← Back to Aerospace AEROSPACE · WORKFLOW

Flight operations planning and optimization

This workflow automatically creates optimized flight plans by analyzing weather conditions, aircraft performance data, and regulatory constraints to generate fuel-efficient routes with real-time updates. It reduces flight planning time by 70% while improving fuel efficiency and ensuring regulatory compliance.

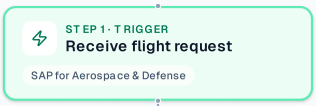
Download PDF | Get Your Blueprint

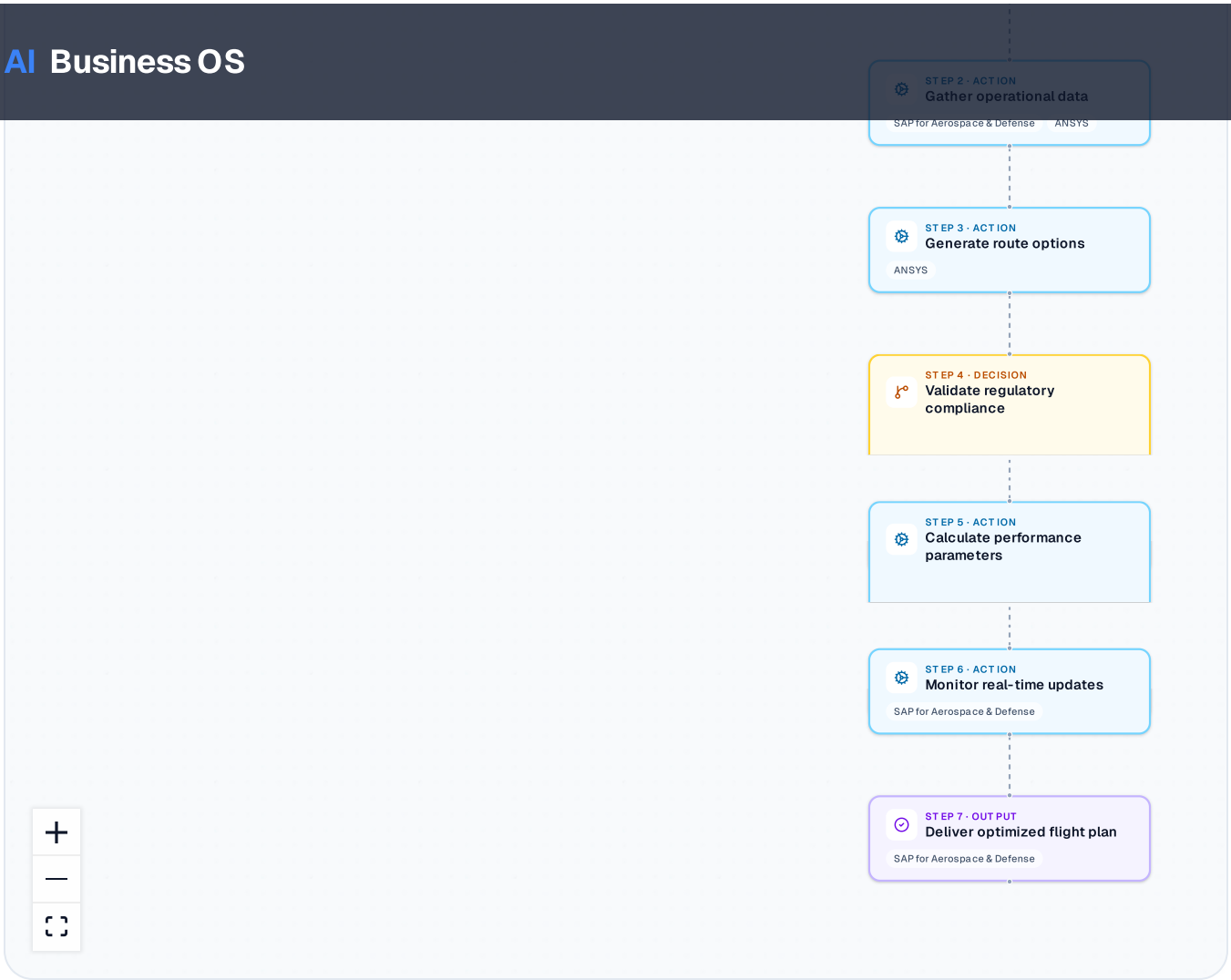
WORKFLOW TRIGGER

New flight request submitted with departure/arrival airports and scheduled time

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

Receive flight request

Flight operations team submits new flight request with route, aircraft type, payload, and scheduling requirements. System captures all mission

parameters for analysis.

SAP for Aerospace & Defense

2

ACTION

Gather operational data

System retrieves current weather forecasts, NOTAMs, aircraft performance specifications, and fuel costs. All data sources are integrated for comprehensive planning analysis.

SAP for Aerospace & Defense ANSYS

3

ACTION

Generate route options

AI algorithms calculate multiple flight path alternatives considering wind patterns, restricted airspace, and fuel optimization. Each route is scored for efficiency and safety metrics.

ANSYS

4

DECISION

Validate regulatory compliance

System checks if generated routes meet all aviation regulations, aircraft limitations, and airport restrictions. Non-compliant routes are flagged for modification or rejection.

SAP for Aerospace & Defense

5

ACTION

Calculate performance parameters

System computes fuel requirements, flight time, payload adjustments, and alternate airport options for approved routes. Performance data includes contingency planning scenarios.

ANSYS SAP for Aerospace & Defense

6

ACTION

Monitor real-time updates

System continuously tracks weather changes, traffic delays, and airspace modifications to suggest route adjustments. Automatic notifications are sent for significant changes requiring crew attention.

SAP for Aerospace & Defense

7

OUTPUT

Deliver optimized flight plan

Complete flight plan with detailed route, fuel calculations, alternate airports, and performance data is generated and distributed to flight crew and operations center. Digital flight bag integration ensures seamless cockpit delivery.

SAP for Aerospace & Defense

Outputs

- Optimized flight route with waypoints
- Fuel calculation and loading instructions
- Performance data and alternate airport selections
- Regulatory compliance documentation

Key Metrics

- Flight planning time reduction percentage
- Fuel efficiency improvement
- On-time departure rate
- Regulatory compliance score

Tools & Integrations

- SAP for Aerospace & Defense
- ANSYS

AI Business OS

Actionable AI implementation strategies for business leaders ready to transform their operations.

COMPANY

About

Industries

RESOURCES

Articles

CONNECT

MVP.dev

LinkedIn