

Aircraft parts manufacturing and assembly tracking

Automatically tracks aircraft parts from initial manufacturing through final assembly, ensuring quality compliance and real-time visibility across the production lifecycle. Reduces manual tracking errors and accelerates delivery timelines while maintaining aerospace safety standards.

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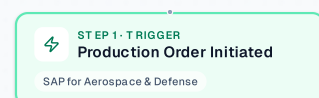


WORKFLOW TRIGGER

New aircraft part production order is created in SAP for Aerospace & Defense

Visual Flow

Each node represents an automated step. Connections show how data and decisions move through the workflow.





Step-by-Step Breakdown

Detailed explanation of each automated stage in the workflow.

1

⚡ TRIGGER

Production Order Initiated

A new aircraft part manufacturing order is created in the ERP system with specifications, quantities, and delivery requirements. The system

automatically extracts part numbers, materials, and quality requirements.

AI Business OS

SAP for Aerospace & Defense

2

 ACTION

Generate Manufacturing Instructions


CAD designs and manufacturing parameters are retrieved from engineering systems to create detailed work instructions and tooling requirements. Quality checkpoints and inspection criteria are automatically embedded.

CATIA

Siemens NX

Dassault DELMIA

3

 ACTION

Track Production Progress

Real-time manufacturing status is monitored through shop floor systems, capturing completion percentages, cycle times, and quality measurements. Digital work instructions guide operators through each manufacturing step.

Dassault DELMIA

SAP for Aerospace & Defense

4

 DECISION

Validate Quality Standards

Automated quality inspection results are evaluated against aerospace certification requirements and customer specifications. Parts failing validation are flagged for rework or rejection.

ANSYS

SAP for Aerospace & Defense

5

 ACTION

Update Assembly Readiness

Approved parts are marked as available for assembly and their locations are updated in the inventory management system. Assembly teams receive automatic notifications when all required components are ready.

SAP for Aerospace & Defense

PTC Windchill

6

 ACTION

Generate Compliance Documentation

Complete traceability records, certificates of conformance, and material certifications are automatically compiled for regulatory compliance. Digital twin records are updated with as-built configurations.

PTC Windchill

SAP for Aerospace & Defense

7

 OUTPUT

Deliver Assembly Package

Finished parts with complete documentation packages are released to assembly operations with full traceability chains. Quality certifications and material genealogy records accompany each component.

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Outputs

- Certified aircraft parts ready for assembly

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- Complete traceability documentation
- Quality compliance certificates
- Real-time production status dashboard



Key Metrics

- Manufacturing cycle time
- First-pass quality rate
- On-time delivery percentage



Tools & Integrations

- SAP for Aerospace & Defense
- CATIA
- Siemens NX
- Dassault DELMIA
- ANSYS
- PTC Windchill

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