movement.

Step / owner	Required action and evidence
1 Compile the dossier	Reconcile order, invoice or non-sale value record, packing list, commodity description, quantities, mass, origin evidence, transport plan and required permissions. Distinguish product, packaging and returnable-asset lines where necessary.
2 Review the data	Verify legal parties, delivery terms, classification, valuation basis, destination, end use and applicable restrictions. Obtain approval for unresolved differences before submitting instructions to the declarant.
3 Authorize filing	Send controlled instructions through the approved channel. Capture declaration identity, version and acceptance status. A submitted or accepted filing is not automatically permission to move or release the goods.
4 Control movement	Observe export, transit, bonded storage and inspection conditions. Record seals and custody where required. Do not divert or consume goods subject to an uncleared procedure without the necessary authorization.
5 Verify release	Retain actual release evidence, duties or security records and any conditions. Receiving shall distinguish customs release from product acceptance. Inform the warehouse when restrictions or procedure status change.
6 Reconcile and close	Compare the filed data with actual goods and financial records. Correct errors through the lawful procedure, close transit or temporary movements and track refunds or guarantees. Preserve the full audit trail.

Customs delay shall trigger an operational shortage assessment without pressuring staff to make unsupported declarations. Annex F is the shipment trade-control checklist and shall be adapted to the lane.

21 Dangerous, sensitive and exceptional consignments

21.1 The designated specialist shall classify batteries, chemicals, aerosols, pyrotechnic components and other potentially regulated goods for their actual condition and transport mode. Determine packaging, quantity, marking, documentation, training and carrier acceptance requirements. A routine automotive part description is not a sufficient classification.

21.2 Damaged, defective, recalled, prototype, waste or used energy-storage products may require a different transport route from new conforming goods. The sender shall communicate condition truthfully and obtain the necessary technical and transport acceptance. Do not place a suspect battery in an ordinary parcel flow to simplify a return.

21.3 Temperature, humidity, vibration, shock, corrosion and electrostatic limits shall derive from the product and packaging qualification. Monitoring devices shall have identified locations, suitable range and an agreed excursion response. A logger at the container wall may not represent the condition of every part inside.

21.4 High-value and sensitive cargo shall use proportionate custody, access, route and seal controls. Avoid broadcasting commercially sensitive cargo details beyond operational need. Tracking information shall be protected from unauthorized access, and stale location data shall not be presented as a current confirmed position.

21.5 Oversized or heavy consignments require competent assessment of lifting points, restraints, route permissions, transfer equipment and receiving capability. A standard freight booking shall not authorize an exceptional lift. Packaging and handling changes follow IAF-MAN-IPC-001; battery conditions also interface with IAF-MAN-GAA-001.

22 Returns, empty assets and cross-border repair flows

22.1 Reverse flows shall begin with an authorized reason, ownership, product condition and destination. Distinguish unused return, quality rejection, repair, core return, recall, packaging return and waste. These categories can require different handling, accounting and trade treatment; one generic returns code is insufficient.

22.2 Returned goods shall preserve serial or lot identity, original shipment information and condition evidence. Receiving shall assign hold status until the appropriate inspection and disposition. A credit note or commercial settlement does not prove that a returned component is safe or suitable for reuse.

22.3 Returnable crates and racks shall have owner, asset identity, custody, return deadline, cleaning status and repair rules. Separate empty assets from saleable stock and product scrap. Loss, damage and overdue balances shall be reconciled with partners without creating fictitious return transactions.

22.4 For cross-border repair, replacement, temporary use or return of assets, the trade owner shall select the actual lawful procedure and evidence. Record outgoing and incoming identity, value basis, repair activity and closure obligations. Similar appearance is not sufficient proof that the returning unit is the one originally exported.

22.5 Before disposing of goods or packaging, confirm ownership, environmental obligations, data or intellectual-property concerns and any customs restrictions. Obtain authorized destruction or recovery evidence. Reusable packaging loops follow IAF-MAN-IPC-001; service core and warranty flows follow IAF-MAN-ASI-001.

23 Shortage, disruption and recovery management

Owner: Supply Chain Director or delegated incident lead. Trigger: a credible risk to supply, quality, transport, customs, systems or site access. Act before the line is already starved.

