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Digital Cargo @ IATA
Digital Cargo @ IATA

Our vision

To achieve a fully digitally connected and integrated air cargo supply chain

Our mission

We lead the industry with end-to-end supply chain collaboration on development of innovative technology streamlined processes and global standards
IATA supports Digital Cargo implementation by developing industry standards and offering guidance and tools that facilitate the adoption of new initiatives.

**Workshop & conference**
Beyond the World Cargo Symposium, IATA organizes the annual Digital Cargo Conference in Geneva and regular Digital Cargo workshops at the local levels. During those events, attendees benefit from a thorough understanding of new Digital Cargo initiatives and the ability to network with subject matter experts and other industry colleagues.

**Solution**
To support the digital transformation of the air cargo industry, IATA developed a range of solutions aiming to help the entire supply chain actors moving toward a paperless way of working:
- Matchmaker
- Cargo-XML AutoCheck

**Business Process & Standard**
In order to remove paper and use electronic messages it is necessary to have common and clear business process and standards, which are the foundations of Digital Cargo initiatives. IATA is driving business process and standard setting activities gathering the industry in workgroups and governance bodies.

**Technology**
Moving to Digital Cargo requires changes in the technologies used by the air freight stakeholders. IATA facilitates understanding of key IT requirements necessary to support Digital Cargo projects, and offer guidance with regard to solutions and services available on the market.
e-Freight
Designed to fulfill the vision
Digitization of the air cargo industry

In 2017, more than 50% of the global air trade rely on paper-based processes. A shipment can generate up to 30 paper documents and many of the processes, such as track & trace, still depend on human intervention.

Each year, more than 7,800 tons of paper documents are processed, the equivalent of 80 Boeing 747 freighters filled with paper.
e-Freight: designed to fulfill the vision

e-Freight is an industry-wide program that aims to build an end-to-end paperless transportation process for air cargo made possible with regulatory framework, modern electronic messages and high quality of data.

e-Freight is part of the StB Cargo program aiming at making air cargo easier, smarter and faster. The program portfolio holds 6 projects with the objective to accelerate change in the areas of digitization, visibility and safety.
### e-Freight benefits

The ultimate goal of the e-Freight program is to bring benefits for the air cargo industry.

<table>
<thead>
<tr>
<th>Operational efficiency</th>
<th>Cost effectiveness</th>
<th>Data quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-Freight brings operational efficiency through the reduction of the end to end processing time (up to 24h)</td>
<td>e-Freight brings cost effectiveness through the reduction of document processing and archiving costs</td>
<td>e-Freight improves data quality and accuracy (e.g. auto-checks, mandatory fields, …)</td>
</tr>
</tbody>
</table>

### Innovation

- Standardization and digitization are key enablers for the development of new innovative services and solutions, thus increasing the value of the air freight to shippers (e.g. real time status update)

### Sustainability

- e-Freight will eliminate more than 7,800 tons of paper documents annually, the equivalent of 80 Boeing 747 freighters filled with paper

### Regulatory compliance

- e-Freight implementation facilitates compliance to international and local regulations (e.g. facilitate Advance Electronic Information (AEI) requirements for security purpose)
Initiated by IATA in 2006, the program became an industry-wide initiative involving carriers, freight forwarders, ground handlers, shippers, customs brokers and customs authorities.

The e-Freight roadmap outlines a shared end-to-end industry approach with clear leadership roles, around three core components, or "pillars".

1. Customs documents
   Engaging regulators and governments worldwide to create an ‘e-freight route network’ with fully electronic customs procedures and where regulations support paperless shipments.

2. Transport documents
   Working collaboratively within the cargo supply chain to digitize the core industry transport documents, starting with the Air Waybill (AWB).

3. Commercial & Special cargo documents
   Developing a plan to digitize the commercial and special cargo documents typically accompanying airfreight today, in or outside of the ‘Cargo pouch’.
The scope of e-Freight covers 20 documents supported by 12 Cargo XML message standards.

Scope of e-Freight documents:
- **Export Goods Declaration**
- **Import Goods Declaration**
- **Export Cargo Declaration**
- **Import Cargo Declaration**
- **Customs Release Export**
- **Customs Release Import**
- **Certificate of Origin**
- **CITES Certificate**
- **Shipper’s Dangerous Good Declaration**
- **Invoice**
- **Letter of Instruction**
- **Packing List**
- **House Air Waybill**

Transportation documents:
- **House Manifest**
- **Master Air Waybill**
- **Flight Manifest**
- **Transfer Manifest**
- **Transit Declaration**
- **Freight Book List**
- **Consignmnet Security Declaration**

Commercial documents:
- **Certificate of Origin**
- **CITES Certificate**
- **Shipper’s Dangerous Good Declaration**
- **House Air Waybill**

Special Cargo documents:
- **House Manifest**
- **Master Air Waybill**
- **Flight Manifest**
- **Transfer Manifest**
- **Transit Declaration**
- **Freight Book List**
- **Consignmnet Security Declaration**

