

PROFESSIONAL SUMMARY

Key results: **98%** reduction in reported ATC confusion events with AI in production | **zero** dispatch-into-restricted-airspace incidents since go-live | **~22.5M** flight-data changes a year through a single source of truth

Airline operations solutions architect with 24 years inside the systems an operations control center (OCC) runs on: movement control, aircraft rotation and tail assignment, IATA Type B MVT/LDM, ACARS, NOTAMs and crew management. Joined the first production implementation of the **Lufthansa Systems NetLine suite** in 2000, then owned it for two decades through fleet growth from **60 to 500+ aircraft** and passenger growth from 10M to 85M.

IATA schedule data standards in production, not on paper: SSIM Chapter 4 (SSM), Chapter 5 (ASM) and Chapter 7, Type B messaging and **SchedConnect since 2007**, feeding a single source of truth for schedule and flight data across eleven downstream domains.

AI applied to operational safety, in production: a fully AI-based callsign safety system (Neo4j, Graph Attention Networks, PyTorch Geometric) for an **NP-hard** Quadratic Assignment Problem, plus a real-time Early Warning System and an overflight cost engine (**EUR 800K** first-year savings).

Architecture underneath the domain: **200+ integration points across 86 systems**, ~50M annual transactions and **99.8% availability**, 24/7. Technical due diligence on vendor decisions for three carriers and a five-vendor RFP; PMP-certified, rated **exceptional** in the DDI Manager Ready assessment.

WORK EXPERIENCE

Career Break and Professional Development	Istanbul	Sep 2024 – Present
Planned break after 24 years with the Turkish Airlines Group, combining family time with structured upskilling: earned AWS Certified AI Practitioner (AIF-C01), Professional Scrum Product Owner I (PSPO I) and AWS Certified Cloud Practitioner (CLF-C02) in 2026 and continued research on graph-based AI for aviation safety.		

Principal Solutions Architect	Turkish Technology	Istanbul, Turkiye	Jan 2023 – Sep 2024
Official title: Distinguished Expert, the highest technical grade at Turkish Technology.			
- Cut reported ATC confusion events by 98% across up to ~1,500 daily flights at peak season, sustained in the years since, by replacing the 2011 heuristic season-start assignment with an in-house, fully AI-based callsign safety system aligned with EUROCONTROL CSST standards. - Shaped integration and technology strategy for next-generation aviation operations platforms as cross-airline NetLine Subject Matter Expert for Turkish Airlines, SunExpress and AJet, and as Subject Matter Expert in callsign safety, IOCC and operational control systems. - Protected schedule coherence across two carriers and two reservations systems during AJet's migration from TROYA, the group's reservations and inventory platform, to a separate third-party PSS, running SchedConnect-based schedule synchronization, inter-carrier schedule distribution and schedule change management in a transition architecture. - Reframed callsign assignment as an NP-hard Quadratic Assignment Problem and built a scalable solution on Graph Neural Networks (GNN): Graph Attention Networks (GAT) on Neo4j with PyTorch Geometric and feature engineering over phonetic, visual and semantic similarity. - Owned roadmaps and technical direction for six mission-critical operational systems (1,000 users, ~100 concurrent, 5M annual transactions, EUR 1M budget), sequencing change through integration dependency management and architectural constraints so new capabilities did not fragment the platform landscape. - Ran the NetLine/Ops replacement selection (5 vendors, 3 shortlisted, 2 POCs) and vendor evaluation of flight planning platforms (Jeppesen, CAE formerly FPM, Lido) through RFP/RFI, vendor management and business cases, advising VP-level leadership on build-versus-buy, technology strategy and long-term R&D strategy. - Established a design authority and design reviews that brought architecture decisions under ISO 27001 compliance, software quality management and enterprise architecture governance, and supported regulatory audits and ICAO compliance. - Led an 8-person cross-functional team (project manager, 2 system analysts, 1 business analyst, 4 software engineers) as architecture and design decision owner: defined the implementation approach, mentored engineers hands-on and cleared complex technical blockers, with Scrum Master support as required.			

Official title: Senior Expert, Integration Architect.

- Engineered a real-time Early Warning System across NetLine and FPM that cross-checks planned routes for up to **~1,500 daily** peak-season dispatch legs with hundreds of automated checks and alarms: **zero** flight dispatches into restricted airspace since go-live.
- Extended PSS/DCS integration with the in-house PSS TROYA to irregular operations (IROPS/IRROPS) and disruption management, propagating IOCC decisions to inventory, reservations and departure control as they happened, so disrupted passengers, even those already en route to the aircraft, could re-accommodate online.
- Drove the enterprise integration transformation: standardized **200+ integration points across 86 systems (~50M annual transactions)** under a single integration governance and data governance model, with enterprise messaging and data streaming reference patterns adopted group-wide for interoperability, maintainability, observability and operational reliability.
- Achieved **99.8% availability**, including planned maintenance windows, for mission-critical operational platforms serving **500+ concurrent users** with **zero unplanned downtime**, by leading cross-functional delivery management across internal and external integration platforms through production deployment under high availability, disaster recovery design and SLA/SLO management.
- Modernized the integration landscape onto an event-driven application and data integration platform on Apache Kafka (topic design, schema registry), IBM MQ and REST/SOAP APIs, sustaining **~50M annual transactions** with microservices, enterprise integration patterns, API-first design and lifecycle management, and API versioning and backward compatibility.
- Built a real-time observability tool across all live enterprise integrations, using structured logging, correlation IDs and distributed tracing; directed delivery of Grafana dashboards, metrics and alerting to support proactive issue detection.

