



QUALITY MANUALS | FIRST EDITION

IAF GLOBAL SUPPLY CHAIN CRISIS AND BUSINESS CONTINUITY MANUAL

Supply disruption response
and controlled production recovery

STABLE RELEASE

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Emergency sourcing and alternative logistics
Continuity exercises and recovery assurance

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Publication identity and use

IAF Global Supply Chain Crisis and Business Continuity Manual

This manual establishes how automotive organisations prepare for supply disruption, activate a coordinated crisis response and restore an acceptable level of conforming production. It covers semiconductor shortages, natural disasters, blocked customs routes and supplier insolvency, with controlled alternative sourcing, logistics and recovery decisions.

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Application of requirements

“Shall” identifies a requirement when this manual is adopted by an organisation or agreement. “Should” identifies a recommendation. Worked examples are illustrative and supply no universal legal deadline, product limit or completed approval. Annexes provide record structures for controlled local implementation.

Publication and operational release

Stable Release identifies the completed publication text. Actual operating approvals, market obligations, technical validation and role authorisations shall be established by the responsible organisation. Mandatory law, applicable customer rights, approved product requirements and safe work instructions remain controlling for the specific operation.

IAF recognition

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

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Using the operational annexes

Create a separate controlled record for each case. Expand the editable worksheets as needed and enter actual values, evidence links, responsible names and dates. Blank fields and worked examples are not proof of a completed activity.

1 Purpose and continuity outcomes

1.1 The organisation shall maintain the ability to deliver conforming automotive products when a critical supplier, transport route, facility, utility or information service becomes unavailable. This manual applies to manufacturers, component suppliers and logistics partners across inbound supply, production support and recovery. It supplements the ordinary supply chain operating process with exceptional decision controls.

1.2 Continuity objectives shall identify the minimum acceptable output, the products and customers served, the required quality controls and the period for which the arrangement can be sustained. Maintaining a moving assembly line is not an acceptable outcome if vehicles lack required safety functions, traceability or market permissions. A controlled reduction or stop may be the correct continuity decision.

1.3 The responsible operating director shall provide resources for preparation, reserve capacity, verification and exercises. Purchasing savings shall be assessed alongside dependency concentration, alternative qualification time and the cost of a prolonged interruption. Plans shall cover simultaneous failures and constraints outside direct contractual control.

1.4 Each activated response shall retain the initiating facts, decisions, assumptions, owners and verified results. The organisation shall measure actual restored capability and unresolved exposure. This manual does not promise uninterrupted production under every event; it establishes a disciplined method for reducing disruption and preventing crisis actions from creating a second quality or safety incident.

2 Terms and recovery states

2.1 A business continuity plan, or BCP, defines how an organisation continues priority activities during disruption and returns them to an accepted operating condition. A disruption is a loss or material degradation of an essential input or capability. A crisis requires coordinated decisions beyond the normal authority or resources of one function.

2.2 Time to survive is the estimated period for which an affected activity can meet its defined minimum output using usable resources and credible replenishment. Time to recover is the estimated elapsed time to restore the required capability. Both are scenario dependent and shall include assumptions, uncertainty and the date of assessment.

2.3 A recovery time objective is the approved target for restoring an activity. A recovery point objective defines acceptable data loss for a specified information process. Neither is proof of achieved recovery. A maximum tolerable disruption period shall reflect when the consequences become unacceptable, including customer, safety, financial and legal effects.

2.4 Response states shall distinguish monitoring, preparation, activation, stabilisation, recovery, controlled return and closure. A supplier announcing restart does not establish stable production, transport release or acceptable receiving quality. An alternative source may be identified, assessed, technically qualified, commercially contracted or released for a bounded scope; those states shall remain distinguishable.

3 Responsibilities and decision authority

3.1 The operating director shall appoint a continuity owner and named deputies. Supply chain planning maintains the dependency model; purchasing manages supplier commitments; logistics controls movement; engineering assesses changes; quality verifies conformity; and homologation assesses market consequences. Finance and legal personnel review exceptional commercial arrangements within their competence.

3.2 An incident leader shall coordinate the response and its decision timetable. The leader may allocate approved resources but shall not override a technical hold, required market approval, safe work restriction or lawful trade prohibition. The authority matrix shall identify who may commit funds, approve an alternative, alter the production plan and release recovered output.

3.3 Technical approval, exceptional purchasing approval and payment execution shall retain appropriate separation. A person who proposes an urgent broker purchase shall not alone verify authenticity, approve the technical substitution and release payment. Small teams shall arrange competent independent review where an internal separation is impracticable.

3.4 Every critical responsibility shall have an out of hours contact and an effective handover route. Deputies shall have current access to the relevant plans and decision limits. The crisis log shall record delegations and their expiry. Unavailable senior personnel shall not prevent immediate action to protect people or contain suspect product.

4 Operational adoption and planning assumptions

4.1 Before adoption, each entity shall define its facilities, product families, markets, partners and activities covered. Record the connection to the corporate continuity plan and site emergency arrangements. A generic group plan shall be adapted to actual suppliers, transport lanes, information systems and minimum staffing at each participating operation.

4.2 Planning assumptions shall state production demand, approved bill of materials, stock accuracy, usable storage life, transport availability, validation capacity and customer priorities. Critical assumptions shall have evidence owners and review triggers. Historical delivery performance alone shall not support an assumption that a supplier can recover from a damaged facility.

4.3 The adoption review shall identify applicable contractual notification duties, trade restrictions, insurance conditions and local obligations. Exact obligations and current legal identifiers shall be maintained in controlled operational registers. The manual's publication date shall not be recorded as evidence that a facility previously approved or exercised its own plan.

4.4 Release requires a named incident team, accessible plans, verified contact routes, supported recovery strategies and an exercise appropriate to the risk. Open gaps shall have a consequence, owner and funded action. An unresolved gap that invalidates the minimum continuity objective shall prevent the organisation from claiming that capability as available.

5 Supply network and dependency mapping

5.1 The dependency map shall connect each critical finished product to required parts, manufacturing sites, upstream processes and transport nodes. Identify the actual producing location as well as the contracted Tier 1 supplier. A distributor or corporate headquarters shall not be treated as the fabrication or assembly source without verification.

5.2 For critical electronic components, map fabrication, assembly, packaging, test and any specialised programming dependencies to the depth needed for continuity decisions. For mechanical parts, include dedicated tooling, special processes, raw material sources and unique inspection equipment. Record known dependencies and explicitly label gaps rather than filling them with assumed alternatives.

5.3 The map shall show common utilities, ports, industrial parks, logistics providers and lower tier suppliers shared by nominally separate sources. Two commercial suppliers using the same damaged upstream site may provide no effective diversification. The continuity owner shall test whether alternatives can operate independently under the selected scenario.

5.4 Supplier information shall be obtained and shared through authorised channels with proportionate confidentiality controls. Each mapped relationship shall have an owner, last verification date and change trigger. Material sourcing changes, acquisitions, plant moves and new product introductions shall update the dependency model before the old recovery assumptions are reused.

6 Business impact and product criticality

6.1 A business impact assessment shall identify which activities must continue, at what minimum level and by when. Evaluate customer assembly interruption, service obligations, safety campaign supply, contractual effects, cash exposure and constraints on safe shutdown. Distinguish immediate loss from consequences that accumulate over several days or weeks.

6.2 Parts shall be prioritised by the consequence of unavailability, substitution difficulty, replenishment time and concentration of supply. Low purchase value does not imply low criticality. A small connector, programmed controller or unique seal can stop an entire vehicle build. Criticality shall be linked to the current product configuration and production sequence.

6.3 The assessment shall consider minimum viable output rather than assuming full capacity is always the first recovery objective. Identify product mixes that use available approved parts and the operational consequences of resequencing. Commercial prioritisation shall preserve mandatory safety, legal and customer commitments and shall have an accountable approver.

6.4 The output shall assign recovery objectives, required resources and tolerable interruption for each priority activity. Owners shall reconcile incompatible objectives across shared bottlenecks. Review the assessment after substantial demand change, a new model, loss of a source or an exercise showing that the assumed strategy cannot be executed.

