



ENGINEERED  
OPTIMIZED  
SOLVED

# ATA E-BUSINESS CONFERENCE

## ATRWG SPEC2500

June 22, 2022

# AGENDA

SPEC 2500 QUICK INTRO

ASSET TRANSFER PROBLEM STATEMENT

THE EVOLUTION OF ASSET TRANSFERS

CASE STUDIES

Q&A



## ATA e-Business Program



- International standards program for information exchange to support engineering, maintenance, materiel management and flight operations.
- Open membership
  - 90+ companies in 33 countries
  - Over 800 active individual participants
- Neutral, consensus-based
- Collaborative web site: [www.ataebiz.org](http://www.ataebiz.org) for documents, balloting, calendars, email

# ATRWG Quick Intro



Global  
Industry

- Team consists of airlines, OEM, MROs, aftermarket services, consultants, lessors, software developers, etc.
- Open Membership
- Neutral, consensus based



Vision

- A seamless **exchange** and availability of **digital** information throughout the civil aviation industry



Purpose

- Leverage and benchmark information standards in support of aircraft maintenance
- Evolving standards through sharing and promoting implementation
- Increase business agility and reduce costs, while maintaining the highest level of safety standards



■ International standards program for information exchange to support engineering, maintenance, materiel management and flight operations.

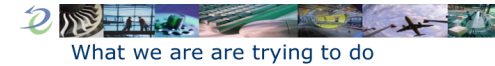
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What we are trying to do

## ■ Vision

- Enable the seamless **exchange** and availability of **digital** information throughout the civil aviation industry.

## ■ Mission

- Provide the aviation industry with benchmark information standards in support of aircraft maintenance and operations.
- We are committed to evolving shared standards and promoting implementation to contribute to **increased business agility** and **reduced costs**, while maintaining the highest levels of safety.

UNIFYING SOLUTIONS THROUGH INDUSTRY COLLABORATION



# Asset Transfer - Problem Statement

## INDUSTRY CHALLENGES



- Labor intensive, limited resources able to focus/dedicate effort
- Aircraft historical data, records formats, mods, and effectivities complicate efforts
- Occur infrequently enough where expertise is never achieved
- Challenges may be unique by aircraft, owner/lessor

## CONSEQUENCES

- Data errors in baseline set-up
- Data missing in system
- Long timeline to identify a compliance issue
- Dependency on manual processes
- Inability to easily identify issues/escapes/equipment differences
- Delays from contractual requirements

## IMPACT

- Safety
- Non-Compliance / AOG
- Negative publicity / brand impact
- Resource drain
- Research and rework by engineering, records, QC, etc. long after error was made
- Financial penalties

The diagram illustrates the structure of the Aircraft Transfer Record (ATR) schema, organized into several key components:

- Company Info:** Includes `CompanyID` (Unique Identifier for the Orgs), `CreateDateTime`, and `OrganizationInfo` (1..n).
- Info about aircraft, engine or other asset:** `AssetInformation` (mandatory 1) identifies the top level Asset such as Aircraft, Engine, APU to which the content below applies.
- Status Reports:** `ContentGroup` (1..n) contains content associated with top level assets. Repeat for each top level asset such as for an aircraft and 12 engines.
- Other standardized data such as electronic Logbook or eARC:** `ContentDetails` (1..n) is a Repeating Group for each individual content item such as a AD-Form report or an individual PDF of a GPR.
- Add metadata to other documents such as PDF:** `ContentDetails` includes:
  - `ContentID` (1)
  - `ContentDateTime` (1) (Contains the dateTime that the report, GPR or other content was created)
  - `ATA_Spec2008_Content` (1) (Time to create the eARC 2.0 content not defined in Spec 2008 would be included)
  - `ATA_Other_Content` (1)
  - `OtherContent` (1)
  - `ATA_AIRN_TransferIdentifier` (1) (Identifies the registration identifier such as the ATA transfer data code (B00))
  - `AssetContentLifeCycle` (1) (This block should be used as an air-frame cycle information for content that is different from the time cycle information shown in the Asset Block above)
  - `DiffInfoFlag` (1) (Can be used to identify content which is preliminary and known not to be the final data associated with an asset transfer)
- Links to documents to be tied to reports such as URLs:** `LinkTable` (1..n) (The table allows data set IDs from within different content types to be linked)

```

\AircraftTransferRecordsCrate ..... \Schemas\ATA_AircraftTransferRecordsCrate.xsd"
  <CrateID source="Asset Management System">EX3</CrateID>
  <CreateDateTime>2016-09-15T00:00:00Z</CreateDateTime>
    <OrganizationInfo>
      <OrganizationName>ABC Airlines</OrganizationName>
      <OrganizationCode OrganizationCodeType="CAGE">12345</OrganizationCode>
      <OrganizationalRole>Lessee</OrganizationalRole>
      <ContactName Role="Deliveries">
        <Name>John Smith</Name>
        <PostalAddress>
          <AddressLine>ABC House</AddressLine>
          <AddressLine>Gatwick Park</AddressLine>
          <AddressLine>London Road</AddressLine>
          <City>Crawley</City>
          <Municipality>West Sussex</Municipality>
          <State></State>
          <PostalCode>RH10 9UY</PostalCode>
          <Country>United Kingdom</Country>
        </PostalAddress>
      <Email>john.smith@aviation.com</Email>
      <Phone>+441234123123</Phone>
    </ContactName>...

