Executive Summary

This Vendor Evaluation & Selection Framework provides a rigorous, structured, and transparent methodology for assessing and selecting airline flight scheduling system vendors. This framework is purpose-built for Integrated Operations Control Centre (IOCC) environments where decisions carry significant operational, financial, and strategic consequences.

The framework is anchored in a Balanced Scorecard (BSC) philosophy, recognizing that the optimal vendor is not necessarily the cheapest or most feature-rich, but the one that delivers the strongest alignment across six critical dimensions: functional capability, technical architecture, commercial terms, vendor credibility, service levels, and regulatory compliance.

A Weighted Scoring Model (WSM) underpins the evaluation, ensuring each dimension is assessed proportionally to its strategic importance to the airline. The result is a Total Weighted Score (TWS) that enables objective, auditable, and defensible vendor comparisons to support sound procurement governance.

This framework is designed to serve evaluation committees, procurement leads, IOCC operational managers, IT architects, and finance sponsors throughout the vendor engagement lifecycle - from initial Request for Information (RFI) through to contract award.

Guiding Principle

Once the contract is signed, you are locked in. This framework exists to ensure that every vendor decision is made with clarity, evidence, and discipline.

How to Use This Framework

This document is structured to guide an evaluation committee through the full vendor selection process sequentially. Each section builds on the previous one:

- Sections 1–2: Understand the framework structure, scoring philosophy, and evaluation design.
- Sections 3–8: Use each component's metric tables to score vendors during RFP review and system demonstrations.
- Section 9: Consolidate individual component scores into a Total Weighted Score (TWS) and interpret results.
- Sections 10–11: Apply governance protocols and adapt the framework to your airline's specific context.

Quick Reference: Framework at a Glance

6 Evaluation Components | Weighted Scoring Model | 5-Point Rubric | TWS = 0 to 5.0

Functional Fit (25%) → Technical Fit (20%) → Commercial Evaluation (20%) → Vendor Maturity (15%) → SLA & Support (10%) → Risk & Compliance (10%)

A vendor scoring 4.50 or above is considered an Exceptional Fit. A vendor scoring below 3.00 on Functional Fit should be subject to mandatory committee review regardless of their overall TWS.

Section 1: Framework Overview & Design Principles

1.1 Purpose & Scope

The airline IOCC operates as the 24/7 nerve centre of airline operations, integrating crew management, fleet scheduling, operations control, and disruption recovery under a single command. The selection of a flight scheduling system vendor is therefore not a standard software procurement exercise but a strategic operational decision with multi-year impact on safety, efficiency, punctuality, and cost.

This framework provides a structured, objective, and repeatable methodology for evaluating competing vendors across all dimensions relevant to airline operations. It is technology-neutral and designed to be applied irrespective of the airline's size, fleet complexity, or current system architecture.

> **Example: Why Standard IT Procurement Approaches Fail in Airlines**
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> A mid-size regional airline recently selected a flight scheduling vendor based primarily on the lowest headline license price. The vendor's system required significant custom development to support their regulatory FTL framework, integration with their legacy MRO system took 14 months rather than the projected 3, and the go-live was delayed by 11 months. Total overspend was 3.2× the original contract value.
>
> A **structured BSC evaluation** would have surfaced the integration risk (Technical Fit) and implementation track record gaps (Vendor Maturity) during due diligence.

1.2 Balanced Scorecard Philosophy

The Balanced Scorecard (BSC) approach rejects single-dimensional procurement decision-making. Rather than selecting solely on price (commercial bias) or feature count (functional bias), it mandates a structured assessment across multiple strategic perspectives.

In this framework, the six perspectives are:

- Functional Fit - Can the system do what our operations require?
- Technical Fit - Will it integrate and perform within our technology environment?
- Commercial Evaluation - Is the total cost of ownership fair, predictable, and competitive?
- Vendor Maturity - Is the vendor credible, stable, and experienced in airline environments?
- SLA & Support - Will the vendor maintain system availability and respond when things go wrong?
- Risk & Compliance - Does the vendor protect the airline from regulatory, data, and contractual risk?

1.3 Weighted Scoring Model (WSM)

Each evaluation component is assigned a strategic weight expressed as a percentage of 100%. Within each component, individual metrics are scored on a scale of 1 to 5, where 5 represents fully meets or exceeds requirements and 1 represents unacceptable performance. The Component Score is calculated as the average of individual metric scores. The Weighted Component Score multiplies the Component Score by the assigned weight. The sum of all Weighted Component Scores yields the Total Weighted Score (TWS).

