SPEC2000 Regulatory Documentation

Understanding the Electronic Authorized Release Certificate

by
Klaus Malone

Air Transport Association

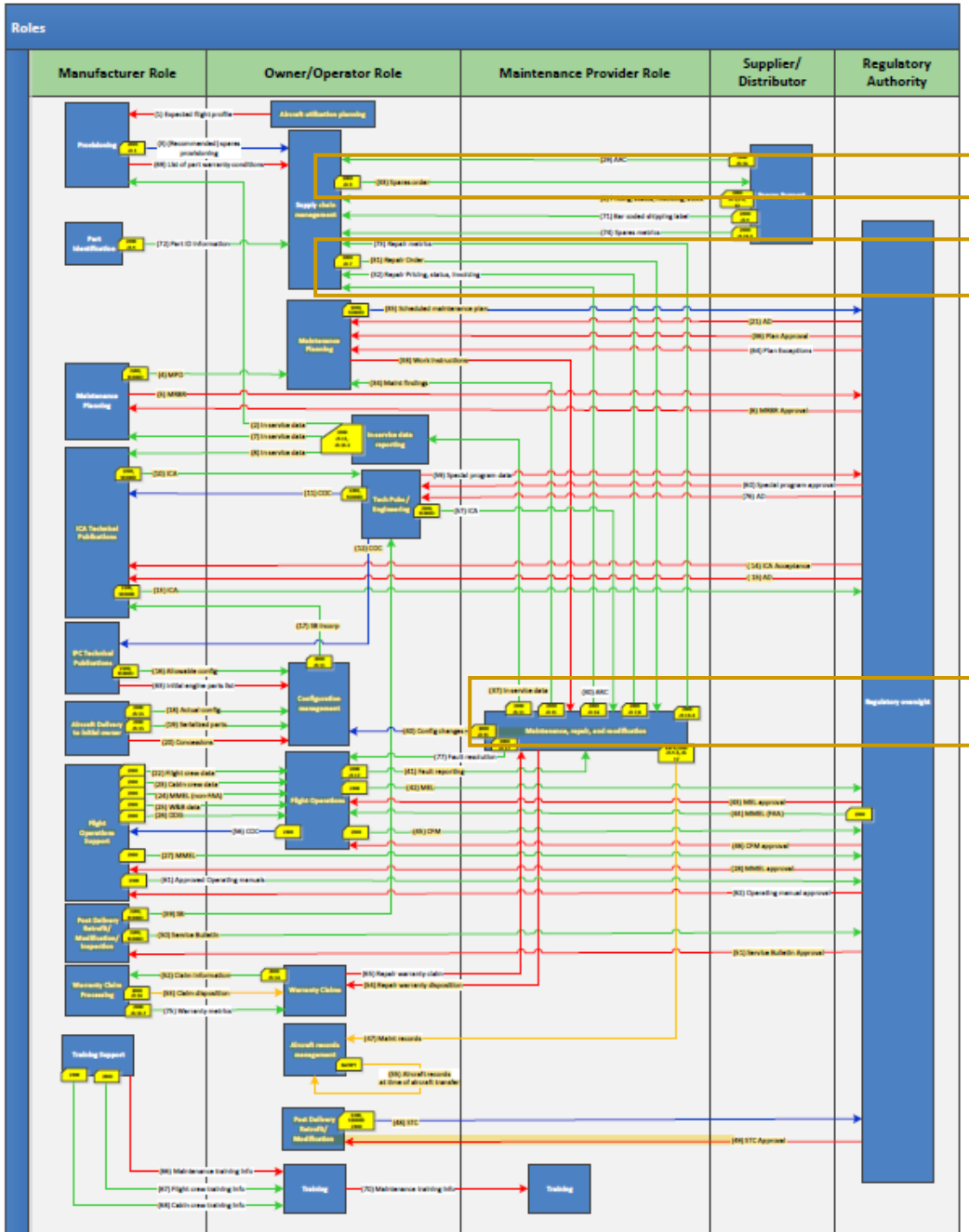
SPEC2000
e-business standards

- Created by and for the civil aviation industry
- Widely used by the world's airlines and suppliers
- Administered by the Air Transport Association of America (ATA/A4A)
- www.SPEC2000.com

