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warp it AG

**eCERT for SAP ERP**

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# Agenda – eCERT for SAP ERP

- Industry Background
- Advantages of electronic ARC
- Industry standards
- Product overview
- General Architecture
- Inbound + Outbound process
- Certificate App !!! NEW !!!
- Live Demo

# Industry background

ARC (Authorized Release Certificates), also known as Airworthiness Approval Tags are implemented and required by the Airline industry for the following reasons:

- Used by the manufacturer for conformity determination
- Prevent unapproved parts being used
- Identify parts and assure traceability

Currently implemented using paper forms!

- e-ARC is the electronic representation of authorized release certificates.
- Defined in ATA SPEC2000 chapter 16

# Industry standards

The ATA SPEC2000 has two relevant chapters

- ATA Spec 2000, chapter 16 (Electronic Parts Certification Forms)
  - This standard represents e-ARC currently used by industry electronically. This standard was introduced by ATA to cover electronic part certification for the airline industry.
- ATA Spec 42 (Aviation Industry Standards for Digital Information Security)
  - The ATA standard for digital security utilizing PKI (Public Key Infrastructure) for determining the currency and validity of the message sender's digital certificate.
- Both standards are XML based

# Advantages of electronic ARC

Implementing e-ARC using IT technologies offers numerous advantages:

- Higher reliability
- Security
- Authenticity
- Data consistency
- Cost reduction

# Product Overview

- Data and interface functionality and eCERT cockpit integrated in SAP ERP
- User does not have to change tools and system
- Standard SAP ERP functionalities can be used
  
- Integration in SAP modules SD, MM, QM
  - Sales Order, Outbound Delivery, Transportation,
  - Purchase Order, Inbound Delivery
- Customizing
  - Can store certificates for each SAP document object (deliveries, inspection lots,...)
- Incoming and outgoing certificates can be stored and viewed

# Product Overview

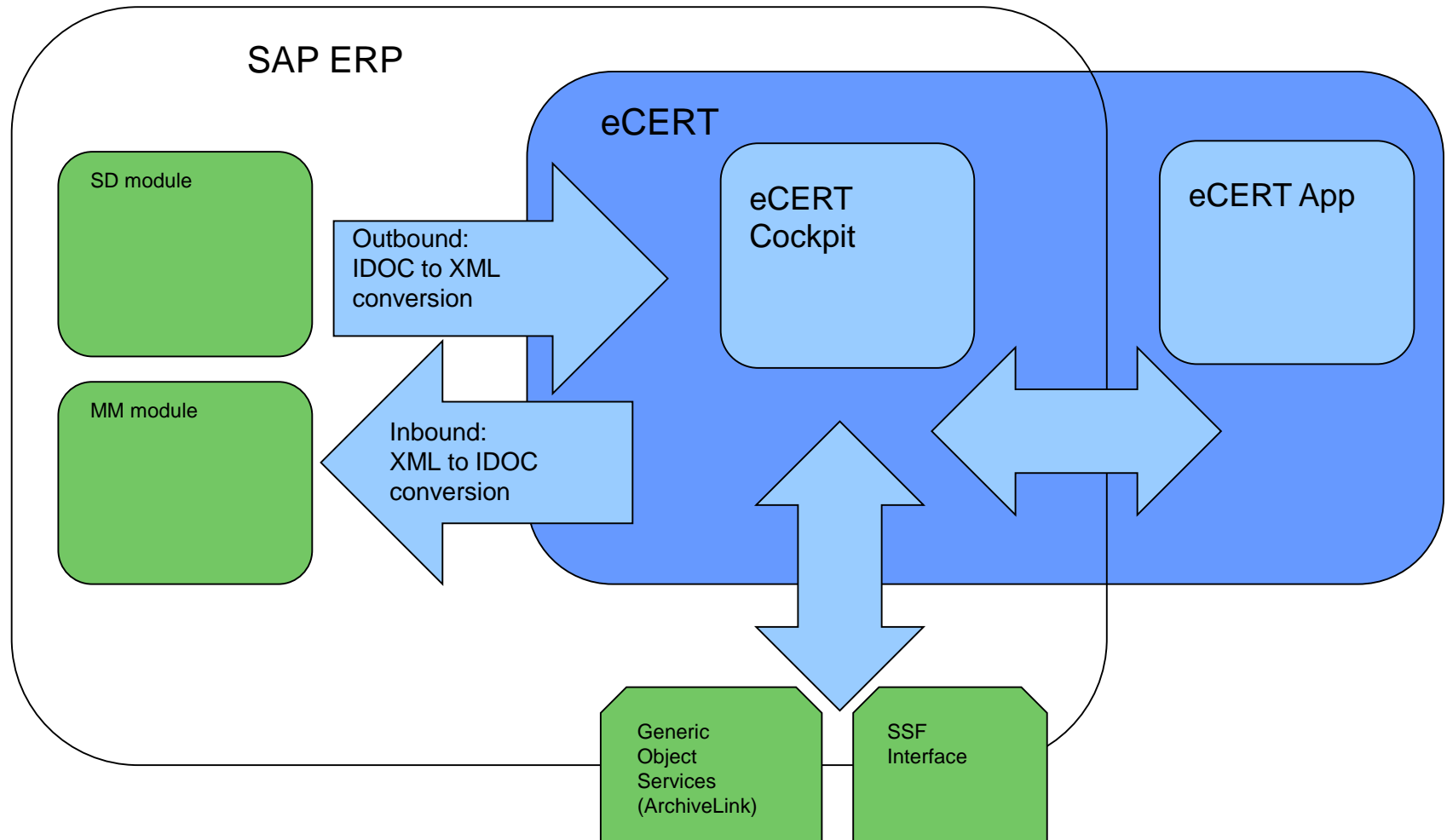
- Digital signature validation performed with SAP SSF functionality (SSF: Secure Store & Forward)
  - SAPSECULIB and STRUST store
  - Support 3rd Party products
  - Hardware or Software certificates
- SAP authorization concept
  - To identify logged in ERP user
- Rule based workflow ensures compliance with regulations
  - User must review the form before signing