7 Survival time and recovery gap calculations

7.1 Planning shall calculate survival using physically usable stock, consumption at the selected production mix, confirmed replenishment and unavoidable losses. Exclude quarantine, reserved safety campaign stock, incompatible revisions, missing kits and goods that cannot lawfully clear the border. Inventory value and a purchase order balance are not usable quantities.

7.2 A simple stock divided by daily consumption calculation is permitted only when demand, unit usage and replenishment assumptions support it. Time phased planning shall be used when arrivals, mixed variants, yields or production rates change. Account for weekends, shifts and time zones consistently; state whether periods mean calendar days or operating days.

7.3 Recovery time shall include diagnosis, contracting, tooling, validation, production ramp, transport, receiving inspection and release. Activities may run in parallel only where dependencies permit. The recovery gap shall compare required arrival or capability dates with survival, using a conservative range where facts are uncertain. A positive gap requires a response or an explicit stop plan.

7.4 Every calculation shall retain its input snapshot and owner. New shipment delays, revised demand or inspection failures shall trigger recalculation. The incident team shall not improve the reported position by counting unapproved substitutions or by replacing a credible recovery estimate with the supplier's most optimistic statement.

8 Disruption scenarios and common cause risks

8.1 Scenario planning shall include semiconductor allocation, fire, flood, earthquake, severe weather, border closure, transport interruption, workforce shortage, information outage and failure of a financially distressed supplier. Select scenarios relevant to actual locations and dependencies. Evaluate combinations where the event also removes the planned alternative or the means of communication.

8.2 For each scenario, describe the initiating event, affected functions, earliest warning, stock exposure, recovery constraints and credible options. Separate loss of capacity from loss of product confidence: a flooded warehouse may contain stock that exists physically but requires containment and technical assessment before use.

8.3 Stress tests shall include longer recovery, lower ramp yield and less transport capacity than the base estimate. A plan dependent on one urgent flight, one specialist technician or one untested tool transfer shall expose that dependency. Alternative scenarios shall include a safe reduction or suspension of production when continuation cannot be supported.

8.4 The scenario register shall link mitigations to responsible owners and evidence of readiness. Periodic review shall retire irrelevant assumptions and add emerging exposures. Scenario severity shall be used to improve decisions and resource allocation, not to create an unsupported numerical claim that all supply risk has been eliminated.

9 Early warning and verification

9.1 The organisation shall monitor delivery failures, allocation notices, financial distress signals, facility incidents, customs holds and relevant transport conditions. Indicators shall have a responsible analyst, an information source, a review frequency and an action threshold appropriate to the affected part. Automated alerts shall preserve the underlying event and timestamp.

9.2 Unverified reports shall be labelled and assessed proportionately. Contact the supplier or logistics provider through a trusted route to confirm location, product scope, current capability and the next reliable update. Lack of a supplier response shall be treated as uncertainty that may itself justify protective preparation.

9.3 Financial or ownership information shall be handled on a need to know basis. A late payment report or rumour does not establish insolvency. Purchasing and finance shall distinguish a temporary dispute, liquidity stress, formal proceedings and operational inability to deliver before selecting commercial interventions.

9.4 The warning record shall capture the first credible signal and any reason activation was delayed. Quality shall be informed when accelerated sourcing, changed inspection or damaged stock may follow. Monitoring thresholds shall be reviewed after missed warnings and excessive false alarms so that important signals remain actionable.

10 Crisis activation procedure

10.1 The detecting function shall open an event record identifying the affected part, supplier, site, route or system, the known interruption and evidence confidence. It shall immediately route safety, environmental or security emergencies to the appropriate emergency process while the continuity assessment proceeds. Administrative classification shall not delay protective action.

10.2 Planning shall estimate the first threatened production or customer commitment using a current inventory snapshot. The continuity owner shall compare the consequence with ordinary recovery authority and decide whether to prepare or activate. Record the decision, incident leader, participating functions and the next review time, including reasons where activation is declined.

10.3 On activation, the incident leader shall establish one decision log and a bounded action plan. Purchasing verifies source status; logistics verifies goods and routes; engineering and quality identify approval constraints; and finance confirms spending limits. Each action shall have a responsible person, expected evidence and deadline tied to the actual exposure.

10.4 The first situation report shall distinguish confirmed facts, working assumptions, options under assessment and approved actions. Notify affected internal and external parties through controlled channels. Activation shall remain reversible and proportionate, but closure shall require demonstrated recovery or an accepted long term operating change with continuing ownership.

11 Incident coordination and situation reports

11.1 The incident team shall use a common event identity and maintain a current view of stock, demand, recovery milestones, alternatives and unresolved holds. Meetings shall produce decisions and assigned actions. Separate the update cadence for rapidly changing physical events from the cadence for longer technical qualification work.

11.2 Each situation report shall state its timestamp and time zone, scope, changed facts, production exposure, customer effects, decisions required and next update. Tables shall identify quantities and units. Supplier claims, carrier booking confirmations and quality release evidence shall remain distinct data types rather than a single green status.

11.3 The incident leader shall resolve competing requests for shared capacity using the approved priority basis. Cross site transfers shall account for the loss imposed on the donating location. Local teams shall not issue conflicting commitments to the same supplier or book the same constrained freight space independently.

11.4 Shift handovers shall identify active holds, unconfirmed arrivals, impending decisions and authorised changes. The receiving lead shall acknowledge ownership. When a communication platform is unavailable, the team shall use the established alternative channel and reconcile decisions back into the controlled record once reliable service returns.

12 Physical inventory and pipeline verification

12.1 The warehouse owner shall verify critical stock by part number, revision, lot, quantity, location, release status and shelf life. Compare physical counts with planning records and resolve discrepancies before allocating scarce material. Include work in progress, consignment stock, supplier held stock and parts already committed to service obligations.

12.2 Goods in transit shall be counted by their actual state: packed, collected, departed, arrived, customs released, received or quality released. A shipping notice shall not be treated as arrival. Confirm the party controlling the goods, the current custody point and whether documentation, sanctions, damage or commercial disputes prevent onward movement.

12.3 Where kit completeness determines output, verify all companion parts and software dependencies. Hundreds of controllers without required connectors, calibration data or valid configuration may support no additional vehicles. The plan shall identify the limiting component and prevent double allocation across plants or product variants.

12.4 Adjustments shall retain the original value, revised value, evidence, person and time. Unexpected loss, damage or mismatch shall trigger containment and a new survival assessment. Stock identified through an emergency count shall follow the same authenticity, traceability and release requirements as ordinary receipts.

13 Constrained production planning

13.1 Planning shall build feasible production scenarios from available released parts, labour, equipment, inspection capacity and market configurations. Identify output by product and time period rather than reporting aggregate units that cannot actually be assembled. The constrained plan shall include supplier ramp assumptions and replenishment uncertainty.

13.2 Resequencing shall assess station balance, operator competence, packaging, line side capacity and error proofing. A mix change can create quality risk even when every individual part is approved. Manufacturing engineering shall verify that work instructions, tooling and system settings support the proposed sequence and that mandatory inspections remain available.

13.3 Partially built vehicles shall have a controlled storage and completion route. Record missing items and prohibit inadvertent shipment or customer release. Assess deterioration, battery state, preservation, traceability and the need to repeat inspections after completion. Build ahead shall not merely hide an unresolved bottleneck in a growing parking area.

13.4 The incident leader shall approve the selected scenario with its expected benefit, costs, customer consequences and stop conditions. Planning shall compare actual output with the scenario daily during active recovery, or at an event appropriate interval, and revise assumptions when losses or arrivals differ materially.

14 Allocation of scarce supply

14.1 Allocation shall use an approved basis considering safety remedies, binding customer commitments, product criticality, feasible production and the effect on downstream operations. The organisation shall identify who decides exceptions and how affected customers are informed. Sales influence or internal competition shall not silently override the recorded basis.

14.2 Reserve stock shall have a stated purpose and release authority. Material held for a safety campaign shall not be diverted to production without review of the resulting safety and legal consequences. An allocation decision shall identify the receiving plant, product, quantity, delivery date and the commitments displaced elsewhere.