- A comprehensive set of e-Business specifications, products and services

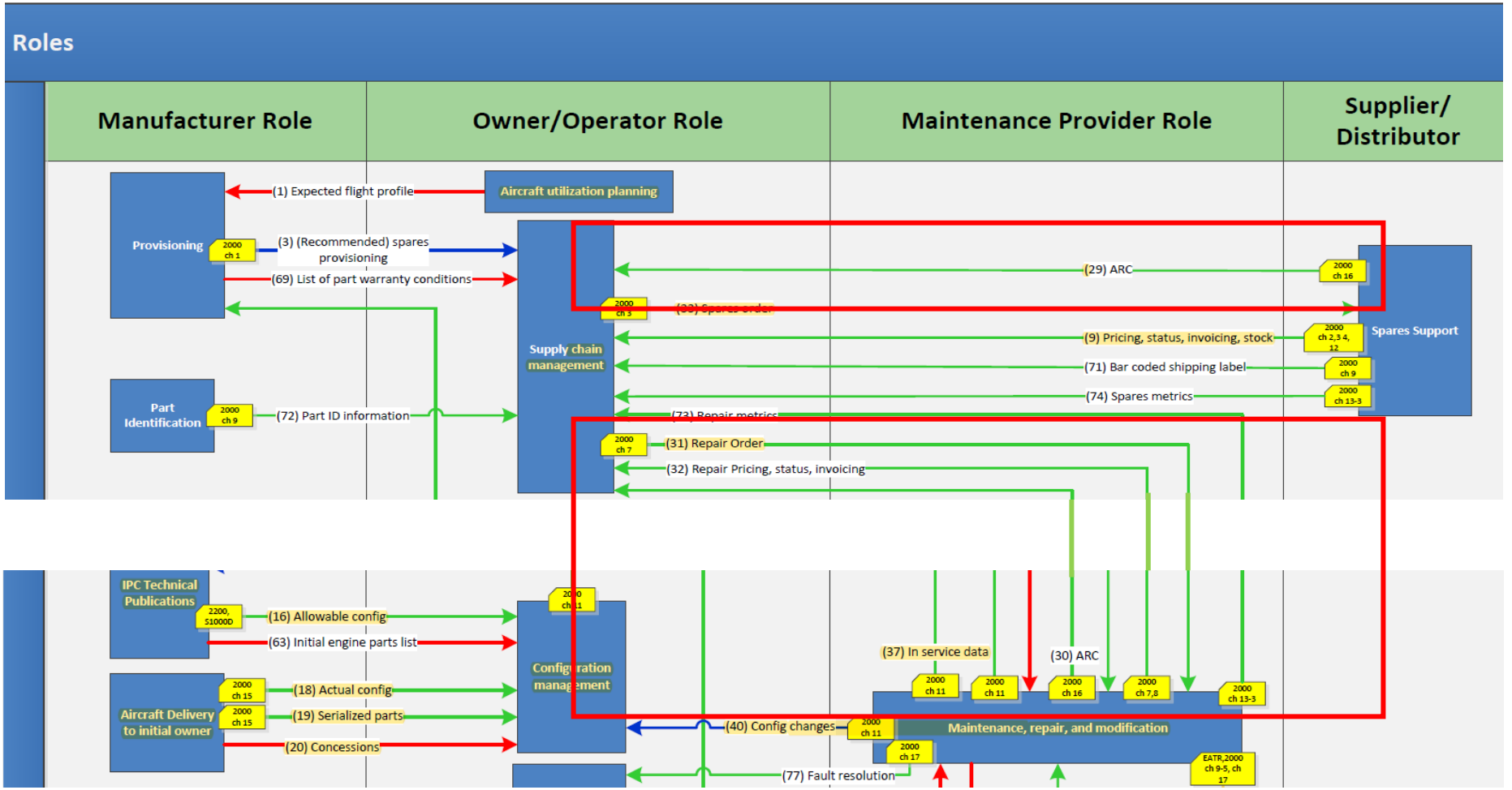
ATA e-Business Program

High-Level Information Flows and Specifications

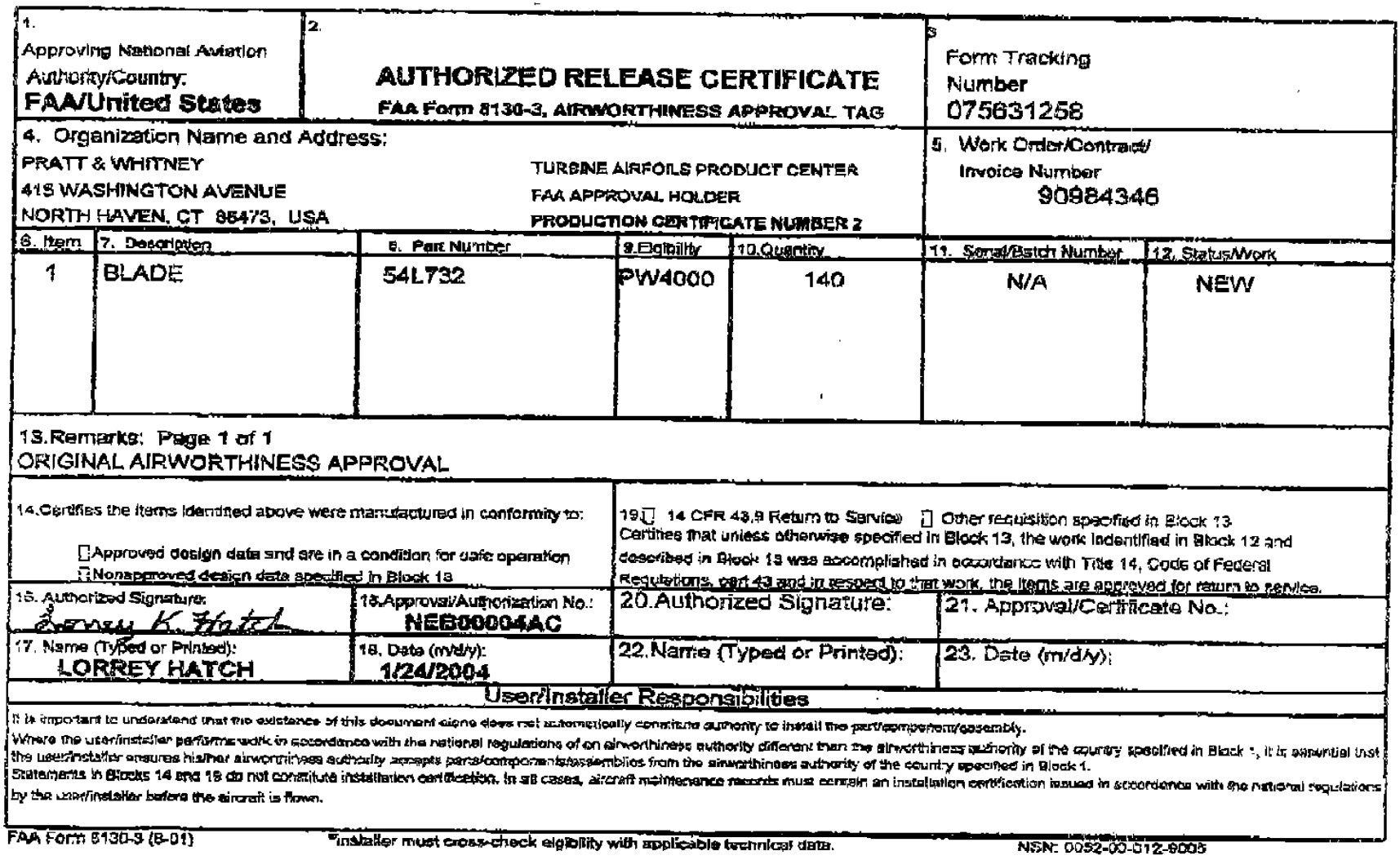


ATA e-BUSINESS PROGRAM

High-Level Information Flows and Specifications



Paper Reality



1. Approving National Aviation Authority/Country: **FAA/United States**

2. **AUTHORIZED RELEASE CERTIFICATE**
FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG

3. Form Tracking Number: 075631258

4. Organization Name and Address:
PRATT & WHITNEY
415 WASHINGTON AVENUE
NORTH HAVEN, CT 86473, USA
TURBINE AIRFOILS PRODUCT CENTER
FAA APPROVAL HOLDER
PRODUCTION CERTIFICATE NUMBER 2

5. Work Order/Contract/ Invoice Number: 90984346

6. Item	7. Description	8. Part Number	9. Eligibility	10. Quantity	11. Serial/Batch Number	12. Status/Work
1	BLADE	54L732	PW4000	140	N/A	NEW

13. Remarks: Page 1 of 1
ORIGINAL AIRWORTHINESS APPROVAL

14. Certifies the items identified above were manufactured in conformity to:
☐ Approved design data and are in a condition for safe operation
☐ Nonapproved design data specified in Block 13

19. ☐ 14 CFR 43.9 Return to Service ☐ Other requisition specified in Block 13
Certifies that unless otherwise specified in Block 13, the work identified in Block 12 and described in Block 13 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.

15. Authorized Signature: Lorrey K. Hatch
16. Approval/Authorization No.: NEB00004AC
20. Authorized Signature:
21. Approval/Certificate No.:
17. Name (Typed or Printed): LORREY HATCH
18. Date (m/d/y): 1/24/2004
22. Name (Typed or Printed):
23. Date (m/d/y):

User/Installer Responsibilities

It is important to understand that the existence of this document alone does not automatically constitute authority to install the part/component/assembly.
Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures his/her airworthiness authority accepts parts/components/assemblies from the airworthiness authority of the country specified in Block 1.
Statements in Blocks 14 and 19 do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft is flown.