```

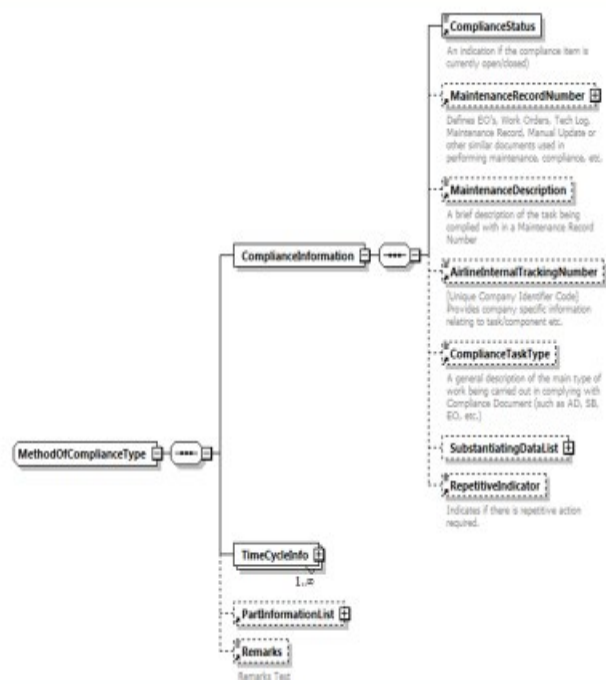
6



# Method of Compliance Crate to Code



## Spec 2500 Excerpt - MOC



## Sample XML – Method of Compliance

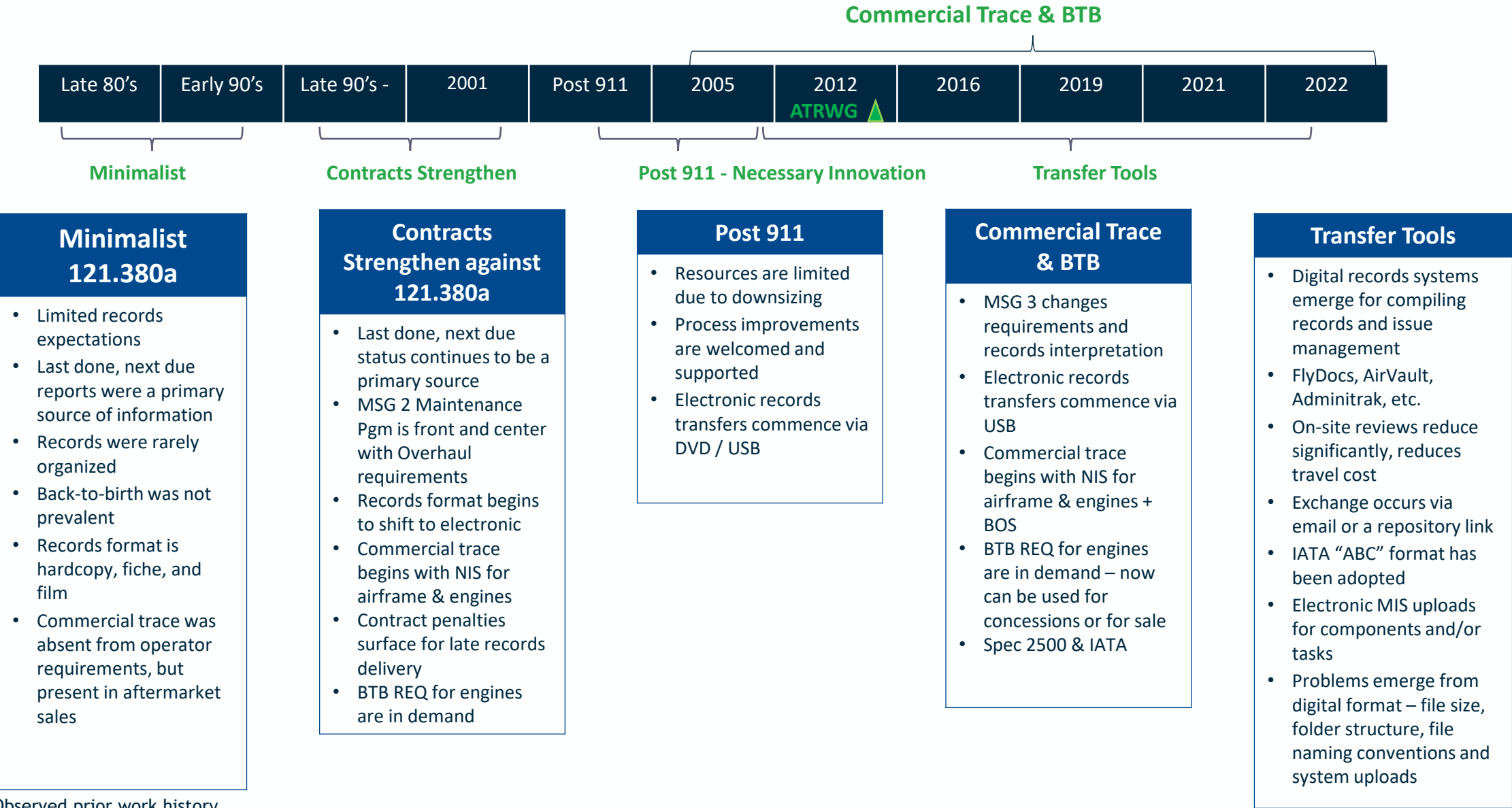
```
<MethodOfCompliance>
  <ComplianceInformation>
    <ComplianceStatus>Open</ComplianceStatus>
    <MaintenanceRecordNumber>
      <DocumentNumber>E0-33-4234581</DocumentNumber>
      <DataSetID source="Maintenance System">AD5</DataSetID>
      <TypeOfDocument>EO</TypeOfDocument>
      <CAGE_Code>9V238</CAGE_Code>
      <Company>American Airlines</Company>
      <Model>767-300</Model>
    </MaintenanceRecordNumber>
    <MaintenanceDescription>Replace the aft pressure bulkhead at Station 1582 of Section 48 w/
    Instructions of Boeing Alert Service Bulletin 767-101234, Revision 1, dated August 4, 2016</MaintenanceDescription>
    <AirlineInternalTrackingNumber>27-987876-33</AirlineInternalTrackingNumber>
    <ComplianceTaskType>Part Replacement</ComplianceTaskType>
    <SubstantiatingDataList>
      <SubstantiatingData>
        <DocumentNumber>XB101</DocumentNumber>
        <DataSetID source="20-05-2015">AD6</DataSetID>
        <TypeOfDocument>SB</TypeOfDocument>
        <CAGE_Code>81205</CAGE_Code>
        <Company>Boeing</Company>
        <Model>767-300</Model>
        <RevisionNum>13</RevisionNum>
        <RevisionDate>2015-08-14</RevisionDate>
      </SubstantiatingData>
    </SubstantiatingDataList>
    <RepetitiveIndicator>true</RepetitiveIndicator>
  </ComplianceInformation>
  <TimeCycleInfo>
    <Threshold EarlierLaterOf="LaterOf">
      <TimeCycleList>
        <TimeCycleDetails>
          <Date>2020-07-20T00:00:00</Date>
        </TimeCycleDetails>
      </TimeCycleList>
    </Threshold>
    <TimeCycleList>
      <TimeCycleDetails>
        <Cycles>2000</Cycles>
      </TimeCycleDetails>
    </TimeCycleList>
  </TimeCycleInfo>
</MethodOfCompliance>
```

