



ICAO

SECURITY AND FACILITATION



World Customs Organization  
Organisation mondiale des douanes

# Moving Air Cargo Globally

Air Cargo and Mail Secure Supply Chain  
and Facilitation



Third Edition

2023



SECURITY AND FACILITATION



## Introduction

Aviation security measures are key to safeguard international civil aviation against acts of unlawful interference. Previous attacks on civil aviation committed or attempted by concealing improvised explosive or incendiary devices in consignments demonstrate that it is essential to remain vigilant and apply measures that secure air cargo and mail.

Vulnerabilities in cargo and mail security can provide terrorists and criminals with a route of attack. There are two main threats: placement and/or concealment of an improvised explosive or incendiary device in consignments to be loaded on an aircraft, and seizure of a commercial aircraft which is then used as a weapon of mass destruction.

The highly complex nature of the air cargo and mail operating environment, involving a multiplicity of entities, adds to the difficulties of countering threats. This publication identifies the roles and responsibilities of these various entities and highlights how they can work together effectively to secure air cargo and mail within the regulatory framework.

*Moving Air Cargo Globally* is destined for a broad audience and for information only. It is neither a legally binding document, nor does it constitute a manual, standards or guidelines.

For the purposes of this publication, the term “air cargo” is understood to include mail.





## Contents

|  |    |
|--|----|
| Message from the ICAO Secretary General .....                      | 2  |
| Message from the WCO Secretary General .....                       | 3  |
| Air Cargo Supply Chain and Operations .....                        | 4  |
| <i>Air cargo supply chain overview</i>                             |    |
| <i>Roles and responsibilities</i>                                  |    |
| Securing the Air Cargo Supply Chain .....                          | 8  |
| <i>ICAO regulatory framework</i>                                   |    |
| <i>WCO regulatory framework</i>                                    |    |
| <i>Joint ICAO-WCO Guidelines/Statement</i>                         |    |
| Air Cargo Supply Chain and<br>Associated Documents .....           | 18 |
| <i>General cargo documents flow</i>                                |    |
| <i>Express model documents flow</i>                                |    |
| Mail.....  | 24 |
| The Impacts of Air Cargo Services on<br>Economic Development ..... | 27 |
| <i>Economic benefits of air cargo services</i>                     |    |
| <i>The regulatory framework</i>                                    |    |
| Role of Authorities .....  | 31 |
| <i>International Organizations – ICAO</i>                          |    |
| <i>International Organizations – WCO</i>                           |    |
| <i>International Organizations – UPU</i>                           |    |
| <i>International Organizations – UNODC</i>                         |    |
| <i>National authorities – aviation security</i>                    |    |
| <i>National authorities – Customs</i>                              |    |
| Stakeholders .....   | 36 |
| <i>ACI; FIATA; GEA; IATA; TIACA</i>                                |    |
| Glossary .....   | 38 |

## Message from the ICAO Secretary General

This third edition of *Moving Air Cargo Globally* is designed to promote a better awareness of the air cargo and mail supply chain.

It includes general updates and input from wide ranging stakeholders, including both regulators and industry, contains new material on the economic impact of cargo movements, and recognizes how international supply chains can be critical engines for regional economic development.

Maintaining operational efficiency and commercial viability has always been at the cornerstone of ICAO's efforts towards improving aviation security, as demonstrated by the tremendous adaptability and resilience the air cargo sector showed during the COVID-19 pandemic.

Further highlighted in this new third edition is the increasing importance of the digitalization of cargo processes, in order to make them better fit for purpose in modern multimodal supply chains, and more agile, responsive, and secure in the face of new opportunities and threats.

Since the first edition of this joint ICAO-WCO publication was made available in 2013, the regulatory framework has become more robust, guidance material has been expanded, and our general understanding of the nature and level of related security threats – and how to combat them – has significantly increased. In that regard, new measures were introduced to address transfer and high-risk cargo, and to raise screening standards, including measures directed at staff members to mitigate the threats posed by insiders.

ICAO's *Year of Security Culture (YOSC)* in 2021 contributed considerably to this evolution in the security domain, raising significant and widespread awareness on how to better secure supply chains in a sustainable manner.

ICAO believes that this publication will serve as a valuable resource for those who are new to air freight, as well as providing a very useful reference tool for those who have years of experience behind them.

*Moving Air Cargo Globally* will help to support the implementation of robust and harmonized standards worldwide, while fostering the improved air transport connectivity which will be so critical to the future sustainability of societies and economies everywhere.



Juan Carlos Salazar

## Message from the WCO Secretary General

The World Customs Organization (WCO), a specialized inter-governmental organization focused on Customs matters, is dynamically engaged in the simplification, harmonization and standardization of Customs procedures, as well as the development and implementation of security and compliance programmes, in order to facilitate and secure the international trade supply chain and support economic development.

With the rapid growth in the air cargo industry, especially in e-commerce business models, and the associated security concerns, a coordinated and collaborative approach between and among Customs, civil aviation authorities and other stakeholders at the international, regional and national levels is of paramount importance in achieving a safe, secure and sustainable global aviation system.

The WCO and ICAO have been partnering to secure and protect the air cargo and mail supply chain from unlawful intrusions whilst facilitating the movement of people, goods and conveyances across borders through a holistic approach supported by a wide range of joint activities, notably working groups on air cargo security, conferences, workshops and the implementation of our respective standards in a harmonized and efficient manner.

The COVID-19 pandemic has demonstrated that well-functioning air cargo operations and good cooperative and collaborative efforts among stakeholders are critical for facilitating timely cross-border flows of trade and travel as well as supporting the economic and social wellbeing of countries.

The publication of this third edition of the ICAO-WCO brochure is important in order to provide updated information on security and facilitation measures implemented by the WCO, ICAO and other stakeholders. The brochure will, among other things, greatly support national, regional and international efforts by Customs and its aviation partners to promote end-to-end security and facilitation of the air cargo and mail supply chain across the globe.



Kunio Mikuriya

## Air cargo supply chain overview

Cargo supply chains, the process of moving consignments from origin to destination, are often complex and subject to a range of regulatory requirements, especially when they include international movements and transport by air.

Air cargo is highly diverse in its physical characteristics and value. It may originate from, and be delivered to, almost anywhere in the world, most commonly as goods being sent from a seller to a buyer or from a consignor to a consignee. It can take the form of personal belongings, gifts and donations, product samples or equipment, and even live animals for professional activities and events. It may be considered low risk – a regular shipment from a known source in a relatively safe region – or high risk – such as a shipment presenting anomalies or identified by intelligence.

The cargo will be handled along the chain by a number of entities with varying responsibilities, including aircraft operators, express carriers, designated operators, regulated agents, consignors, consignees, hauliers and ground handlers. As a further complication, these entities will often be known by different names according to the State or region in which they are located.

The cargo may transfer between several different flights before it reaches its destination, and consignments will be subjected to a variety of procedures and documentary requirements in accordance with legal and commercial frameworks. Authorities responsible for the safety and security of aviation, for the prevention of crime and protection of fiscal revenues, will all have an interest in the process and their own rules.

All those involved in these often complicated movements share the responsibility for ensuring the safety and security of the cargo and for operating within the law. In particular, they are responsible for ensuring that nothing contained in the cargo will endanger an aircraft and the lives of those travelling it.

This publication provides an introduction to how all these various elements fit together.

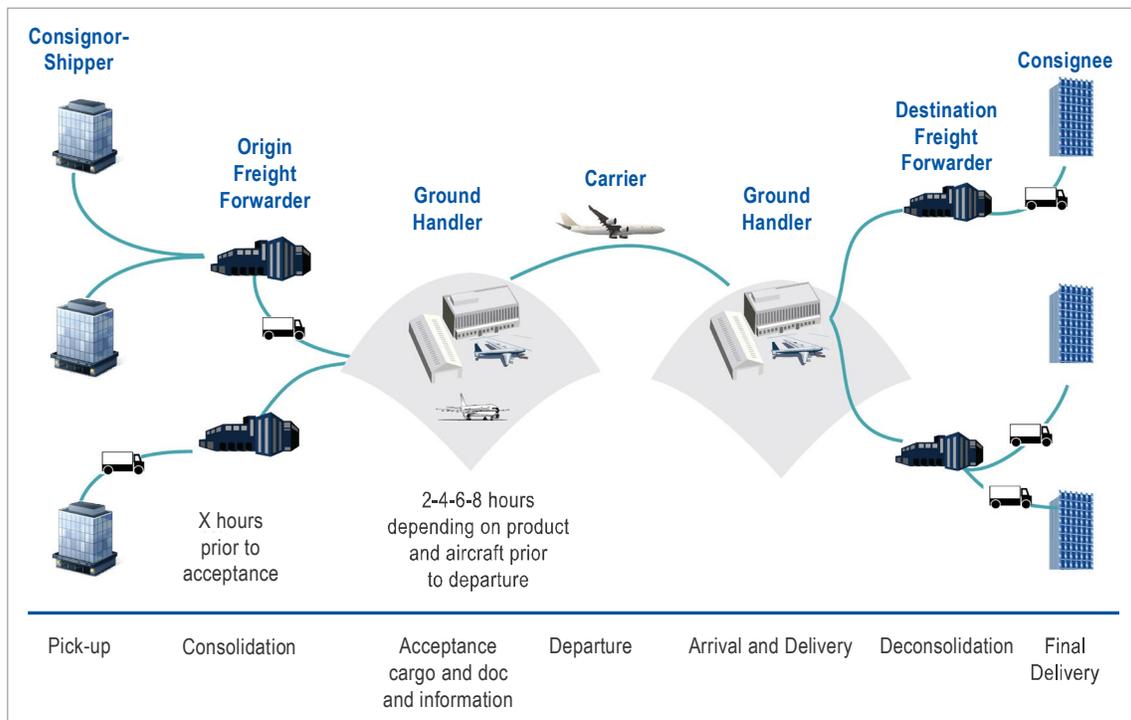


Figure 1 – Air cargo movement overview

## Roles and responsibilities

A single entity may fulfil more than one role in the supply chain and take on the combined responsibilities.

### *Customs Brokers*

Customs brokers are engaged by parties who are responsible for meeting the import and export requirements of Customs administrations and other government agencies. In jurisdictions where Customs brokers are regulated, they are usually subject to legislative or regulatory requirements relating to knowledge, financial stability and compliance standards. In meeting the requirements, Customs brokers may act as authorized agents for the purpose of performing various services, including the filing of required documents and the payment of duties and taxes for their clients within the compliance framework set for them.