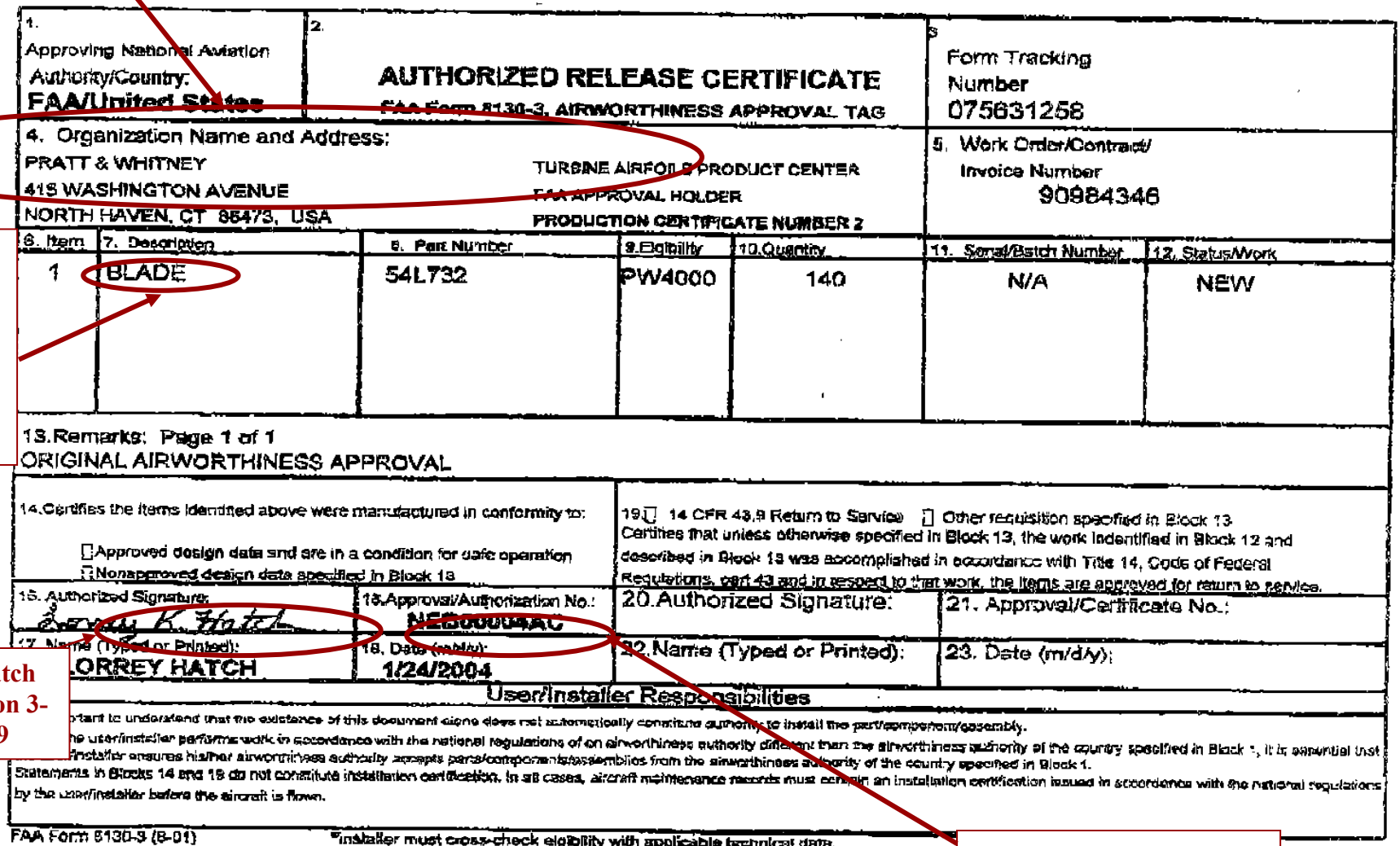
FAA Form 8130-3 (8-01) *Installer must cross-check eligibility with applicable technical data. NSN: 0052-00-012-9005

North Haven Facility closed in 2003

Description not consistent with other 8130-3 tags for this part number

Mr. Hatch retired on 3-31-99

Obsolete ODAR number not used since 7-31-98



1. Approving National Aviation Authority/Country: FAA/United States

2. **AUTHORIZED RELEASE CERTIFICATE**
FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG

3. Form Tracking Number 075631258

4. Organization Name and Address:
PRATT & WHITNEY
415 WASHINGTON AVENUE
NORTH HAVEN, CT 06473, USA
TURBINE AIRFOIL PRODUCT CENTER
FAA APPROVAL HOLDER
PRODUCTION CERTIFICATE NUMBER 2

5. Work Order/Contract/ Invoice Number 90984346

6. Item	7. Description	8. Part Number	9. Eligibility	10. Quantity	11. Serial/Batch Number	12. Status/Work
1	BLADE	54L732	PW4000	140	N/A	NEW

13. Remarks: Page 1 of 1
ORIGINAL AIRWORTHINESS APPROVAL

14. Certifies the items identified above were manufactured in conformity to:
☐ Approved design data and are in a condition for safe operation
☐ Nonapproved design data specified in Block 13

15. Authorized Signature: Beverly K. Hatch

16. Approval/Authorization No.: [redacted]AC

17. Name (Typed or Printed): BEVERLY HATCH

18. Date (m/d/y): 1/24/2004

19. ☐ 14 CFR 43.9 Return to Service ☐ Other regulation specified in Block 13
Certifies that unless otherwise specified in Block 13, the work identified in Block 12 and described in Block 13 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.

20. Authorized Signature:

21. Approval/Certificate No.:

22. Name (Typed or Printed):

23. Date (m/d/y):

User/Installer Responsibilities

It is important to understand that the existence of this document alone does not automatically constitute authority to install the part/component/assembly.
The user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures his/her airworthiness authority accepts parts/components/assemblies from the airworthiness authority of the country specified in Block 1.
Statements in Blocks 14 and 15 do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft is flown.

FAA Form 8130-3 (8-01) *Installer must cross-check eligibility with applicable technical data.

An ATA industry project

Mission

To develop an industry specification to enable the electronic exchange of regulatory documentation for aircraft products and parts.

Airlines	Authorities	Industry Groups
ABX Air **Air Canada** Alitalia Airlines **American Airlines** **ATA Airlines** Atlas Air **Continental Airlines** Delta Air Lines **FedEx** Japan Airlines JetBlue Airways Lufthansa Technik Midwest Airlines Northwest Airlines **Qantas Airways** Southwest Airlines United Airlines **UPS** US Airways	**FAA** **EASA (at a later time)**	**ATA** AIA ARSA **ASA**
	Manufacturers	**Suppliers/Distributors**
	Airbus **Boeing** **Dassault Falconjet** GE Aircraft Engines **Goodrich** **Honeywell** International Aero Engines Korry Electronics Co Parker Hannifin **Pratt & Whitney** Rolls-Royce	AirLiance Materials A.J. Levin **M & M Aerospace Hardware** Tracer Corp Valtec Aircraft Supply
		Solution Providers
		Avexus IBM **ILS** **SITA** Technology Solutions

A common electronic data format for eForms:

- Regulatory Forms (ARCs)
  - CAA Form 1
  - CASA Form 1 (CASA Form 917)
  - EASA Form 1 (JAA Form One)
  - FAA Form 8130-3
  - TC Form One (TCCA 24-0078)

- None Regulatory Forms
  - ATA Form 106
  - Certificate of Conformance
  - Certificate of Conformity
  - Transfer Document

Regulatory documentation

What is it?