Official title: Project Manager, Flight Operations.

- Designed and built **TKAODS** (Airline Operational DataStore) and **OFPDS** (Operational Flight Plan DataStore), **Tier-0** integration layers in front of the Lufthansa Systems NetLine suite (NetLine/Sched, NetLine/Slot, NetLine/OPS & Base) and flight planning that became the **single source of truth** for schedule and flight data.
- Managed the daily operational message and data flows of the operations control center (OCC/IOCC), 24/7: movement control and aircraft rotation/tail assignment in NetLine/OPS, IATA Type B MVT (movement) and LDM (load) messages, ACARS feeds, NOTAMs and crew management system interfaces.
- Owned enterprise-wide flight plan and flight data distribution for planning, operational and post-flight periods as the single integration point for **eleven main downstream domains**: scheduling, crew, load control, PSS/DCS interfaces, cargo, maintenance, DWH, revenue and cost accounting, SAP finance, HR/payroll and regulatory reporting.
- Processed **~100K update records a day** for up to **~1,500 flights a day** at peak, 24/7 and near-real-time, through source-to-target mappings, ETL/ELT pipelines and integration rules that consolidated, transformed and enriched every update across summer and winter seasons under data quality and metadata controls.
- Architected batch, near-real-time and real-time distribution patterns that absorbed **~22.5M** flight-data changes a year (~450K annual flights, ~50 changes per flight) before fan-out to large-scale distributed data processing and analytics, with consumer-specific horizons from a **rolling three-day window** to a **90-day window**.
- Fed operational changes (delays, cancellations) to passenger-notification systems and flight data to loyalty and disruption hotel systems, so passenger notifications, loyalty and disruption hotel arrangements ran on the same data as operations.
- Designed the enterprise operational data and integration architecture on the AODB (Airline Operational DataStore) pattern, standardizing flight, leg, schedule and operational flight-plan data airline-wide: logical data models, entities and relationships, canonical data structures, and the ESB pattern applied twice.
- Evolved both Tier-0 platforms for **ten years** (2014 – Sep 2024) as de facto product owner with final authority over feature prioritization and architectural evolution, running agile delivery in **Jira** and **Confluence**: user stories with acceptance criteria, backlog management, sprint planning and Definition of Ready/Done.
- Coordinated operational stakeholders and cross-squad dependencies for two Tier-0 platforms, carrying releases through production under ITIL-aligned **Site Reliability Engineering (SRE)** practices and continuous monitoring.
- Drove technical direction, integration landscape and platform modernization for **multimillion-euro** airline operational systems across scheduling, slot management, flight planning and IOCC as lead architect with delivery accountability, combining system and business analysis, software architecture and hands-on coding through release, operational handover and 24/7 production under ITIL.
- Managed NetLine's master and reference data (NetLine/Base) with the team: built and maintained the tables where users edit it and trained key users in master data management (MDM), keeping master data owned at its source.
- Built a reporting layer into both platforms on the same enriched data and fed it back into NetLine and the flight planning system, so enterprise reporting and operations shared one version of the data.
- Coordinated the infrastructure teams' VMware-based solution as Turkish Airlines' NetLine product owner, keeping users working in NetLine throughout the pandemic.

Official title: Acting Team Leader.

- Led a **6-person team** through the full lifecycle of **100+ integrations**, from requirements and system analysis to design, development, testing and documentation, harmonizing project plans across functions and tracking cross-functional milestones for every project.
- Architected the schedule-to-PSS (TROYA) message integration under IATA SSIM Chapter 4 (SSM) and Chapter 5 (ASM) over Type B messaging, keeping inventory and reservations in step with cancellations, re-timings, equipment and routing changes, reinstated flights and disruption reason codes.
- Introduced SchedConnect in 2007 for inter-carrier schedule enrichment and distribution, establishing recurring schedule data exchange with partner carriers under IATA data standards.
- Delivered **EUR 800K** in first-year savings with a multi-currency overflight cost engine, launched in 2012 and built on a data pipeline of country entry/exit timestamps and segment distances.
- Headed solution design and delivery for flight operations, crew management system and flight-planning integrations across global aviation vendors, including IATA Type B MVT and LDM message flows, building multithreaded real-time integration frameworks (2010) and contributing to an in-house Enterprise Service Bus (ESB) on Service-Oriented Architecture (SOA).
- Developed the first heuristic Callsign Similarity & Assignment System (phonetic, visual and semantic similarity), delivered in 2011: the groundwork later rebuilt as the graph-based AI solution once reclassified as NP-hard.