Step / owner	Required action and evidence
1 Establish the facts	Confirm affected parts, tiers, sites, orders, usable stock, pipeline evidence and consumption. Separate verified facts from supplier estimates. Record the last reliable inventory and schedule snapshot.
2 Assess the horizon	Estimate time to shortage and recovery under plausible demand and delay scenarios. Include quality release and route constraints. Do not count unapproved alternative parts or physically inaccessible stock as available.
3 Protect priorities	Agree allocation using safety, customer commitments and operational consequence. Record the decision and affected parties. Avoid duplicate emergency orders or informal stock transfers that hide the true shortage.
4 Select recovery	Evaluate approved alternate routes, qualified sources, controlled schedule changes, transfers or repair options. Review product, trade, packaging and safety impacts before execution. Assign cost and authority limits.
5 Execute and monitor	Use a single action log, timed updates and named owners. Verify actual dispatch, clearance and receipt. Escalate missed milestones promptly; a carrier booking alone does not establish recovery.
6 Close and learn	Reconcile emergency stock and freight, restore normal planning, disposition excess material and record actual losses. Verify corrective-action effectiveness and update dependency, buffer and continuity plans.

Rehearse critical scenarios, including loss of a sub-tier, route, warehouse system or mobile-robot fleet. A documented plan without exercised people, usable data and accepted alternatives is incomplete.

24 Digital integration, data security and fallback control

24.1 The system architecture shall identify ERP, planning, supplier portal, transport management, WMS, fleet control and production interfaces. Assign an authoritative system for each data element and transaction. Define how timestamps, time zones, units and identifiers are reconciled across organizations.

24.2 Validate message structure, authentication, authorization, duplicate detection, acknowledgement and retry behaviour. A delayed ASN or repeated receipt message shall not create extra stock. Record rejected messages with ownership for resolution; do not silently discard a shipment because an integration field is missing.

24.3 Access shall follow job scope and separate supplier, carrier and internal permissions. Protect engineering data, prices, trade records and personal information. Changes to routes, inventory status, bank details and fleet settings require controlled approval and logs. Connected equipment follows IAF-MAN-OTC-001.

24.4 Tracking and predicted-arrival systems shall distinguish measured events, estimates and stale data. Human review is required when automated allocation or rerouting would create a safety, legal or material customer consequence. Preserve the data and model version behind consequential recommendations.

24.5 Fallback procedures shall define authorized manual records, unique numbers, custody, stock holds and later reconciliation. During recovery, prevent double posting, missing movements and release based on unverified balances. Test restoration and interfaces using a controlled exercise before relying on them for a critical production commitment.

25 Performance, cost and environmental measurement

25.1 Use a balanced scorecard for on-time-in-full delivery, shortages, quality holds, inventory accuracy, transport damage, lead-time variation, premium freight and recovery effectiveness. Report against the original agreed date as well as any accepted revision. Do not improve performance by overwriting missed commitments.

25.2 Define on-time-in-full at the agreed order-line or shipment level. State the time window, complete quantity, acceptable condition and document requirements. Calculate the numerator and denominator from the same population. Separate cancelled demand, partial deliveries and customer-caused delay rather than hiding them in a general exclusion.

25.3 Total logistics cost shall identify freight, handling, storage, packaging, duties where relevant, damage, inventory carrying, emergency recovery and claims. Distinguish recoverable taxes and internal transfers from true cost. Finance shall reconcile the reporting basis and prevent double counting between supplier and receiving sites.

25.4 Environmental reporting shall define organizational and transport boundaries, activity data, allocation, loaded and empty legs and calculation assumptions. Keep measured fuel or energy separate from estimates. A consolidated load or reusable rack is not automatically a lower-impact outcome without considering the full lane and product damage.

25.5 Review trends by part family, lane, supplier and failure mechanism. Set targets from a verified baseline, capacity and risk. Improvement actions shall name owner, due date, acceptance evidence and checks for unintended inventory or safety effects. Annex G contains calculation rules and an incident-action record.

26 Competence, assurance and implementation

26.1 Before independent work, personnel shall be trained and assessed for the specific task, system and equipment. Cover receiving, load handling, identification, trade escalation, dangerous-goods awareness, AGV/AMR interaction and incident reporting as applicable. Attendance at a briefing alone is not demonstrated operational competence.

26.2 Implementation shall proceed through scope and baseline, critical gap closure, representative pilot, controlled rollout and sustained review. Each stage shall have an accountable approver and evidence of readiness. A new site shall not activate an unsafe route or unclear trade role merely to meet a rollout date.