AD Compliance is Open

Ref to Substantiating SB

Due before 20,000 Cycles

# Evolution of Aircraft Transfers





# Evolution of Aircraft Transfers

Key Deliverables	1987 -1992	1993-1997	1998-2001	2002-2006	2007-2011	2012-2016	2017	2018	2019 to present
Hardcopy Records	Not accepted	Not accepted	Not accepted						
Records Format: Fiche, and Film									
Electronic Records				Gaining acceptance	Gaining acceptance	Standard Practice			
Transfer reports: LDND, AD/SBs, Major Assemblies, Time-Limited Components, Major Alt									
Dirty Fingerprint Records									
Engine Back-to-Birth									
Commercial Trace: NIS and BOS									
Contracts Strengthen due to gap in Regulatory Guidance									
Digital data transfers									
Transfer Tools									
Spec2500									
IATA ABC Format									

Hardened 

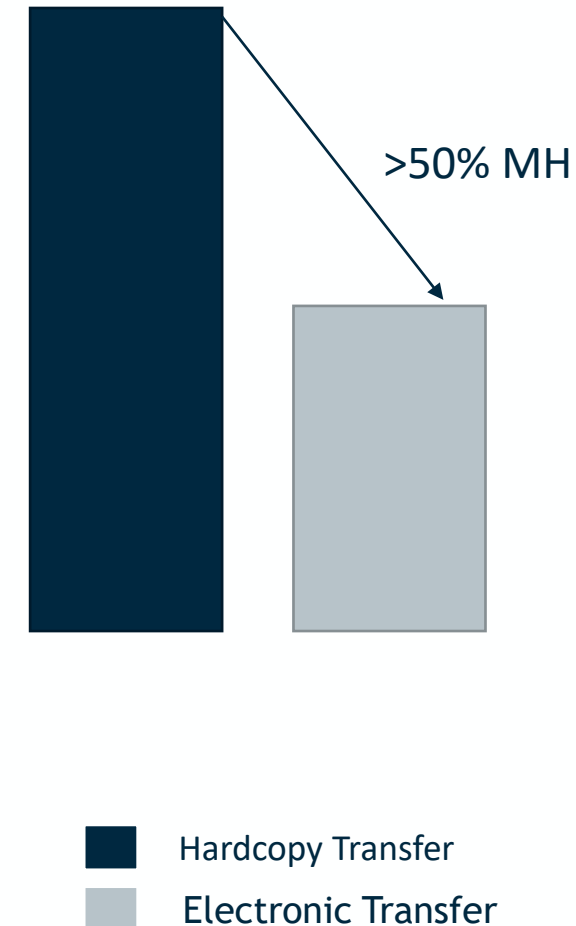
Limited 

# Improvements from Electronic Data Transfers – Reduced Man-hours and Errors

5 key business drivers to solidifying the way forward....

- 1 Reduced real estate for records management
- 2 Reduced man-hours (MH) at >50%
- 3 Reduced concession \$'s for critical components
- 4 Limited the need for on-site reviews, reducing travel costs
- 5 Tools allowed for collaborative issue management in lieu of paper or excel issue tracking

Observed prior work history



# 1 Case 1: eTransfer Tool for Aircraft

## Client and context

A regional airline was transferring in a series of aircraft with more than half to be placed into operation while others would be parked. The aircraft delivery span was for seven months.

The previous operator's records were primarily in hard copy format, which resulted in an on-site presence for auditing and digital conversion in preparation for upload into the transfer tool

A couple of months into the project it became known that the transferring carrier would be ceasing their operation. This resulted in an accelerated review of key requirements in a short period of time.

Shifted priorities to ensuring completeness of hard copy records prior to digital conversion.

## Approach

Adapted SeaTec methodology to align with client's existing processes and controls using their internal IATA "like" checklist.