Official title: Analyst Programmer.

- Contributed to the first production implementation of the Lufthansa Systems NetLine suite (NetLine/Sched, NetLine/Slot, NetLine/OPS & Base) across schedule planning, slot management, movement control and aircraft rotation/tail assignment, the platform foundation owned for the next two decades.
- Drove the technical work of the first major legacy modernization from day one as an implementation team member, moving schedule and operations control off the IBM mainframe (ADABAS/Natural) onto Oracle on Unix (AIX) and the NetLine product family.
- Enabled SunExpress and later AJet to adopt the NetLine platform, establishing the cross-carrier SME role.
- Developed and maintained integrations from flight operations to DWH, SAP, MRP, PSS and DCS, a leg-to-flight online conversion platform supporting cargo integration, and backend components in Oracle, PL/SQL, Java and C on Unix/Linux, with incident analysis and performance tuning.
- Cut costs by **EUR 100K** a year by designing and building the timetable publication system from scratch: worldwide airline schedules and partner codeshare flights in, a downloadable timetable on the corporate website out (Java, C, PL/SQL).
- Built **Flight Watch**, a 24/7 live view of every Turkish Airlines flight on a world map: system design and architecture decisions, mainframe integration over IBM MQSeries and Java object-oriented design.
- Developed the 24/7 middleware interfaces of **SCORE**, the slot coordination system Turkish Airlines ran on behalf of the State Airports Authority (DHMI), also used by the Istanbul Ataturk Airport ATC tower: Java and Swing on Windows servers with online mainframe integration.
- Set the calculation methodology for average passenger and baggage weights through statistical analysis of historical data.

TECHNICAL SKILLS (hands-on) & CORE COMPETENCIES

Flight Operations Systems: Lufthansa Systems NetLine suite (NetLine/Sched, NetLine/Slot, NetLine/OPS & Base, SchedConnect), operations control center (OCC/IOCC), operational and tactical flight planning (Jeppesen flight planning; FPM, now CAE Flight Planning Solutions; Lido), schedule and slot management, operational data distribution, irregular operations (IROPS) and disruption management, PSS/DCS interfaces.

IATA and Industry Standards: SSIM Chapter 7 (Presentation and Transfer of a Schedule Data Set); schedule-to-PSS distribution across three group carriers.

Operational Data Architecture: Authoritative flight-data model and single source of truth, Canonical Data Model, near-real-time distribution to downstream operational consumers, Enterprise Data Architecture, Data Modeling, Operational Data Store (ODS), Data Integration Architecture, Data Pipeline Architecture.

Integration Architecture: Event-Driven Architecture, API Architecture, Apache Kafka, IBM WebSphere MQ, Enterprise Service Bus (ESB), REST and SOAP APIs.

Analytics & Graph / Advanced Analytics and AI: Neo4j and graph databases, PyTorch and PyTorch Geometric, MLOps, data quality and metadata management.

Engineering Platforms & Languages: Oracle DB, Docker and containerization, Linux (RHEL) and Unix administration (AIX, HP-UX), application administration on Windows Server; Languages: Python, Java, C, PL/SQL, shell scripting (Bash, KSH), YAML and JSON; Git and Jenkins; UML; multithreaded real-time and database-driven systems.

Operational Resilience: 24/7 mission-critical operations, high availability and disaster recovery, SLA/SLO management, incident prevention, operational continuity.

Executive Leadership and Delivery: Transformation governance, executive (C-level) stakeholder management, programme management, delivery governance and operational readiness, customer consulting and workshop facilitation.

EDUCATION

• Ph.D. (coursework)	Business Administration (Finance)	Yeditepe University	Istanbul	2002 – 2006
• M.Sc.	Management Engineering	Istanbul Technical University	Istanbul	1997 – 2002
• B.Sc.	Computer Science Engineering	Istanbul University	Istanbul	1993 – 1997

LANGUAGES

• English	C1	Full Professional
• German	A2	Studying towards B1
• Turkish		Native

CERTIFICATIONS

• AWS Certified Cloud Practitioner (CLF-C02)	Amazon Web Services (AWS)	2026
• AWS Certified AI Practitioner (AIF-C01)	Amazon Web Services (AWS)	2026
• Professional Scrum Product Owner I (PSPO I), Credential ID 1347372	Scrum.org	2026
• AI and Cloud Foundations: OCI AI Foundations; Agentic AI Foundations; IBM SkillsBuild; PMI AI (CPMAI, GenAI)	Oracle, IBM, PMI	2025
• Docker Foundations Professional Certificate	Docker	2025
• Manager Ready (DDI) leadership simulation: exceptional rating	TAG Taurus Group	2024
• ITIL v3 Foundation, Credential ID 990453483		2013
• Project Management Professional (PMP), Credential ID 1225730	PMI	2008
• Lufthansa Systems SchedConnect vendor training (two weeks)	Lufthansa Systems	2007