1.3.1 Master Formula

The full expanded formula is:

$$TWS = (0.25 \times CS_1) + (0.20 \times CS_2) + (0.20 \times CS_3) + (0.15 \times CS_4) + (0.10 \times CS_5) + (0.10 \times CS_6)$$

Where: CS_1 = Functional Fit, CS_2 = Technical Fit, CS_3 = Commercial Evaluation, CS_4 = Vendor Maturity, CS_5 = SLA & Support, CS_6 = Risk & Compliance.

Worked Formula Example

A vendor scores: Functional Fit = 4.22, Technical Fit = 3.88, Commercial = 3.40, Vendor Maturity = 4.67, SLA & Support = 4.00, Risk & Compliance = 3.83

TWS = (0.25 × 4.22) + (0.20 × 3.88) + (0.20 × 3.40) + (0.15 × 4.67) + (0.10 × 4.00) + (0.10 × 3.83)

TWS = 1.06 + 0.78 + 0.68 + 0.70 + 0.40 + 0.38 = 4.00 → Rating: It's a Strong Fit

1.4 Balanced Scorecard — Component Weights Summary

The table below presents the six evaluation components, their assigned strategic weights, and the rationale for each weighting decision. Weights are calibrated to reflect the primacy of operational capability (Functional Fit at 25%), balanced against technical, commercial, and risk considerations. A Key Question column has been added to help evaluation committee members internalize the purpose of each component.

#	Evaluation Component	Weight	Max Score	Strategic Rationale	Key Question
1	Functional Fit	25%	5.0	Core reason for purchase. If the system cannot perform required scheduling, crew management and ops control functions, no other factor matters.	Can this system run our 24/7 operations?
2	Technical Fit	20%	5.0	Determines integration viability and long-term sustainability within the airline's existing IT ecosystem and architecture.	Will it connect to our systems and scale?
3	Commercial Evaluation	20%	5.0	Ensures cost predictability, value for money, and contractual flexibility over the full system lifecycle.	Is the 5-year TCO fair and predictable?
4	Vendor Maturity	15%	5.0	Reduces implementation risk by favoring proven vendors with demonstrated airline sector experience and financial stability.	Has this vendor done this before, successfully?
5	SLA & Support	10%	5.0	Guarantees operational continuity and defines accountability for system availability in a 24/7 airline environment.	Who answers the phone at 2am during IROPS?
6	Risk & Compliance	10%	5.0	Protects the airline from regulatory exposure, data breaches, and contractual lock-in risks.	What happens if things go wrong or we need to exit?
TOTAL		**100%**	**5.0**		

Section 2: Scoring Rubric

All individual metrics across every component are scored using the following standardized five-point rubric. Consistent application of this rubric across all evaluators is critical to the integrity and comparability of the evaluation. Where multiple evaluators score the same vendor, scores should be averaged per metric prior to computing Component Scores.

A Practical Example column has been included in each score band to illustrate how an actual airline evaluation scenario would be scored at that level.

Score	Rating	Assessment Criteria	Procurement Outcome	Indicator	Practical Example
5 – Excellent	Fully Meets / Exceeds	Vendor fully satisfies all requirements with zero gaps. May offer value-add beyond scope.	Strong selection candidate		Vendor provides native EASA/FAA FTL crew pairing, live crew tracking, and real-time disruption automation — all demonstrated in a live airline environment.
4 – Good	Meets with Minor Gaps	Vendor satisfies core requirements. Minor gaps exist but are addressable via configuration or roadmap.	Acceptable with conditions		Crew rostering is fully functional but the vendor lacks a native fatigue risk module; confirmed on the 6-month roadmap and available via API integration.
3 – Adequate	Partial Meet	Vendor meets approximately 60–79% of requirements. Notable gaps require custom development or workarounds.	Proceed with caution		Aircraft scheduling works for point-to-point but vendor has not deployed hub-and-spoke optimization; airline must validate workaround suitability.
2 – Poor	Below Expectations	Vendor meets less than 60% of requirements. Significant gaps with no clear resolution pathway.	High risk — review carefully		Vendor cannot support real-time IROPS management; only batch-based disruption recovery is available. No roadmap commitment provided.
1 – Unacceptable	Does Not Meet	Vendor fails to address critical requirements. Fundamental misalignment with airline operational needs.	Disqualify / Eliminate		Vendor has no crew management module; proposes a third-party integration with no defined timeline, no reference clients, and no contractual obligation.

It is strongly recommended that a minimum qualifying threshold is established at a Component Score of 3.0 or above for Functional Fit (Component 1), given the non-negotiable nature of core operational requirements. Vendors scoring below this threshold on Functional Fit should be subject to mandatory review by the evaluation committee before being permitted to progress.

Important

Where multiple evaluators score the same metric, individual scores should be recorded independently before any group discussion. Score averaging should only occur after independent scoring is complete to prevent anchoring bias.

