Tracking Aircraft Parts; An Industry Vision

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February 2012
Objective

- Track aircraft parts in commercial aviation industry for:
  - Organization’s internal use (traceability within own inventory and shops)
  - Organization’s external use (traceability as parts move across company’s physical control)
  - Efficient and updated record keeping (includes maintenance history)
  - Retaining commercial value for resale or leasing
  - Aircraft configuration compliance
  - Increase maintenance efficiency
Meeting Objective

- Agree on a simple message as an Industry Vision that can be accomplished in X years
- Address all possible sources of obstacles and ways to mitigate
- Identify participants and their roles to develop roadmap
- Agree on a plan to move forward and promote Industry Vision
Background

- There is an overwhelming need for accurate tracking of aircraft parts and related data and information for:
  - Safety
  - Regulatory Compliance (Regulatory acceptance of electronic information)
  - Asset Value Management
  - Maintenance and Record keeping
  - Aircraft Configuration; status and control
  - Simplification and standardization of paperwork and information exchange
  - Efficiency improvement and cost avoidance
  - Process understanding, mapping and “leaning”
  - Simplify maintenance tasks
Current Situation – Industry Need

- Aircraft parts information (records, location, status etc.) to be tracked in the same way by various entities in the airline industry supply chain.
- Technology alignment for tracking parts (manual control, bar codes, RFID, etc.) and data storage/retrieval.
- Easily accessible (digital form) regulatory information.
- Complete history availability of the aircraft part as appropriate. Extra costs + time required to generate the part history on demand.
- Bureaucracy, paper forms and very inefficient, time consuming processes can be innovated.
Performance Metrics

- Lead time
- Human errors
- Inventory size (no of parts required)
- Inventory expense (capital and operational)
- Maintenance task time
- .......

New Tech to Track Aircraft Parts - draft
Proposed Solution

- Implementation of new technologies to register and track the history of aircraft parts using a simple solution within the whole airline industry supply chain.

- Auto-ID/RFID (radio frequency identification) to explore based on the simplicity and convenience, previous IATA experience with the technology for luggage localization (StB RFID project) and maturity.
Industry Benefits envisioned

- Locate and track / trace aircraft parts (physical location and history)
- Record and access the maintenance history of each part
- Include regulatory tags / e-signatures
- Airworthiness part registration
- Efficient transfer of aircraft and its parts
- Maintenance optimization (task & lead time…)
- Data release for operators, lessors, suppliers or regulators
- Minimize paper and time consuming processes
- Elimination of human errors on track and recording
- Use of web connections to access the parts databases (as needed)
- Agreement of industry standards
Challenges and Mitigation (1)

- New and existing fleets and parts
  - New aircraft / parts will be tagged after a specific date (e.g. in 5 years)
  - Old aircraft / parts will be tagged as applicable; unless for use in new a/c
  - What parts should be tracked?

- Universal Recognition of basic information
  - Availability of readers / standard frequency (-ies) around the globe
  - Multi frequency reader; accuracy?

- Standards
  - ATA standards will be enhanced as applicable

- Wireless internet availability
  - Wired and/or paper option will be available (today’s status)
Challenges and Mitigation (2)

- **Stakeholder understanding and commitment**
  - Buy-in by airline inventory and parts departments (including airline IT)
  - Buy-in by Technical (E&M) Heads (including airline Supply Chain)
  - Buy-in by Airline Senior Executives (CEO/CFO and IATA’s BoG/AGM)

- **Investment and Operational Costs**
  - Business case TBD for the industry
  - Question: Why bar codes and RFID exist for luggage that the exposure to loss is significantly lower?

- **Timeline to implementation**
  - Needs to be determined; industry commitment
Challenges and Mitigation (3)

- **Regulatory acceptance**
  - Ensures compliance, avoids errors, existing laws penalize tampering
  - Serviceable and unserviceable read / write capability; e-tag on part

- **Data Ownership**
  - Maintenance records belong to operator(s) and owner(s); repair shop should provide data to operator
  - Should be transferred along with the part when part changes hands
  - Regulatory (Government) and Commercial obligations
  - Loans and Borrows agreements same as today
  - Data reside on operator’s / owner’s IT systems; minimal information on tag will be required – rest (e.g. part history) is optional
Airline Industry’s Vision

- Track aircraft parts uniformly between industry stakeholders? (“e-parts”, “e-parts tracking”???)
- Improve industry efficiency; reduce turn-around-times; increase aircraft availability; reduce D&C?
- Reduce Maintenance costs and Capital investment (parts)?
- .....
Project Participants

- Impact of local/ regional regulations and documentation required
- B2B relationships with direct vendors and providers
  System alignment
- Asset control based on new technologies
  Valuation based on inventory
- Input on regulatory issues and success factors
  Cost implementation estimation
  Benchmark with other industries and savings
- Input on issues and particularities for parts tracking
  Impact evaluation of new technologies on systems, procedures & human factors
- Inventory capabilities for parts and supplies
  Standardization of labeling among OEMS
- Delivery processing
  Delivery Tracking
- Supply chain impact and integration
  Purchase processing
- Project Lead
  Cost/Benefit Analysis
  Best Practices
  Implementation & Monitoring
Project Phases

Phase 1

Assessment of New Technology use and Cost/Benefit evaluation

INVolVEMENT
• IATA, industry stakeholders and Airlines to validate findings

OUTCOME
• Assessment on potential new technologies and cost/benefit analysis

GO/NO GO Decision

Phase 2

Joint Analysis on specific technical requirements and industry alignment

INVolVEMENT
• IATA, industry stakeholders (systems and other industries) and Airlines to validate findings

OUTCOME
• Report on the potential global alignment of the solution in the industry
• Solid support from IATA senior management and interest groups -ENG/FOG/OPC to move forward
• Estimation of additional funding required – Global Business Case

GO/NO GO Decision

Phase 3

BoG final presentation of Industry priority and IATA position

INVolVEMENT
• IATA senior management and BoG members
• Supporters from the airline industry to the business case

OUTCOME
• Final GO – NO GO decision
• Support to the project as a BoG objective or industry priority
• Support to the IATA position on the subject
• Decision about the level of compliance to be required to our members related to this position and global plan for alignment

THANKS

Any Questions???

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