Customs brokers often have invested in processes that facilitate the submission or transmission of data and the payment of duties and taxes to Customs administrations and other government agencies. The precise services to be provided by a Customs broker will depend on the contractual arrangement with the client, and the Member's national legislation.

### *Buyer*

The buyer is the purchaser of the goods and, in the international trade context, the buyer or importer either clears consignments on its own or utilizes the services of a broker to assist with various requirements of border regulatory agencies.

### *Seller/vendor*

The role of the seller/vendor is to sell and to provide the product to the buyer/consumer.

Vendors typically generate and possess sets of key data during the sale and delivery process, which may notably be required to complete Customs and tax obligations in the country of importation/destination.

A vendor should ensure that goods meet the regulatory requirements of the respective importing country, and bear responsibility for the transmission of complete and accurate information to other stakeholders such as Customs brokers, logistics service providers, express carriers, designated operators, and e-commerce platforms/marketplaces, for the authentication and description of the goods, for the sales transaction, and for risk information disclosure to



buyers, protecting consumer rights, and establishing a product quality traceability system and a security risk prevention and control mechanism.

### *Consignor*

A consignor is the entity or individual who initiates the movement or transport of the goods. In other words, it is the sender. (A 'known consignor' is an entity recognized in some States as meeting specified security requirements). The term 'shipper' is often used to describe the entity or individual who initiates the trade in goods. Consignor and shipper are separate roles but can be the same entity or individual.

### *Consignee*

The consignee is the party designated on the invoice or packing list as the recipient of the goods at the end of the transport movement.

### *Freight forwarders and logistics providers*

Freight forwarders are part of the transport logistics process within the supply chain and their main task is to arrange for air shipments to be managed in such a way that they are ready for transportation by aircraft operators. Such arrangements might include the consolidation of cargo.

A freight forwarder and logistics service provider may offer a service relating to the preparation, storage, carriage and final delivery of goods, including the applicable documentary and facilitation formalities. A forwarder rarely acts as carrier of the goods. Usually, it is the organizer of multiple carriages in several modes of transport and other services that contribute to the building of a supply chain. Such carriage may be performed by single or multimodal transport means.

## Roles and responsibilities *(continued)*

Multimodal transports occur when air cargo services are combined with sea, rail, or pre-carriage trucking from the shipper or manufacturer to the airport of departure and from the airport of destination to the consignee. Services offered by the forwarder may include consolidation, storage, handling, packing, or distribution of the goods. In addition, the forwarder can provide a range of ancillary and advisory services in relation to the physical movement of the goods. These services will often include Customs and fiscal matters, declaring the goods for official purposes, procuring insurance for the goods, and collecting or procuring payment or documents relating to the goods.

Freight forwarding services also include logistical services with modern information and communication technology in connection with the carriage, handling, or storage of goods and, de facto, total supply chain management.

For air cargo shipments, a freight forwarder normally books and contracts with an aircraft operator in the form of an air transport service agreement from the airport of departure to the airport of destination. The freight forwarder will then proceed with the shipment from its warehouse or another location, and deliver it directly to the aircraft operator or its representative. This process normally starts well before Customs export formalities have been resolved.

A forwarder's prime responsibility is to safeguard the interests of its customer, the consignor or shipper. Freight forwarding entails working closely with aircraft operators in order to book space on aircraft for consignments that are ready to travel, for which air transport contracts are concluded and air waybills are issued. Freight forwarders are often located landside, but some may operate, or even own, warehouses that are located airside or on the border between landside and airside.

### *Ground handlers*

Ground handlers are subcontracted and act on behalf of freight forwarders and/or aircraft operators. This occurs when the freight forwarder or aircraft operator does not have the necessary facilities. Ground handling services can include the provision of warehouses to accept, handle, prepare and tag cargo and mail, as well as the loading/unloading, transit, and storage of cargo and mail. Ground handlers are responsible for dealing with operational aspects, based on the instructions of freight forwarders and aircraft operators. Once a consignment is ready for shipment, the freight forwarder will release the cargo and instruct the ground handler to deliver it to the aircraft operator.

Ground handlers are often located on airport premises, either airside or at the frontier between landside and airside, though they may also be located landside.



### Designated operator

A designated operator is any governmental or non-governmental entity officially designated by a member country of the Universal Postal Union (UPU) to operate postal services and to fulfil the related obligations arising out of the UPU Acts, including the universal postal service obligation. For the purposes of these guidelines, mail is defined as all postal items conveyed by designated operators under the conditions of the Universal Postal Convention, its Regulations as well as any applicable UPU technical, messaging and security standards.

Designated operators conduct business with aircraft operators for the conveyance of mail, and apply security controls to mail, including screening, as required by the appropriate authority, and in accordance with the Universal Postal Convention.

The confidential nature of correspondence is generally protected by national legislation, which may prohibit the opening of mail receptacles or restrict the use of some screening methods. It may also require that mail be treated differently than cargo consignments.

### Airport operator

An airport operator is the entity responsible for the provision and security of the airport infrastructure. The operator will establish a secure environment through which the goods move and may also be responsible for the provision of 'on airport' cargo services. In some cases, an airport operator will be the party responsible for the protocols for dealing with incidents resulting from a positive

identification of a physical threat in air cargo, while this is on ground.

### Aircraft operators

Aircraft operators, also known as airlines and air carriers, provide air transportation for goods. A transport contract (air waybill) binds an aircraft operator with the relevant contracted parties for the safe and secure transport of cargo and mail from one location (e.g. the airport of departure) to another (e.g. the airport of arrival).

The air cargo may be transported on passenger aircraft or all-cargo aircraft. In some instances, particularly for short distances, aircraft operators may also transport air cargo by road. The transport contract remains an air waybill, however, and the road segment is considered as a flight, with a designated flight number. This type of operation is known as a 'road feeder service'.

### Express carriers

Express carriers combine the work of a broker, haulier, freight forwarder, ground handler and aircraft operator into one single company or group, which is why they are also sometimes referred to as 'integrators'. Express delivery has thus become a specific business model in the cargo industry. Express carriers manage end-to-end multimodal supply chains spanning 220 States and territories. They operate sophisticated track-and-trace information technology systems, which allow them to monitor the progress of an individual shipment through their chain, from pick up to delivery. Express carriers typically transport high-value-added, time-sensitive cargo, with a time-definite delivery.

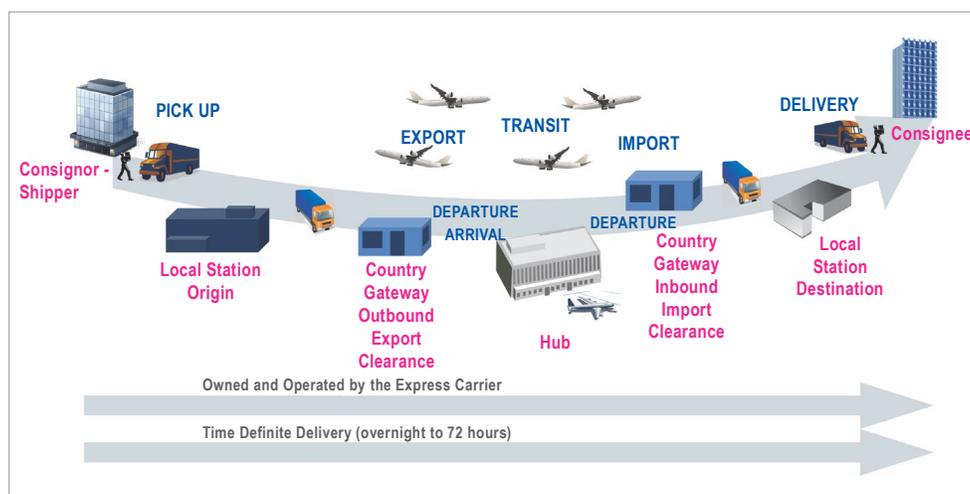


Figure 2 – The Express Model

## ICAO regulatory framework<sup>1</sup>

The ICAO regulatory framework for the air cargo secure supply chain has been developed incrementally over a period of time and is set out in a series of Standards and Recommended Practices (SARPs) in Annex 17 – *Aviation Security* to the Chicago Convention, supported by guidance material in the *Aviation Security Manual* (Document 8973 – Restricted), especially in its Chapter 13 – Cargo and mail, and other *ad-hoc* guidance documents, such as, for instance, those published<sup>2</sup> during the COVID-19 pandemic. This regulatory framework remains under constant review and is updated periodically to provide the best responses to evolving threats.

The framework provides for the following entities in the supply chain:

### Aircraft operators

In principle, as shown below, an aircraft operator can bear the entire responsibility of applying security controls, including screening of 100 per cent of cargo and mail before loading on to an aircraft.

However, while all passengers and their baggage are screened immediately before departure, this is generally not a practical proposition for all outgoing cargo.

The alternative is a secure supply chain, where security controls are applied at the point of origin or at an intermediate point before the airport, and cargo is kept protected against unauthorized interference from the point at which those security controls were applied and until it is loaded onto the aircraft. This:

- respects existing obligations of businesses operating in the air cargo supply chain;
- shares costs and responsibilities among all stakeholders and allows cargo to be secured upstream in the supply chain to reduce the burden of security controls imposed on aircraft operators;
- facilitates the flow of cargo transported by air and reduces or limits possible delays generated by the application of security controls;
- applies appropriate security controls for specific categories of cargo that cannot be screened by the usual means due to their nature, packaging, size or volume; and
- preserves the primary advantages of the air transport mode: speed, safety and security.