14.3 Supplier allocation reports shall distinguish firm commitments from forecasts and opportunities. Purchasing shall obtain evidence of actual production or released stock where reliance is critical. Avoid duplicate ordering that obscures real demand or causes an artificial shortage. Cancellation and rescheduling shall be communicated through a coordinated purchasing route.

14.4 When customers compete for the same scarce input, retain a consistent and lawful decision record. Share only information needed to coordinate recovery and respect commercial confidentiality. Review allocation outcomes for hidden losses, unpaid premium freight and the risk that one short term decision creates a larger interruption at another node.

15 Alternative source readiness

15.1 Before a disruption, critical part owners shall maintain a list of alternative sources with precise readiness status. Record manufacturing site, technical scope, capacity, lead time, required tooling, access to design data and any unresolved market implications. A supplier website, catalogue listing or quotation is an identification lead rather than qualification evidence.

15.2 An alternative shall be assessed for genuine independence from the affected source and for the ability to meet demand under the selected scenario. Verify lower tier dependencies, competing commitments, process capability, inspection resources and change notification arrangements. Nominal installed capacity shall be reconciled with usable capacity and achievable yield.

15.3 Engineering shall maintain the validation plan needed for a change, including form, fit, function, durability, software compatibility and safety consequences. Quality shall define evidence and release controls. Homologation shall determine whether test coverage, approvals, declarations or market documentation must change before affected vehicles can be released.

15.4 Readiness shall be refreshed after design revisions, equipment moves, prolonged inactivity or loss of key personnel. Where holding an alternative ready has a cost, management shall make that cost visible against the recovery gap. The plan shall state what remains to be done when an alternative is activated.

16 Emergency alternative part approval procedure

16.1 Purchasing shall open a proposed substitution record with the original and alternative identities, producing sites, available quantities, urgency and evidence of supply. The record shall identify the exact vehicle or assembly configurations intended to use the part. Urgency shall determine review priority without becoming the technical acceptance criterion.

16.2 Engineering shall compare specifications, interfaces, materials, software, environmental limits and failure consequences, then define required validation. Quality shall assess the production process, measurement evidence, traceability and containment plan. The homologation owner shall determine market effects and obtain required permissions or evidence through the applicable route before release.

16.3 A competent reviewer shall record acceptance, restricted acceptance, further testing or refusal. Any temporary approval shall define quantity, time period, products, sites, markets, special controls and expiry. A customer concession cannot waive a mandatory safety or legal requirement, and an internal deviation cannot create statutory approval.

16.4 The receiving and production systems shall enforce the authorised scope and identify affected units. Verify the first production use and monitor subsequent results. At expiry, stop further use unless a new supported decision exists. Retain removed restrictions and the transition back to the original or permanently qualified configuration.

17 Semiconductor shortage response

17.1 The component owner shall identify the constrained device at manufacturer part number and approved revision level. Confirm its function, programmed content, package, temperature grade, lifecycle status and use across assemblies. Allocation shall be calculated from the number of devices per assembly, usable yield and the finished product mix.

17.2 Purchasing shall seek verified allocation from approved channels and distinguish wafer starts, packaged devices and released stock. A new wafer commitment may have little effect on immediate survival. Identify constraints in packaging, test, substrates and programming, including shared facilities used by supposedly alternative component sources.

17.3 Engineering shall assess approved pin compatible alternatives, board redesign, software adaptation and product mix changes as separate options. Apparent electrical equivalence shall not replace validation of timing, power, diagnostics, security functions and environmental performance. Required safety functions shall not be removed or silently disabled to reduce chip content.

17.4 The crisis plan shall sequence short term allocation, qualified substitution and longer redesign according to their achievable release dates. Record broker exposure, testing capacity and the risk of obsolete stock after recovery. Customer commitments shall reflect approved configurations and realistic supply, with homologation review before any affected market release.

18 Independent distributors and counterfeit prevention

18.1 Purchases outside ordinary authorised channels shall require a documented necessity, supplier identity check, commercial review and a risk based authenticity plan. Verify the source of goods, chain of custody, handling conditions, lot information and the ability to pursue discrepancies. A certificate supplied by the seller shall be assessed rather than accepted automatically.

18.2 Quality shall define inspection and testing appropriate to the part and consequence of failure. Consider packaging, marking consistency, electrical function, date code plausibility, storage history and specialist analysis where needed. Sampling limitations shall be explicit: acceptable findings on sampled devices do not prove that every unit in an uncertain mixed lot is authentic.

18.3 Suspect goods shall be quarantined, with identity and evidence preserved. Do not blend questioned lots with released stock or return them through an uncontrolled route that could put them back into the supply chain. Purchasing and legal personnel shall manage dispute, notification and disposal decisions within applicable obligations.

18.4 Financial urgency shall not remove technical release authority. Advance payments and changed bank details shall receive independent verification through a trusted contact. The final record shall identify the evidence supporting use, the units affected, residual limits and whether the exceptional source remains eligible after the crisis.

19 Electronic and software dependent substitutions

19.1 A changed electronic component can affect software timing, diagnostic behaviour, communication, security and calibration even when the mechanical footprint is unchanged. The design owner shall identify affected functions and establish the software and hardware versions that must be evaluated together. Required validation shall include the actual intended configuration.

19.2 Software changes made to accommodate scarcity shall enter the controlled development and release process. Preserve requirements, change rationale, test results, approved binaries and configuration identifiers. Prohibit unofficial patches, borrowed credentials or altered end of line settings used solely to make an unapproved assembly appear acceptable.

19.3 The assessment shall address safe failure behaviour, update compatibility, service diagnosis and the ability to distinguish affected vehicles later. Manufacturing, service and market records shall receive the new configuration mapping. A successful bench test does not by itself establish vehicle integration or continued market conformity.

19.4 Release shall specify the allowed component and software combinations, verification method and recovery route if field problems emerge. The source recovery plan shall include whether vehicles return to the original combination or remain in a maintained alternative configuration. Neither route shall create an undocumented mixed population.

20 Materials and process substitution

20.1 Material or process alternatives shall be reviewed for performance, durability, environmental exposure, dimensional behaviour and downstream compatibility. The evaluation shall include adhesives, coatings, heat treatments, resins, metals and battery related materials where applicable. A similar commercial grade name shall not establish equivalence for an automotive application.

20.2 The process owner shall define trials and acceptance criteria before manufacturing production quantities. Verify equipment settings, curing or treatment conditions, inspection methods and the ability to distinguish trial material. Where destructive validation or long duration testing is necessary, the response plan shall reflect the real elapsed time.

20.3 Quality shall control mixed batches, cleaning, cross contamination and changeover. Identify whether packaging, storage life, transport conditions or handling precautions change with the alternative. The receiving system shall prevent an old inspection plan from automatically releasing a newly substituted material without the required checks.

20.4 Engineering and homologation shall determine the effect on the approved product and market evidence. Bounded use shall have explicit conditions and traceable production identities. When the original material returns, assess reverse changeover and remaining alternative stock rather than assuming the previous process can restart without verification.

21 Tooling transfer and alternate manufacturing sites

21.1 A tooling recovery plan shall identify ownership, location, condition, maintenance history, transport needs and lawful access. Include drawings, programs, fixtures, gauges and process knowledge required to use the tool. Physical possession of a die or mould does not establish the right or practical ability to manufacture the part.

21.2 Before transfer, engineering shall assess the receiving machine interface, utilities, foundation or lifting needs, operating competence and inspection capability. Plan safe removal, transport, receipt and installation through competent personnel. The crisis timetable shall include setup, trial output, measurement and approval rather than ending at tool arrival.

21.3 The transfer record shall retain condition photographs where useful, serial identities, missing items and custody changes. Back up authorised programs and settings securely. Sensitive design information shall be limited to the receiving party's approved scope, with clear rights for use, retention and return.

21.4 Production release shall follow representative trials and required customer or market actions. Compare results with the approved baseline and retain traceability of all trial and production units. The original and alternate sites shall have a defined transition point so that duplicated production or revision confusion does not undermine containment.