26.3 Assurance shall sample real transactions across the entire flow: supplier call-off to line-side consumption and invoice closure. Trace selected lots both upstream and downstream. Observe actual loading, receiving and robot handovers. Compare physical stock with system status and test whether a held unit can be inadvertently dispatched.

26.4 Management shall review performance, dependencies, incidents, audit findings, supplier changes and resources at least annually and after significant disruption. Record decisions, owners and follow-up. Repeated expedites, unexplained stock adjustments or persistent declaration errors require systemic corrective action.

26.5 Control instructions, trade decisions, approvals, genealogy, custody, training and incident records through IAF-GUI-DOC-001. Set retention from applicable legal, contractual and product needs, preserve investigation holds and verify archive readability. IAF-QM-001 and the applicable reporting, privacy and conflict policies govern institutional interfaces.

Annex A Supplier tier and dependency register

Form SCL-A. Use one record per critical part family or clearly defined dependency. Owner:

Review date: Scope:

Field	Required entry
Part and use	Part / revision / receiving sites / affected vehicles or assemblies: _____
Direct source	Contracted entity / actual manufacturing site / approved scope: _____
Sub-tier dependencies	Material, process, site, tooling or shared source / verification: _____
Capacity basis	Demonstrated mix, yield, shifts and limiting resource: _____
Supply route	Pickup, nodes, mode, border points and receiving release: _____
Exposure	Single source, common dependency, disruption and consequence: _____
Stock and horizon	Usable stock / consumption / time to shortage / assumptions: _____
Recovery options	Qualified alternatives / evidence / lead time / restrictions: _____
Controls	Mitigation owner / due date / acceptance evidence: _____
Change triggers	Site, source, tooling, route, ownership or material changes: _____
Review	Reviewer / open uncertainty / decision / next review: _____

Treat undisclosed or unverified dependency information as uncertainty. Record the assurance route and escalation rather than filling the gap with an assumed supplier name.

Evidence location and access restrictions: _____

Annex B Supplier and lane readiness record

Form SCL-B. Supplier / site: _____ Parts: _____ Lane: _____ Trial date: _____
Intended operating scope: _____

Acceptance gate	Evidence and decision
Identity and agreement	Verified entity, authority, roles and contract / evidence: _____
Technical capability	Product and process approval, capacity and traceability: _____
Packaging	Approved pack, labels, container availability and return plan: _____
Electronic exchange	Order, acknowledgement, ASN and receipt trial: _____
Transport	Approved carrier, equipment, route, timing and recovery: _____
Trade	Parties, data, permissions and declaration instructions: _____
Receiving and line feed	Safe unloading, inspection, storage and point-of-use trial: _____
Continuity	Contacts, fallback data, qualified alternatives and exercise: _____
People	Competence, shift cover and escalation readiness: _____
Open gaps	Owner, restriction, due date and closure evidence: _____

Decision: approve defined scope / restricted pilot / hold. Approved scope: _____

Quality: _____ Logistics: _____ Trade: _____ Procurement: _____

Actual operational date and review trigger: _____

An approval records a defined scope. It shall not be reused for a different site, commodity or load configuration without assessing the change.

Annex C Shipment release and custody checklist

Form SCL-C. Shipment: _____ Order: _____ Dispatch site: _____ Destination: _____
 Date / time zone: _____

Check	Result and evidence
Product release	Part, revision, lots, quantity, unit and quality status: _____
Pack release	Container, protection, remaining life and label verification: _____
Carrier and vehicle	Identity, equipment suitability and appointment: _____
Trade permission	Required approvals, documents and actual release status: _____
Load plan	Mass, distribution, restraint, segregation and delivery order: _____
Handling units	Scanned identities, hierarchy and physical count: _____
Load condition	Vehicle check, damage, restraints and supporting evidence: _____
Custody	Seal if used / actual handover person / time / departure: _____
ASN confirmation	Actual message, differences, acknowledgement and version: _____
Exceptions	Hold reason, responsible function and resolution: _____

Dispatch authorization: _____ Carrier acceptance: _____ Date: _____

Custody event / location / time / receiving party: _____

Keep planned departure, actual departure and receiving acceptance separate. Correct changes through a traceable update rather than replacing the original event.