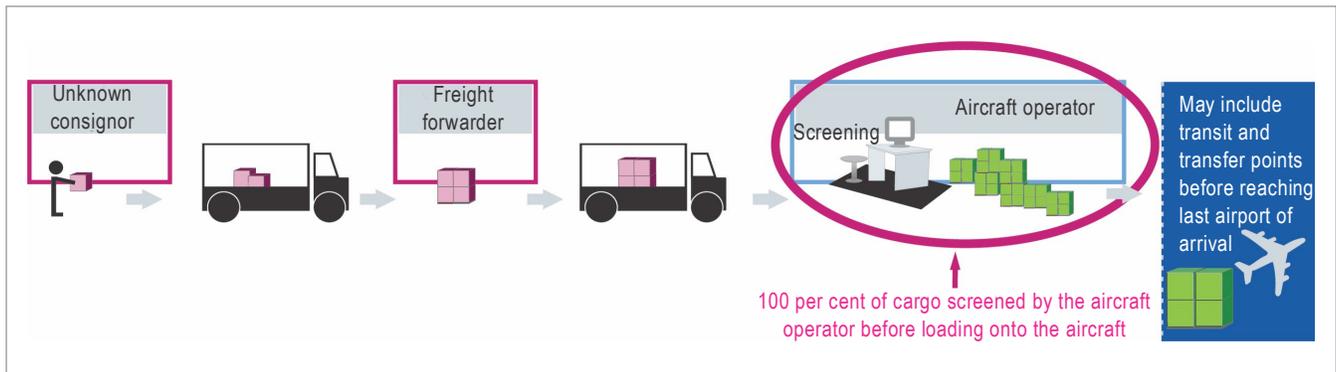


Figure 3 – Security controls applied by aircraft operators

<sup>1</sup> This section is based on standards and guidance materials in force at the time of the development of this publication (2022)

<sup>2</sup> [Guidelines for Aviation Security Contingency Measures during the COVID-19 Pandemic – EB 2020/32](#), or the [Distribution of COVID-19 Vaccines and Air Cargo Security](#)

ICAO and its Member States have developed Standards to support the implementation of a secure supply chain through the regulated agent and known consignor regimes. These entities are approved by the appropriate authority and may apply security controls, including screening, upstream in the air cargo supply chain. They ensure that the cargo and mail to be carried on commercial aircraft is protected from unauthorized interference from the point at which screening or other security controls are applied until the departure of the aircraft.

The implementation of the secure supply chain reduces the burden on aircraft operators while facilitating the processing of secure cargo when it arrives at an airport.

### *Regulated agents*

A regulated agent (RA) is a freight forwarder or any other entity (e.g. ground handler, designated operator) that conducts business with an aircraft operator and provides security controls that are accepted or required for cargo or mail by the appropriate authority. Once approved as a regulated agent, an entity may conduct security controls for cargo, including the screening of goods.

An aircraft operator may receive cargo secured by a regulated agent, which accounts for the security status of consignments. Approvals for regulated agents are usually site-specific.

Candidates for regulated agent status must meet specific requirements determined by the appropriate authority. The regulated agent must develop and maintain a security programme that describes all the security measures implemented on the premises and during all operations to secure cargo and maintain its integrity until delivery to the next entity. Such measures should include, inter alia: access control to secure areas; monitoring of premises; protection and surveillance of cargo against unauthorized access; screening processes; delivery and reception processes; security training for all staff who may access the premises; and monitoring of subcontractors.

## **Challenges inherent in screening cargo at the last moment before being loaded on to an aircraft:**

- Immediately before departure, cargo is already palletized, and it is generally not possible to screen it in its entirety without breaking up the pallets;
- Certain parcels and/or consolidated consignments are too large for conventional X-ray screening, one of the most common screening methods applied at airport premises;
- Due to the diversity of the nature and content of cargo, an appropriate screening method must be selected. Security operators may need to employ several methods to clear some items and not all options may be available at an airport; and
- Tonnes of cargo are prepared for each individual flight and there are only brief windows of time before scheduled departures. Screening of all cargo by the aircraft operator at the last moment before departure could slow down the flow and impact the competitiveness of air transport.



## ICAO regulatory framework *(continued)*

However, a regulated agent can only maintain the security of a consignment or screen it, and there are some types of cargo that are time consuming to screen thoroughly. In these instances, the implementation of a known consignor regime offers the possibility of conducting effective security controls at the manufacturing/assembly/packing stage.

### Known consignors

An entity may act as a known consignor (KC) when it originates cargo or mail for its own account and when its procedures meet common security rules and standards sufficient to allow the carriage of cargo or mail on commercial aircraft. Once a known consignor has accounted for the security status of cargo, the consignment may be delivered to a regulated agent, other approved entity, or directly to the aircraft operator, who then takes over the

responsibility for keeping it secure until it is loaded onto an aircraft.

In order to be designated as a known consignor, an entity such as a manufacturer or assembler should demonstrate compliance with the known consignor security programme under which business will be conducted, as recognized and approved by the appropriate authority or other entity authorized by the State to act on its behalf. Known consignors should apply for designation, approval or listing by the appropriate authority at regular intervals not exceeding five years. Approvals for known consignors are usually site-specific.

Their placement in the supply chain is shown in Figure 5 below.

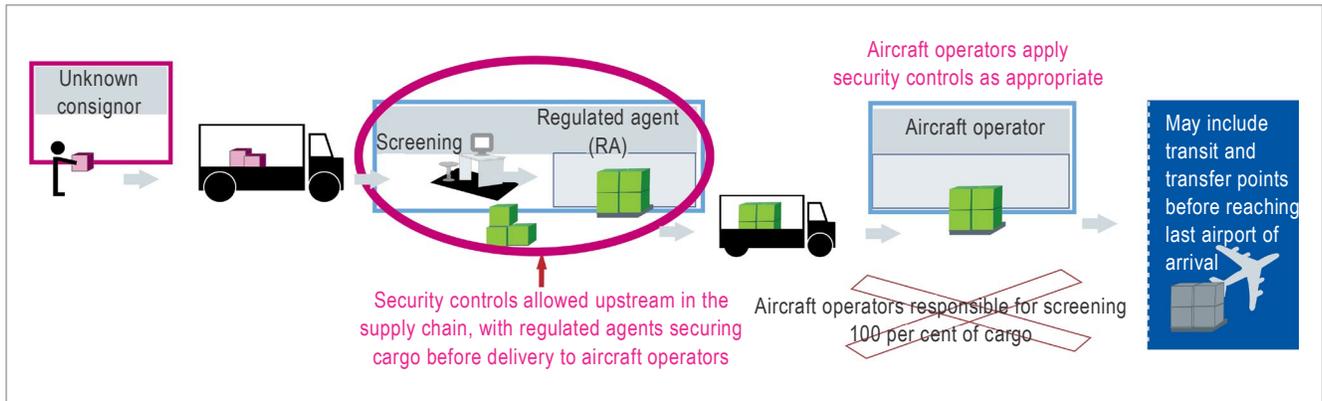


Figure 4 – Security controls applied by regulated agents

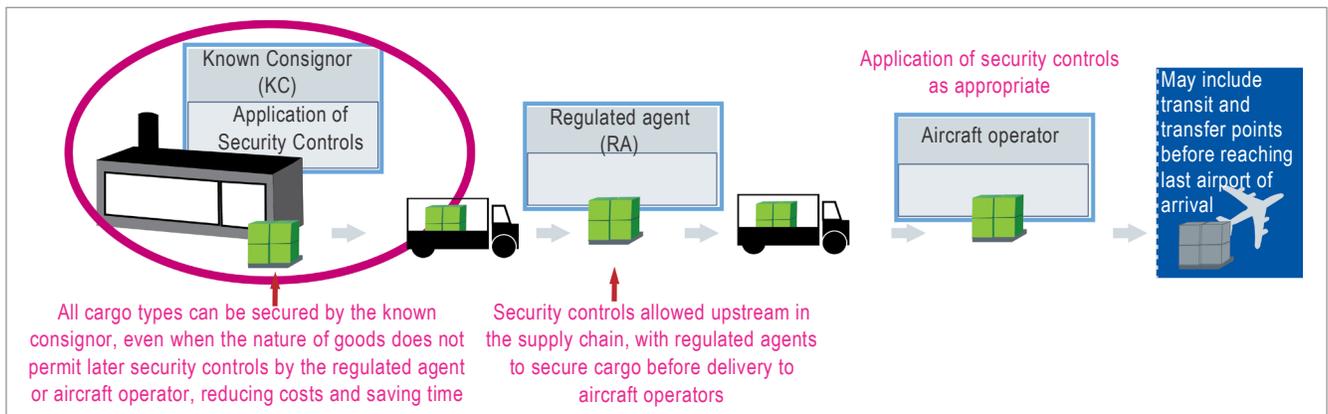


Figure 5 – Security controls applied by known consignors

## Screening

For aviation security purposes, screening is the application of technical or other means which are intended to identify and/or detect weapons, explosives or other dangerous devices, articles or substances which may be used to commit an act of unlawful interference. Different air cargo security screening options are available to States, including hand search, X-ray (single, multi-view), Explosive detection systems (EDS), explosives trace detection (ETD) and explosives detection dogs (EDD).

The entity that secures the cargo must ensure that screening is carried out using an appropriate means or methods, taking into account the nature of the consignment, as not all means or methods will be suitable for all consignments. Also, some consignments may be categorized as 'high risk', for instance on the basis of intelligence information, and should in these circumstances be subject to additional screening or other security controls<sup>3</sup>.

## Consignment Security Declaration (CSD)

*(Further details are available in the Air Cargo Supply Chain and Associated Documents section)*

All along the supply chain, including at transfer points, it is crucial to share information about the security status of cargo and mail to ensure that anything that needs to be secured or re-secured is properly identified and screened.

To assure this transmission of information, an entity that renders cargo secure shall issue a security status which includes important security information applied to consignments of cargo and mail. This could take the form of a CSD that accompanies the consignment and is transmitted to each party involved later in the secure supply chain to inform of the security measures which have been applied to the consignment. All consignments of secured cargo and mail must be protected from unauthorized access.

The electronic version of the CSD (or eCSD) complements the increasing automation of air cargo processes and allows operators to exchange and store security information electronically.

When accepting a consignment, a regulated agent or an aircraft operator will automatically refer to the CSD in order to determine the way to handle, prepare, store and, if necessary, screen the cargo. The CSD should only be issued once the appropriate security controls, have been applied. If no security status is indicated, or no consignment security declaration is issued, it should be deemed that no security controls have been previously applied. The CSD should be completed at each step along the secure supply chain, to indicate that another authorized entity acting within the secure supply chain is taking responsibility for the security status of the cargo.

Only entities accredited by a State as regulated agents (including the designated operators with RA status), known consignors or aircraft operators are entitled to issue or complete such a declaration, and their unique identification number should be recorded, to indicate their responsibility and administrative accreditation. The CSD can be transferred either as a hard copy or in an electronic format.

In the express business model, the relevant cargo security information is instead usually available in in-house information technology systems.