# General Architecture

- The eCERT solution contains these main modules
  - Outbound modules for suppliers  
(SAP QA-IDOC, XML conversion and preparation, process integration)
  - Inbound modules for airlines  
(XML conversion, process integration, SAP QA-IDOC)
  - eCERT Cockpit
  - NEW: eCERT App for mobile devices

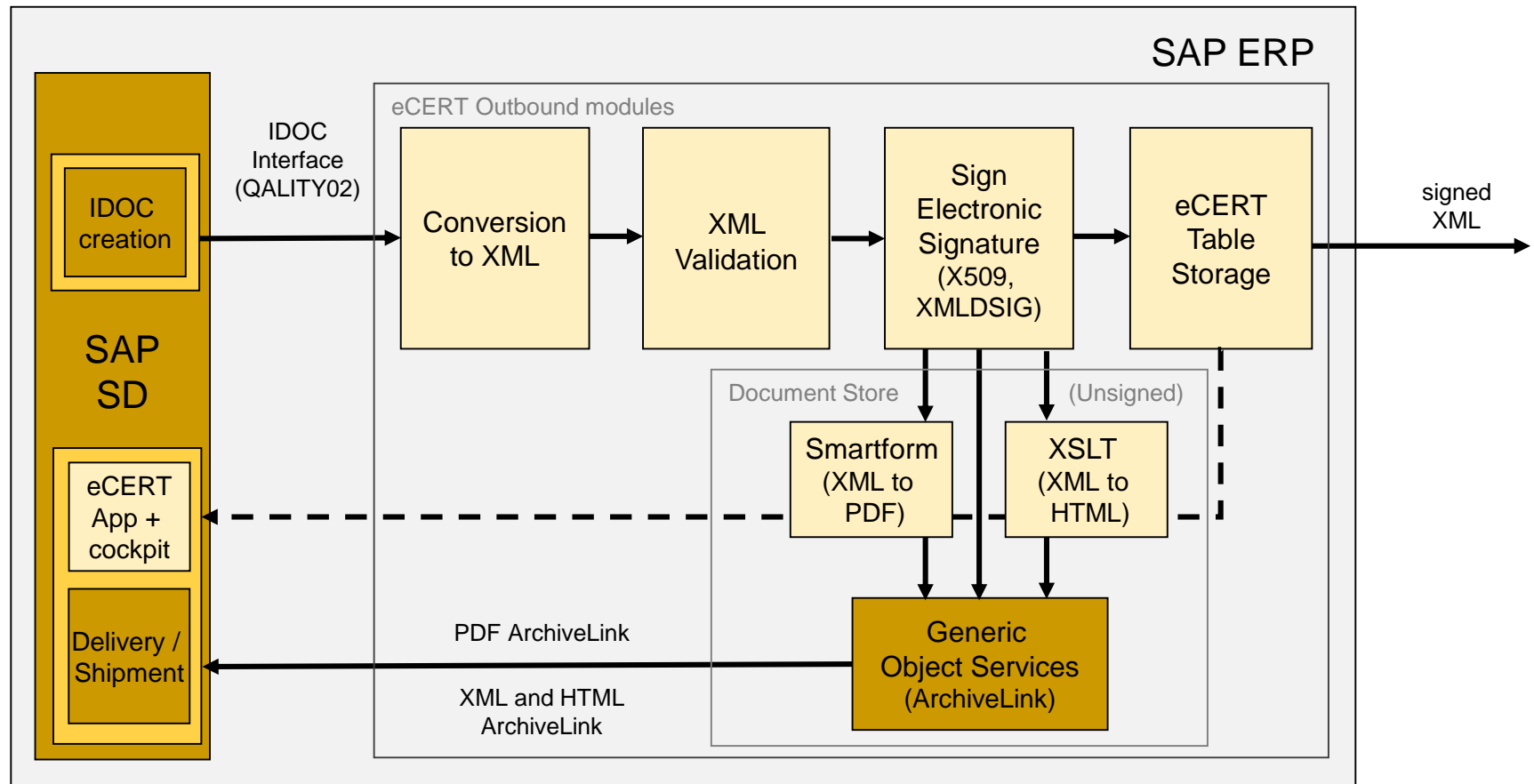


# General Architecture



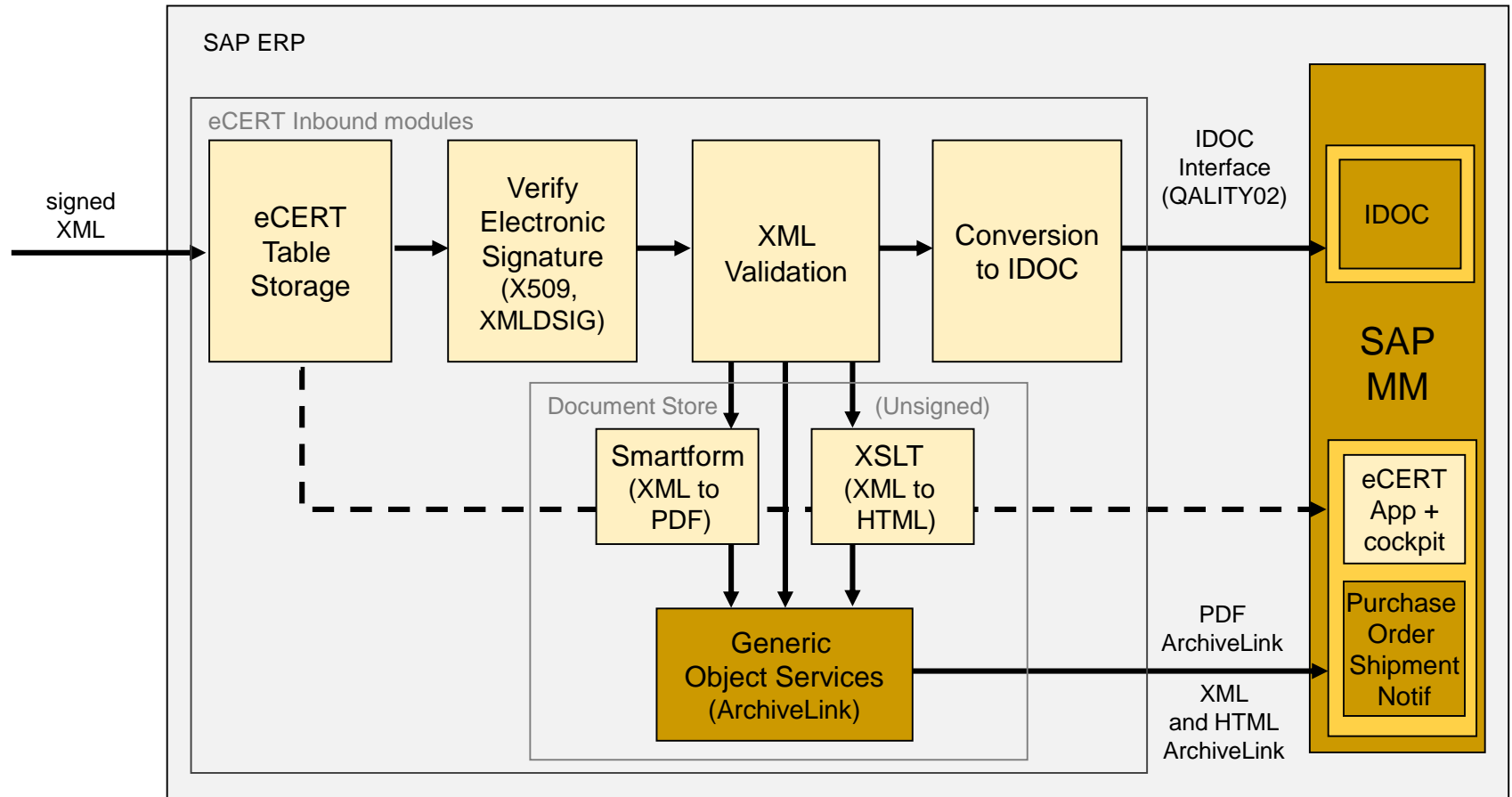
# Outbound process

- The SAP SD module is customized to create the part certification during delivery or shipment