Operated a turn-key process inclusive of:

- Receipt and evaluation of records
- AD compliance
- Bridging of maintenance programs
- Authoring task cards and engineering orders
- Ops Spec pkg for FAA approvals
- Client /MRO work scope decisions
- Data uploads into their Maintenance
- Spares provisioning
- Maintenance Information System (MIS)
- Progress metrics and reporting

Utilizing the client's checklist with the transfer tool created visibility to identify gaps between the previous and the current operator's requirements for contingency plans.

## Outcomes

The tool allowed for the client to establish pre-defined audit points ahead of an upload into their (MIS)

The tool's approval process allowed for key decisions to be addressed timely based on the documents uploaded into the tool

Rejected tasks require action by replacing a component, performing a conformity verification, or repeating maintenance for missing records as well as creating visibility for concession opportunities

**Asset transfer tools allow for collaboration between stakeholders to review records and issue resolution resulting in a Safe and compliant delivery**

# 2

## Case 2: eTransfer of OEM Data

### Client and context

A domestic operator required support of inducting 14 aircraft into their system within a six- month period.

The aircraft were scheduled to have post-delivery visit tasks performed within ~ a week from technical acceptance.

The operator's request was to validate the completeness and forecast accuracy of the data loads into their MIS from OEM delivery documents as well as using the operator's most current aircraft configuration as a baseline for setup.

After the first aircraft, scope shifted for SeaTec to include corrections into the MIS, which has a workflow tool for the operator to accept or reject the change before allowing the change into their MIS.

### Approach

SeaTec methodology to align with client's existing processes and controls:

Operated a turn-key process inclusive of:

- Phased approach for each aircraft:
  - Phase 1 – task limits  $\geq 90$  days
  - Phase 2 – task limits  $< 90$  days  $< 2$  years
  - Phase 3 – tasks  $\geq$  to 2 years
- Bridging of maintenance programs to OEM and AMP
- Data uploads into their MIS
- Progress metrics and reporting

### Outcomes

Reduced man-hours for manual MIS updates

Data mis-matches allow for a concentrated view of the fallout as opposed to a line-by-line review

An in-house tool with the ability to compare OEM to AMP for effectivity, limits, and missing data further reduced risks and level of effort

A second set of eyes validation of the change prior to placing into production mitigated compliance risks

**MIS upload of OEM data driving efficiencies and reducing costs and risks**  
**Next step OEM data upload directly to operator's MIS (proof of concept in-work)**

# Case 3: eTransfer of Components

## Client and context

A large domestic carrier opted to purchase previously operated aircraft from a foreign carrier and chose to outsource a majority of the aircraft transfers program.

Fleet conformity requirements added complexity to include lead times for service bulletin kits, parts, etc.

Aircraft arrived in batches from two different operators, demanding flexibility, a deep pool of expertise across every maintenance and engineering function, and the ability to surge on demand.

## Approach

SeaTec methodology on approach vetted with client 's existing processes and controls.

Operated a turn-key process inclusive of:

- Receipt and evaluation of records
- AD compliance
- Bridging of maintenance programs and MIS next due forecast requirements
- Validate and correct serialized uploads of component mis-matches
- Authoring task cards and engineering orders
- Packages for Ops Spec addition/ FAA approvals
- Progress metrics and reporting
- Independent validation /auditing

## Outcomes

Reduced man-hours for manual MIS updates

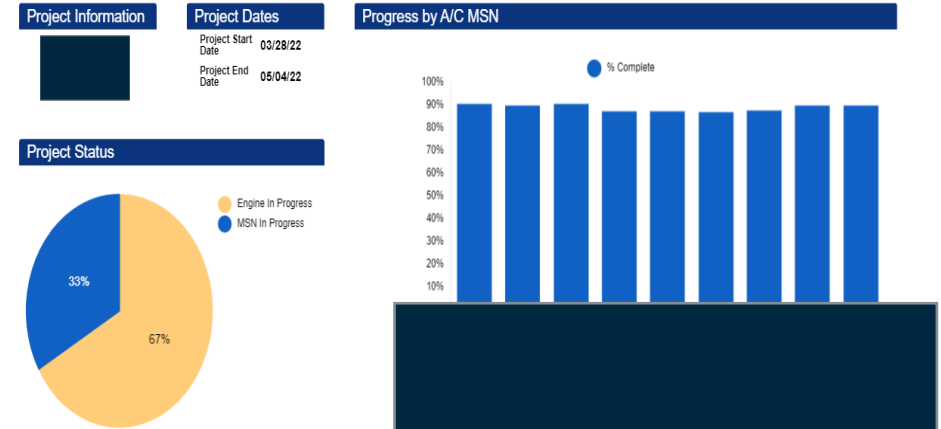
A team with expertise in their MIS was key to the complexity of the program deliverables