Postal consignments utilize UPU standard documentation, which should in any case incorporate the relevant cargo security information as established by the aviation security appropriate authority.

The delivery bill (e.g. CN 38) and receptacle labels (e.g. CN 35, CN 36, CP 84, CP 85) are the most important – to postal services and airlines/carriers – for many reasons, including Customs at airports. For the airline, the delivery bill and UPU standard receptacle labels define a shipment as being mail, rather than cargo or freight, and enable the airline simplified processes relating to mail to be applied.

---

3 Currently, the possibilities of electronically analysing shipment-related data to identify shipments which may represent a higher risk are being implemented by some States. Any consignments so identified are subject to additional scrutiny and possibly extra security requirements. Such preloading advance cargo information (PLACI) systems have the potential to provide an additional layer of security.

## WCO regulatory framework

### The WCO SAFE Framework of Standards

The WCO SAFE Framework of Standards is the Customs instrument covering all modes of transport, to secure and facilitate goods moving through international supply chains. The Framework has both national and international implications, and is composed of distinct standards that call for:

- partnerships to be established between Customs administrations, between Customs administrations and the private sector, and between Customs administrations and aviation authorities and other government agencies at borders;
- harmonized advance electronic information and/or pre-loading advance cargo information requirements for conducting risk assessments to address security threats;
- outbound inspection of high-risk cargo and/or transport conveyances;
- the use of modern, non-intrusive inspection equipment and smart security devices;
- the introduction of the Authorized Economic Operator (AEO) concept; entities which, having satisfied pre-determined security standards, receive the benefit of enhanced facilitation; and

- mutual recognition between Customs administrations of their respective AEOs and Customs control procedures.

In some regions, there is already a degree of mutual recognition of AEO and Regulated Agent/Known Consignor Status, and this may be further harmonized and extended in time.

Traditionally, Customs has been responsible for implementing a wide range of government policies, spanning areas as diverse as revenue collection, trade compliance and facilitation, interdiction of prohibited substances, protection of cultural heritage and enforcement of intellectual property laws. This breadth of responsibility reflects the fact that Customs authorities have long been entrusted with administering matters for which other government ministries and agencies have policy responsibility, such as health, agriculture, environment, trade statistics and, in some cases, immigration.

Customs has the authority to inspect cargo and any means of transport entering, transiting or exiting a State. It may even refuse entry, transit or exit in certain cases. While these powers are extensive, a holistic approach is required to optimize the securing of the international trade supply chain while ensuring continued improvements in trade facilitation.





Customs has therefore developed cooperative arrangements with other government agencies in a so-called coordinated border management environment.

Modern Customs processes are based on the International Convention on the Simplification and Harmonization of Customs Procedures ([Revised Kyoto Convention, RKC](#)). Following the events of 9/11, the WCO Council adopted the SAFE Framework of Standards to Secure and Facilitate Global Trade, thereby adopting a holistic approach to the supply chain. 172 Members of the WCO have signed a 'letter of intent' to implement it. It is kept up to date and relevant by the WCO SAFE Working Group through a periodic review process.

The cargo facilitation provisions of ICAO's Annex 9 — *Facilitation* are amended, from time to time, to keep them aligned, to the greatest extent possible, with the RKC and the SAFE Framework. They were changed most recently in 2015 to incorporate the AEO concept into the Annex.

The WCO's [SAFE Package](#) brings together all WCO instruments and guidelines that support implementation of the SAFE Framework. The Package includes the SAFE Framework, the Integrated Supply Chain Management Guidelines, AEO Implementation and Validation Guidance including the possibility for virtual validation practices, the Online AEO Compendium, Model AEO Appeal Procedures, the Guidelines for the Purchase and Deployment of Scanning/Non-intrusive Inspection Equipment including the Guidance Material on Threats and Technology Solutions, the WCO Recommendation Concerning Customs Formalities in Connection with the Temporary Admission of Container Security Devices, the SAFE Data Element Maintenance Mechanism, the Trade Recovery Guidelines, the Strategy Guide for AEO Mutual Recognition Arrangements or Agreements, Toolkit for Pillar 1 (Customs

to Customs) and the Coordinated Border Management Compendium, the Single Window Compendium – Volume 1 Volume 2, the Joint WCO/ICAO Brochure, the Customs-Business Partnership Guidance, and the Recommendation of the Customs Co-Operation Council on the Guiding Principles for Data Quality (June 2015).

The SAFE Framework is a dynamic instrument that balances facilitation and control while ensuring the security of the global trade supply chain.

#### *Integrated Customs control procedures*

Everything entering or leaving a Customs territory is subject to Customs control. In an integrated Customs control chain, the integrity of a consignment has to be ensured from the time the goods leave the place of origin until they arrive at the absolute final destination. This usually starts with advance electronic transmission of prescribed information by the exporter or its agent.

This information should be lodged with Customs prior to goods being loaded onto the means of transport (or into the container) being used for their exportation.

A further initial transmission may be required from the aircraft operator at an agreed later stage. For security purposes, Customs usually limit their information requirements to those available in aircraft operators' normal documentation and based on those set out in Annex III to the SAFE Framework of Standards.

### WCO regulatory framework *(continued)*

Similarly, there is advance electronic transmission of prescribed information by the aircraft operator or its agent to the Customs administration at entry, followed by complementary transmission by the importer at an agreed later stage.

The WCO SAFE Framework of Standards includes provisions for any business involved in moving goods through the international supply chain to become validated by Customs as AEOs if they meet supply chain security requirements. AEOs are allowed to submit reduced pre-arrival data sets, which must nonetheless contain the minimum information necessary for Customs to conduct a security risk assessment.

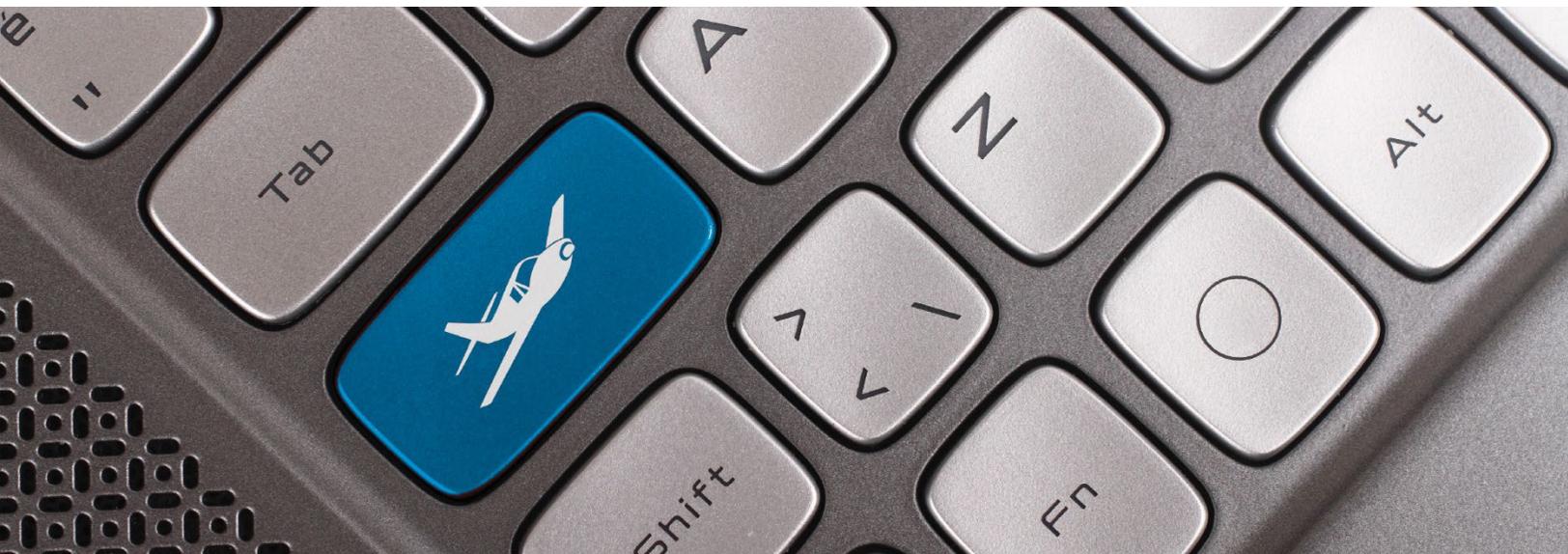
These arrangements can be extended by the concept of an authorized supply chain in which all operational participants in a transaction are approved by Customs as meeting specified standards in the secure handling of goods. Consignments passing from origin to destination entirely within such a chain will be assessed ordinarily as low risk and can benefit from enhanced facilitation as they cross borders.

In the integrated Customs control chain, Customs carries out risk assessment for security on an on-going basis. This can commence on receipt of the initial export declaration, and be updated as further information becomes available at later stages, such as data from the cargo declaration. This on-going process avoids unnecessary duplication of controls.

At any point in the supply chain, where Customs has reason to suspect that a consignment presents a risk, they can ask for more information, carry out further enquiries, subject the goods to non-intrusive inspection, or open the consignment for physical examination. Goods are released (for export or import) as soon as all Customs formalities have been met. Customs will, within a specified time limit, notify the party having submitted prescribed information whether the goods can be loaded, unloaded or released. Consignments being moved by AEOs within a secure supply chain enjoy enhanced facilitation, such as priority treatment for examination and clearance.

Customs at the office of departure will usually take action to enable the office of destination to identify the consignment and to detect any unauthorized interference. In addition, the Customs administrations at departure and destination should agree to use an electronic messaging system to exchange Customs data. In particular, this should apply to control results and arrival notifications for high-risk consignments.

As part of the integrated Customs control chain, Customs administrations along the supply chain may have routine Customs-to-Customs data exchanges, in particular for high-risk consignments.



## Digitalization and information management

Digitalization involves the use of digital technologies to change a business model and provide new revenue and value-producing opportunities. Digital cargo platforms, which allow the exchange of information between interested parties (e.g. cargo community systems), are increasingly common among supply chain stakeholders. Customs are usually participants in such systems in order to access data required for risk assessment. Modern Customs administrations use automated systems to manage security risks and, in so doing, seek globally interoperable standards to avoid the burden of different sets of requirements to secure and facilitate commerce. To be accepted, emerging standardization efforts should be founded on the principle of interoperability so that they may connect multiple domains and facilitate compliance with varying domestic and intergovernmental requirements, while fully respecting privacy and meeting cybersecurity needs.