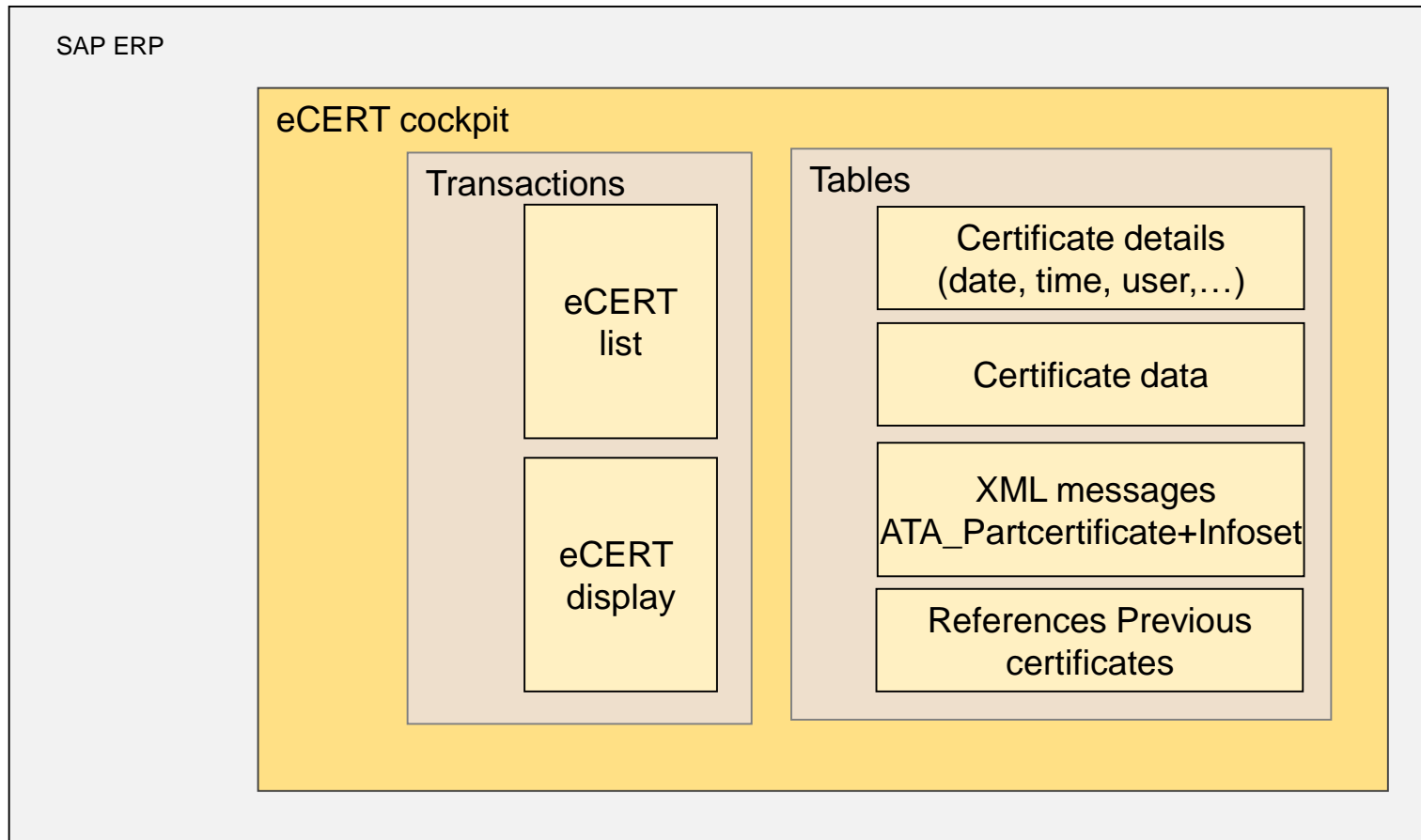
# Inbound process

- The SAP MM module is customized to link the part certification into the purchase order and inbound delivery



# eCERT cockpit

- Main transaction



# eCERT App - !!!NEW!!!

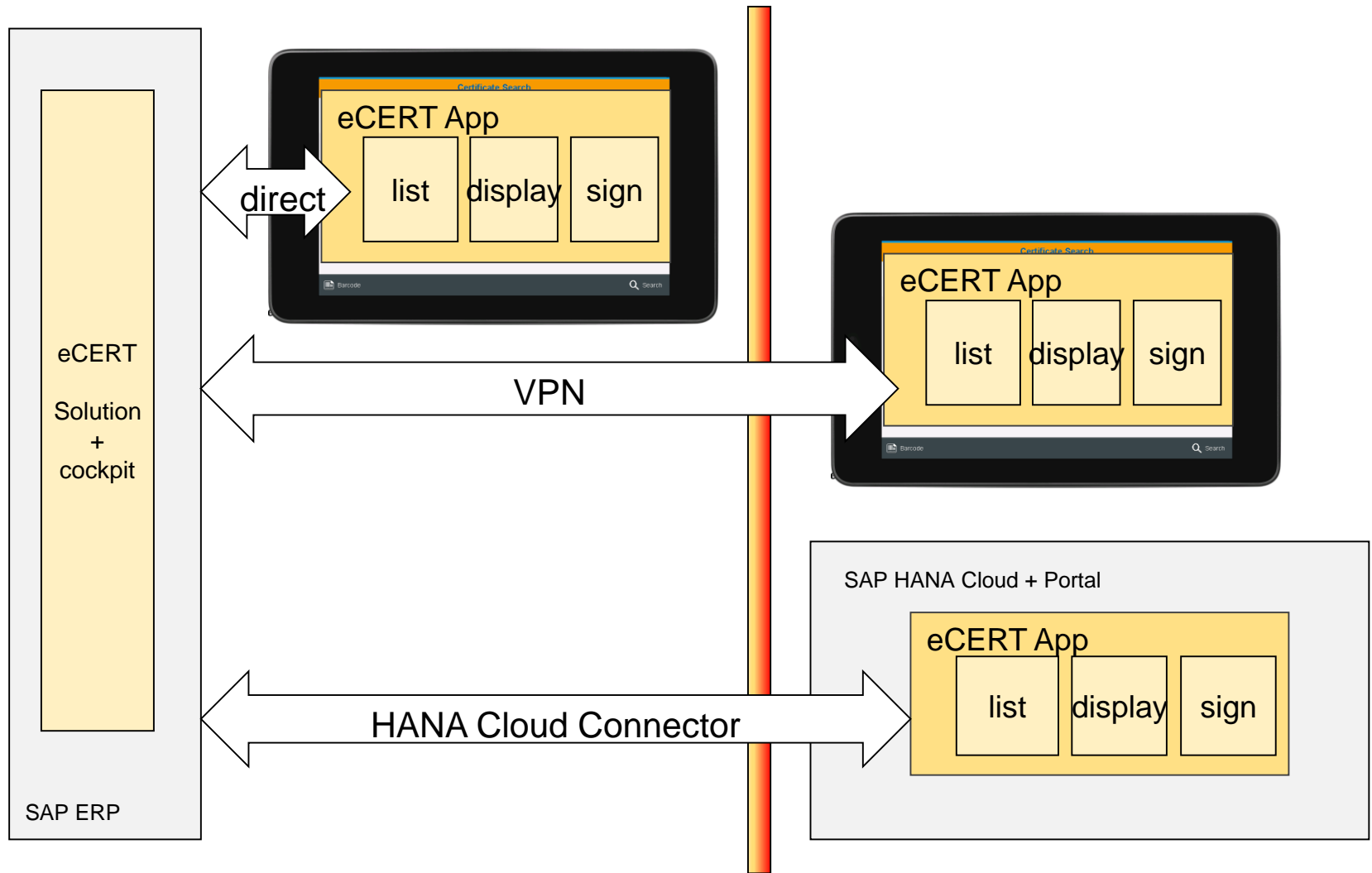
- **Mobile App for real paperless process**
- More mobility for QA user
- More mobile support for external services
- Check and sign online at container
- SAP Fiori ready

The screenshot displays the 'Unsigned Certificate' screen of the eCERT App. At the top, there is a blue header bar with a back arrow and the title 'Unsigned Certificate'. Below the header, there are two circular icons: a document icon labeled 'Certificate' and an information icon labeled 'Info'. The main content area is a form with several sections:

- 1. Approving Component Authority/Country:** Luftfahrt-Bundesamt/GE
- 2. AUTHORISED RELEASE C:** EASA FORM 1
- 4. Organisation Name and Address:** SPLTS, Test Supplier, Balanstrasse 73, Munich, 81541, DE.
- 6. Item, 7. Description, 8. Part No., 9. Eligibility:** A table with four columns and one row.