- A new way to meet existing regulatory requirements
- A replacement of paper forms with computer files
- A common electronic data format
  - Content, structure and syntax
  - Parsable
- A “data-centric” approach
- A comprehensive baseline of data security capabilities
- A shared process for exchanging data
- A set of agreed implementation rules
- An international, open, broad-based industry standard

  ATA Spec 2000 Chapter 16

Guiding Principles

- Standard pertains to exchange of data, not internal company processes
- Meet intent and objectives of governing regulations
- Leverage regulatory guidance regarding digital signature
- Meet legal and liability requirements
- Leverage existing technologies, standards, and best practices where applicable

What are the Benefits?

- Facilitates improved reliability, consistency and timeliness of the data
- Difficult to forge undetected; originals verifiable directly to source
- Reduced lost, or misdirected originals
- No more damaged/mutilated originals
- Reduced errors
- Reduced costs for record retention
- Easier access to historical data
- Easier to integrate with other systems and data

Business Guidelines

- A new eForm will be issued for each transfer/RTS
- A separate eForm will be issued for each part number for non-serialized parts
- A separate eForm will be issued for each serial number for serialized parts
- Each eForm should reference and attach any applicable, immediately prior eForm
- All transmissions of an unaltered, digitally signed eForm are considered originals
- Any paper forms printed from the eForm are considered copies.

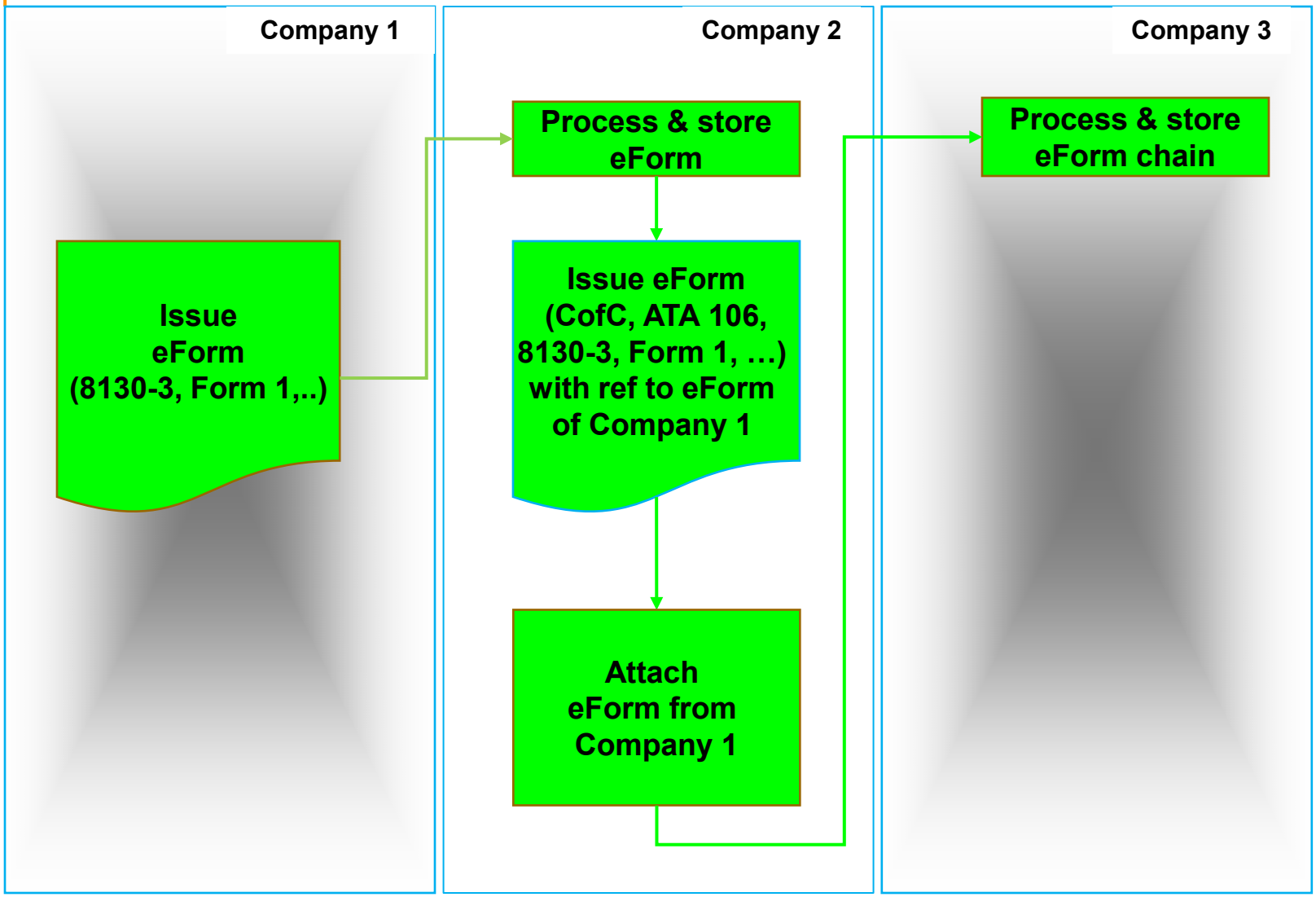
eForm XML Schema

- The data elements that are provided
- Which are mandatory/optional, repeatable
- The sequence in which they’re provided
- The application of digital signatures to the data
- References to previous eForms