For the purpose of standard and harmonized Customs data requirements at import and export, the WCO has developed the WCO [Data Model](#), which defines a maximum set of data for the accomplishment of export and import formalities and the electronic message formats. The Data Model includes the data necessary for Customs control and risk assessment purposes, as well as data elements required by other border agencies.

In addition to demonstrating to the world the critical role of air cargo and global supply chains, the COVID-19 pandemic has shown supply chain stakeholders the importance of digital technologies that allow supply chain actors to socially distance or remotely fulfil their duties during urgent situations with minimal disruption. ICAO, the WCO and other stakeholders are increasing their collaboration to develop innovative, common solutions to ensure the safety and health of workers along the supply chain, as well as the increased operational efficiency and reliability of air cargo. Through digitalization, processes will become simplified, redundancies will be eliminated, and the environmental footprint of the legacy, paper-based operating environment will eventually give way to a digital eco-system.

## Advance Information

Customs authorities have been using Pre-Arrival Advance Cargo Information (ACI), based on the provisions set out in the WCO's SAFE Framework of Standards, for a number of years as an essential tool in the process of targeting and risk assessment of shipments for security and facilitation. Now, the possible use of Pre-Loading Advance Cargo Information (PLACI) as part of a multi-layered risk-based approach to air cargo security is also being considered as an additional optional layer to the risk assessment continuum. Determining how electronic PLACI can be used to support risk management in air cargo security is one of the areas on which ICAO and the WCO are currently working together.

Possible benefits of adopting a PLACI system are as follows:

- Additional layer of security, increasing the effectiveness of a multilayered system and risk-based approach;
- Focus on, and easier identification of, security high-risk air cargo shipments;
- Avoidance of unnecessary delays for low-risk air cargo shipments;
- Meeting the needs of Customs and aviation security through a single, joint process, avoiding duplication;
- Flexibility to adapt to diverse supply chain models providing comparable security outcomes; and
- Facilitation of movements of cargo throughout global supply chains, which are complex, cross-border, and multi-modal.

Currently, there are five PLACI programmes in operation and under development including the US ACAS System, EU Import Control System 2, the Canadian PACT, the UK PreDICT and the UAE system. These systems are not part of ICAO Annex 17 – *Aviation Security* SARPs, and are implemented as an additional security layer by these States.

## WCO regulatory framework *(continued)*

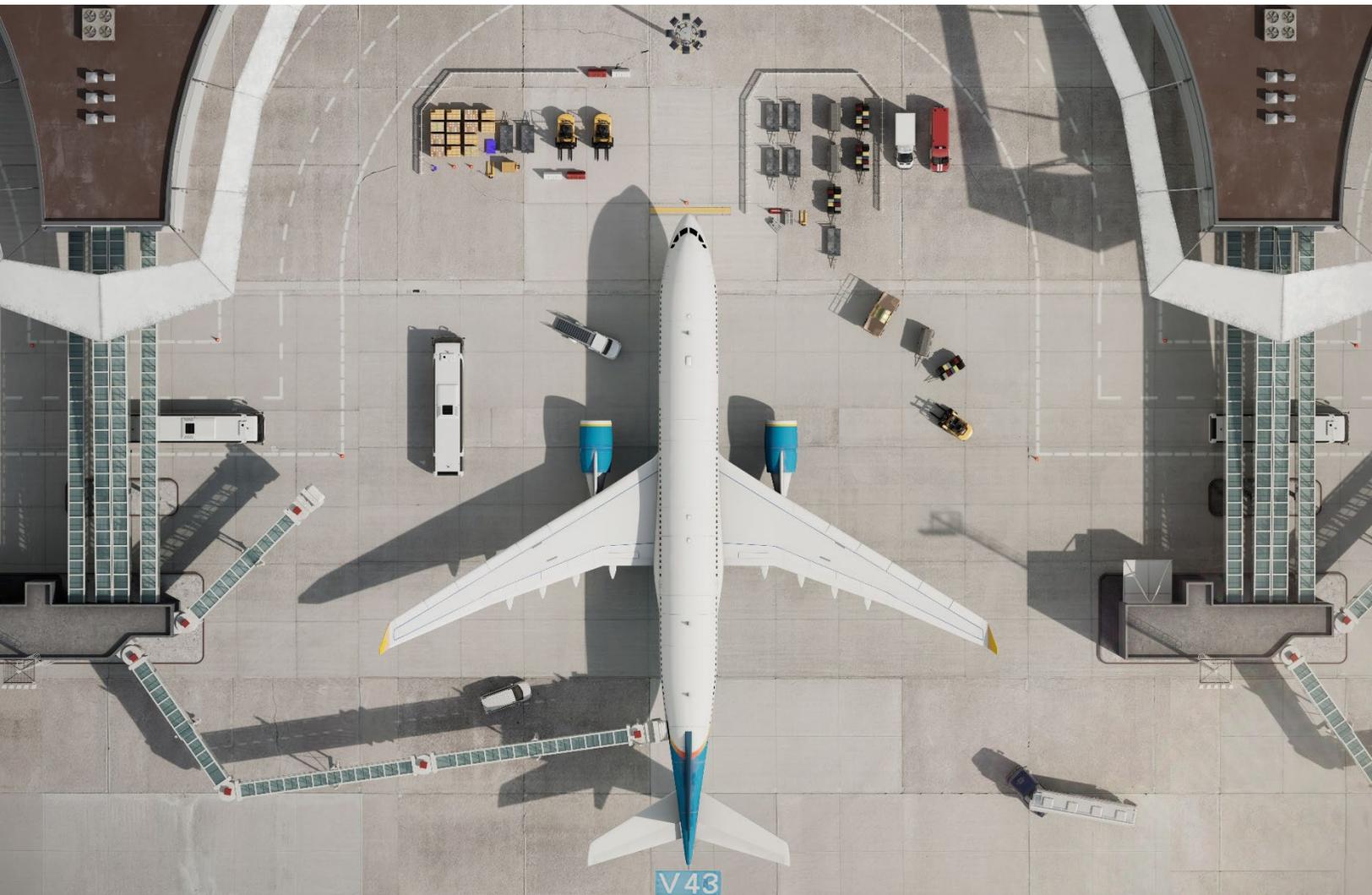
### The WCO Framework of Standards on E-Commerce

The WCO E-Commerce FoS, first adopted in June 2018 and updated in June 2022, provides 16 baseline global standards with a focus on the exchange of advance electronic data for effective risk management and enhanced facilitation of the growing volumes of cross-border small and low-value Business-to-Consumer (B2C) and Consumer-to-Consumer (C2C) shipments, through simplified procedures with respect to areas such as clearance, revenue collection and return, in close partnership with e-commerce stakeholders.

It also encourages the use of the Authorized Economic Operator (AEO) concept, non-intrusive inspection (NII) equipment, data analytics, and other cutting-edge technologies to support safe, secure and sustainable cross-border e-commerce.

The E-Commerce FoS is supplemented by a package of tools containing detailed guidance and good practices to support the implementation of the Framework.

The [E-Commerce Package](#) can be consulted on the WCO website and is available in both English and French.



## Joint ICAO – WCO Guidelines/Statement

During the intersession, the ICAO and WCO Secretariats and Members actively engaged to develop several joint guidelines to support Members to enhance collaboration to foster and facilitate trade.

### *Joint Guidelines on the alignment of Customs and Aviation Security programmes (AEO vs RA/KC)*

As mentioned above, the Authorized Economic Operator (AEO) programme and Regulated Agents/Known Consignors (RA/KC) are the two security programmes developed by the WCO and ICAO.

While there are differences in these security programmes, there are many similarities too. The WCO and ICAO have undertaken to enhance cooperation between Customs and Aviation Security (AVSEC) authorities and promote alignment and synergies between both supply chain security programmes.

ICAO's *Aviation Security Manual* includes guidance on the approval of entities that hold or seek AEO status as RA or KC. In Standard 3, Pillar 3 of its SAFE FoS, the WCO encourages the alignment of the various programmes that are in place to enhance the security of the international supply chain.

The joint Guidelines aim to assist ICAO and WCO Members wishing to assess the similarities of their Customs and Aviation security secure supply chain programmes with the intention of further aligning these programmes, avoiding duplications, establishing a more efficient use of resources and strengthening supply chain security. This should ultimately lead to the simplification of procedures and the eradication of duplicative security requirements and controls, to the benefit of authorities and industry.

The joint guidelines can be found [here](#).

### *Joint Guiding Principles for Pre-Loading Advance Cargo Information (PLACI)*

The purpose of this document is to provide general guidance, principles, and a description of the risk assessment process to assist International Civil Aviation Organization (ICAO) Member States and World Customs Organization (WCO) Members considering the option of implementing a Pre-Loading Advance Cargo Information (PLACI) programme, as an additional layer, for aviation security purposes. It provides a useful starting point for further discussions between Customs and Aviation Security (AVSEC) authorities and the private sector with the goal of refining PLACI concepts and ensuring the optimum degree of alignment between existing and future PLACI programmes.

The Joint Guiding Principles can be found on both the [ICAO](#) and [WCO](#) websites in several languages.

### *Joint Statement by the ICAO and WCO Secretary Generals*

In the wake of the COVID-19 pandemic, ICAO and the WCO worked closely together and published a Joint Statement calling on governments to demonstrate maximum flexibility with respect to border clearance and air transport supply chain operations essential to the effective distribution of COVID-19 vaccines and related medical supplies.

Signed by the ICAO and WCO Secretary Generals, the Joint Statement urged the rapid establishment of the infrastructure needed to support end-to-end vaccine storage and logistics for public supplies.

Improved open collaboration between the aviation and Customs communities and partnering organizations was also strongly emphasized.

ICAO and the WCO are, furthermore, encouraging countries to designate required aviation staff as 'key workers' providing an essential service, in alignment with the WHO's Roadmap for Prioritizing Uses of COVID-19 Vaccines.

More details on the Joint Statement can be found on both the [ICAO](#) and [WCO](#) websites in several languages.

## General cargo documents flow

The following business process overview (Figure 6) describes the physical flow of goods and the information flow between the different stakeholders involved in the air cargo supply chain. The Figure depicts a process wherein a freight forwarder consolidates shipments from various

shippers into a single consignment at origin and performs brokerage activities and delivery at the final destination.

There are 14 main documents that may be used along the entire supply chain, as described in Table 1 on the following page.