22 Tier 1 supplier insolvency response

22.1 Purchasing and legal personnel shall verify the supplier's actual operating and legal status, including the authorised representative in any formal proceeding. The incident team shall separately assess stock, workforce, utilities, critical subcontractors and access to tooling or data. Financial distress shall not be assumed to mean immediate physical shutdown.

22.2 Legal review shall establish ownership, title, security interests, retention rights and any limits on payment, collection or transfer. The organisation shall not remove tools, inventory or confidential information merely because they support its production. Emergency arrangements shall be agreed with parties who have authority to commit the affected assets.

22.3 The recovery options may include a controlled continuation agreement, direct support for essential inputs, lawful transfer of production or qualification of another supplier. Finance shall evaluate cash exposure, recoverability, fraud risk and the effect on other creditors where relevant. Technical quality controls shall remain effective during any supervised continuation.

22.4 The action plan shall identify who controls each asset, the evidence needed for access, the receiving capability and the earliest credible supply date. Protect sub tier continuity and traceability. A commercial rescue agreement shall not be reported as recovered capacity until the agreed output can be manufactured, released and delivered.

23 Emergency finance and purchasing controls

23.1 The authority matrix shall define exceptional expenditure limits, approval routes and evidence for premium freight, tooling moves, stock purchases and supplier support. Requesters shall show the continuity consequence, alternatives considered and expected benefit. Approval shall be recorded before commitment where practicable, with a controlled urgent route for exceptional circumstances.

23.2 Finance shall distinguish purchase commitments, deposits, advances, reimbursable costs and settled payments. Verify beneficiary identity and bank details independently when information changes. A crisis email or telephone call shall not justify redirecting funds to an unverified account. Maintain separation between the commercial requester and payment release.

23.3 Supplier support shall have defined purpose, milestones, deliverables, rights and exit conditions. Review whether the organisation can recover funded tooling or material and whether commitments remain enforceable under the actual circumstances. Do not describe financing as secured or recoverable without the evidence supporting that conclusion.

23.4 The incident cost register shall connect each spend to an authorised action, receipt and outcome. Review duplicate invoices, unused freight bookings and abandoned orders. Cost pressure shall not remove necessary testing or safety controls, and postevent audit shall not automatically treat every expensive emergency decision as misconduct.

24 Natural disaster response and supplier site assessment

24.1 When a natural event affects a supplier region, the first priority shall be people and the appropriate emergency response. Purchasing shall seek a factual status update without pressuring personnel to enter unsafe facilities. Confirm affected sites, utilities, transport access and the expected time for a competent damage assessment.

24.2 Material at the affected location shall be assessed for damage, contamination, storage excursion and lost identification. Goods shall not be released solely because their outer packaging appears intact. Quality shall define containment and inspection needs, including whether testing can establish suitability after the actual exposure.

24.3 The recovery plan shall include building access permission, equipment inspection, utility reliability, workforce availability and the status of lower tier inputs. A site reopening announcement is not evidence that the approved production process is stable. Distinguish limited trial activity from released production and confirmed shipping capacity.

24.4 Alternative routes and sites shall be evaluated for the same regional disruption. Protect recovery workers from fatigue and unsafe acceleration. Record whether changed equipment, relocated processes or substitute materials require renewed validation, and maintain a controlled stop where safe conforming output cannot yet be demonstrated.

25 Utilities workforce and essential service continuity

25.1 Site continuity plans shall identify essential electricity, gas, water, compressed air, ventilation, communications and specialist services. Assess which failures require immediate safe shutdown and which permit a limited operating mode. Backup supplies shall be rated and maintained for the actual load and duration by competent engineering personnel.

25.2 The minimum staffing plan shall identify authorised operators, maintenance, inspection, emergency and supervisory roles. A headcount figure without the necessary competence shall not establish readiness. Cross training shall be demonstrated practically, and staffing alternatives shall respect fatigue controls, safe working arrangements and applicable employment obligations.

25.3 Outsourced services such as waste removal, laboratory testing, equipment maintenance and security may constrain output even when production machinery remains available. Identify substitute providers and their required permissions. Service continuity shall include access credentials, work instructions and safe coordination with ongoing operations.

25.4 Before using a degraded mode, record permitted activities, limits, monitoring and stop conditions. Recheck product quality when utility instability may affect process parameters. Recovery shall verify the normal supply and reconcile any temporary settings, bypass permissions or accumulated maintenance before restoring unrestricted production.

26 Customs blockage and border interruption response

26.1 Logistics shall confirm the exact nature of the blockage: missing documents, classification dispute, inspection, licence issue, trade restriction, capacity congestion or physical border closure. Record the goods, custody location, responsible broker and official case details where available. Distinguish an estimated delay from a legal prohibition on movement.

26.2 The trade compliance owner shall identify lawful resolution options and the evidence each requires. Correct inaccurate declarations through the authorised process. Do not alter origin, value, description, consignee or routing to conceal the true transaction or evade a restriction. A transshipment point does not automatically change origin or eligibility.

26.3 Alternative routes shall be checked for transit permissions, import conditions, customs procedures, carrier acceptance and the receiving site's ability to use the goods. Compare total door to usable stock time, including border clearance and quality release, rather than the transport leg alone. An apparently faster route may add a new legal or physical bottleneck.

26.4 The incident team shall approve the feasible option and update survival calculations. Customers shall receive realistic effects on supply. Preserve correspondence, revised documents, charges and final release evidence. Goods shall remain unavailable for production until the applicable legal, custody and technical release conditions have been met.

27 Alternative route selection procedure

27.1 The logistics planner shall define origin, destination, cargo identity, quantity, dimensions, handling limits, required arrival and the current route failure. Generate feasible alternatives across road, sea, rail or air where the cargo and permissions allow. Include multimodal handovers and the ability to obtain reliable tracking.

27.2 For each candidate, verify lawful movement, confirmed capacity, terminal handling, customs readiness, packaging suitability and insurance conditions. Eliminate options that cannot satisfy essential requirements before comparing cost or speed. A score shall not compensate for prohibited transit or inadequate handling of a safety critical shipment.

27.3 Compare total lead time as collection plus transit plus transfer, clearance, receiving and inspection time. Use ranges where uncertain and identify common route dependencies. Confirm the booking and custody responsibilities with the actual providers. The selected plan shall state fallback points and what event requires rerouting or escalation.

27.4 Release the shipment only after documentation, packaging and receiving readiness are confirmed. Monitor critical milestones and update the production plan when the expected usable arrival changes. At closure, compare planned and actual performance and record lessons about bottlenecks, extra handling, damage and unanticipated border requirements.

28 Carrier capacity and transport partner assurance

28.1 A carrier proposed during a crisis shall be verified for legal identity, operating scope, equipment suitability, cargo acceptance and the actual subcontracting chain. Check capacity for the required dates and route rather than relying on a general service promise. Relevant insurance or liability arrangements shall be reviewed by competent personnel.

28.2 The transport order shall define cargo description, handling restrictions, collection and delivery points, custody transfers, milestone reporting and incident contacts. Sensitive or high value parts shall receive proportionate security controls. Drivers and terminal staff shall receive necessary handling information without broad access to confidential engineering data.

28.3 Logistics shall confirm that the receiving location has unloading equipment, operating hours, space and authorised personnel. Avoid routing urgent material to a facility that cannot process it. Temperature, moisture, shock or orientation requirements shall be controlled where they matter to product suitability.

28.4 Missed milestones, unexplained route changes, damaged seals or inconsistent tracking shall trigger verification and escalation. A tracking system outage shall not be resolved by inventing delivery status. The performance review shall include custody integrity and usable delivery, with corrective action for repeated subcontractor or handover failures.

29 Trade documentation and shipment integrity

29.1 Each shipment shall have an internally consistent set of commercial, transport and technical documents appropriate to the transaction. Reconcile part descriptions, quantities, value, origin evidence, parties and routing. The trade owner shall retain the exact legal and procedural requirements in the controlled shipment file rather than relying on generic terminology.

29.2 Urgent route or consignee changes shall trigger document review before movement. The broker shall receive approved information and shall return evidence of submissions and release. The organisation remains responsible for the accuracy of information it provides; outsourcing clearance does not make an unsupported declaration acceptable.