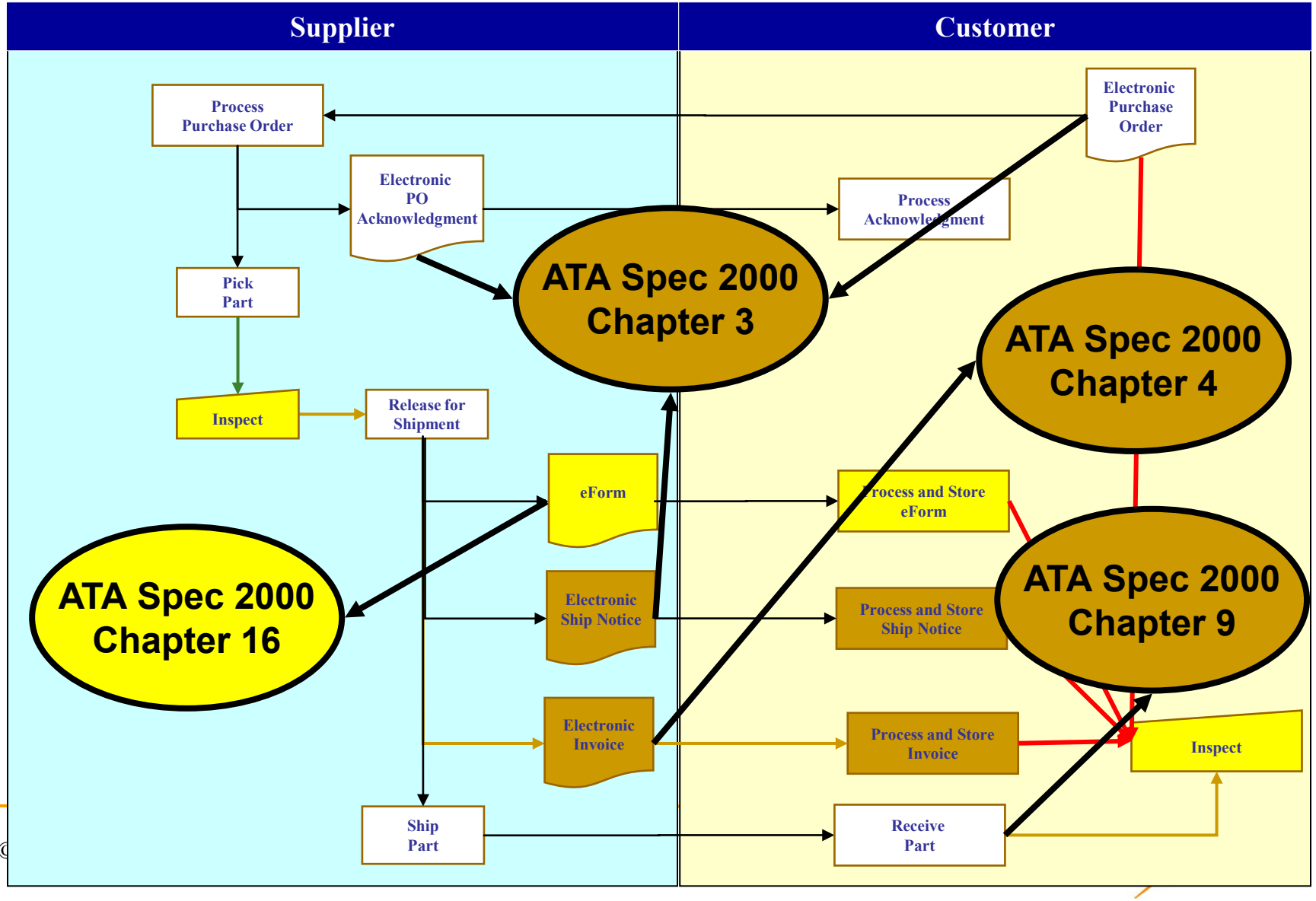
Digital Security

- Objectives
  - Signer authentication
  - Data integrity
  - Non-repudiation
- Solution
  - W3C XML Signature
    - X.509 Digital Certificates
    - Digital Signatures
    - Public Key Infrastructure (PKI)