Final input buy-off by client reducing compliance risk

**Success in system intake of another operator's data set fulfilling new operator's requirements**

# SeaTec's Adoption of IATA Best Practices Benefits

- Baseline of robust requirements to engage with client for project scoping
- Repeatable process for asset transfers
- Collaborative issue management
- Quick launch of project tasking with dashboards
- Synergies with others who use IATA A-B-C format
- Spec 2500 and IATA are aligned in approach



Forms IATA Template - Engine C/L

MSN/ESN	At Risk	Operator or Lessor Certified	1-Time Doc	IATA Doc Group	Doc Subgroup	IATA Doc	IATA Doc Group Name	Doc ID	Doc Description	Requirement Type	Source	Who	Doc to SeaTec	Assigned To	Due Date
MSN/ESN							Engine Records	F000	Complete Records						
MSN/ESN							Engine Records	F001	Manufacturer Delivery Documents (EOD, Log book, Test Data/Performance Summary, Configuration Listing and SB Status at Manufacture).	Industry Stan			No		
MSN/ESN							Engine Records	F002	Certificate of Airworthiness for Export at Manufacture (if applicable).	Industry Stan			No		
MSN/ESN							Engine Records	F003	Certified statement of Total Time in Service (Hours and Cycles).	CFR Industry			No		
MSN/ESN							Engine Records	F004	Certified status of Engine Airworthiness Directives (including applicability status and statement as to method of compliance e.g. modified/inspected).	CFR Industry			No		
MSN/ESN							Engine Records	F005	Certified status of incorporated Engine Manufacturer Service Bulletins.	Industry Stan			No		
MSN/ESN							Engine Records	F006	Certified status of incorporated Engine Non-Manufacturer modifications including STCs with applicable regulatory approval.	Industry Stan			No		
MSN/ESN							Engine Records	F007	Certified Life Limited Parts listing indicating cycle limit, cycles consumed since new, and cycles remaining. (LLP Status Summary)	CFR Industry			No		
MSN/ESN							Engine Records	F008	Individual total cycle substantiation data for each Life Limited Part since manufacture (LLP BTB)	CFR Industry			No		
MSN/ESN							Engine Records	F009	All historical Engine/Module Shop Visit reports (which may not include engine DFP records and shop task cards)	CFR Industry			No		
MSN/ESN							Engine Records	F010	Condition Monitoring Report (current Trend Data)				No		
MSN/ESN							Engine Records	F011	Engine Log Book and/or Master record of installation & Removals (as applicable).				No		
MSN/ESN							Engine Records	F011-1	Engine Log Book				No		
MSN/ESN							Engine Records	F011-2	Operational History Report of installations & Removals	CFR Industry			No		
MSN/ESN							Engine Records	F012	Last Borescope report (including video) (if required by lease).				No		
MSN/ESN							Engine Records	F012-1	Last Borescope Report	Industry Stan			No		
MSN/ESN							Engine Records	F012-2	Last Borescope Video Report				No		
MSN/ESN							Engine Records	F013	Last Engine Test Cell report.	Industry Stan			No		
MSN/ESN							Engine Records	F014	Last On-wing Maximum Power Assurance Ground Run (as performed during end of lease maintenance check if applicable)				No		
MSN/ESN							Engine Records	F015	Certified Engine Incident & Accident Clearance Statement for period of operation with Lease (ATA/JAR/DO format or equivalent, if not covered by Aircraft ICS in 8016)	Industry Stan			No		
MSN/ESN							Engine Records	F016	Certified Power Rating Operation statement (including (if applicable) cycles of operation at different thrust ratings) - may be included in Disc Sheet or LLP tracking templates.	Industry Stan			No		
MSN/ESN							Engine Records	F017	Certified maintenance task cards for Specialist Engine Field Repairs since last shop visit (if applicable)	Industry Stan			No		
MSN/ESN							Engine Records	F018	Certified maintenance task cards for Fan Blade Distribution (including P/N, S/N, and Moment Weight information) - Fan Blade Distribution List				No		

