Digital Aircraft Operations
e-signature

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Today's reality

↗ 100+ boxes of paper to transfer an aircraft (88 boxes for an ATR-72…)

↗ **NO** digital EASA Form 1* or FAA's 8130-3* has been issued yet!!!

  ↗ Standards/Awareness/Best Practices; SAE/ARINC, A4A/ATA, IATA

  ↗ Regulations available: (https://www.icao.int/safety/airnavigation/OPS/airworthiness/Pages/EAMR.aspx)

* Authorized Release Certificate, Airworthiness Approval Tag

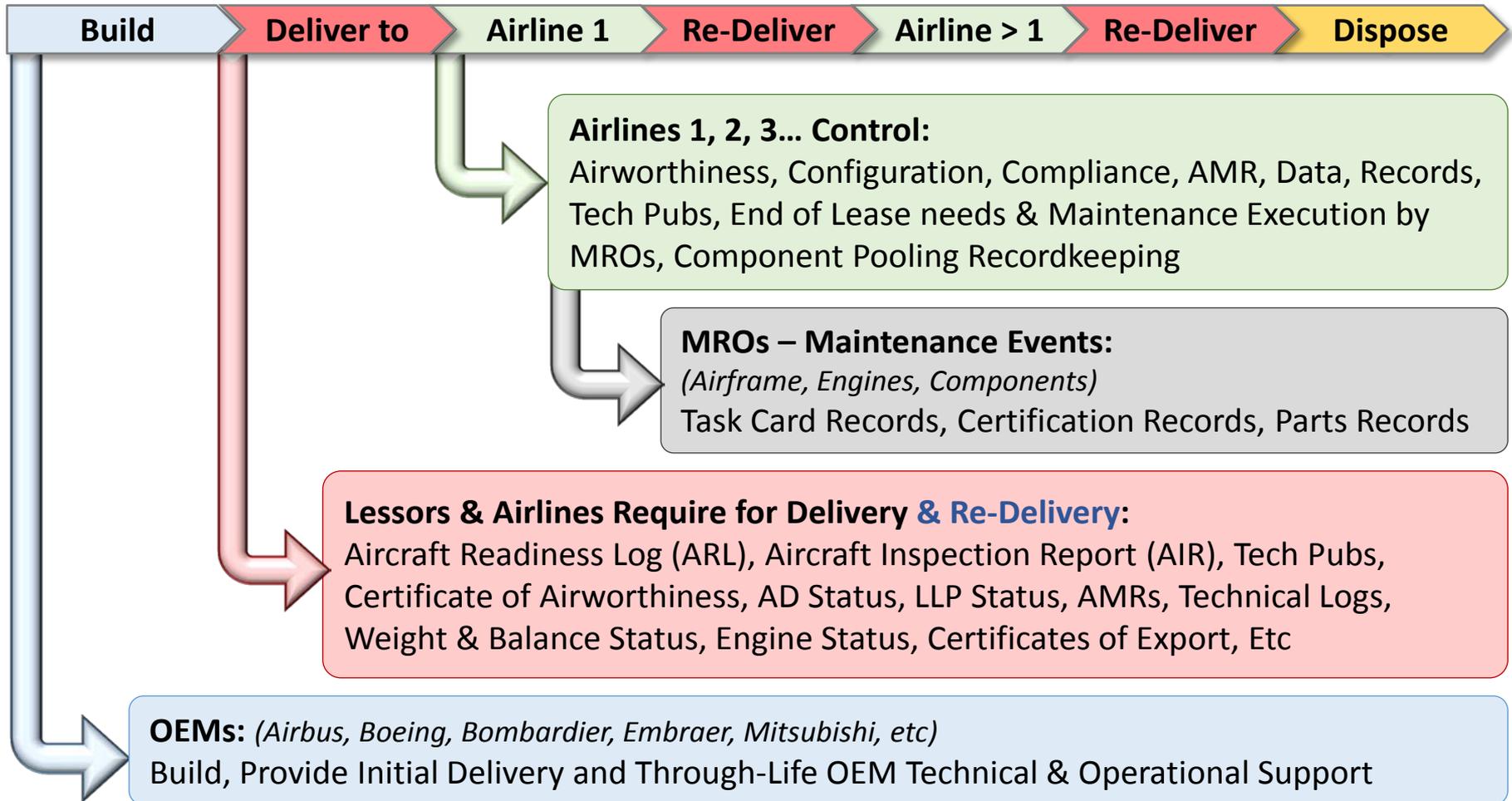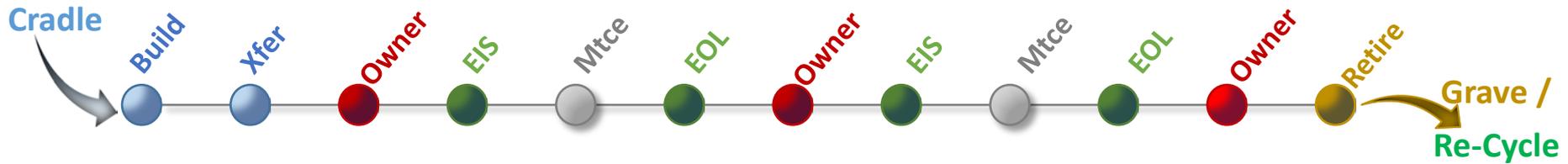## 2020 is the target implementation year…