At the bottom right of the screen, there is a green button with a signature icon and the text 'Sign'.

# eCERT App - !!!NEW!!!



# eCERT App – Next steps

- Presented at ATA eBusiness Forum 2015 in Orlando
- In discussion with manufacturers to offer the electronic certificates as a service for airlines
- In test with AMOS (Swiss-AS)
- Different apps for different roles
  - QA inspector at supplier
  - QA inspector at airline
  - Airline requesting from manufacturer/supplier
- SAP Fiori ready
- eCERT on SAP HANA platform as a service
- Using SAP HANA Integration service

# Live Demo

- SAP business documents and trigger from Shipment

**Document Flow**

Status overview Display document Service documents Additional link

Business partner

Document On Status

Standard Order 0000013971	19.06.2014	Completed
Delivery 0080016249	19.06.2014	Open
Shipment 0000001324	19.06.2014	In transp. planning

Shipment 0000001324

Output

St...	Outp...	Description	Medium	Fu...	Partner
OO	ZPCF	Out. Part Cer...	EDI	SP	1310



# Live Demo

## ■ SAP IDOC with extensions

The screenshot displays the SAP IDoc display interface. On the left, a tree view under 'IDoc display' shows the hierarchy for IDoc 000000000930800. It includes 'Control Rec.' and 'Data records'. The 'Data records' section lists segments from 000001 to 000016. Segment 000005, labeled 'E1EDK02 079', is highlighted with a red box. To the right of the tree, a table lists the segments and their corresponding segment numbers. On the right side of the interface, a 'Technical short info' panel provides details about the IDoc, including direction (1, Outbox), current status (18), basic type (QALITY02), extension (/WARPIT/QALITY02), message type (ZPCF), partner number (1310), partner type (KU), and port (S2KEPCF). Below this, a 'Content of selected segment' table shows the data for segment 000005, including fields like QUALF (079), BELNR (0000001324), POSNR (000000), and DATUM (20140625).

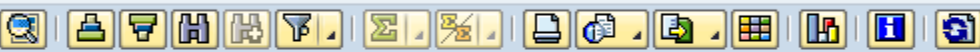
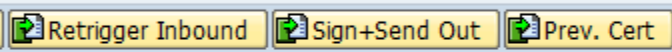
IDoc display	
▼ IDoc 000000000930800	
• Control Rec.	
▼ Data records	Total number: 000016
• E1EDK03 010	Segment 000001
• E1EDK02 001	Segment 000002
• E1EDK02 018	Segment 000003
• E1EDK02 012	Segment 000004
• <b>E1EDK02 079</b>	Segment 000005
▼ E1EDK02 080	Segment 000006
• /WARPIT/ZATA	Segment 000007
▶ E1TXTH1	Segment 000008
• E1ADRM1 AG	Segment 000010
• E1ADRM1 LF	Segment 000011
▼ E1EDLIN	Segment 000012
• /WARPIT/ZATA	Segment 000013
• /WARPIT/ZATA	Segment 000014
• /WARPIT/ZATA	Segment 000015
• E1EDP19 001	Segment 000016
▶ Status records	

Technical short info	
Direction	1 Outbox
Current status	18
Basic type	QALITY02
Extension	/WARPIT/QALITY02
Message type	ZPCF
Partner No.	1310
Partn.Type	KU
Port	S2KEPCF

Content of selected segment	
Fld name	Fld cont.
QUALF	079
BELNR	0000001324
POSNR	000000
DATUM	20140625