Process

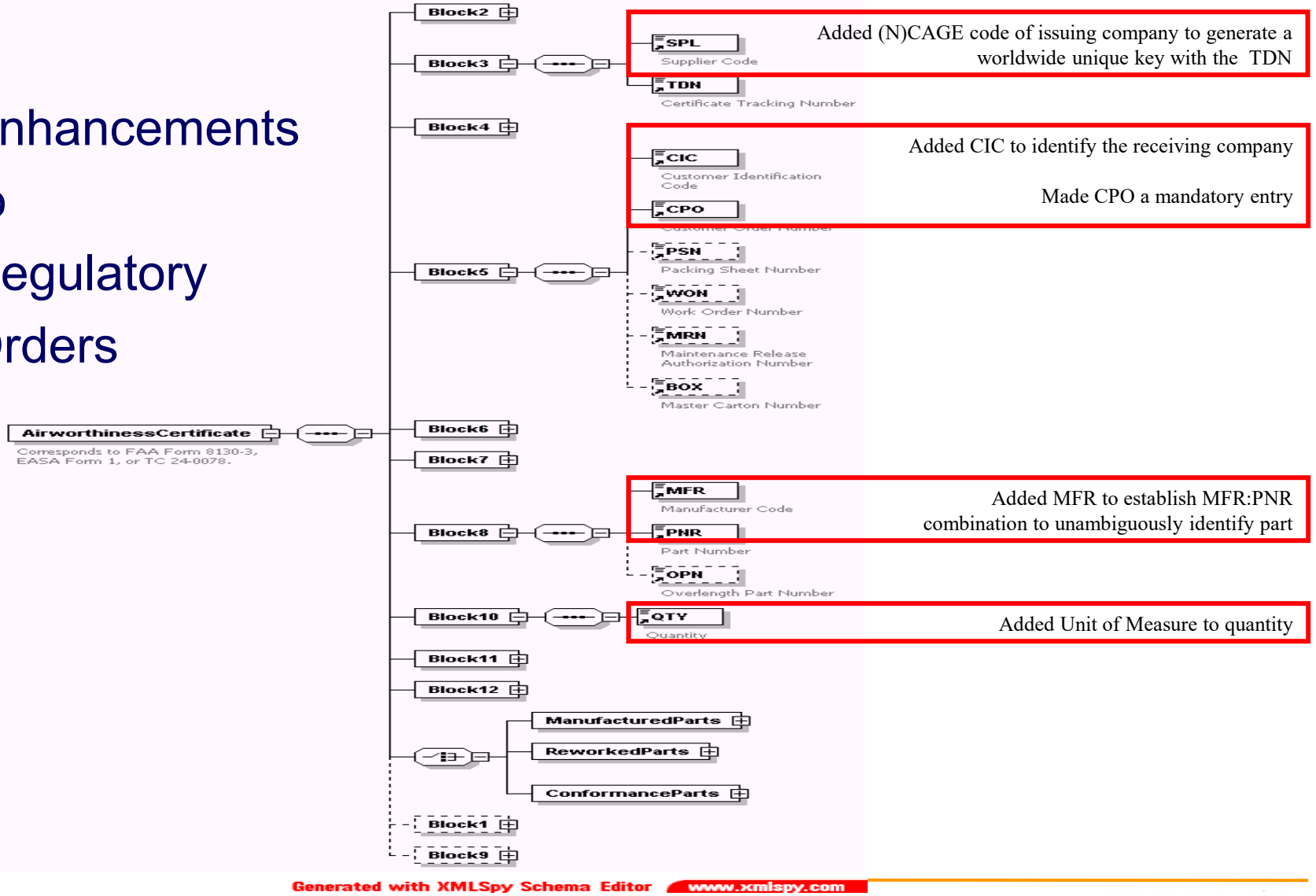


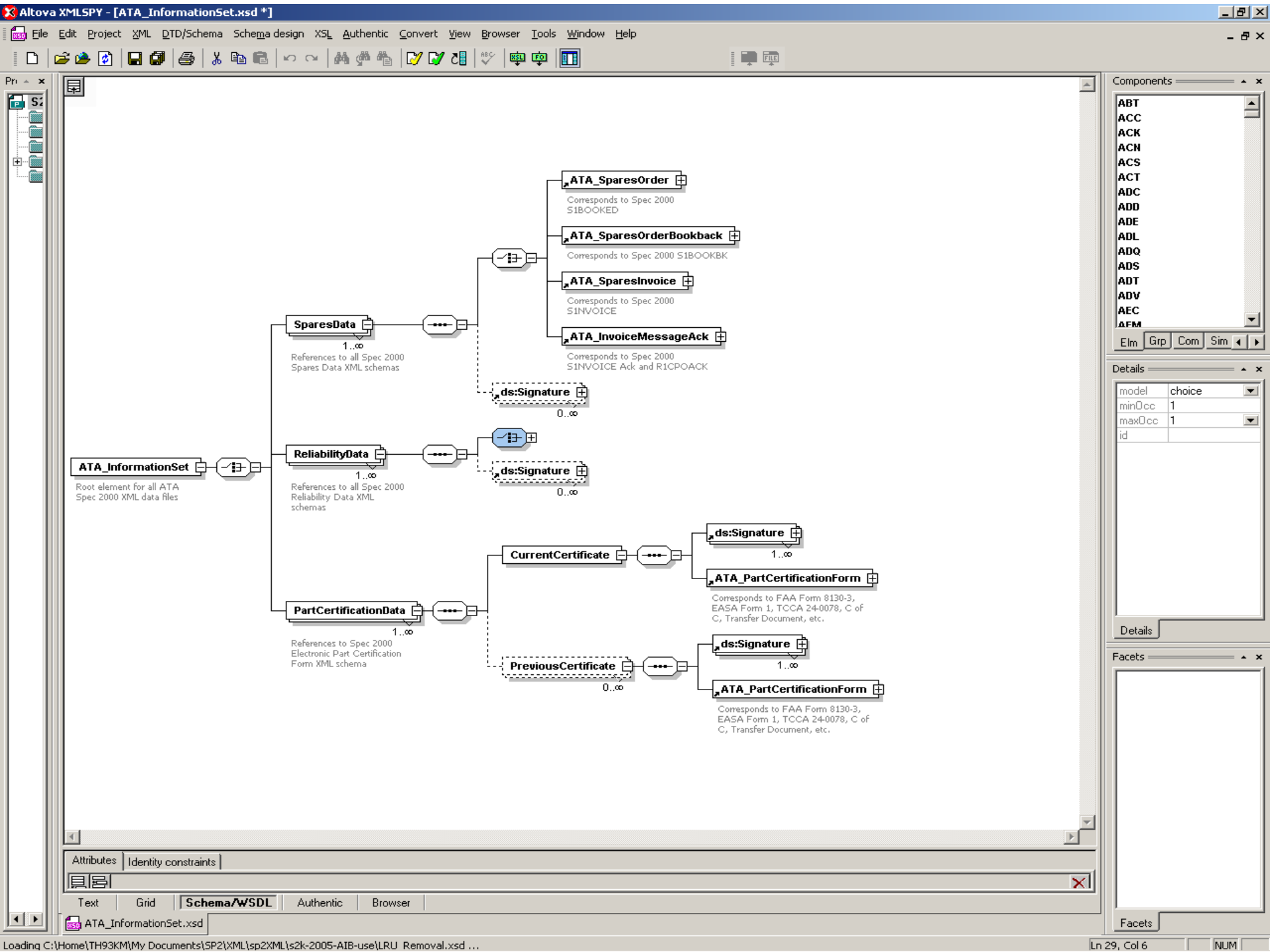
Regulatory documentation – New parts



Regulatory documentation

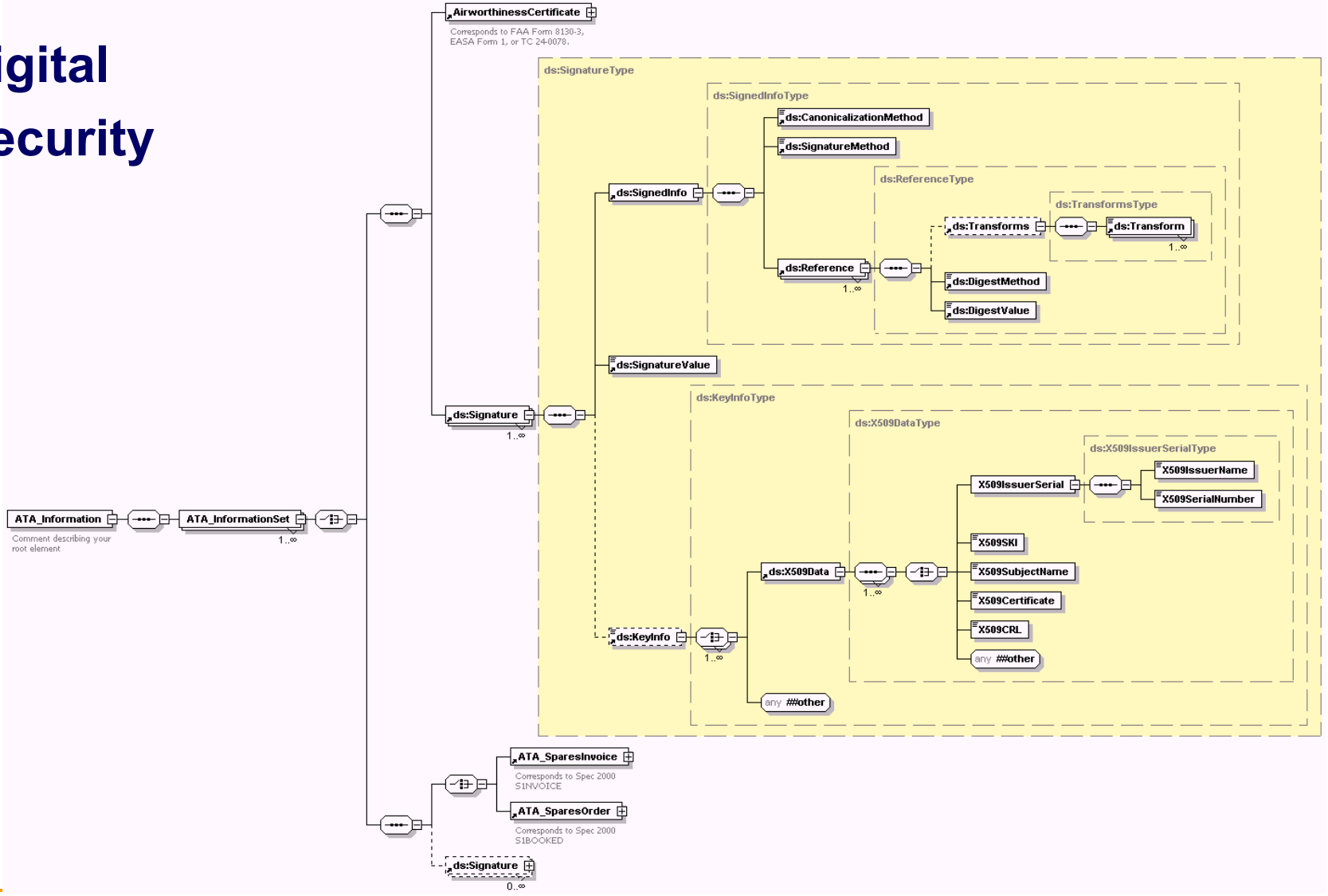
Enhancements to Regulatory Orders




Altova XMLSPY - [ATA_InformationSet.xsd *]
File Edit Project XML DTD/Schema Schema design XSL Authentic Convert View Browser Tools Window Help
ATA_InformationSet
Root element for all ATA Spec 2000 XML data files
SparesData
1..∞
References to all Spec 2000 Spares Data XML schemas
ATA_SparesOrder
Corresponds to Spec 2000 S1BOOKED
ATA_SparesOrderBookback
Corresponds to Spec 2000 S1BOOKBK
ATA_SparesInvoice
Corresponds to Spec 2000 S1NVOICE
ATA_InvoiceMessageAck
Corresponds to Spec 2000 S1NVOICE Ack and R1CPOACK
ds:Signature
0..∞
ReliabilityData
1..∞
References to all Spec 2000 Reliability Data XML schemas
ds:Signature
0..∞
PartCertificationData
1..∞
References to Spec 2000 Electronic Part Certification Form XML schema
CurrentCertificate
ds:Signature
1..∞
ATA_PartCertificationForm
Corresponds to FAA Form 8130-3, EASA Form 1, TCCA 24-0078, C of C, Transfer Document, etc.
PreviousCertificate
0..∞
ds:Signature
1..∞
ATA_PartCertificationForm
Corresponds to FAA Form 8130-3, EASA Form 1, TCCA 24-0078, C of C, Transfer Document, etc.
Components
ABT ACC ACK ACN ACS ACT ADC ADD ADE ADL ADQ ADS ADT ADV AEC
Elm Grp Com Sim
Details
model choice
minOcc 1
maxOcc 1
id
Facets
Attributes Identity constraints
Text Grid Schema/WSDL Authentic Browser
ATA_InformationSet.xsd
Loading C:\Home\TH93KM\My Documents\SP2\XML\sp2XML\s2k-2005-AIB-use\LRU_Removal.xsd ...
Ln 29, Col 6
NUM

Regulatory documentation

Digital Security



1. Approving Competent Authority/Country	**AUTHORISED RELEASE CERTIFICATE** EASA FORM 1	3. Form Tracking Number
4. Approved Organisation Name and Address:		5. Work Order/Contract/Invoice

6. Item	7. Description	8. Part No	9. Eligibility (*)	10. Quantity	11. Serial/Batch No	12. Status/Work

13. Remarks

Part M Section A Subpart F organisation approval number: AAA RRR XXXX

14. Certifies that the items identified above were manufactured in conformity to: ☐ approved design data and are in condition for safe operation ☐ non-approved design data specified in block 13		19. ☐ Part-145.A.50 Release to Service ☐ Other regulation specified in block 13 Certifies that unless otherwise specified in block 13, the work identified in block 12 and described in block 13, was accomplished in accordance with Part-145 and in respect to that work the items are considered ready for release to service.	