Different timing for;
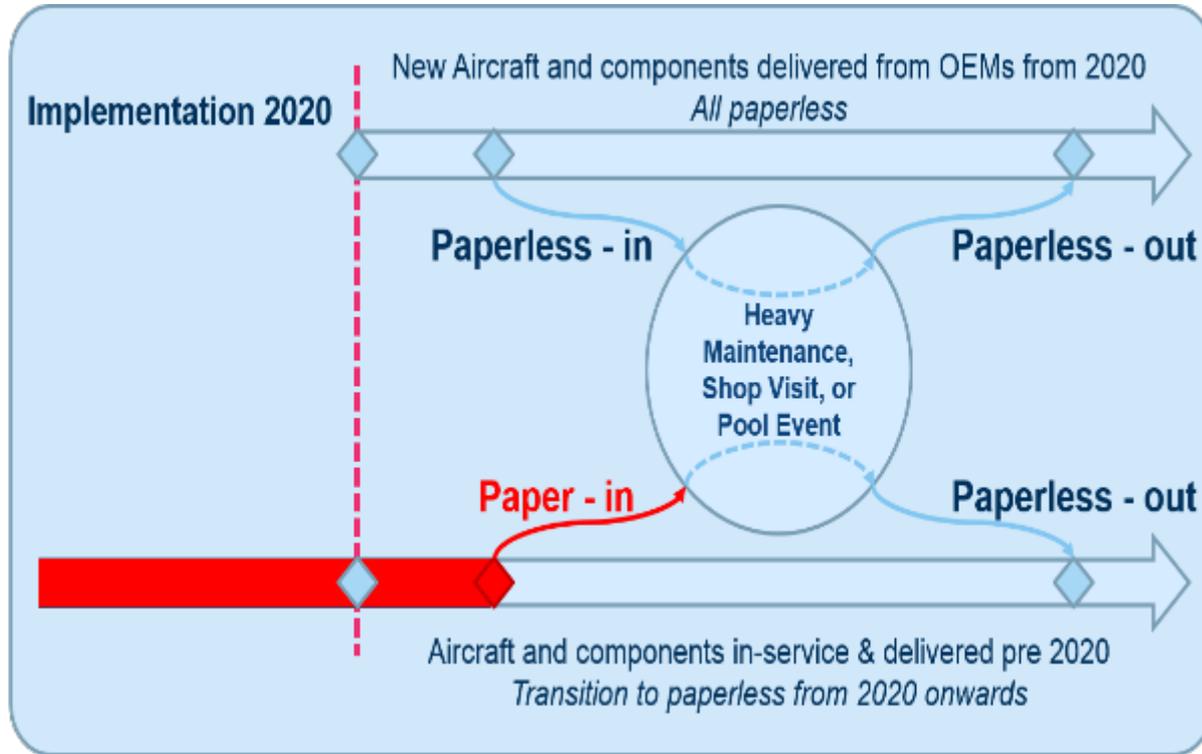
New Aircraft

In-Service Aircraft

The Digital Aircraft Operations initiative caters for digitising of current paper systems as a phase towards ultimate e-business