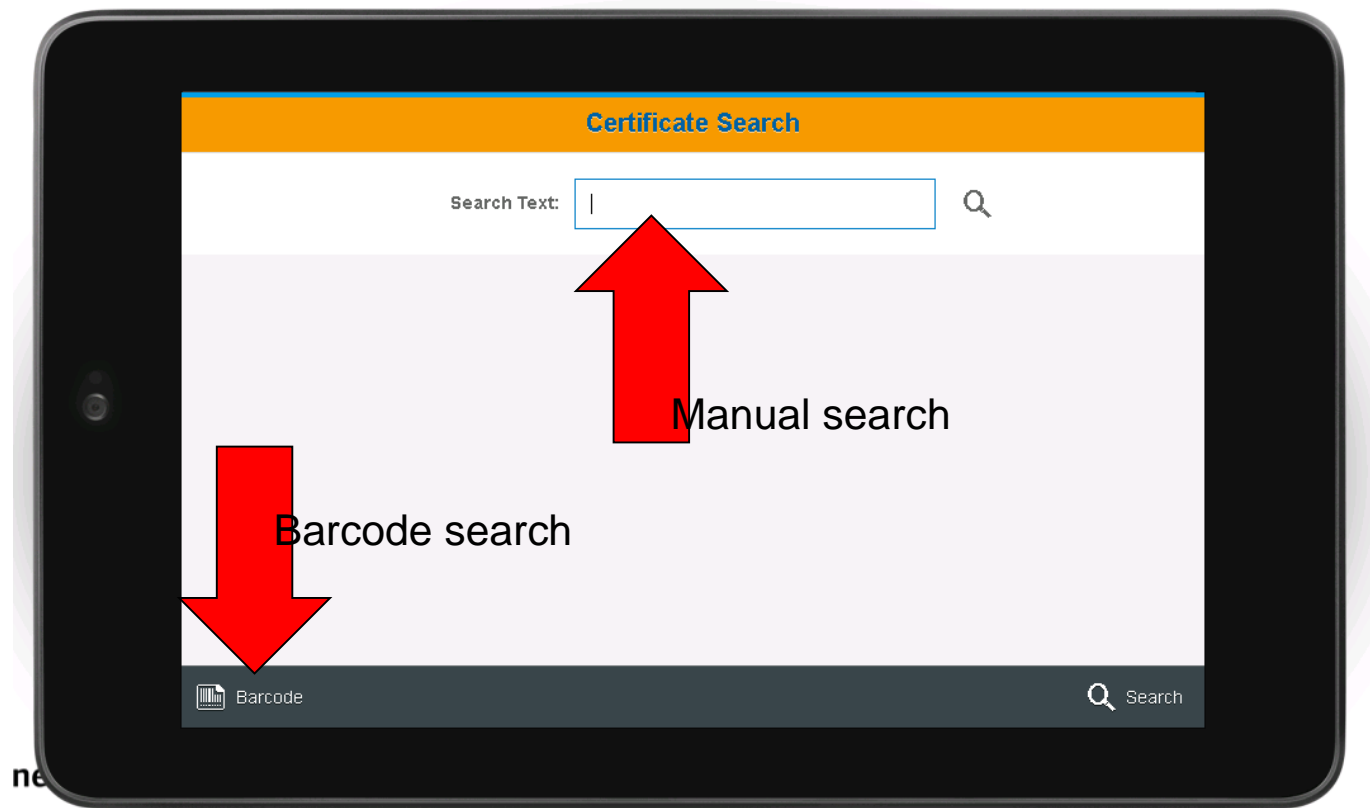
# Live Demo

## ■ eCERT cockpit

eCERT Certificate Cockpit										
										
										
TDN	Type	Supplier	Customer	Custo...	CPO	SD Doc. No.	Delivery	Shipment ...	Creation Date	Crez
<u>WMTD20140619-122106</u>	I	SPLTS	1321	D00DZ	4500017334	13968	80016247	1307	19.06.2014	12:2
	P	SPLTS	1321	D00DZ	4500017334	13968	80016247	1307	19.06.2014	12:2
<u>WMTD20140619-131658</u>	P	SPLTS	1321	D00DZ	TESTCPO01	13971	80016249	1324	19.06.2014	13:1

