

ATC Automation System Selection and Implementation

Best-Practices and Lessons-Learned

Presented to: ICAO

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Federal Aviation
Administration 1

Agenda

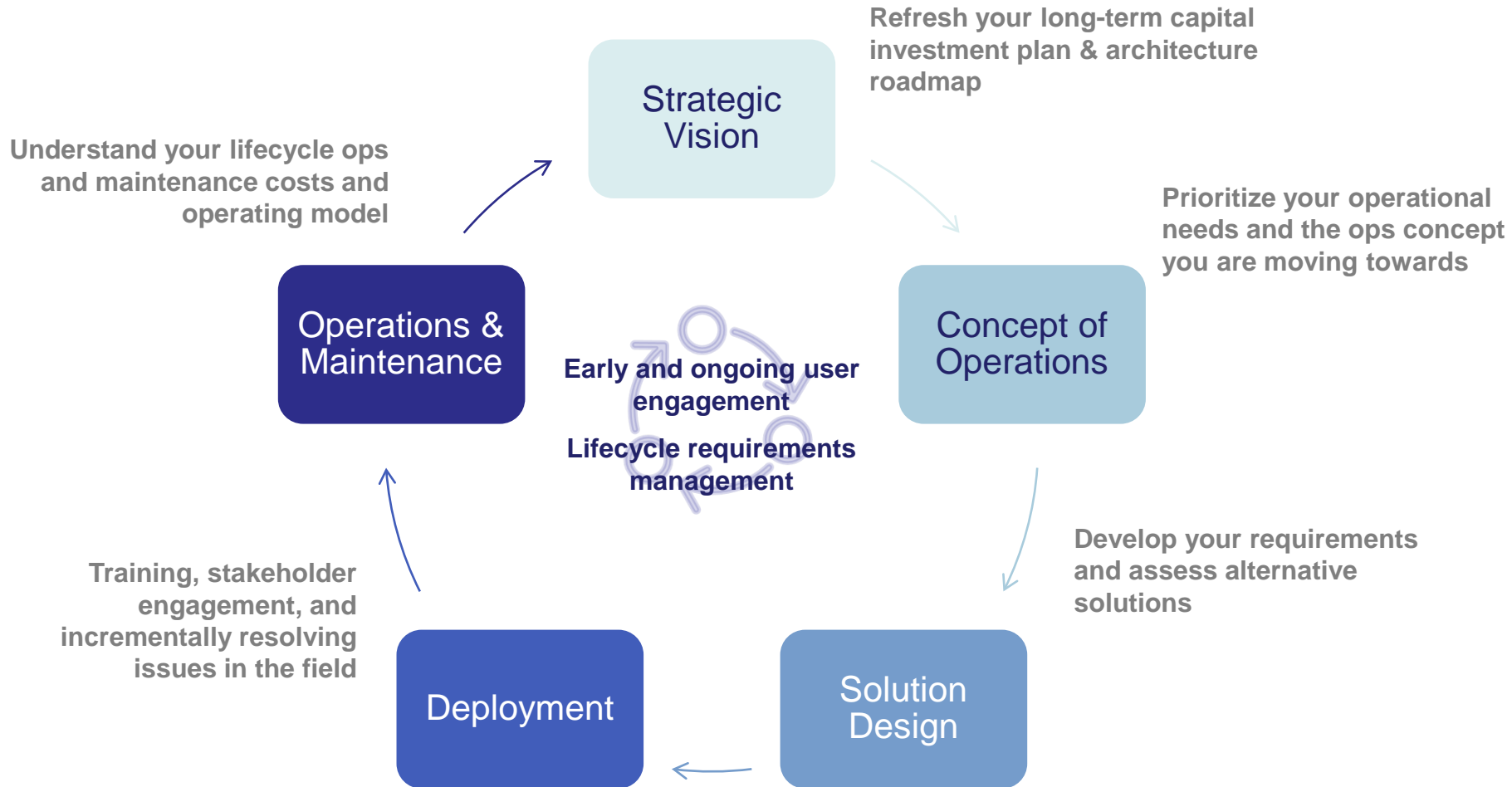
Today's Focus – Examining ATC system selection and implementation challenges we've experienced so as to offer best-practices and lessons-learned that can apply to ANSPs worldwide.