Cargo XML Messages supporting the e-Freight program:
- **XML Waybill** (XFWB)
- **XML House Waybill** (XFWH)
- **XML Flight Manifest** (XFFM)
- **XML Freight Booked List** (XFBL)
- **XML Status Message** (XFSU)
- **XML Certificate of Origin** (XCOO)
- **XML Shippers Declaration for DG** (XSDG)
- **XML Invoice** (XINV)
- **XML Packing List** (XPCL)
- **XML Certificate of Origin** (XCOO)
- **XML Shippers Letter of Instruction** (XSLI)
e-AWB

*Enabling the 100% e-Freight vision*
The Air Waybill (AWB) is a critical air cargo document that constitutes the **contract of carriage** between the “**shipper**” and the “**carrier**” (airline)

It is governed by IATA Resolution 600a “The Air Waybill” and 600b “Air Waybill Conditions of Contract”
The electronic Air Waybill (e-AWB) is the **electronic contract of carriage** between the “shipper” and the “carrier” (airline).

The Electronic Air Waybill Resolution 672 (MeA) removes the requirement for a paper Air Waybill.

The original transportation contract is electronic (shipment record).

There is no longer a need to print, handle or archive the paper AWB simplifying the air cargo process.
Paper AWB versus electronic AWB

The 2 components of an AWB can be found both in the paper and in the electronic worlds.
e-AWB

How do we implement it?
Implementing e-AWB in 6 steps

The following 5 steps are key to ensure the success of an e-AWB implementation.

1. Join the Multilateral e-AWB Agreement
2. Ensure your technology supports e-AWB
3. Ensure high-quality electronic messages
4. Ensure business processes are set
5. Roll out e-AWB

As a prerequisite, please verify that local regulations authorize the use of e-AWB as a contract of carriage between the “shipper” and the “carrier”
Pre-requisite / Check the regulatory environment
The use of e-AWB as a means to establish the contract of carriage is only recommended on feasible trade lanes. In September 2018, the feasible trade lanes represented 69% of the AWBs.

Feasible trade lane is defined as such when country of origin and country of destination ratified the same treaty - either the Montreal Protocol No. 4 of 1975 (MP4) or the Montreal Convention of 1999 (MC99).

The use of e-AWB as a contract of carriage between the “shipper” and the “carrier” may also depend on government authorities recognizing and accepting the e-AWB.

Countries that have ratified MP4

Countries that have ratified MC99

USA / France
MC99 countries

Brazil / Niger
MP4 countries
Step 1 / Join the Multilateral e-AWB Agreement
The IATA Multilateral e-AWB Agreement (IATA Resolution 672) provides a single standard e-AWB agreement that airlines and freight forwarders can sign once with IATA and start doing e-AWB with all other parties to the Agreement. By signing the Agreement with IATA, freight forwarders and airlines effectively enter into e-AWB Agreements with each other, i.e. enabling them to execute contracts for the carriage of air cargo shipments by electronic means, in lieu of paper AWBs. The agreement does not amend the Air Waybill conditions of contract.

**Benefits**

- **Free of charge**
- Provides the necessary legal framework for establishing electronic cargo contracts (e-AWB)
- Avoids the need to negotiate numerous bilateral e-AWB agreements with Airlines
- Enables to do e-AWB with all participating Airlines

Participating Airlines and Freight Forwarders are listed on the IATA website. For more info, please visit: https://www.iata.org/en/programs/cargo/e/efreight/#tab-5
Step 2 / *Ensure your technology supports e-AWB*
Communicating effectively requires Freight Forwarders, Airlines and GHAs to exchange standard messages.

The Resolution 670 rules the Cargo electronic data interchange message standard, supported by the recommended practice 1670 (Carriage of Cargo using Electronic Data Interchange), the recommended practice 1672 (Cargo-Fact/Cargo-IMP Message Standards) and the recommended practice 1675 (Cargo-XML Message Standards).

The table below describes the different messages as per the 2 IATA message standards – Cargo-IMP and Cargo-XML:

<table>
<thead>
<tr>
<th>Required capability</th>
<th>FF</th>
<th>AL</th>
<th>GHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send Air Waybill message</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Receive Air Waybill message</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Send Status Update message</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Receive Status Update message</td>
<td></td>
<td></td>
<td>recommended ✓</td>
</tr>
<tr>
<td>Produce Cargo Receipts for FF</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Archive electronic messages</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Print on-demand AWB information if need be</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Cargo-IMP message standard is no longer maintained since 2014. IATA recommends to use standard IATA Cargo-XML to exchange electronic information along the air freight supply chain as the alternative to IATA Standard Cargo-IMP.