29.3 Where export controls, sanctions or restricted technology may apply, obtain competent review before sharing data or shipping goods. Engineering drawings supplied to accelerate customs clarification shall be limited to what is necessary and permitted. Customer urgency shall not create an exception to a binding restriction.

29.4 Document errors shall be corrected with an audit trail preserving prior versions and the reason for change. Shipment release shall connect to physical identity and custody, not merely a cleared invoice. Retain rejected submissions and material correspondence when needed to explain delay, liability or later compliance review.

30 Packaging and controlled cargo conditions

30.1 Emergency transport shall preserve product condition and identity throughout the selected route. Packaging shall suit actual handling, stacking, vibration, weather and transfers. Reuse of a familiar container is permitted only when its condition and protection remain suitable. Record special preservation needs for electronics, precision parts and sensitive materials.

30.2 Dangerous or otherwise restricted cargo shall be classified, packed, documented and carried through the applicable specialist process. The continuity team shall not improvise battery transport or conceal cargo characteristics to obtain a faster service. Damaged or suspect batteries require a competent handling and transport decision before routine shipment is considered.

30.3 Any departure from the ordinary packaging design shall have technical assessment and acceptance criteria. Verify closure, load restraint, identification and handling instructions before dispatch. If a sustainability target cannot be met safely in an emergency, record the justified packaging decision and a recovery or reuse plan rather than weakening essential protection.

30.4 Receiving personnel shall inspect packaging and evidence of excursions or tampering. Quarantine affected goods where suitability is uncertain and inform the incident team of the resulting stock impact. Packaging arrival alone does not establish part usability, and damaged goods shall not be counted as recovered supply before release.

31 Emergency warehousing and interplant transfers

31.1 Temporary warehousing shall be reviewed for security, environmental conditions, fire protection, permitted goods, traceability and access to receiving inspection. Define locations and status controls before the first receipt. An available building shall not automatically be suitable for batteries, moisture sensitive devices or precision assemblies.

31.2 Interplant transfers shall reconcile the donating site's commitments and the receiving site's approved configurations. Confirm part revision, quantity, packaging, shelf life and ownership. The allocation decision shall identify the operational consequence at both locations. A transfer shall not merely relocate an unreported shortage or a quarantined lot.

31.3 The inventory system shall retain source lot and custody through relabelling, repacking and consolidation. Prevent duplicate stock creation when one site ships before another receives. Offline transactions shall use controlled identifiers and later reconciliation. Receiving holds shall remain visible to planners and shall not be removed to improve availability reports.

31.4 Temporary capacity shall have an exit plan covering remaining goods, records, security credentials and restored ordinary flows. Audit damaged, missing and excess stock during closure. Permanent use of a temporary location shall require the normal facility and process approvals instead of repeated emergency extensions.

32 Information outage and manual continuity

32.1 The plan shall identify the information needed to order, receive, build, inspect and ship safely during an outage. Maintain protected, current copies of approved part identities, production configurations, critical contacts and essential instructions. Recovery point objectives shall be assigned by process, since losing a schedule differs from losing vehicle genealogy.

32.2 Manual operation shall have a defined scope, competent authorisation and a reliable way to preserve unique identities. Use controlled paper or offline records for receipts, consumption, inspection and shipment. Stop activities where missing configuration or traceability information prevents a defensible release. Memory and personal spreadsheets shall not become an uncontrolled substitute master.

32.3 The technology owner shall restore services through a tested recovery method and verify integrity before reconnecting dependent processes. A system that opens successfully may still contain stale or incomplete transactions. Users shall check representative orders, stock statuses, instructions and access controls against known reliable evidence.

32.4 Reconciliation shall resolve duplicate entries, missing transactions and conflicting versions without destroying the original offline record. The process owner shall authorise return to normal operation and identify any products requiring further review. Recovery time and data loss shall be measured from actual events and compared with the approved objectives.

33 Cyber disruption and supplier system compromise

33.1 A suspected cyber incident affecting supplier instructions, shipping records or production data shall enter the security response process. Continuity staff shall preserve the relevant evidence and use trusted alternative contacts. An urgent email reporting a changed bank account, collection address or software package shall receive independent verification before action.

33.2 The technology owner shall distinguish unavailable systems from systems whose integrity is uncertain. A compromised planning feed can create false stock or routing decisions even while remaining online. Quarantine questionable instructions and reconcile critical information with reliable records. Do not reconnect an affected partner merely because it reports that service has resumed.

33.3 Alternative communication and data exchange shall use approved channels with restricted access and verified recipients. Temporary arrangements shall retain traceability and avoid uncontrolled public file links. A supplier's emergency remote support shall not gain broader access to production networks than the task requires.

33.4 Recovery shall include confirmation of trusted data, credentials and configurations as well as system availability. The incident leader shall coordinate production restart with the security and quality owners. Preserve unresolved data integrity questions as release constraints, and review whether products or financial transactions already processed require containment or correction.

34 Crisis records and controlled information

34.1 The incident record shall connect facts, assumptions, decisions, approvals and outcomes under one event identity. Record dates and time zones, responsible persons, supporting evidence and the version of each plan used. Decisions made verbally during urgent work shall be captured promptly and confirmed by the responsible owner.

34.2 Access shall reflect operational need and the sensitivity of supplier finances, technical designs, personal details and commercial commitments. Situation reports for wider distribution shall omit unnecessary restricted information. Sensitive attachments shall retain controlled access instead of being copied into unrestricted meeting notes or messaging groups.

34.3 Records shall preserve superseded forecasts and changed decisions so that the event can be reconstructed. Correct errors by identifiable amendment. A later successful outcome shall not justify deleting evidence of a failed option, missed warning or temporary departure. Retention and disposal shall follow the IAF document control framework and actual obligations.

34.4 After closure, the custodian shall verify that the decision log, technical approvals, logistics evidence, expenditure and recovery results are complete and retrievable. Lessons may be circulated in a deidentified form. Proprietary supplier information shall not become a general training resource without permission or another valid basis.

35 Customer and stakeholder communication

35.1 The communication owner shall identify customers and other parties affected by disruption, together with notification obligations and agreed channels. Initial messages shall state known facts, likely operational effects, actions underway and the next update. Do not provide a firm recovery date when the supporting technical or transport milestones remain uncertain.

35.2 Product substitutions, changed specifications or altered delivery commitments shall be explained through the applicable commercial and technical process. Customer agreement shall be specific where required. A general crisis notice shall not be treated as acceptance of a different product, removal of a safety feature or a waiver of mandatory rights.

35.3 The team shall coordinate messages across purchasing, sales, logistics and plants to avoid contradictory commitments. Public statements shall protect confidential information while accurately describing material effects. Communications about safety concerns shall follow the relevant safety and recall process without being delayed for commercial reassurance.

35.4 Retain the content, recipients, date, acknowledgements and outstanding questions for material messages. Review whether the receiving customer can act on the information, including part identities and revised quantities. Repeated holding messages shall not replace escalation when a customer decision is needed to prevent a larger downstream interruption.

36 Supplier collaboration and engineering information

36.1 Recovery collaboration shall define what technical and commercial information each participant needs, who may share it and the permitted use. Access to drawings, process recipes, tooling programs and customer data shall be bounded by the recovery task. Confidentiality arrangements shall be supported by practical access controls and recorded authorisations.

36.2 The organisation shall verify the rights needed to transfer design data or manufacture at an alternative site. Supplier failure does not automatically release intellectual property or contractual restrictions. Where rights are uncertain, legal and engineering owners shall develop a lawful recovery option rather than assuming that possession of a file confers permission.

36.3 Shared workspaces shall identify participants, approved versions, download rights and expiry. Remove access when the task ends or personnel change. Do not send an entire vehicle design package to resolve a single component shortage when a controlled extract is sufficient. Record the technical baseline supplied to the alternative source.

36.4 Collaborative decisions shall preserve each party's technical accountability and required approvals. Competitor or industry cooperation shall avoid inappropriate exchange of prices, customer allocation or other sensitive commercial information. The final record shall identify deliverables, continuing rights, returned assets and verified access closure.