15. Authorised Signature	16. Approval/ Authorisation Number	20. Authorised Signature	21. Certificate/Approval Ref. No
17. Name	18. Date (d/m/y)	22. Name	23. Date (d/m/y)

EASA Form 1- Issue 1

(*) Installer must cross-check eligibility with applicable technical data

XML document

- <?xml version="1.0" encoding="UTF-8"?>
- <ATA_PartCertificationForm xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespaceSchemaLocation="C:\Home\TH93KM\My Documents\SP2\XML\sp2XML\s2k-2005-AIB-use\ATA_PartCertificationForm_Draft13.xsd" version="1.0" id="IDF6198AS80349934-01001">
- <Block2> <CET FVI="ISSUE 1">EASA Form 1</CET> </Block2> <Block3> <TDN>AS80349934-01001</TDN> </Block3>
- <Block4> <IssuerDetail> <SPL>FAPE3</SPL> <WHO>Airbus Head Quater</WHO> <ADL>1 Rond Point</ADL> <ADL>Maurice Bellonte</ADL>
- <CIY>Blagnac Cedex</CIY> <ZIP>31707</ZIP> <CNT>FR</CNT> </IssuerDetail> <RemoteIssuerDetail> <SPL>D4296</SPL>
- <WHO>Airbus Spares Support and Services</WHO> <ADL>Weg beim Jaeger 150</ADL> <CIY>Hamburg </CIY> <ZIP>22335</ZIP>
- <CNT>DE</CNT> </RemoteIssuerDetail> </Block4> <Block5> <CIC>SIA</CIC> <CPO>QQQQQ12345</CPO> <BOX>8098288700</BOX> </Block5>
- <Block6> <LIN>1</LIN> </Block6> <Block7> <PDT>SEAL</PDT> </Block7> <Block8> <MFR>FAPE3</MFR> <PNR>F5453082320200</PNR>
- </Block8> <Block10> <QTY UNT="EA">4</QTY> </Block10> <Block11> <LOT>L056060300</LOT> </Block11> <Block12> <PSC>Inspected</PSC>
- <ManufacturedParts> <Block14M> <DDA>A</DDA> </Block14M> <Block15M> <SOF>true</SOF> </Block15M> <Block16M>
- <ARN>DE.21G.0009</ARN> </Block16M> <Block17M> <NME>GHODSS-A.</NME> </Block17M> <Block18M> <DAT>2005-03-13</DAT>
- </Block18M> <Block13M> <NewPartsData> <DMF>2005-01-01</DMF> <EXP>2013-01-01</EXP> </NewPartsData>
- <PreviousCertificate previousCertificateFormat="E"> <SPL>F6198</SPL> <TDN>AS80335364/01001</TDN> <CET>EASA Form 1</CET>
- </PreviousCertificate> <REM>Inspected as per P 10-01-00 Next PC 2008-12-11</REM> </Block13M> </ManufacturedParts> <Block1>
- <NAA>Luftfahrt-Bundesamt</NAA> <CNT>DE</CNT> </Block1> <Block9> <MOL>A330</MOL> </Block9> </ATA_PartCertificationForm>