Section 3: Component 1 — Functional Fit (Weight: 25%)

3.1 Definition & Strategic Importance

Functional Fit is the single highest-weighted component in the BSC evaluation, accounting for 25% of the Total Weighted Score. It examines whether the vendor's system natively delivers the operational capabilities required to support the airline's IOCC functions, including aircraft scheduling, crew management, operations control, and disruption recovery, without excessive customization.

Functional Fit is intentionally placed first and given the greatest weight because no degree of commercial attractiveness, technical elegance, or vendor reputation can compensate for a system that cannot perform the airline's core operational processes. A high Functional Fit score is a prerequisite for serious procurement consideration.

> **Why Functional Fit Comes First**
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> An airline evaluated three vendors and found that Vendor C had the lowest TCO and the most modern technology stack. However, Vendor C's system had no native hub-and-spoke fleet optimization and required a custom module for EASA FTL compliance — both identified as non-negotiable requirements. Despite strong scores in Technical Fit and Commercial Evaluation, Vendor C scored 2.1 on Functional Fit. Under this framework, the evaluation committee was required to review this result before proceeding. The committee ultimately disqualified Vendor C, saving an estimated 18 months of costly failed implementation.

3.2 Component Formula

Weighted Functional Fit Score = 0.25 × [(Σ Functional Metric Scores) ÷ Number of Metrics]

Example: If a vendor scores 4, 5, 3, 4, 5, 4, 3, 4, 5 across the nine functional metrics listed below, their CS_1 = (4+5+3+4+5+4+3+4+5) ÷ 9 = 37 ÷ 9 = 4.11. Their Weighted Functional Fit Score = 0.25 × 4.11 = 1.03.

3.3 Functional Fit Metrics

Each metric below includes a Practical Evaluation Tip which is a specific test, question, or scenario to apply during the vendor demonstration or RFP review to generate reliable scoring evidence.

Metric	Description / Assessment Criteria	Max Score	Weight %	Practical Evaluation Tip
Aircraft Scheduling & Fleet Optimization	Ability to optimize tail assignment, rotation planning, maintenance adjacency, and fleet balancing across complex network models including hub-and-spoke, point-to-point, and hybrid operations.	5	11%	Ask the vendor to run a live optimization on a sample of your actual fleet data, not their demo network. Compare results against your current best schedule.
Crew Pairing & Rostering	Native capability for legal pairing generation, optimized crew rostering, and fatigue risk management compliant with applicable regulatory frameworks (e.g., EASA FTL, FAA Part 117, GCAA, ICAO Annex 6).	5	13%	Provide a set of known 'borderline' duty patterns and verify whether the system correctly flags them. Request a sample compliance report output.

Metric	Description / Assessment Criteria	Max Score	Weight %	Practical Evaluation Tip
Crew Tracking & Real-Time Management	Live crew position monitoring, duty event updates, flight cover management, and automated replacement identification for disrupted operations.	5	12%	During the demo, simulate a crew member going sick at 3am during a wave. How does the system identify and present replacements? How long does it take?
Operations Control & Disruption Management	Integrated delay management, irregular operations (IROPS) decision support, automated re-accommodation tools, and scenario modelling for rapid disruption recovery.	5	12%	Ask the vendor to demonstrate a real-world IROPS scenario e.g., an aircraft AOG at a hub with 4 affected rotations. Evaluate the quality and speed of the system's decision support output.
Long-Term Schedule Planning & Slot Management	Season build capability, frequency planning, seasonal pattern management, and airport slot coordination consistent with IATA Scheduling Guidelines.	5	10%	Verify integration with your primary slot coordinator (ACL, ACI, or similar). Request sample SSIM file export to validate format compliance.
Ground Operations & Turnaround Management	Support for stand and gate allocation, ground handling integration, and turnaround time optimization including turnaround buffer management.	5	10%	Check whether the system supports real-time turnaround monitoring or only planning. Integration with your ground handler's systems is a key dependency to validate.
Maintenance & Engineering Integration	Seamless integration with or native support for aircraft maintenance due-date tracking, technical stop planning, and A-check/line maintenance scheduling within flight operations.	5	11%	Confirm compatibility with your MRO/M&E system (e.g., AMOS, TRAX, Mxi Maintenix). Request sample API documentation for the maintenance integration interface.
Reporting, Analytics & KPI Dashboards	Availability of operational performance dashboards, KPI monitoring (OTP, schedule completion rate, crew utilization, cost per block hour), and configurable management reporting.	5	11%	Ask to see the standard KPI dashboard out-of-the-box. Then ask how long it takes to configure a custom report. Complex configuration requirements signal a rigid system.
Configurability & Localization	Ability to configure business rules, constraint parameters, and workflow processes to match the airline's specific operational policies, fleet rules, and regulatory environment without bespoke coding.	5	10%	Test this during the demo: ask the vendor to add a new business rule (e.g., a custom crew qualification restriction). How many steps does it take? Does it require a developer?
COMPONENT TOTAL		**5.0**	**100%**	