37 Production changes during continuity operation

37.1 Manufacturing changes shall have a controlled instruction identifying the affected line, product, parts, software, tooling and inspection requirements. Define the first and last units under each temporary arrangement. Operators shall receive the approved instruction before use, with obsolete instructions removed from the point of work.

37.2 The process owner shall assess error proofing, takt changes, manual operations and increased rework. Bypassing a station or performing work offline requires an approved method that preserves the necessary quality and safety controls. A temporary route shall not permit missing torque evidence, disabled interlocks or lost component genealogy.

37.3 Quality shall verify the initial output and monitor the process at a frequency justified by the change and consequence of failure. Segregate trial, suspect and released units. Engineering and homologation shall resolve configuration and market implications before shipment. Production completion and market release shall remain distinct decisions.

37.4 Temporary changes shall expire by a defined quantity, date or condition and shall have an owner for closure. Review cumulative temporary changes that may interact. When returning to the ordinary process, verify settings, parts and instructions, then reconcile all units produced under the exceptional route.

38 Controlled slowdown and safe stop

38.1 The continuity plan shall identify the conditions requiring reduced output or a controlled stop, including exhausted usable stock, lost inspection capability, unapproved configuration and unsafe utility or staffing conditions. The incident leader shall not require production to continue merely to avoid reporting downtime. The site shall retain immediate safety stop authority.

38.2 Before stopping, the process owner shall secure work in progress, materials, process settings and traceability. Identify preservation needs for tooling, chemicals, batteries, unfinished coatings and temperature dependent processes. Competent personnel shall perform shutdown through approved work instructions, with emergency actions handled by the site emergency process.

38.3 Planning shall communicate the actual last conforming output, incomplete units, stock position and expected restart constraints. Customers and logistics partners shall receive the relevant revised commitments. Avoid shipping incomplete or unverified vehicles to move the apparent interruption outside the factory boundary.

38.4 During the stop, maintain essential monitoring, security, environmental controls and equipment preservation. Record inspections and any deterioration. The restart plan shall be updated as conditions change and shall require evidence that the reason for stopping has been resolved or controlled within an approved operating scope.

39 Production restart procedure

39.1 The incident leader shall request a restart review when the proposed supply, equipment and staffing are available. The review shall identify the intended products, rate, duration and remaining constraints. Confirm that facility access and safe work conditions have been released by the competent site functions before production trials begin.

39.2 Engineering shall verify tooling, settings, utilities, software and instructions. Quality shall confirm material identity, inspection capability, calibration status, traceability and required market evidence. Purchasing and logistics shall demonstrate credible replenishment for the proposed operating period. A single emergency delivery shall not establish sustainable recovery.

39.3 Run the approved trial or first production sequence and record actual results against defined acceptance criteria. Hold output until necessary review is complete. Any failed criterion shall produce a corrective action or a narrower supported restart scope, with affected products contained rather than averaged into an overall passing result.

39.4 The authorised operations and quality roles shall record restart approval, restrictions, monitoring and stop triggers. Planning shall communicate the released capability accurately. Review early output and replenishment at a defined interval, and maintain the incident structure until the recovery criteria are demonstrated over the agreed observation period.

40 Ramp capacity and quality monitoring

40.1 The recovery plan shall define output and quality milestones for the ramp, including available shifts, yield, inspection capacity and transport cadence. Track released good units rather than gross units started. A supplier's equipment utilisation rate shall not be substituted for the number of acceptable parts actually available to the customer.

40.2 Quality monitoring shall focus on changed processes, new operators, alternative materials, transferred tools and manual workarounds. Record defects, rework, traceability failures and escaped nonconformity by the relevant population. Use heightened controls where evidence supports them and define the conditions for returning to ordinary monitoring.

40.3 Planning shall compare actual ramp performance with the assumptions used in allocation and customer commitments. If yield is lower or inspection consumes more time, update the usable supply forecast. Repeated optimistic forecasts shall trigger management review of the underlying capability and remaining recovery gap.

40.4 Ramp restrictions shall be removed only by the competent owner after sustained evidence, not by calendar expiry alone. Preserve the production identities covered by each stage. An emerging safety or compliance concern shall enter the appropriate containment and field assessment process even if it threatens the announced recovery date.

41 Backlog recovery and network stabilisation

41.1 After supply resumes, planning shall reconcile backlog by confirmed customer order, product configuration and due date. Remove duplicate or cancelled demand through an authorised process. The recovery schedule shall include service needs, safety campaigns and ordinary demand so that backlog clearance does not create another shortage elsewhere.

41.2 Additional shifts, premium transport and increased batch sizes shall be assessed for staffing, fatigue, equipment wear, warehouse capacity and quality effects. Recovery targets shall not permit overloaded transport, skipped inspection or uncontrolled overtime. Resource limits shall be visible in the approved schedule and escalation process.

41.3 The organisation shall prioritise backlog using a documented and lawful basis, with customer communication where commitments change. Distinguish delivery of late orders from restoration of current on time performance. A temporary surge shall be evaluated for its sustainability and the risk of leaving excessive inventory after demand normalises.

41.4 The incident leader shall monitor congestion across suppliers, receiving, production and outbound logistics. Release unnecessary emergency bookings and duplicate orders in a coordinated manner. Network stabilisation is achieved when flows and controls are reliable at the agreed demand level, rather than when one plant briefly reaches its peak rate.

42 Return to normal and temporary change closure

42.1 The continuity owner shall propose return to ordinary management when recovery objectives are demonstrated and residual risks have accountable owners. Define the observation period, evidence and pending commitments supporting that decision. Continued dependence on an unapproved source or unresolved safety hold shall prevent unrestricted closure.

42.2 Temporary suppliers, routes, access permissions, work instructions and financial arrangements shall be reviewed individually. Decide whether each ends, remains restricted or enters the permanent approval process. Permanent adoption shall receive the normal technical and commercial evaluation; repeated emergency extensions shall not replace it.

42.3 Reconcile remaining stock, incomplete units, open claims, premium freight, tooling custody and supplier commitments. Preserve the identities of products built under alternative arrangements. Inform service and warranty functions of any continuing configuration differences and required support, including software compatibility and spare part availability.

42.4 The closure record shall retain the event outcome, actual disruption, lessons, unresolved actions and management acceptance. An incident may close while improvement actions remain under ordinary management, provided the operational consequence is explicit. Closure shall not erase the need for field monitoring, customer remedy or legal action arising from the event.

43 Emergency cost review and financial reconciliation

43.1 Finance shall reconcile committed, received, invoiced and paid costs against authorised crisis actions. Separate ordinary purchasing from incremental cost, including premium freight, idle capacity, revalidation, temporary storage and supplier support. Define the accounting treatment through the competent finance process rather than assuming every crisis expense is recoverable.

43.2 Audit shall compare quantities, rates, shipment evidence and approvals, with particular attention to duplicate bookings, unused services, changed beneficiaries and emergency advances. Analytical flags shall prompt review and shall not alone establish fraud. Personnel shall have an opportunity to explain decisions made with the information available at the time.

43.3 Customer or supplier recovery claims shall have a documented contractual and factual basis. Prevent double recovery across insurance, supplier credits and customer reimbursement. Preserve evidence of mitigation and actual loss, including the difference between production deferred and production permanently lost.

43.4 Management shall review whether the chosen response achieved the expected continuity benefit at an acceptable cost. A high cost option may be justified by the avoided consequence, but the basis shall be visible. Findings shall improve approval, procurement and planning controls without creating incentives to hide necessary emergency spending.

44 Continuity performance measures

44.1 Measures shall define their population, time basis, units and exclusions. Track threatened and actual lost output, time to activate, time to minimum capability, time to stable recovery, alternate source readiness and forecast accuracy. Report safety or quality incidents created during recovery alongside production performance.

44.2 Supply recovery measures shall use quality released quantities available at the required location. Shipment, customs release and receiving release are distinct milestones. The organisation shall not count unqualified alternatives as recovered capacity or remove affected products from the denominator merely because they are difficult to restore.