Typical Lifecycle – Cradle to Grave…

Cradle

Build · Xfer · Owner · EIS · Mtce · EOL · Owner · EIS · Mtce · EOL · Owner · Retire

Grave /
Re-Cycle

| Build | Deliver to | Airline 1 | Re-Deliver | Airline > 1 | Re-Deliver | Dispose |

Airlines 1, 2, 3… Control:
Airworthiness, Configuration, Compliance, AMR, Data, Records, Tech Pubs, End of Lease needs & Maintenance Execution by MROs, Component Pooling Recordkeeping

MROs – Maintenance Events:
(Airframe, Engines, Components)
Task Card Records, Certification Records, Parts Records

Lessors & Airlines Require for Delivery & Re-Delivery:
Aircraft Readiness Log (ARL), Aircraft Inspection Report (AIR), Tech Pubs, Certificate of Airworthiness, AD Status, LLP Status, AMRs, Technical Logs, Weight & Balance Status, Engine Status, Certificates of Export, Etc

OEMs: *(Airbus, Boeing, Bombardier, Embraer, Mitsubishi, etc)*
Build, Provide Initial Delivery and Through-Life OEM Technical & Operational Support

e-signature

↗ Foundation and Challenge

↗ A blue ink signature on a coffee stained piece of paper is never questioned…

↗ "Dirty Fingerprints"…!!!

Comparison between authorities

↗ English speaking regulators

↗ Direct comparison between FAA, TCCA, CASA, EASA

   ↗ Excel spreadsheet:

   https://www.iata.org/whatwedo/ops-infra/Documents/IATA%20PAO_TO%20Regulatory%20AC%20Based%20Checklist%20Release_2.1%20Sep%2017.xlsm

CA-PKI
(Certificate Authority - Public Key Infrastructure)

↗ External PKI is costly ($ / person year)

↗ Cannot be revoked instantly

↗ Not easy to keep history

↗ Trust - Political issues

e-signature concept*

↗ Internal PKI – linked to HR, Training... Company systems

↗ Everyone trusts the internet – No Political issues

↗ DNSSEC (Domain Name System Security Extensions) and DANE (DNS-Based Authentication of Named Entities) Protocol

* "Secure and Scalable Identity Management for the Aviation Industry"; IEEE 37th Security and Privacy Conference 2016

AIAS Whitepaper & DAO implementation

- ↗ Aviation Identification & Authorization System (AIAS*)

- ↗ Digital Aircraft Operations (DAO) Implementation
    - ↗ Guidance Material for the implementation of Paperless Aircraft Technical Operations (https://www.iata.org/whatwedo/ops-infra/Documents/Paperless%20Aircraft%20Operations%20in%20Technical%20Operations%20-%20Guidance%20Material%20for%20Implementation.pdf)
    - ↗ Paperless Aircraft Operations: Business Case Support Template (https://www.iata.org/whatwedo/Documents/IATA%20PAO_TO%20Business%20Case%20Support%20Template%20-%20Release%201%20Nov%202018.xlsx)

* https://www.iata.org/whatwedo/ops-infra/Documents/Aviation_Identification_%20Authorisation_System_-_White_Paper_-_v1_2015.pdf

Next Steps

…assuming concept passes the common sense test!

↗ Development of software code / patch for "company.com"

↗ Airline/MRO tries code internally:

    ↗ Within Airline/MRO

    ↗ Between MRO and Airline (e-logbook/techlog)

↗ Application under the CAA's jurisdiction

↗ Application under a BASA?

↗ Worldwide application

↗ Working with ICAO on a Trust Framework

Questions

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