Section 4: Component 2 — Technical Fit (Weight: 20%)

4.1 Definition & Strategic Importance

Technical Fit, weighted at 20% of the TWS, evaluates whether the vendor's system can be successfully integrated within the airline's existing IT ecosystem, meets performance and scalability requirements, and is built on a modern, maintainable architecture. Even functionally superior systems fail to deliver value if they cannot integrate with critical upstream and downstream systems, cannot handle peak transaction loads, or require unsustainable internal IT resources to maintain.

Example: When Technical Fit Derails a Functionally Strong Implementation

An airline selected a vendor with the highest Functional Fit score in the evaluation. During implementation, it was discovered that the vendor's system used a proprietary data format incompatible with the airline's existing ACARS provider, requiring a custom middleware layer. This was not identified during the evaluation because no API documentation review had been conducted. The resulting 6-month integration delay cost the airline $2.1M in extended parallel-running costs. This framework's Technical Fit component, specifically the API & Integration Capability metric, is designed to prevent this outcome.

4.2 Component Formula

Weighted Technical Fit Score = 0.20 × [(Σ Technical Metric Scores) ÷ Number of Metrics]

4.3 Technical Fit Metrics

Metric	Description / Assessment Criteria	Max Score	Weight %	Practical Evaluation Tip
System Architecture & Deployment Model	Evaluation of deployment options (SaaS, on-premise, private cloud, hybrid), infrastructure requirements, and alignment with the airline's existing IT strategy and data sovereignty requirements.	5	13%	If your airline has data residency requirements (e.g., GDPR, national data sovereignty laws), confirm in writing where data is stored and processed, not just where the vendor's primary data centre is located.
API & Integration Capability	Availability and robustness of published APIs (REST, SOAP, SFTP-based), pre-built connectors to major industry systems (Amadeus, Sabre, SITA, AMOS, ACARS), and support for IATA message standards (SSIM, AIDX, MVT, SCR).	5	15%	Request the vendor's full API documentation and test one integration in your sandbox environment before scoring. A vendor who resists this during evaluation will be harder to integrate post-contract.
System Performance & Scalability	Demonstrated ability to handle the airline's current and projected transaction volumes, concurrent users, and optimization run times under realistic operational conditions. Vendor should provide benchmarked performance data.	5	13%	Ask for performance benchmark data from a client with a comparable fleet and network size, not from a controlled lab environment. For large fleet optimizations, ask specifically: how long does a crew pairing run take?

Metric	Description / Assessment Criteria	Max Score	Weight %	Practical Evaluation Tip
Data Security & Access Controls	Compliance with relevant data security standards (ISO 27001, SOC 2 Type II, GDPR where applicable), role-based access control architecture, data encryption protocols (in transit and at rest), and audit trail capabilities.	5	13%	Request copies of the vendor's most recent ISO 27001 certificate and SOC 2 Type II report. Inspect audit trail functionality: can you see who changed what, when, and from where?
Disaster Recovery & Business Continuity	Documented DR architecture including Recovery Time Objective (RTO) and Recovery Point Objective (RPO), failover mechanism design, and geographic redundancy of hosting infrastructure.	5	12%	For an IOCC environment, a maximum RTO of 4 hours is generally acceptable; below 2 hours is preferred. Ask if DR has been tested in the last 12 months and request the test results.
Upgrade & Release Management	Frequency and method of system updates, backward compatibility assurance, client communication protocols for planned maintenance, and the airline's ability to control upgrade timing.	5	12%	Ask: 'Can we defer a mandatory upgrade by 60 days?' and 'How many breaking changes were introduced in the last three releases?' Forced upgrades during operational peaks are a significant risk.
Technology Stack & Longevity	Assessment of the underlying technology platform (programming language, database, middleware) against industry standards of longevity and supportability. Avoidance of legacy or end-of-life technologies.	5	11%	If the vendor's system is built on technologies older than 10 years, request a roadmap for modernization. Legacy technology stacks often become unsupportable within the contract period.
User Interface & Accessibility	Intuitiveness of the UI for IOCC controllers and planners, availability of mobile access where operationally relevant, configurability of role-based dashboards, and multi-language support.	5	11%	Invite 2–3 of your IOCC controllers to observe the demo and rate the UI independently. Experienced operators quickly identify systems designed by engineers rather than for operational users.
COMPONENT TOTAL		5.0	100%	