44.3 Compare actual recovery with the objective and the scenario assumptions. Record the reason for material differences, including validation, lower tier constraints, labour, customs or transport. Financial measures shall distinguish gross emergency spend, confirmed recovery from other parties and estimated avoided loss, with assumptions disclosed.

44.4 Management shall review trends and remaining exposure rather than one favourable event score. Indicators shall identify concentrated dependencies and stale alternatives. Targets shall not reward premature closure, suppressed downtime or reduced inspection. Annex K provides a worked example to support consistent calculation and interpretation.

45 Exercises and scenario validation

45.1 The exercise programme shall cover priority scenarios and the practical dependencies needed to execute the plan. Include tabletop decisions, contact tests, stock reconciliation, alternative route verification, data recovery and selected controlled production trials. A document review alone shall not be recorded as proof that an entire recovery strategy works.

45.2 Each exercise shall define its objective, participants, scenario assumptions, injects, evaluation criteria and safety boundaries. Use fictional or sanitised data where appropriate. Do not place real orders, change live production or contact external parties as part of a simulation unless those actions are separately authorised and controlled.

45.3 Evaluators shall record what participants actually did, the time taken, evidence used and decisions missed. Test uncertainty, absent key personnel, incorrect inventory and failure of a preferred alternative. A scenario shall not be made easier mid exercise merely to produce a passing result.

45.4 Findings shall have accountable owners, due dates and repeat verification. Material gaps shall update the BIA, strategy or claimed readiness. Exercises shall be repeated after significant changes or failed controls. The programme shall build demonstrable capability while respecting real operating constraints and participant competence.

46 Competence and continuity training

46.1 The organisation shall define competence for incident leadership, constrained planning, emergency sourcing, trade review, technical change, quality release and crisis communication. Training shall explain authority limits and the evidence required for each decision. Attendance alone shall not establish permission to approve an alternative part or a market release.

46.2 Assessment shall include realistic tasks such as identifying an unusable stock assumption, challenging an unsupported recovery date, selecting a lawful route and preserving a technical hold under pressure. Retain observed results and development needs. Deputies shall receive sufficient practical exposure to perform their assigned role when the primary owner is unavailable.

46.3 Suppliers and logistics partners shall receive the relevant activation, contact and information requirements. Exercises shall verify that partners understand what evidence is needed and how to report changed conditions. Language and time zone differences shall be addressed in the communication plan.

46.4 Competence shall be reviewed after significant technology change, prolonged inactivity, poor exercise performance or actual event findings. Temporary authority shall be bounded and supervised. Management shall provide enough trained personnel to support sustained incident work without relying on fatigue or one individual's undocumented knowledge.

47 Internal audit and management review

47.1 Audits shall trace selected critical parts from dependency mapping through impact assessment, alternative readiness and exercise evidence. Sample closed incidents and unresolved risks. Verify whether the actual source, site and route match the assumptions in the plan and whether temporary approvals stayed within their quantity and time limits.

47.2 Auditors shall examine objective evidence and independence of important decisions. Test records of stock reconciliation, technical release, customer communication and financial approval. A complete template shall not establish effective control when the supporting evidence is absent or contradicts the recorded status.

47.3 Management review shall assess concentrated dependencies, outdated strategies, unresolved recovery gaps, supplier financial exposure and the cost of readiness. Record decisions on inventory, diversification, tooling, validation capacity and staffing. Resource decisions shall connect to the specific continuity objective they are expected to support.

47.4 Corrective actions shall address causes and demonstrate effectiveness. If a strategy repeatedly fails exercises or actual events, reduce the claimed capability until it is corrected. The review shall also recognise successful controls and retain practical lessons that can be applied to comparable products or sites.

48 Document interfaces and revision control

48.1 This manual operates within IAF-QM-001 and the IAF Documents and Records Guide. IAF-MAN-SCL-001 governs ordinary supply and logistics; IAF-MAN-ASI-001 supports service inventory; and IAF-MAN-IPC-001 governs packaging. Continuity arrangements shall connect to these processes through controlled instructions and case identities.

48.2 IAF-MAN-SQA-001 governs supplier quality evidence, IAF-MAN-NPI-001 supports new process introduction and IAF-MAN-HLC-001 governs market conformity consequences. IAF-MAN-SDV-001 controls vehicle software release. Emergency sourcing shall not replace the technical decisions assigned to these processes or create an implied approval through purchasing alone.

48.3 IAF-MAN-ISP-001 governs facility and engineering information protection, while IAF-MAN-OTC-001 supports production network security. Physical emergencies and battery incidents shall follow IAF-MAN-IRB-001. The IAF privacy, conflict of interest, whistleblowing and complaints policies apply to their respective institutional interfaces.

48.4 Revisions shall identify affected plans, forms, suppliers, training and system controls. The document owner shall coordinate notice and implementation through the established document process. An updated manual shall not retrospectively validate an earlier unapproved substitution, alter the facts of an incident or imply statutory permission or IAF recognition for an organisation.

Annex A Operational adoption and responsibility record

Complete for each entity and site before claiming a continuity capability. Attach actual decisions and retain later scope changes as separate versions.

Record field	Required entry and evidence
Scope	Entity, sites, product families, markets, critical activities and external partners covered.
Objectives	Minimum accepted output, tolerable interruption, recovery targets and evidence supporting them.
Accountability	Operating director, continuity owner, incident leader, functional leads and named deputies.
Authority	Spending, sourcing, technical release, trade decisions, safe stop and restart approval limits.
Obligations	Controlled contractual and market registers reviewed, with owners and review dates.
Readiness	Current plans, protected copies, contacts, equipment, reserve capacity and exercise evidence.
Open conditions	Gap, consequence, affected capability, interim control, responsible person and due date.
Adoption	Actual decision date, signatories, released scope, restrictions and next review triggers.

Enter actual names and evidence locations in the editable record. A publication date or completed blank template does not demonstrate site adoption.

Annex B Dependency and common cause worksheet

Use one record for each critical part or service. Expand the rows to map upstream processes and shared infrastructure.

Record field	Required entry and evidence
Output	Finished products and commitments affected, minimum output and accountable owner.
Part identity	Part number, revision, quantity per unit and required software or companion items.
Producing sites	Contracted supplier, actual manufacturing sites and verified lower tier dependencies.
Shared exposure	Common fabrication, tooling, utilities, industrial park, ports, carriers or information platforms.
Source evidence	Information origin, confirmation date, confidence and unresolved mapping gaps.
Alternatives	Independent source or route, qualification state, capacity and activation dependencies.
Scenario test	Event assumed, nodes lost together and capability remaining after that event.
Action	Mitigation, owner, investment or validation required and reassessment date.

Two vendor names shall not be counted as independent recovery paths without checking the actual upstream and location dependencies.

Annex C Worked survival and recovery gap calculation

Illustrative exercise using operating days. Apply a time phased model where demand or arrivals vary. The numbers below are not prescribed stock targets.

Record field	Required entry and evidence
Physical stock	12,000 devices counted; 2,000 are quarantined, leaving 10,000 released devices.
Usage	500 vehicles per operating day, with 2 devices per vehicle, consume 1,000 devices daily.
Base survival	10,000 divided by 1,000 gives 10 operating days, before any credible replenishment.
Recovery estimate	The required source capability and usable delivery are expected after 14 operating days.
Initial gap	14 minus 10 gives a 4 operating day gap that requires action or a controlled stop.
Firm replenishment	2,000 additional approved devices arrive and clear inspection on day 8; survival extends to 12 days.
Residual gap	14 minus 12 leaves 2 operating days of exposure under the same consumption assumptions.
Sensitivity	If the day 8 shipment is unconfirmed or fails inspection, retain the original 4 day exposure.

The calculation assumes no other losses, identical approved devices and unchanged demand. Record timing conventions and do not count the same shipment twice.

Annex D Activation log and situation report

Start with the first credible signal. Update the report without overwriting earlier facts or decisions.