For more information, please visit: [https://www.iata.org/en/programs/cargo/e/efreight/#tab-2](https://www.iata.org/en/programs/cargo/e/efreight/#tab-2)
Step 3 / Ensure high-quality electronic messages
Ensuring the high quality of the electronic message is a key enabler toward a full paperless process. The main causes of quality issues are:

- **Invalid or missing data**
- **Message syntax error**
- **Cargo system not configured properly (message integration, print layout)**
- **Message not sent in time**
Step 3 / Improve the message quality

To address the main quality issues the following best practices are encouraged:

**Build phase**

- Start the roll-out with a pilot
- Define test cases based on real life shipment to ensure all the mapping tables are properly configured
- Test the message integration in the systems to avoid message rejection
- Perform FNA/XFNM analysis as a basis for the root cause analysis
- Print and compare the results to identify truncated information issues

**Run phase**

- Perform FNA/XFNM analysis as a basis for the root cause analysis
- Monitor the message arrival time to ensure message arrive on time
- Automate the sending process to avoid late message due to human error
- **Airlines and Freight forwarders to work closely to address message content issues and define the appropriate action plan**

IATA offers you to validate your Cargo XML message for free

For more info, please visit

https://cargo-xml-autocheck.iata.org/ValidationPortal/(S(1oozbof0wekj5wfnm30jtsb0))/IATA/Login.aspx?Proj=1&Lang=EN
Step 4 /

*Ensure business processes are set*
Step 4 / Ensure business processes are set

Review your business processes, together with your business partners, to make sure they are adapted to the new paperless way of operating.

The SOP describes the operational steps that stakeholders of the air cargo supply chain need to follow when shipping air cargo in compliance with the e-AWB functional specifications.

The e-AWB Global SOP is available at: https://www.iata.org/contentassets/4bc75639b37641ba88f2e81e5516a020/iata_eawb_global_sop.pdf
Step 4 / A full paperless air cargo process

The below chart presents a simplified view of a paperless air cargo process using the main e-AWB messages.

Cargo iQ Members initially developed the Master Operating Plan (MOP) to support implementation of quality management processes and metrics. The MOP describes the key processes and sub-processes involved in transporting air cargo from shipper to consignee in a systematic and harmonized manner.

For more information, please visit:  https://www.cargoiq.org/_files/ugd/722a02_e289dc70805f4bd491a467906f728abc.pdf
Step 4 / Why do we need a Single process?

The use of e-AWB is regulated by international treaties (MP4/MC99) and/or local laws.

- e-AWB is **only authorized on feasible trade lanes.** Outside of this regulatory framework, the use of **paper AWB** is still **required.** However, even within the right regulatory framework, **paper AWB might be required by local authorities.**

With the Single process, the Freight Forwarder **does not** need to face these questions. It always sends an e-AWB to the Airline and the cargo is accepted without paper AWB, regardless of the trade lane. If required, the paper AWB can be printed by the Airline or the Ground Handler.
Step 4 / How does the Single process work?

Regardless of the trade lane, the Freight Forwarder always sends an e-AWB to the Airline.

Freight Forwarder sends a XFWB/FWB message to Airline and delivers the Cargo without paper AWB, regardless of the trade lane.

Based on the trade lane and the local authorities procedures, Airline or Ground Handler determines whether a paper AWB is required.

**ECC:** If paper AWB is not required, the AWB is electronic and all the required information is in the system.

**ECP:** If paper AWB is required, Airline or Ground Handler prints the paper AWB on behalf of Freight Forwarder.

Note: this can be done either at Origin, Transit or Destination.

In any case, the Freight Forwarder delivers the Cargo without paper AWB.

All required information is sent through the XFWB/FWB message. More info on the Special Handling Codes usage [here](#).
Step 5 / 
Roll out e-AWB
Step 5 / Define your e-AWB roll out strategy

Once your organization is ready from both the business processes and the IT perspective, you will need to define your e-AWB roll out strategy. Some area you may consider:

- Pilot vs Big Bang
- Home location vs remote locations
- High potential airports across several countries vs all airports within one country
- By freight forwarders / By airlines

To help the industry accelerate e-AWB adoption, IATA encourage stakeholders to embrace a community approach aimed at encouraging airlines, freight forwarders, customs authorities and ground handlers to adopt e-AWB.
e-AWB

How do we implement it?

Wrap up
e-AWB implementation - Wrap up

1. Join the Multilateral e-AWB Agreement
   - Start your journey to join the Multilateral e-AWB Agreement

2. Ensure your technology supports e-AWB
   - Ensure your organization is capable of sending and receiving Cargo-XML or Cargo-IMP messages

3. Ensure high-quality electronic messages
   - Ensure your system produce high quality messages
   - Validate your Cargo XML message for free

4. Ensure business processes are set
   - Engage with your business partners
   - Agree on a standard business processes and think Single process
   - Comply with the Standard Operating Procedures (SOP) where applicable.

5. Roll out e-AWB
   - Define your e-AWB roll out strategy
   - Airlines to activate Freight Forwarders in Matchmaker
THANK YOU