

XERPIUM

Aerospace

Enterprise Resource Planning

Complete integrated ERP solution for
aerospace industry

2000+

MODULES

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Aerospace Manufacturing Ecosystem

XERPIUM AEROSPACE is a complete ERP solution for the aerospace & defense industry — covering aircraft type, part number, BOM, work center, manufacturing order, work order sign-off, ECO, NCR, CAPA, AS9102 FAI, quality release, serial number traceability, and supplier management.

Aircraft Type & Configuration

Aircraft Type — Unique code, manufacturer, category (fixed_wing/rotary_wing/uav/glider), MTOW, range, cruise speed, engines, engine type, seats, certification standard

Configuration — As-designed, as-built, as-maintained — variant code, description, BOM link per configuration

Part Number — Part type (raw/component/assembly/sub-assembly/tooling/consumable), alternates, drawing number/revision, material spec, weight, ITAR/EAR controlled, serial/batch tracking

Serial Number — Unique number per part, linked to product, aircraft type, status (available/installed/in_repair/scrapped), flight hours/cycles, overhaul due date

Work Center & Supplier

Work Center — Extended from mrp.workcenter: center type (assembly/machining/testing/paint/inspection/tooling), certification required, capacity aircraft types, calibration due, environmental controls

Tooling — Unique tool number, type (fixture/gauge/special/standard/measuring), calibration interval, last/next calibration, status (available/in_use/calibration/maintenance/retired), owner

Supplier — Tier (1/2/3), certifications (AS9100D), quality rating 0-100, on-time delivery rate, approved parts, qualification status, last audit date

ECO — Engineering Change Order

ECO — Change types: design, process, material, tooling, documentation — linked to BOM, part number, aircraft type

Workflow — Draft → Under Review → Approved → Implemented → Closed

Approval — Multi-approver: reviewer + approver, timestamp, action (approve/reject)

BOM Impact — Change orders directly linked to mrp.bom for revision tracking

Part Number — Many2many ke part number affected

Material Traceability

Material Trace — Batch number, heat treatment number, material certificate, supplier certificate

Chemical Composition — Chemical composition of material, mechanical properties

Test Report — Test report reference, date, notes

Serial Link — Linked directly to aerospace.serial.number

Audit Trail — Full traceability from raw material to finished part

⚙ Manufacturing Order

MO Extension — Extended from mrp.production: aircraft type, serial number, configuration, customer, priority (AOG/Critical/High/Normal/Low)

Quality Release — quality_release_required flag, link to aerospace.quality.release

Sign-off — sign_off_required, sign_off_by (res.users), sign_off_date, actual_completion_date

Sequence — Auto-numbering per company, mail thread tracking

BOM Integration — MO created from BOM per aircraft type & configuration

Work Order

Work Order Extension — Extended from mrp.workorder: operator_id (hr.employee), sign-off required, sign-off by, sign-off date

Tool Tracking — Many2many to aerospace.tool: tool assignment per work order

Special Instructions — Dedicated field for work instructions

Digital Sign-off — action_sign_off(): set operator, timestamp, done

Operator Assignment — Operators from hr.employee with matching qualifications

Sample Work Centers

Assembly Line 1 — Main assembly with capacity per aircraft type

Machining 1 — Precision machining, certification required

Testing Station 1 — Functional & performance testing

Paint Shop 1 — Aerospace-spec painting & coating

Quality Inspection 1 — Quality inspection with calibration due tracking

Tooling 1 — Tooling & fixture center

Dynamic Stages

Serial Number Stages — Draft → Available → Installed → In Repair → On Hold

ECO Stages — Draft → Under Review → Approved → Implemented → Closed

Quality Release — Draft → Pending → Released → On Hold

Configurable — Dynamic stage framework per model

Quality — NCR, CAPA, FAI, Inspection

Complete quality system for aerospace: Non-Conformance Report, Corrective/Preventive Action, AS9102 First Article Inspection, Inspection Plans, Quality Release.

⚠ NCR — Non-Conformance Report

NCR — Non-conformance number auto, severity level, root cause, disposition

Linked MO — manufacturing_order_id directly to mrp.order

Part Number — Affected part, serial number, quantity

Disposition — Use-as-is, rework, repair, scrap, return-to-supplier

Root Cause — Cause analysis, containment action, corrective action

📋 CAPA — Corrective & Preventive Action

Corrective Action — Action plan, assigned to, due date, status tracking

Effectiveness — Verification of effectiveness, closed-loop

Preventive Action — Prevent recurrence, monitoring plan

Linked NCR — CAPA originates from NCR findings

📋 FAI — First Article Inspection

AS9102 Compliant — Full, partial, delta FAI per AS9102

Linked MO — manufacturing_order_id for first article

Inspection Lines — Nominal, min, max, actual — auto pass/fail

Part Number — Part, serial number, drawing revision

Results — Pass/fail per characteristic, overall result

📄 Inspection Plan & Quality Release

Inspection Plan — Incoming, in-process, final inspection per part number

Plan Lines — Inspection points, method, specification, frequency

Quality Release — Certificate of conformance: draft/pending/released/on_hold

Released By — Authorized signatory, timestamp, linked MO

Aerospace Manufacturing Accounting

Automatic manufacturing journal from material consumption to finished goods — mrp_account & aerospace COA integration.

COA Aerospace

Specific COA — Chart of accounts for Indonesian aerospace manufacturing

Expense Accounts — Raw materials, direct labor, factory overhead, WIP

Revenue — Aerospace product sales, MRO services, engineering

Balance Sheet — Current assets (inventory, WIP), fixed assets (machines, measuring tools)

P&L — Revenue, COGS, engineering expenses, quality, certification

Dashboard & KPI

Real-time KPIs for aerospace operations — open MOs, production status, quality metrics, fleet utilization.

KPI Dashboard

Total MO — Manufacturing orders by state

Efficiency — qty_produced sum, target 100%

Downtime — Work center downtime trend

Open NCR — Non-conformances not yet closed

FAI Status — First article inspection pass/fail rate

Cross-Module Integration

Accounting — Automatic WIP & COGS journals, aerospace-specific COA

Inventory — Serial number tracking, lot/expiry, traceability

Purchase — Supplier management, approved parts, quality rating

HR — Operator assignment, sign-off by employee, certification tracking

AI Assistant — Search part number, check MO status, generate report

Xerpium ERP — xerpium.com

Contact us for a free demo

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