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Process map and interaction matrix — ISO 9001 Clause 4.4

Fourteen processes with owner, interactions, criteria, KPI and retained information

Clause 4.4.1 asks for the processes AND their interactions, AND the criteria and methods for judging them. Most process maps answer only the first. The columns that decide an audit are "Feeds these processes" and "Criteria and method" — an auditor who cannot trace an output to the next process, or find how you judge success, has an immediate finding regardless of how good the diagram looks.

REF	PROCESS	TYPE (MANAGEMENT / CORE / SUPPORT)	PROCESS OWNER	KEY INPUTS	KEY OUTPUTS	FEEDS THESE PROCESSES	CRITERIA AND METHOD (HOW YOU JUDGE IT WORKED)	KPI	TARGET	RISKS AND OPPORTUNITIES (6.1)	DOCUMENTED INFORMATION RETAINED	CLAUSE
P-01	Management review	Management	Managing Director	Audit results; customer feedback; KPI performance; risk status; resource needs	Decisions on improvement, resource and change; minuted actions	P-02, P-09, P-11	All 9.3.2 inputs tabled; every action has an owner and due date	Actions closed on time	90%	Risk: review becomes a status report with no decisions. Opportunity: fold into the existing quarterly board pack	Management review minutes and action register	9.3
P-02	Quality planning and objectives	Management	Quality Manager	Quality policy; context and interested-party analysis; prior performance	Quality objectives with plans, resources, owners and dates	P-01, P-05, P-11	Every objective measurable, monitored and communicated	Objectives with a defined measure	100%	Risk: objectives set without a measure. Opportunity: reuse existing operational KPIs rather than inventing new ones	Quality objectives register	6.2
P-03	Customer requirements and quotation	Core	Sales Manager	Enquiry; drawings and specifications; statutory and regulatory requirements	Reviewed quotation; confirmed order with agreed requirements	P-04, P-06	Requirements reviewed and capability confirmed before commitment	Quotes reviewed before issue	100%	Risk: verbal scope changes never documented. Opportunity: template review checklist in the CRM	Quotation review record; order acknowledgement	8.2
P-04	Design and development	Core	Engineering Manager	Confirmed customer requirements; applicable standards; prior designs	Released drawings; verified and validated design outputs; change records	P-06, P-07	Design review, verification and validation completed and recorded at each defined stage	Designs released with all stage records complete	100%	Risk: validation skipped under schedule pressure. Opportunity: gate release in the PLM system so it cannot be bypassed	Design review, verification, validation and change records	8.3
P-05	Purchasing and external provider control	Core	Procurement Lead	Approved supplier list; purchase requisitions; specifications	Purchase orders with defined requirements; supplier performance data	P-06, P-11	Suppliers evaluated and re-evaluated against defined criteria; goods verified on receipt	On-time-in-full from approved suppliers	95%	Risk: single-source dependency on two critical materials. Opportunity: qualify a second source	Approved supplier list; evaluation records; goods-inward inspection	8.4
P-06	Production and service provision	Core	Production Manager	Released drawings; work orders; verified materials; competent operators	Conforming product; traceability records; in-process inspection results	P-07, P-08, P-11	Controlled conditions per 8.5.1; work instructions available at the point of use	First-pass yield	97%	Risk: unrecorded process adjustments by experienced operators. Opportunity: shift-handover log	Work orders; inspection records; traceability	8.5
P-07	Inspection, release and delivery	Core	Quality Manager	Finished product; inspection plan; calibrated equipment	Released product; certificates of conformance; delivery records	P-08, P-09	Release only after planned verification is complete and recorded, by an authorised person	Releases with complete evidence	100%	Risk: release under commercial pressure before verification. Opportunity: system-enforced release authority	Inspection and release records; certificates of conformance	8.6
P-08	Control of nonconforming output	Core	Quality Manager	Detected nonconformity from any source; customer complaint	Contained product; disposition decision; input to corrective action	P-10, P-11	Product identified and controlled to prevent unintended use; disposition recorded	Nonconformities contained within one shift	95%	Risk: rework performed without record. Opportunity: barcode the quarantine area	Nonconformity records with disposition and authority	8.7

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P-09	Customer satisfaction and feedback	Core	Sales Manager	Delivery performance; complaints; survey responses; warranty claims	Analysed satisfaction data; trends into management review	P-01, P-10	Monitored from at least two independent sources, not surveys alone	Customer satisfaction index	≥ 8.0 / 10	Risk: silence read as satisfaction. Opportunity: use delivery and warranty data as a second signal	Satisfaction analysis; complaint register	9.1.2
P-10	Nonconformity and corrective action	Support	Quality Manager	Nonconformities from audit, production, supplier or customer	Root cause; corrective action; verified effectiveness	P-01, P-11	Root cause determined by a defined method; effectiveness verified before closure	Corrective actions verified effective	90%	Risk: correction recorded as corrective action. Opportunity: require a cause statement before closure is allowed	Corrective action records with effectiveness evidence	10.2
P-11	Internal audit	Support	Internal Audit Lead	Audit programme; process performance data; prior findings	Audit reports; findings; input to management review	P-01, P-10	Programme covers every process at planned intervals; auditors independent of the work audited	Programme completed to plan	100%	Risk: auditing your own process. Opportunity: reciprocal auditing across sites	Audit programme, plans, reports and findings	9.2
P-12	Competence, training and awareness	Support	HR Manager	Role competence requirements; skills matrix; training needs	Competent personnel; training records; awareness of the quality policy	P-04, P-06, P-11	Competence determined for each role and evidenced, not assumed from tenure	Roles with current competence evidence	100%	Risk: competence assumed from years served. Opportunity: fold the skills matrix into the existing HRIS	Skills matrix; training and competence records	7.2, 7.3
P-13	Control of documented information	Support	Quality Manager	Draft documents; change requests; external standards	Approved, current documents available at point of use; controlled records	All processes	Current version available where used; obsolete versions prevented from unintended use	Documents within review date	95%	Risk: uncontrolled copies on the shop floor. Opportunity: QR codes linking to the current version	Document register; revision history	7.5
P-14	Calibration and monitoring equipment	Support	Maintenance Lead	Measurement requirements; equipment register; calibration schedule	Calibrated equipment with traceable status; out-of-calibration assessments	P-06, P-07	Traceable to national standards; impact assessed when equipment found out of calibration	Equipment calibrated to schedule	100%	Risk: no assessment of product already released on a failed gauge. Opportunity: automated recall trigger	Calibration certificates; out-of-tolerance assessments	7.1.5

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