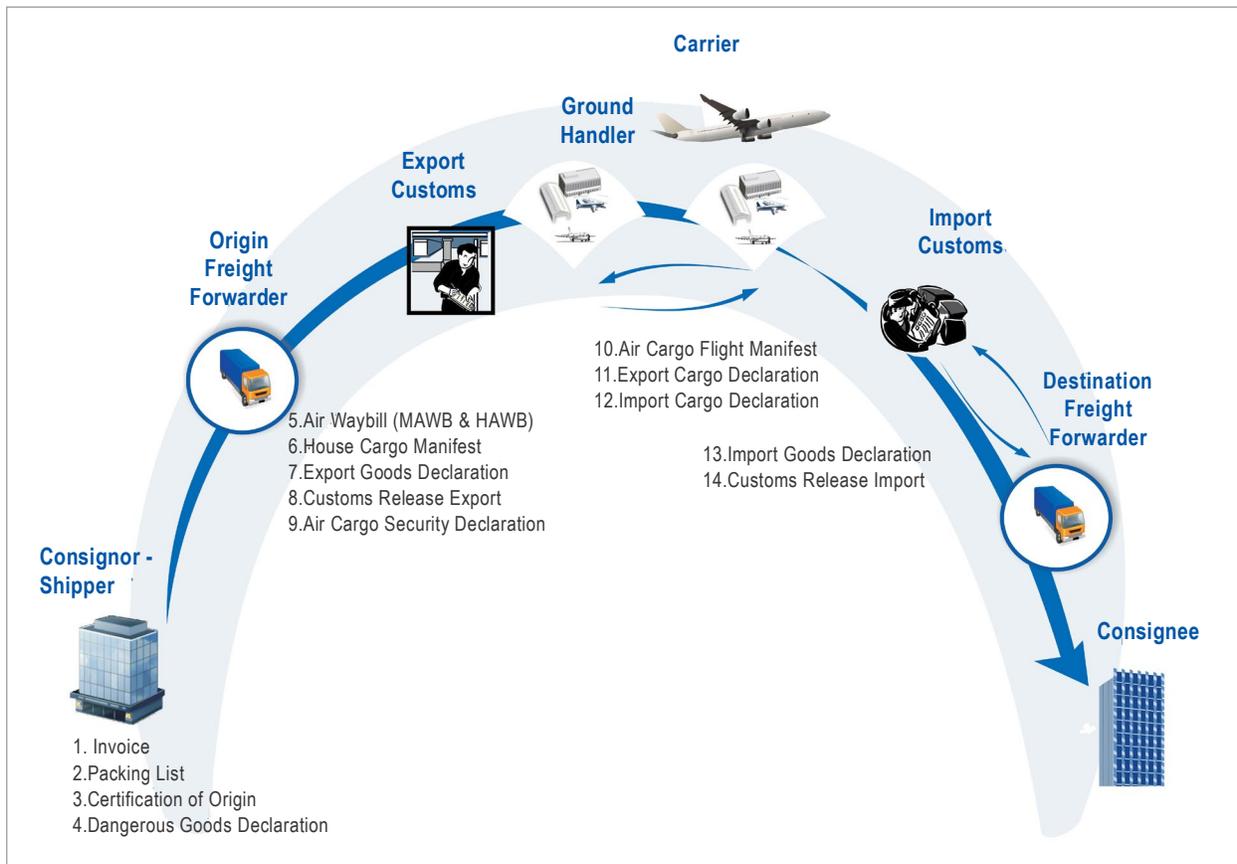


Figure 6 – General cargo: most common document flow for Customs

**Table 1: Supply chain document requirements**

|  |   |
|--|---|
| Air cargo manifest                     | A document issued by an aircraft operator, and available in hard copy or electronic form. This document contains the details of consignments loaded on to a specified flight and provides a list of all the air waybill and master air waybill numbers referring to the goods loaded on to an aircraft. The nature of the goods, weight, and number of pieces composing each consignment on a specified flight, and the unit of loading used, are also identified in this document.   |
| Air waybill                            | A document prepared by or on behalf of a shipper that evidences the contract between the shipper and aircraft operator(s) for the carriage of goods over routes of the operator(s). Air waybills have several purposes, but their two main functions are as a contract of carriage (behind every original air waybill are the conditions of contract for carriage), and as evidence of the receipt of goods. An air waybill is the most important document issued by an aircraft operator either directly or through its authorized agent (freight forwarder), and covers the transport of cargo from airport to airport. Air waybills have eleven-digit numbers used to make bookings and to check the status of a delivery and the current position of the shipment. The first three digits are the aircraft operator prefix. |
| House air waybill                      | A freight forwarder offering a consolidation service will issue its own air waybill to the shipper, called a house air waybill, which may act as a multimodal transport document. The house air waybill and the forwarder's general conditions may be seen as a part of the contract between the freight forwarder and each shipper whose goods have been consolidated. There are two reference numbers on a house air waybill, the number of the master air waybill to which it is linked and the house air waybill number itself, which is always different from one freight forwarder to another, without limitations or standard digits, and which may be used to trace a shipment through the freight forwarder.   |
| Master air waybill                     | Master air waybills are issued by or on behalf of freight forwarders offering a consolidation service. This document specifies the contract between a freight forwarder (or consolidator) and aircraft operator(s) for the transportation of goods originated by more than one shipper but destined for the same final State, airport or other destination.<br>Master air waybills are linked to several house air waybills, and the master number can be used to trace a shipment with an aircraft operator.   |
| Certificate of Origin                  | A specific form identifying the goods, in which the authority or body empowered to issue it certifies expressly that the goods to which the certificate relates originate in a specific State. This certificate may also include a declaration by the manufacturer, producer, supplier, exporter, or other competent person.  |
| Consignment security declaration (CSD) | A consignment security declaration is a document used to establish the security status of cargo. It allows tracking of the security status of cargo and mail throughout its movement within the secure supply chain. This document helps to ensure that regulated agents, known consignors, and aircraft operators are held accountable regarding the security controls applied to cargo. A consignment security declaration, which may be in hard copy or electronic form, should be issued by the entity that renders and maintains the cargo secure. A CSD template can be found in the ICAO <i>Aviation Security Manual</i> (Doc 8973 — Restricted).  |
| Customs release export                 | A document whereby a Customs authority releases goods under its control to be placed at the disposal of the party concerned for export (also called a Customs delivery note).   |
| Customs release import                 | Same as above but for import  |
| Dangerous Goods Declaration            | Document(s) issued by the consignor or shipper to certify that the dangerous goods being transported have been packaged, labelled, and declared in accordance with the provisions of international standards and conventions.   |
| Export cargo declaration (departure)   | A generic term applied to the document, also referred to as a freight declaration, providing the particulars required by Customs concerning outbound cargo carried by commercial means of transport.  |
| Export goods declaration               | A document whereby goods are declared for export Customs clearance.   |
| House cargo manifest                   | A document containing the same information as a cargo manifest as well as additional details on freight amounts, etc.   |
| Import cargo declaration (arrival)     | Same as above but for inbound cargo   |
| Import goods declaration               | A document whereby goods are declared for import Customs clearance.   |
| Invoice                                | A document required by Customs in an importing State in which an exporter states the invoice or other price (e.g. selling price or price of identical goods), and specifies costs for freight, insurance, and packing, as well as terms of delivery and payment, for the purpose of determining the Customs value of goods in the importing State.  |
| Packing list                           | Documents specifying which goods are in each package.   |

# Air Cargo Supply Chain and Associated Documents

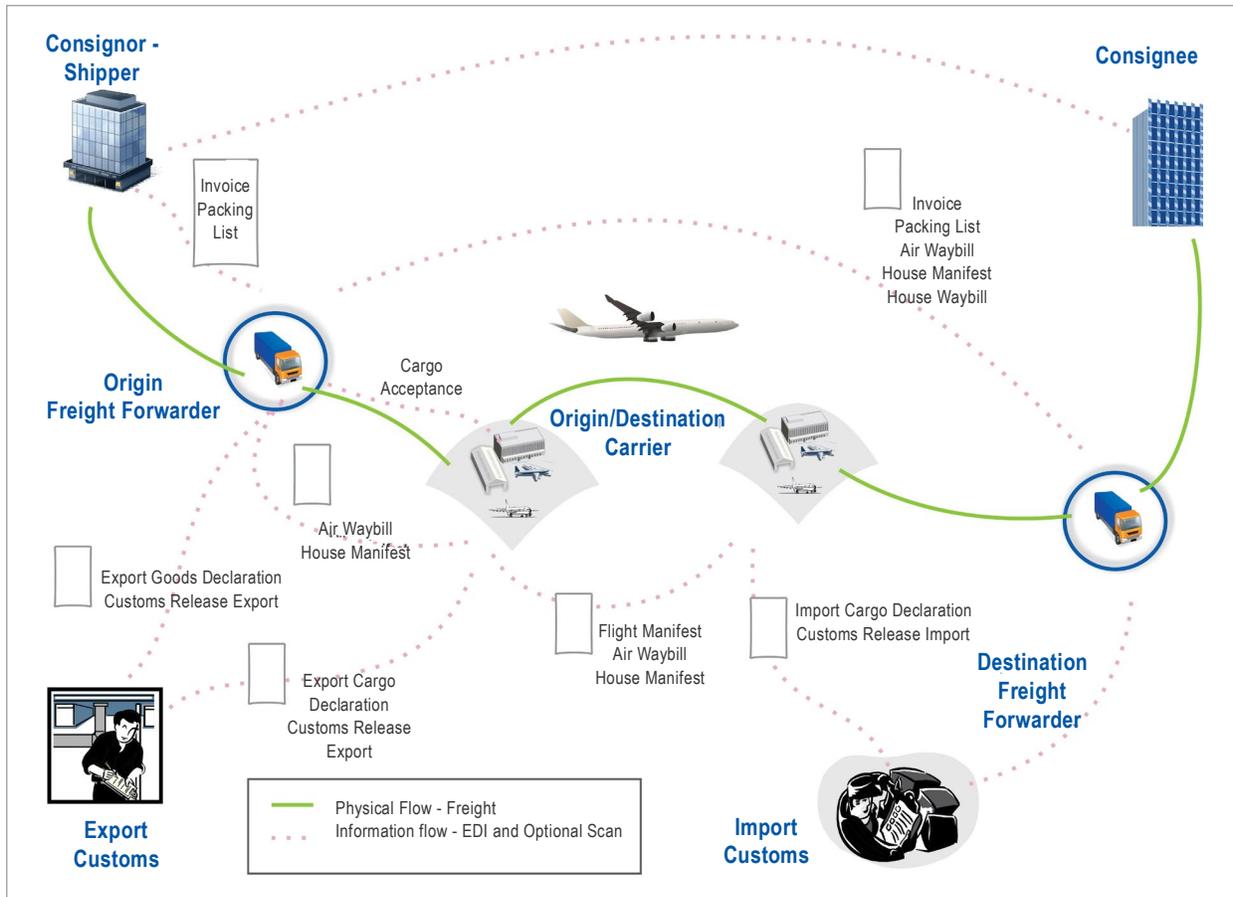


Figure 7 – Business process overview: exchanges between stakeholders

## General cargo documents flow (continued)

The origin freight forwarder, when acting as a Customs agent or broker, using the information received from the shipper (consignor), prepares and sends an export goods declaration to Customs. Customs releases the goods for export and notifies the origin freight forwarder by electronically sending a Customs release for export. The origin freight forwarder prepares the house manifest as well as the master air waybill and sends them to the origin aircraft operator. If not submitted by the aircraft operator, the freight forwarder may, on behalf of the operator or the shipper, submit advance security risk assessment information and, where applicable, PLACI (7+1 data elements) to the destination Customs. Customs can then perform an advance security risk assessment and,