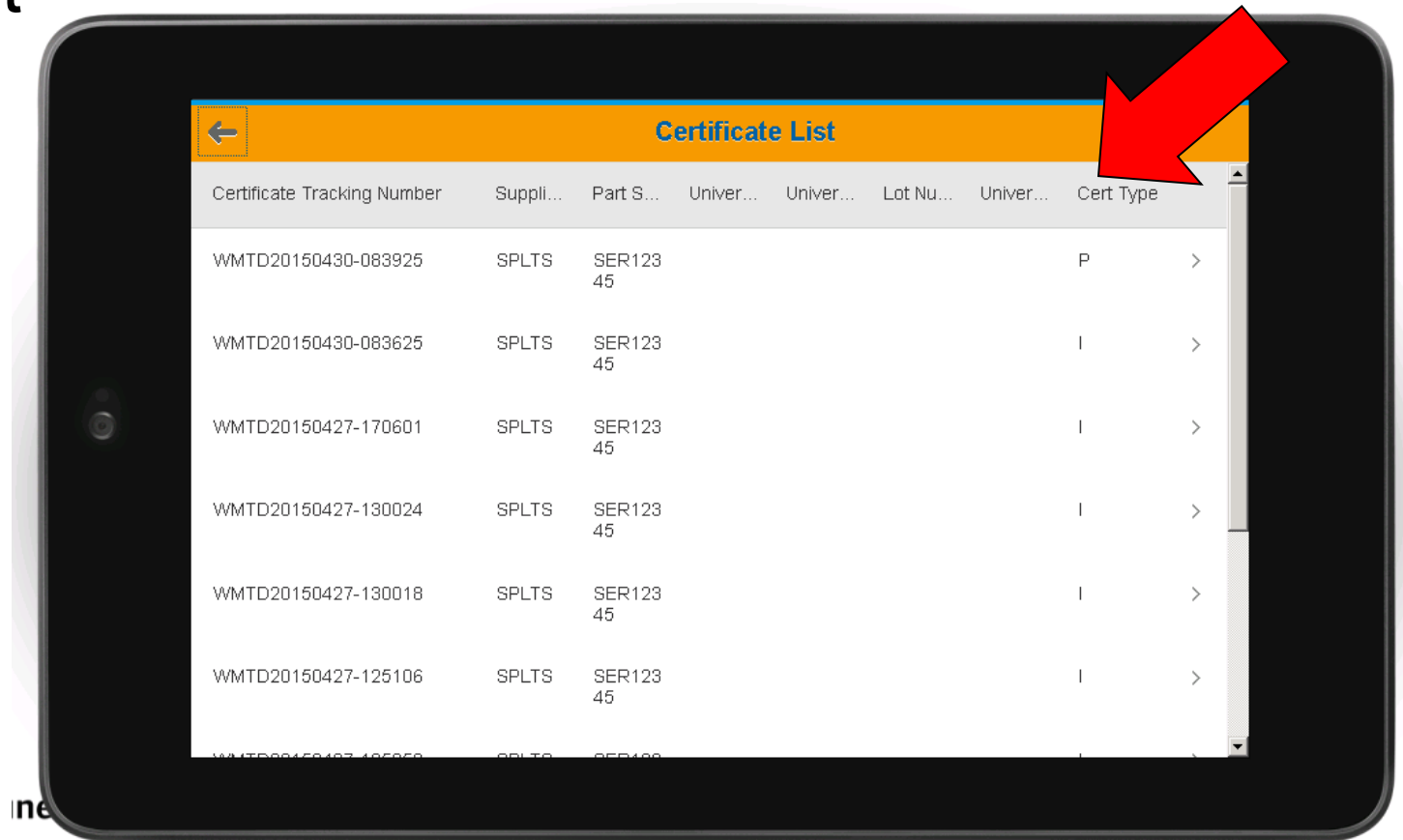
# Live Demo

- search



# Live Demo

## ■ select



# Live Demo

## ■ verify and sign

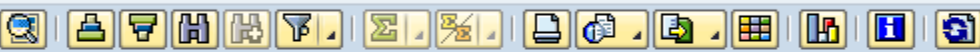
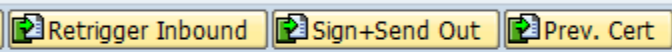
The screenshot shows a tablet interface for an 'Unsigned Certificate'. The top bar is orange with a back arrow and the title 'Unsigned Certificate'. Below the bar are two icons: a document icon labeled 'Certificate' and an information icon labeled 'Info'. The main content area is a form with the following sections:

- 1. Approving Component Authority/Country**  
Luftfahrt-Bundesamt/GE
- 2.**  
AUTHORISED RELEASE C  
EASA FORM 1
- 4. Organisation Name and Address**  
SPLTS  
Test Supplier  
Balanstrasse 73  
Munich  
81541  
DE
- 6. Item**
- 7. Description**
- 8. Part No.**
- 9. Eligibility**

At the bottom right, there is a green button with a pen icon and the text 'Sign'.

# Live Demo

## ■ eCERT cockpit step 1

eCERT Certificate Cockpit										
										
										
TDN	Type	Supplier	Customer	Custo...	CPO	SD Doc. No.	Delivery	Shipment ...	Creation Date	Crez
<u>WMTD20140619-122106</u>	I	SPLTS	1321	D00DZ	4500017334	13968	80016247	1307	19.06.2014	12:2
	P	SPLTS	1321	D00DZ	4500017334	13968	80016247	1307	19.06.2014	12:2
<u>WMTD20140619-131658</u>	P	SPLTS	1321	D00DZ	TESTCPO01	13971	80016249	1324	19.06.2014	13:1

# Live Demo

## ■ eCERT DISPLAY

**Part Certificate Reference Display**

<ul style="list-style-type: none"><li>PartCertificate<ul style="list-style-type: none"><li>WMTD20140619-1316</li></ul></li><li>References<ul style="list-style-type: none"><li>OR80349934-00001</li></ul></li></ul>	<table border="1"><tr><td>1.Approving Component Authority/Country</td><td>A</td></tr><tr><td colspan="2">Luftfahrt-Bundesamt/EN</td></tr><tr><td colspan="2">4. Organisation Name and Address</td></tr><tr><td colspan="2">SPLTS</td></tr><tr><td colspan="2">Test Supplier</td></tr></table>	1.Approving Component Authority/Country	A	Luftfahrt-Bundesamt/EN		4. Organisation Name and Address		SPLTS		Test Supplier	
1.Approving Component Authority/Country	A										
Luftfahrt-Bundesamt/EN											
4. Organisation Name and Address											
SPLTS											
Test Supplier											

```
<?xml version="1.0"?>
- <ATA_PartCertificationForm>
  - <Block2>
    <CET FVI="ISSUE 1"> EASA Form 1</CET>
  </Block2>
  - <Block3>
    <TDN> WMTD20140619-131658</TDN>
  </Block3>
  - <Block4>
    - <IssuerDetail>
```

# Live Demo

## ■ Sign and Send

**eCERT Certificate Cockpit**

Retrigger Inbound Sign+Send Out Prev. Cert

TDN	Type	Supplier	Customer	Custo...	CPO	SD Doc. No.	Delivery	Shipment ...	Creation Date	Cre
<u>WMTD20140619-122106</u>	I	SPLTS	1321	D00DZ	4500017334	13968	80016247	1307	19.06.2014	12:2
	P	SPLTS	1321	D00DZ	4500017334	13968	80016247	1307	19.06.2014	12:2
<u>WMTD20140619-131658</u>	P	SPLTS	1321	D00DZ	TESTCPO01	13971	80016249	1324	19.06.2014	13:1

**Security check**


? Sign+Send Message WMTD20140619-131658 ?