Automation Forms IATA Template - Airframe C/L

ID	MSN/ESN	At Risk	Operator or Lessor Certified	1-Time Doc	IATA Doc Group	Doc Subgroup	IATA Doc	IATA Doc Group Name	Doc ID	Doc Description	Requirement Type	Source	Who	Doc to SeaTec	Assigned To	Due Date
1	A/C MSN N-REG							Current Certificates	A000	Complete Records						
2	A/C MSN N-REG							Current Certificates	A001	Certificate of Airworthiness (from Redelivering Airline), and if applicable the Airworthiness Review Certificate (ARC).	Industry Stan			No		
3	A/C MSN N-REG							Current Certificates	A002	Certificate of Registration (from Redelivering Airline).	Industry Stan			No		
4	A/C MSN N-REG							Current Certificates	A003	Certificate of Airworthiness for Export (if applicable).	Industry Stan			N/A		
5	A/C MSN N-REG							Current Certificates	A004	None Certificate (or equivalent e.g. AFM page).	Industry Stan			No		
6	A/C MSN N-REG							Current Certificates	A005	Copy of Radio Station License (from Redelivering Airline), including installed list of all radio transmitting equipment.	Industry Stan			No		
7	A/C MSN N-REG							Current Certificates	A006	Aircraft De-Registration confirmation (if applicable).				N/A		
8	A/C MSN N-REG							Current Certificates	A007	Built Certificate - Compliance with FAR 25.853 for EASA equipment for seats, carpets, curtains, interior surfaces including in-combination turn certificate (as applicable) (note - turn certificate may be contained in the AIR/ARL or type design / IPC).				No		
9	A/C MSN N-REG							Current Certificates	A007-1	Seat Cushions	CFR Industry			No		
10	A/C MSN N-REG							Current Certificates	A007-2	Back Rest Cushions	CFR Industry			No		
11	A/C MSN N-REG							Current Certificates	A007-3	Dress Covers	CFR Industry			No		
12	A/C MSN N-REG							Current Certificates	A007-4	Carpets	CFR Industry			No		
13	A/C MSN N-REG							Current Certificates	A007-5	Curtains	CFR Industry			No		
14	A/C MSN N-REG							Current Certificates	A007-6	Galley Flooring	CFR Industry			No		
15	A/C MSN N-REG							Current Certificates	A007-7	Interior Surfaces (if refurbished)	CFR Industry			No		
16	A/C MSN N-REG							Current Certificates	A008-1	Aircraft Commercial Trace - Current Bill of Sale	Industry Stan			No		
17	A/C MSN N-REG							Current Certificates	A009-1	Aircraft Commercial Trace - Historical Bill of Sale	Industry Stan			No		
18	A/C MSN N-REG							Current Certificates	A011-8	TBD				N/A		
19	A/C MSN N-REG							Current Certificates	A013-8	TBD				N/A		
20	A/C MSN N-REG							Current Certificates	A013-9	TBD				N/A		
21	A/C MSN N-REG							Current Certificates	A013-9	TBD				N/A		
22	A/C MSN N-REG							Aircraft Maintenance Sta	B000	Aircraft Maintenance Status Summaries				No		
23	A/C MSN N-REG							Aircraft Maintenance Sta	B001	Certified listing of Airframe Check / Inspection History / Maintenance Checks performed.	CFR Industry			No		
24	A/C MSN N-REG							Aircraft Maintenance Sta	B002	Certified status of Total Time in Service (Hours and Cycles).	CFR Industry			No		
25	A/C MSN N-REG							Aircraft Maintenance Sta	B003	Aircraft Flight Time Report / Aircraft Log Book / or Airline Maintenance Information System (MSIS) utilization report (as applicable).				No		
26	A/C MSN N-REG							Aircraft Maintenance Sta	B003-1	Aircraft Flight Time Report	Industry Stan			No		
27	A/C MSN N-REG							Aircraft Maintenance Sta	B003-2	Aircraft Log Book	Industry Stan			No		



# Questions & Comments?



# WHAT WE DO