depending on the results and on the State, Customs may provide an electronic response. The origin freight forwarder may send a pre-alert to the destination freight forwarder to allow the receiving freight forwarder to prepare a Customs clearance in advance. The pre-alert may be comprised of the invoice, packing list, house waybill, house manifest, and master air waybill, or other required documents.

If a Customs agent or broker is involved, the destination freight forwarder will transmit the necessary pre-alert information to the Customs agent or broker at the destination.

In addition to the 7+1 data elements required for PLACI submissions, other consignment data can be helpful in risk assessment and avoid the necessity of further mitigation measures for a shipment. Thus, industry entities can optionally provide, and regulators can accept, additional cargo information about a shipment.

The origin freight forwarder presents the shipment to the origin aircraft operator who performs the necessary checks before receiving the freight as 'ready for carriage'.

A ground handling agent can receive freight on behalf of an aircraft operator.

The origin aircraft operator transmits to export Customs an export cargo declaration and receives a response from export Customs to release the cargo for departure. The origin aircraft operator manifests the flight and transmits at "wheels up" a pre-alert to the destination operator. This pre-alert is comprised of the flight manifest as well as the house manifest and master air waybill. Prior to flight arrival, some national Customs authorities may require the destination operator to transmit electronically a conveyance report indicating the flight identification and estimated time of arrival.

Some of an aircraft operator's activities can be performed by ground handling agents on behalf of the operator.

At or before a flight's arrival, the destination aircraft operator transmits to import Customs an import cargo declaration and receives a response to release the cargo to be delivered to the destination freight forwarder or other 'deliver to' party. The destination freight forwarder collects the freight, where applicable, and transmits the import goods declaration (often prepared in advance) to import Customs to clear the goods (physical and fiscal release). Import Customs performs a risk assessment and, depending on the results, may request additional information from the destination freight forwarder (e.g. invoice, packing list, or other required regulatory documents).

If a Customs agent or broker is involved, the Customs clearance is performed by the agent or broker and not by the destination freight forwarder. The agent or broker may be instructed by the freight forwarder or by the importer (sometimes also the consignee).

Import Customs may transmit a response electronically to the destination freight forwarder (or other declaring parties) to release the goods for import. When the goods are cleared, the destination freight forwarder ensures that the goods are loaded on to the means of transport that delivers the goods to the final consignee or to another identified delivery place.

# Air Cargo Supply Chain and Associated Documents

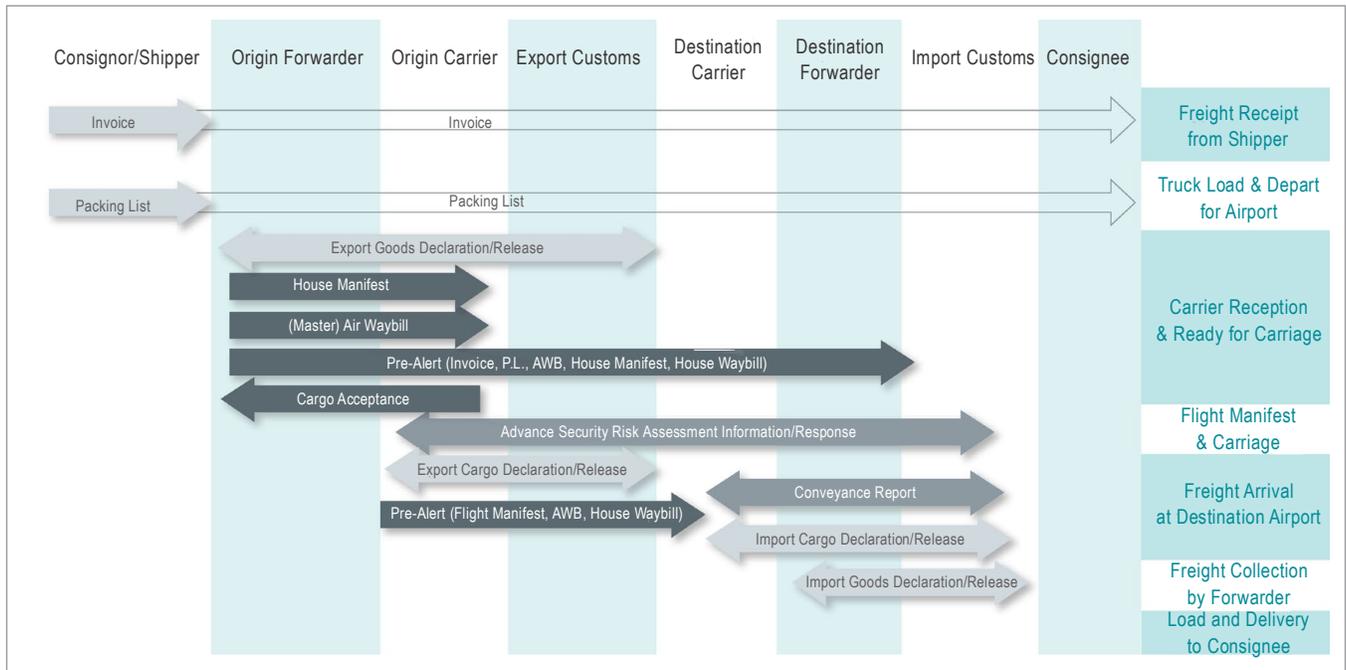


Figure 8 – Air cargo supply chain document sequence

## Express model documents flow

The express delivery industry operates highly sophisticated and fully integrated information technology (IT) systems, allowing the processing of supply-chain-relevant data and managing of information flow ahead of the associated physical flow of cargo.

These proprietary IT systems enable a fully paperless environment necessary to provide express delivery services. Express delivery companies prefer the electronic submission of required official documentation such as manifests and goods declarations. Supporting documentation such as a commercial invoice is digitized and is available for electronic submission or direct access where appropriate and requested. However, where paper-based documentation is still required by national law, these documents can be produced on demand and as required.

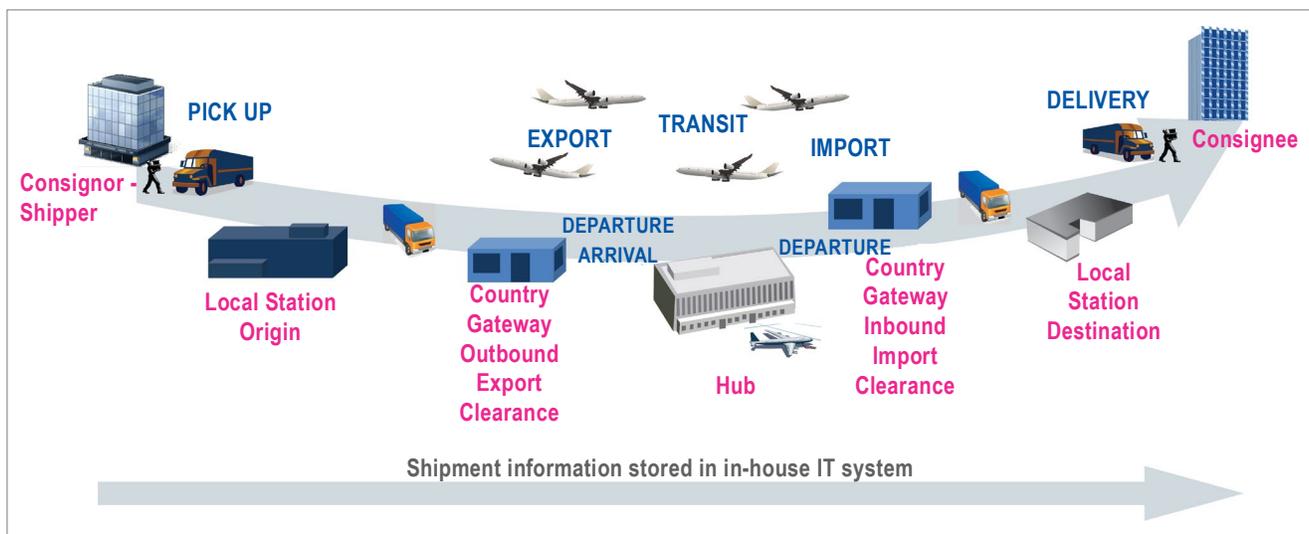


Figure 9 – Information flow in the express model

# Mail

International mail exchanged between designated operators is governed by the Acts of the Universal Postal Union (UPU). Mail, in the context of this publication, is understood to mean anything that requires a Customs declaration, and excludes postcards and other correspondence. The first link in the postal supply chain is the acceptance of mail from senders in exporting designated operators. Senders are asked to confirm at the point of acceptance that an item does not contain anything that is dangerous or that is prohibited by the importing post's legislation. A Customs declaration form is then attached to the item, and the declaration data is transmitted to the destination post.