Yes No



# Live Demo

## ■ eCERT cockpit step 2

eCERT Certificate Cockpit										
										
TDN	Type	Supplier	Customer	Custo...	CPO	SD Doc. No.	Delivery	Shipment ...	Creation Date	Cre
WMTD20140619-122106	I	SPLTS	1321	D00DZ	4500017334	13968	80016247	1307	19.06.2014	12:2
	P	SPLTS	1321	D00DZ	4500017334	13968	80016247	1307	19.06.2014	12:2
WMTD20140619-131658	P	SPLTS	1321	D00DZ	TESTCPO01	13971	80016249	1324	19.06.2014	13:3
	I	SPLTS	1321	D00DZ	TESTCPO01	13971	80016249	1324	19.06.2014	13:3

# Live Demo

## ■ eCERT display step 2

**Part Certificate Reference Display**

- InformationSet
  - WMTD20140019-1316
- References
  - OR80349934-00001

1.Approving Component Authority/Country	AUTHORISED RELEASE
Luftfahrt-Bundesamt/EN	EASA FOI

4. Organisation Name and Address

```
- <Reference URI="">
  - <Transforms>
    <Transform Algorithm="http://www.w3.org/2000/09/xmldsig#envelop
  </Transforms>
    <DigestMethod Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"/>
    <DigestValue> 5B3RSYpwMDz4tmjRvebpS6mF9xk=</DigestValue>
  </Reference>
</SignedInfo>
<SignatureValue> NToW5lxLFQatlrfPa3jZQ5Jid8HI52kGD3kDxOubdl+hF/DX5
yRMvwDRasraXNqL8xyHXX4FzmnzRW8Y3/THULS3cWt0CKIO+AS
V/3dVdQ2n3SUUOG9GzHlvy1LL82ETmWQcOwn1GntiJV+IoiVIK Rmhz9ntwBdM
- <KeyInfo>
  - <X509Data>
    <X509Certificate> MIICWzCCAcSgAwIBAgIEUqbnUzANBgkqhkiG9w0BAQUFA
swCQYDVQQGEwJERTEQMA4GA1UECBMHQmF2YXJpYTEPMA0GA1UE
BxMGTXXVuaWN0MRMwEQYDVQQKEwp3YXJpIGl0IGFnMRMwEQYDVQ
QIEwY3Y3IwTCl0TCFzMBYwEAYDVQDDAw1SVWwvZG90b3R6bWVh
```

# Example – ATA\_InformationSet

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<ATA_InformationSet xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="file:///D:/Warp/Produkte/Part%20Certification/ATA/FlatSchema/ATA_PartCertificationForm_Flat.xsd" version="7283,00" id="ID"
xmlns:N1="http://www.w3.org/2000/09/xmlsig#">
```

```
<PartCertificationData>
```

```
<CurrentCertificate>
```

```
<ATA_PartCertificationForm version="968,00" id="ID">
```

```
<Block2>
```

```
<CET FVI="string">JAA Form One</CET>
```

```
</Block2>
```

```
<Block3>
```

```
<TDN>string</TDN>
```

```
</Block3>
```

```
<Block4>
```

```
<IssuerDetail>
```

```
<SPL>string</SPL>
```

```
<WHO>string</WHO>
```

```
<ADL>string</ADL>
```

```
<CIY>string</CIY>
```

```
<ZIP>string</ZIP>
```

```
<CNT>string</CNT>
```

```
<STP>string</STP>
```

```
<CEN>string</CEN>
```

```
</IssuerDetail>
```

```
<RemoteIssuerDetail>
```

```
<SPL>string</SPL>
```

```
<WHO>string</WHO>
```

```
<ADL>string</ADL>
```

```
<CIY>string</CIY>
```

```
<ZIP>string</ZIP>
```

```
<CNT>string</CNT>
```

```
<STP>string</STP>
```

```
<RCN>string</RCN>
```

```
</RemoteIssuerDetail>
```

```
</Block4>
```

```
<Block5>
```

```
<CIC>string</CIC>
```

```
<CPO>string</CPO>
```

```
<PSN>string</PSN>
```

```
<WON>string</WON>
```

```
<MRN>string</MRN>
```

```
<BOX>string</BOX>
```

```
<CTN>string</CTN>
```

```
</Block5>
```

```
<Block6>
```

```
<LIN>string</LIN>
```

```
</Block6>
```

```
<Block7>
```

```
<PDT>string</PDT>
```

```
</Block7>
```

```
<Block8>
```

```
<MFR>string</MFR>
```

```
<PNR>string</PNR>
```

```
<OPN>string</OPN>
```

```
</Block8>
```

```
<Block10>
```

```
<QTY UNT="SF">7142</QTY>
```

```
</Block10>
```

```
<Block11>
```

```
<UST>string</UST>
```

```
</Block11>
```

```
<Block12>
```

```
<PSC>TESTED</PSC>
```

```
</Block12>
```

```
</ATA_PartCertificationForm>
```

# Example - Signature

```
<N1:Signature Id="ID">
  <N1:SignedInfo Id="ID">
    <N1:CanonicalizationMethod Algorithm="http://www.mywebsite.com"/>
    <N1:SignatureMethod Algorithm="http://www.mywebsite.com">
      <HMACOutputLength>3818</HMACOutputLength>
    </N1:SignatureMethod>
    <N1:Reference Id="ID" URI="http://www.mywebsite.com" Type="http://www.mywebsite.com">
      <N1:Transforms/>
      <N1:DigestMethod Algorithm="http://www.mywebsite.com"/>
      <N1:DigestValue>string</N1:DigestValue>
    </N1:Reference>
  </N1:SignedInfo>
  <N1:SignatureValue Id="ID">string</N1:SignatureValue>
  <N1:KeyInfo Id="ID">
    <N1:KeyName>string</N1:KeyName>
  </N1:KeyInfo>
  <N1:Object Id="ID" MimeType="string" Encoding="http://www.mywebsite.com"/>
</N1:Signature>
```

# Q&A

# Contact

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