Annex D Receiving and discrepancy record

Form SCL-D. Receipt: _____ Shipment: _____ Site: _____ Arrival: _____
Receiver: _____

Record field	Entry
Expected goods	Order / ASN / part / revision / unit / quantity: _____
Custody and condition	Vehicle / seal / damage / environment / evidence: _____
Actual identity	Handling units / lots / serials / count method: _____
Quantity reconciliation	Accepted: ____ Held: ____ Rejected: ____ Short: ____ Over: ____
Acceptance basis	Inspection plan / results / remaining life / release authority: _____
Locations and status	Released, held and rejected locations / system transactions: _____
Discrepancy	Type, affected population, owner and immediate protection: _____
Notification	Supplier / carrier / trade / customer where required / time: _____
Disposition	Return / rework / concession / reject / release and authority: _____
Closure	Stock, ASN, claim and invoice reconciliation / unresolved items: ____

Receiver: _____ Quality decision: _____ Closure date: _____

Do not net overages against shortages from another part or shipment without retaining both original discrepancies. A financial credit shall not change the physical quality status of stock.

Annex E AGV and AMR application and shift record

Form SCL-E. Fleet / vehicle: _____ Application: _____ Shift: _____ Configuration and map version: _____

Control field	Required entry
Approved envelope	Load, attachment, mass, overhang, floor and route limits: _____
Validation	Application acceptance, stopping and transfer evidence: _____
Pre-use check	Required checks, equipment condition and maintenance status: _____
Route check	Aisles, crossings, docking, changes and restrictions: _____
Mission and load	Job / container / source / destination / product status: _____
Delivery evidence	Physical handover / receiving scan / completed or partial: _____
Abnormal event	Fault, collision, localization or transfer issue / time: _____
Safe intervention	Area protection / isolation / competent recovery record: _____
Restart	Cause, repair, affected-function test and authorization: _____
Handover	Open faults, blocked routes and inventory reconciliation: _____

Operator: _____ Technical authority where required: _____ Date: _____

This is a record of readiness and decisions, not an equipment recovery instruction. Attach the approved local method and preserve the fault and configuration evidence.

Annex F International shipment trade-control record

Form SCL-F. Transaction / shipment: _____ Origin to destination: _____ Transit points: _____
Trade owner: _____

Decision area	Evidence and approval
Legal parties	Seller, buyer, exporter, importer and declarant roles: _____
Goods and condition	Accurate description, part, revision, quantity and shipment purpose: _____
Classification	Jurisdictional code, technical basis, reviewer and validity: _____
Origin	Production basis, preferential claim if any and evidence: _____
Valuation	Method, invoice or non-sale value, adjustments and review: _____
Restrictions	Party, destination, end-use and goods screening / resolution: _____
Permissions	Applicable registrations, licences or procedure approvals: _____
Documents	Reconciled invoice, packing, transport and supporting records: _____
Filing and release	Declaration version, acceptance, inspection and actual release: _____
Closure	Transit or temporary procedure, corrections and financial checks: _____

Unresolved issue and movement restriction: _____

Trade approval / actual date: _____ Logistics acknowledgement: _____

Adapt the record to the transaction. A completed checklist does not substitute for a legally required declaration, permission or competent classification decision.

Annex G Calculations, incident actions and interfaces

Illustrative line-side buffer calculation

Assume consumption of 120 parts per hour, validated replenishment time of 0.5 hour and an approved 30-part variability allowance. Required coverage is $(120 \times 0.5) + 30 = 90$ parts. With 20 parts per container, round up to 5 containers, providing 100 parts. Verify physical space, expiry and handling before adoption; these are example inputs, not required settings.

Consistent delivery measurement

If 190 of 200 due order lines meet the agreed time, full quantity, condition and document criteria, on-time-in-full performance is 95%. Keep the 200-line population fixed for that report. State any agreed tolerance and disclose exclusions. Lead-time and stock calculations shall use the same calendar and unit basis.

Incident action	Record
Situation	Event / affected parts, sites and orders / confirmed facts: _____
Exposure	Usable stock / consumption / shortage horizon / uncertainty: _____
Decision	Priority allocation / approved recovery / authority and cost: _____
Execution	Action owner / deadline / actual milestone evidence: _____
Closure	Reconciled stock and cost / root cause / effectiveness check: _____

Controlled document interfaces

IAF-QM-001 and IAF-GUI-DOC-001 govern quality oversight and records. IAF-MAN-LMS-001, IAF-MAN-GAA-001 and IAF-MAN-OTC-001 govern production, battery and connected-system interfaces. IAF-MAN-ASI-001 governs aftermarket stock; IAF-MAN-IPC-001 governs packaging. The applicable IAF privacy, reporting, complaints and conflict policies govern conduct and information handling.