Record field	Required entry and evidence
Event	Unique incident identity, detection time, reporting person and evidence source.
Scope	Affected sites, parts, routes, products, customers and known safety implications.
Confidence	Confirmed facts, assumptions, disputed information and next verification task.
Exposure	Usable stock, limiting item, first threatened commitment and survival estimate version.
Decision	Monitoring, preparation or activation; reason, incident leader and delegated limits.
Actions	Required outcome, responsible person, evidence expected, due time and current blocker.
Communication	Recipients, approved message, contact route, acknowledgement and next update time.
Handover	Outgoing and incoming lead, unresolved holds, imminent decisions and acknowledgement.

Keep the situation report concise enough for decisions. Attach technical and commercial evidence through protected records rather than copying sensitive detail into every update.

Annex E Emergency alternative approval record

Complete before production use or shipment of an alternative. Link to the detailed engineering and supplier quality evidence.

Record field	Required entry and evidence
Proposal	Original and alternate identities, producing site, quantity, urgency and intended configuration.
Comparison	Form, fit, function, material, software, durability, diagnostics and safety differences.
Validation	Tests, methods, acceptance criteria, actual results, reviewer and unresolved limitations.
Market review	Affected territories, approval or certification consequences and required actions completed.
Decision	Accepted, restricted, pending or refused; competent decision makers and reasons.
Bounded scope	Products, sites, markets, quantity, dates, expiry and special receiving or production controls.
Traceability	Lots, vehicle identities, configuration versions, first use check and monitoring plan.
Closure	Expiry action, stock disposition, permanent approval or return to original configuration.

A purchasing approval, customer concession or positive laboratory result shall not be substituted for the complete set of applicable release decisions.

Annex F Alternative route comparison record

Apply mandatory feasibility checks before ranking options. Expand one column or record per candidate route.

Record field	Required entry and evidence
Cargo and need	Part, quantity, dimensions, handling restrictions and required usable arrival.
Route	Collection, transfer points, modes, border crossings, receiving location and actual providers.
Legal feasibility	Import and transit permissions, restricted parties or goods, broker review and unresolved holds.
Capacity	Confirmed booking, equipment, terminal acceptance and contingency if capacity is withdrawn.
Total time	Collection plus transport, transfers, clearance, receiving and inspection; uncertainty range.
Protection	Packaging, security, environmental conditions, custody and receiving capability.
Comparison	Cost, credible arrival, common dependencies, fallback and reasons rejected options fail.
Release and result	Approved route, authoriser, milestone tracking, actual usable arrival and deviations.

An option with a prohibited transit or unsuitable cargo handling shall fail feasibility even if it has the lowest price or shortest advertised transit time.

Annex G Supplier insolvency response worksheet

Use with competent legal and financial review. Record verified status and authority rather than assumptions about ownership.

Record field	Required entry and evidence
Situation	Supplier entity, affected sites, verified proceeding or distress facts and responsible contact.
Operational status	Staff, utilities, inputs, equipment, released stock and credible output capability.
Asset rights	Tools, inventory, programs, drawings, title evidence and restrictions on collection or transfer.
Authority	Persons entitled to contract, release assets or approve continued operation; verification evidence.
Options	Controlled continuation, supported inputs, lawful transfer or alternative source qualification.
Financial controls	Purpose, amount, milestones, beneficiary verification, recovery rights and independent approval.
Technical release	Transferred process validation, inspection, traceability, customer and market implications.
Milestones	Action owner, dependency, due date, evidence of completion and revised supply forecast.

No asset shall be removed or used simply because it is important to production. Preserve agreed rights and obtain the specific authorisation required for the transaction.

Annex H Customs blockage and clearance record

Use for held goods and every material route change. The exact applicable obligations belong in the controlled shipment file.

Record field	Required entry and evidence
Goods	Part identity, quantity, value basis, origin evidence, packaging and custody location.
Hold	Known reason, official or broker case identity, authority contact and information confidence.
Documents	Declarations, permits, invoices and transport records compared for consistency.
Resolution	Required correction, inspection, evidence or lawful alternative, with responsible owner.
Route review	Transit eligibility, new border conditions, receiving capability and total usable arrival.
Approval	Trade and logistics decisions, technical handling review and expenditure approval.
Milestones	Submission, response, release, collection, receipt and quality release times.
Closure	Final records, costs, remaining claims, lessons and stock planning reconciliation.

Never change origin, classification, value or parties merely to escape a restriction. Correct inaccuracies through the authorised process and retain the amendment trail.

Annex I Restart and ramp release checklist

Complete for the actual line and product scope. Record pass, fail or justified nonapplicability with evidence for each relevant item.

Record field	Required entry and evidence
Site	Safe access, utilities, environmental controls and required emergency arrangements released.
People	Competent staffing, deputies, shift coverage and fatigue constraints confirmed.
Inputs	Approved stock, revisions, software, replenishment and receiving release verified.
Process	Equipment, tooling, settings, maintenance, instructions and error proofing checked.
Quality	Measurement, traceability, test capacity, first output results and open holds reviewed.
Market	Configuration and applicable approval or certification evidence valid for intended output.
Decision	Permitted products and rate, authorisers, restrictions, monitoring and stop triggers.
Ramp review	Actual released output, defects, replenishment reliability and decision on the next stage.

Failed mandatory criteria shall remain holds. Trial output and a supplier restart announcement shall not be recorded as unrestricted production release.

Annex J Semiconductor crisis tabletop exercise

Scenario: a critical device is allocated for six weeks and an unknown broker offers immediate stock. A second approved supplier shares the same packaging plant.

Record field	Required entry and evidence
Objective	Verify survival analysis, genuine alternative independence and disciplined urgent sourcing.
Initial evidence	Stock contains a quarantined lot and several assemblies require two devices each.
Inject one	The broker requests advance payment to a newly changed account and cannot prove custody.
Inject two	The approved alternate needs software changes and additional vehicle integration tests.
Expected actions	Correct stock assumptions, verify sources, retain technical holds and compare lawful options.
Decision record	Allocation, constrained mix, validation tasks, customer message and potential stop timing.
Evaluation	Evidence used, unsupported assumptions challenged, authority boundaries and action ownership.
Follow up	Readiness gaps, funded actions, owners, due dates and repeat verification.

Pass depends on defensible decisions and controlled consequences, not on keeping the simulated line running at any cost. Do not make live commitments during the exercise.

Annex K Worked continuity performance measures

Illustrative event with one consistent operating calendar. Measures below shall be adapted through an approved local definition.

Record field	Required entry and evidence
Planned output	5 operating days at 400 vehicles daily equals 2,000 planned vehicles.
Released output	1,500 conforming vehicles are released during the same period.
Output attainment	1,500 divided by 2,000 multiplied by 100 equals 75 percent.
Deferred output	500 vehicles remain deferred; report later recovery separately from this period result.
Recovery objective	Minimum accepted capability was due 48 elapsed hours after activation.
Actual recovery	Verified minimum capability returns after 60 elapsed hours, missing the objective by 12 hours.
Quality separation	Trial or held vehicles are excluded from released output and remain visible in status reports.
Interpretation	The example measures output and timing; it does not estimate financial loss or prove safe recovery.

Do not mix elapsed hours with operating hours or change the denominator after the event to improve performance. Preserve original targets and explain revised assumptions.

Annex L Disaster and blocked route recovery exercise

Scenario: flooding affects the normal supplier and port. Stock in the warehouse may be exposed, and a proposed road route crosses a restricted transit point.

Record field	Required entry and evidence
Objective	Coordinate safe assessment, usable stock verification, lawful rerouting and restart evidence.
Initial response	Confirm people are protected and avoid requests to enter unsafe premises.
Stock challenge	Distinguish physical quantity from released usable material after the actual exposure.
Route challenge	Reject prohibited or technically unsuitable options before comparing speed and cost.
Recovery challenge	The supplier reopens at reduced yield with unverified measuring equipment.
Expected decision	Supported production scope, containment, customer commitments and controlled stop if needed.
Evaluation	Timing, evidence integrity, competent approvals, alternative independence and handover quality.
Closure	Corrective actions, revised BIA assumptions, responsible owners and successful repeat checks.

The exercise is a decision test. It does not authorise travel into an affected area, transport restricted goods or operate damaged equipment.