Today we'll share more about:

- Designing solutions for both current and future needs
- End-user engagement strategies
- Assessing the expertise and experience you need for success
- Collaborating with other ANSPs and industry to learn what works and what could work for you
- Planning strategically and prioritizing realistically

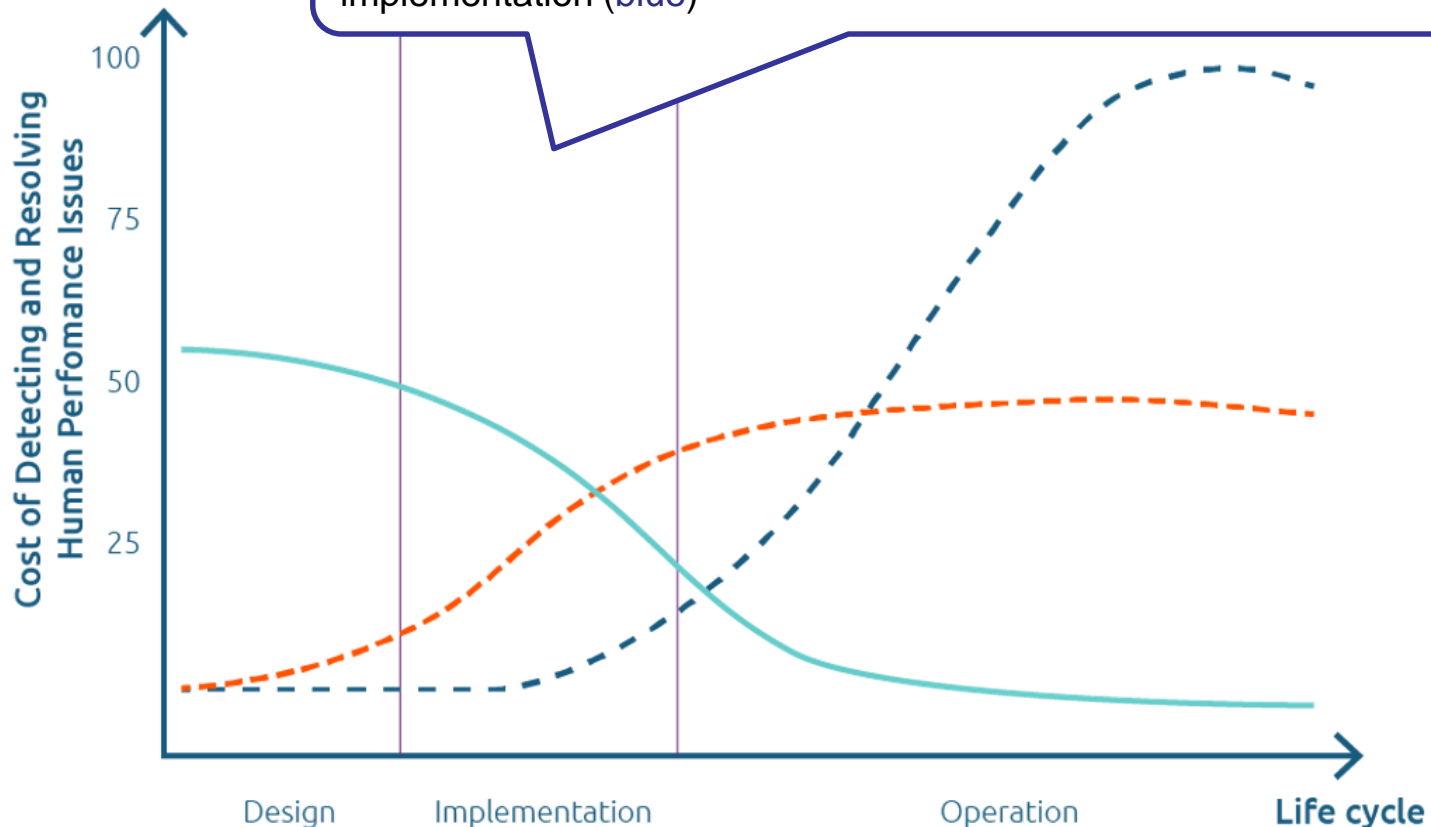


Context for the Project Lifecycle



The value of end-user engagement

You see here the differences in lifecycle costs of addressing system issues found in design (green) vs. implementation (orange) vs. primarily post-implementation (blue)



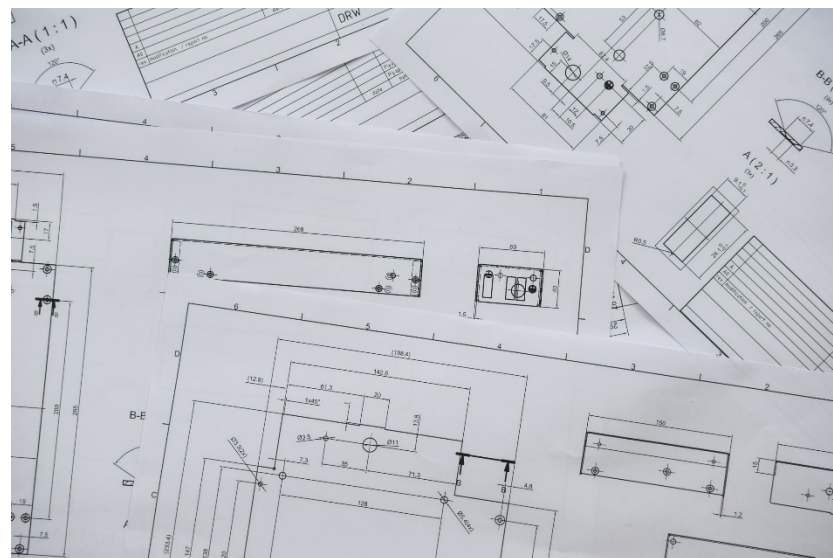