XML document

```
<?xml version="1.0" encoding="UTF-8"?>
<ATA_PartCertificationForm xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespaceSchemaLocation="C:\Home\TH93KM\My Documents\SP2\XML\sp2XML\s2k-2005-AIB-use\ATA_PartCertificationForm_Draft13.xsd" version="1.0" id="IDF6198AS80349934-01001">
        <Block2>        <CET FVI="ISSUE 1">EASA Form 1</CET>                                                                    </Block2>
        <Block3>        <TDN>AS80349934-01001</TDN>
        </Block3>
        <Block4>        <IssuerDetail>      <SPL>FAPE3</SPL> <WHO>Airbus Head Quater</WHO>
                                            <ADL>1 Rond Point</ADL> <ADL>Maurice Bellonte</ADL>
                                            <CIY>Blagnac Cedex</CIY> <ZIP>31707</ZIP>  <CNT>FR</CNT>   </IssuerDetail>
                        <RemoteIssuerDetail> <SPL>D4296</SPL>
                                            <WHO>Airbus Spares Support and Services</WHO>
                                            <ADL>Weg beim Jaeger 150</ADL> <CIY>Hamburg </CIY>
                                            <ZIP>22335</ZIP> <CNT>DE</CNT>                                  </RemoteIssuerDetail>
        </Block4>
        <Block5>        <CIC>SIA</CIC>      <CPO>QQQQQ12345</CPO> <BOX>8098288700</BOX>                                     </Block5>
        <Block6>        <LIN>1</LIN>                                                                                        </Block6>
        <Block7>        <PDT>SEAL</PDT>                                                                                     </Block7>
        <Block8>        <MFR>FAPE3</MFR> <PNR>F5453082320200</PNR>                                                          </Block8>
        <Block10>       <QTY UNT="EA">4</QTY>                                                                               </Block10>
        <Block11>       <LOT>L056060300</LOT>                                                                               </Block11>
        <Block12>       <PSC>Inspected</PSC>
        </Block12>
        <ManufacturedParts>
                        <Block14M>      <DDA>A</DDA>
        </Block14M>
                        <Block15M>      <SOF>true</SOF>
        </Block15M>
                        <Block16M>      <ARN>DE.21G.xxx1</ARN>
        </Block16M>
                        <Block17M>      <NME>Klaus Malone.</NME>
        </Block17M>
                        <Block18M>      <DAT>2022-06-21</DAT>
        </Block18M>
                        <Block13M>      <NewPartsData>      <DMF>2005-01-01</DMF> <EXP>2013-01-01</EXP>             </NewPartsData>
                                        <PreviousCertificate previousCertificateFormat="E">
                                                            <SPL>F6198</SPL>
                                                            <TDN>AS80335364/01001</TDN>
                                                            <CET>EASA Form 1</CET>                                  </PreviousCertificate>
                                        <REM>Inspected as per P 10-01-00   Next PC 2008-12-11</REM>                                 </Block13M>
        </ManufacturedParts>
        <Block1>        <NAA>Luftfahrt-Bundesamt</NAA>          <CNT>DE</CNT>
        </Block1>
        <Block9>        <MOL>A330</MOL>
        </Block9>
</ATA_PartCertificationForm>
```

1. Approving Competent Authority/Country	AUTHORISED RELEASE CERTIFICATE EASA FORM 1	3. Form Tracking Number
EASA/GERMANY		CERT12345678901

4. Organisation Name and Address	5. Work Order / Contract / Invoice
D9999 warp-it AG Ahornweg 5 Pleiskirchen, 84568 GERMANY	Customer: SIA Order: PO123456789 Ship Advise: 9998288799 Work Order: 4711abc MRN: M123456789012345 BOX: 840000 Contract: C10000000

6. Item	7. Description	8. Part No.	9. Quantity	10. Serial/Batch No.	11. Status/Work
1	COMPUTER	A12345678901234	1EA	S12345678901234	INSPECTED/TESTED

12. Remarks

MFR: D9999
OPN;
LL12345678901234567890123456789O

DMF: 2021-08-13
EXP: 2026-08-12
Previous Certificate: EASA Form 1 - - 66-99999
DRAWING: 4711 REV 3 DATED 2019-08-22.

13a. Certifies that the items identified above were manufactured in conformity to:
- [X] approved design data and are in a condition for safe operation.
- [ ] non-approved design data specified in block 12.

14a. [ ] Part-145.A.50 Release to Service [ ] Other regulation specified in block 12.
Certifies that unless otherwise specified in block 12, the work identified in block 11 and described in block 12, was accomplished in accordance with Part-145 and in respect to that work the items are considered ready for release to service.

13b. Authorised Signature	13c. Approval /Authorisation Number	14b. Authorised Signature	14c. Certificate/Approval Ref. No.
Digital Signature on File	DE.21G.xxxx1		
13d. Name	**13e. Date (dd/mmm/yyyy)**	**14d. Name**	**14e. Date (dd/mmm/yyyy)**
Klaus Malone	21/JUN/2022		

User/Installer Responsibilities

This certificate does not automatically constitute authority to install.

Where working in accordance with the national regulations of an Airworthiness Authority different than the Airworthiness Authority of the country specified in block 1, the user/installer shall ensure that their Airworthiness Authority accepts items from the Airworthiness Authority of the country specified in block 1.

Statements in block(s) 13a and 14a do not constitute installation certification. In all cases aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.

High level process steps with certificates			
without eForm	**Remarks**	**with eForm**	**Remarks**
Quotation			
QuoteResponse to customer		**QuoteResponse to customer**	
Certificate copy as PDF	Verification manually and difficult	ATA_PartCertificationForm "eForm" # x	Verification of authenticy possible

High level process steps with certificates			
without eForm	**Remarks**	**with eForm**	**Remarks**
Quotation			
QuoteResponse to customer		**QuoteResponse to customer**	
Certificate copy as PDF	Verification manually and difficult	ATA_PartCertificationForm "eForm" # x	Verification of authenticy possible
PurchaseOrder			
PurchaseOrderStatus to customer		**PurchaseOrderStatus to customer**	
		ATA_PartCertificationForm "eForm" # x +1 and all previous eForms	Receipt before shipment left supplier dock. eForm verification and data capturing done automatically
Shipment		**Shipment**	
Certificate as Paper	Verification manually and sometimes difficult Data capturing might leave room for interpretation.		

High level process steps with certificates			
without eForm	**Remarks**	**with eForm**	**Remarks**
Quotation			
QuoteResponse to customer		**QuoteResponse to customer**	
Certificate copy as PDF	Verification manually and difficult	ATA_PartCertificationForm "eForm" # x	Verification of authenticy possible
PurchaseOrder			
PurchaseOrderStatus to customer		**PurchaseOrderStatus to customer**	
		ATA_PartCertificationForm "eForm" # x +1 and all previous eForms	Receipt before shipment left supplier dock. eForm verification and data capturing done automatically
Shipment		**Shipment**	
Certificate as Paper	Verification manually and sometimes difficult Data capturing might leave room for interpretation.		
RepairOrder			
RepairOrderSubmittal to repair shop		**RepairOrderSubmittal to repair shop**	
		ATA_PartCertificationForm "eForm" # x +1 and all previous eForms	Receipt before shipment left customer dock. eForm verification and data capturing is done automatically
RepairOrderStatus to customer		**RepairOrderStatus to customer**	
		ATA_PartCertificationForm "eForm" # x +1 and all previous eForms	Receipt before shipment left supplier dock. eForm verification and data capturing is done automatically
Shipment		**Shipment**	
Certificate as Paper	Verification manually and sometimes difficult Data capturing might leave room for interpretation.		

Thank You!

Questions?