Source: Eurocontrol HUM.ET1.ST13.4000-REP-02



Establishing your Strategic Vision

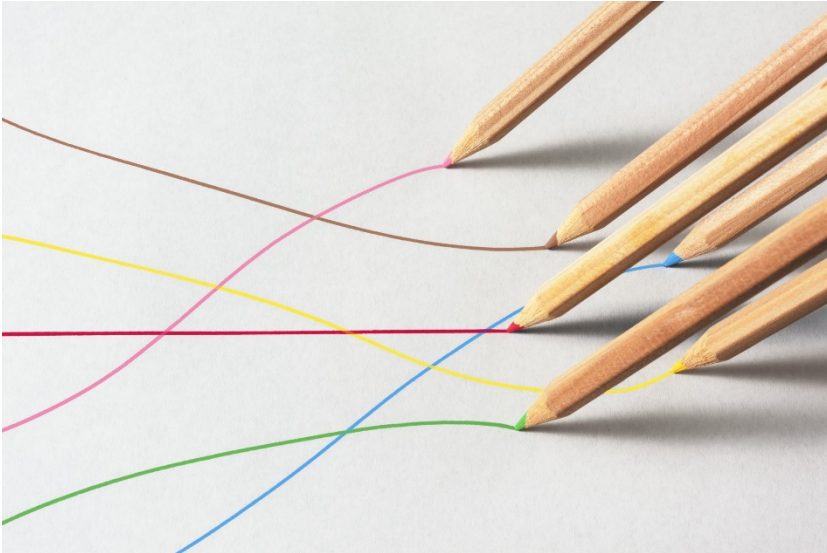
Strategic
Vision

- **IT strategic planning tools (such as an Enterprise Architecture) help to holistically frame your longer-term operating concept**
- **These tools and a robust strategic vision will allow you to:**
 - Evaluate points of integration within and across systems
 - Make informed decisions about scope relative to future potential needs
- **Incorporate input and feedback from adjacent ANSPs and ICAO as well as internal stakeholders when building your longer-term strategic vision**



Elaborating a Concept of Operations

Concept of Operations



- A ConOps is generally a high-level requirements document that describes users' expectations of the system.
- It's used as input to the development of formal testable system and software requirements specifications.
- It allows you to:
 - Gather and validate your highest priority requirements
 - Engage your stakeholders on a common language and common vision early and often



Designing ATC Automation Solutions

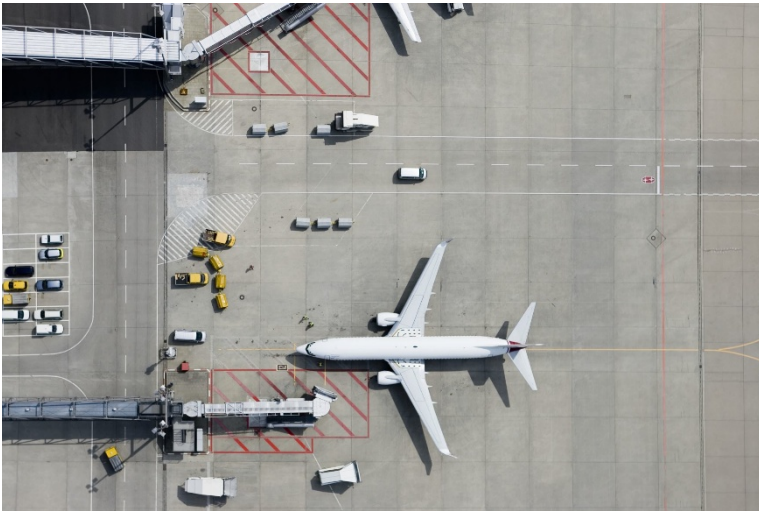
Solution
Design

- **Requirements definition is critical and requires continuous validation and maintenance**
- **Consider what lifecycle approach your project requires:**
 - If a commercial off-the-shelf (COTS) product is selected, plan for hardware end-of-life and software upgrading end-of-service
 - If a custom-built product is required, consider the maintenance strategy and interoperability concerns
- **Communication and coordination with other ANSPs improves knowledge of what works and what does not**
- **Engage with vendors and other ANSPs to see various solutions in operation**
- **Ensure your requirements for vendor support over the full systems lifecycle are clear**
- **... and continue to engage your users**



Deploying Automation Capabilities

Deployment



- **Integrate with your vendor's team as much as possible to ensure collaboration and transparency.**
- **Reduce risk by planning for technical problems and have opportunities for solutions planned in advance**
- **Continue to emphasize stakeholder engagement activity from earlier stages to strengthen user confidence and acceptance of the system by the operators – training alone cannot achieve this**



Operating and Maintaining ATC Automation Platforms

Operations & Maintenance

- **Lifecycle maintenance costs are often higher than you expect**
- **Evaluate the O&M models used by other ANSPs, scaling as necessary. Considering:**
 - How they support sites
 - How engineers work with the vendors
 - How enhancements and new releases are deployed
 - How contractual support from the vendor is structured
- **Integrate O&M performance metrics into periodic updates to your IT strategic plans and future automation requirements**



Key Take-Aways from FAA Lessons-Learned

- **Where possible, included someone familiar with the system/technology being purchased whose job is not to sell to you**
- **Never underestimate training, communication, outreach, and related activities to support user acceptance.**
- **Ensure the vendor's scope of work fully addresses the all requirements including those for test and maintenance.**
- **Establish your evaluation plans and selection criteria before seeking proposals**
- **Before you select a vendor – see where else that system is used and before final selection, visit vendor's customers to observe the system in use, engage users, and collect feedback**



Thank you