After further processing at exporting post facilities, including eventual examination by exporting Customs, mail is tendered by the exporting post to the aircraft operator. Every mail consignment is accompanied by postal transport documentation (CN document, not cargo) for aircraft operator purposes, and operational documentation for importing post purposes. Mail is security screened before being loaded on to an aircraft. Article 8 of the Universal

Postal Convention specifies the responsibility of the designated operator regarding screening, security and safety. In addition, some postal agents have been approved to work as regulated agents and are thus authorized to screen mail. Some designated operators have also been authorized as AEOs.

Mail is then transported to the airport serving the importing post, either directly or after passing through one or more designated operators or airports in transit. Here it is handed over by the delivering aircraft operator to the importing post. Import Customs then examines all incoming mail items to determine their admissibility and assess Customs duties where applicable. After clearance by import Customs, mail items are operationally processed in the facilities of the importing post. Finally, they are delivered to the receiver.

Figure 10 below provides a simplified depiction of the postal supply chain.

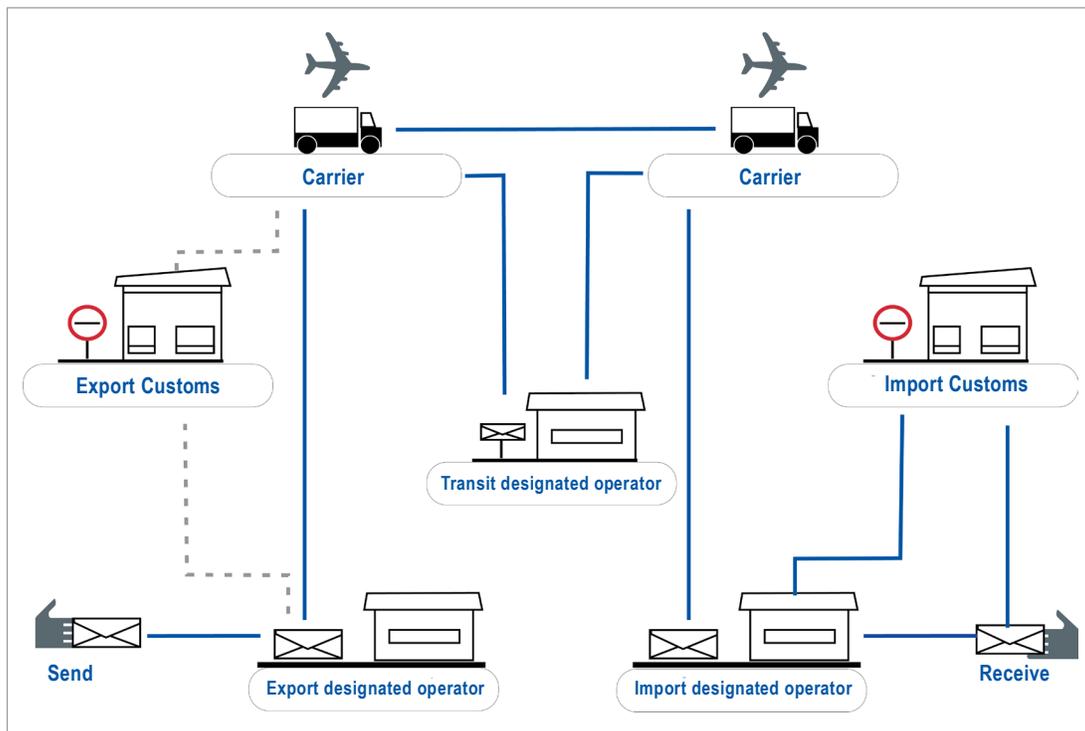


Figure 10 – Postal supply chain

The movement of international mail requires three sets of information exchanges, occurring between: designated operators; designated operators and aircraft operators; and designated operators and Customs. Such information exchanges are increasingly based on electronic messages. Standardized messages have been developed for each of the three categories of information exchanges. The WCO and International Air Transport Association (IATA) have closely collaborated with the UPU in the development of post-Customs and post-aircraft operator messages, respectively.

The UPU is also collaborating closely with the WCO, ICAO and other organizations to develop a postal model that provides advance information electronically for security purposes to appropriate stakeholders. In 2012 the UPU Congress amended the Universal Postal Convention to introduce the provision of such advance information, which was made mandatory in 2021.



The UPU and the WCO have jointly developed CUSITM (Customs Item) and CUSRSP (Customs Response) joint messaging standards. CUSITM pre-advice messages are intended to be sent from the designated operator receiving an item to the local Customs authority. Such messages, as shown in Figure 11, provide Customs with pre-advice regarding an item, including the sender, addressee, contents, postage paid, and declared value. This information allows the Customs authority to decide whether or not an item should be held for security inspection and whether taxes and duties should be assessed. CUSRSP messages, intended to be sent from a Customs authority to a designated operator (usually in response to a CUSITM pre-advice message), advise the designated operator on whether an item can be released for onward processing or whether it must be retained for security inspection or the assessment of taxes and duties.

The UPU has developed a Customs Declaration System (CDS) to process end-to-end electronic Customs declarations between designated operators and Customs/border control. The system is based on the WCO-UPU joint messaging

standards. This software provides extensive functionalities to both postal and Customs/border control users. The Customs Declaration System will facilitate controls and promote postal e-commerce.

UPU/ICAO collaboration has intensified due to increased aviation safety and security requirements. Both organizations participate in the work of each other's security bodies, and training material for use by postal staff is being developed in collaboration with ICAO. The UPU has also developed security standards (S58 and S59) that are modelled on ICAO Annex 17 requirements and the WCO SAFE Framework requirements, and observance of these is now mandatory for UPU member countries. A Memorandum of Understanding between ICAO and the UPU was signed in 2009 and updated in 2015, to include provision for a Contact Committee.

The WCO and UPU also signed a Cooperation Agreement in May 2022, and regularly cooperate on issues of mutual interest, including postal chain security through a Contact Committee.

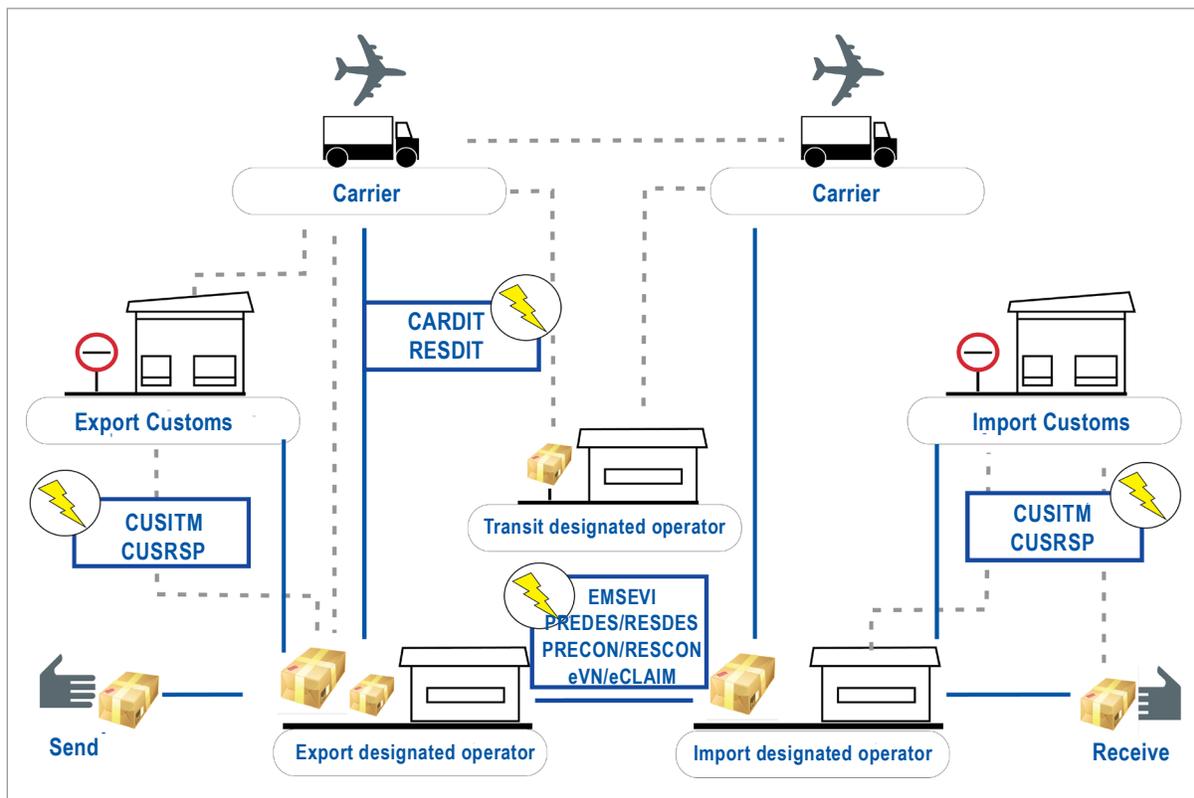


Figure 11 – Electronic information exchanges - Digital Data flows

## Economic benefits of air cargo services

Air cargo transport enables nations, regardless of their geographic location, to efficiently connect to distant markets and global supply chains in a speedy and reliable manner. This is vital for implementing best international business practices, including just-in-time inventory management and build-to-order production.

The industry's ecosystem continues to create millions of jobs worldwide, aiding the growth of the global economy, and has supported the growth of e-commerce, including cross border e-commerce.

In absolute, as well as relative numbers, the impact of air cargo on economies is significant and eclipses passenger travel, even in pre-COVID times:

|                      | 2019  | 2020  | 2021E |
|----------------------|-------|-------|-------|
| Trade Carried by Air | 6,489 | 5,964 | 7,467 |
| Tourism Spend by Air | 850   | 310   | 354   |

Source: IATA<sup>4</sup> (measured in USD billions annually)

Air cargo services are a tremendous enabler for economic progress in developing countries, since they connect markets across continents. High value electrical components and perishable products such as food and flowers are transported all over the world, providing steady employment and sustainable economic growth to regions that benefit from such trade.

Air transport plays a pivotal role for Small Island Developing States (SIDS), Landlocked Developing Countries (LLDCs) and Least Developed Countries (LDCs), allowing them to overcome infrequent boat services or poor infrastructure for ground transportation. Air cargo service routes are regarded as regional lifelines for these areas.

Aviation's speed and reliability are also a key factor in the delivery of urgently needed assistance during emergencies caused by pandemics, natural disasters, famines and wars. Air drops are among the first responses of aid agencies to stem humanitarian crises. Air cargo also plays a vital role in the rapid delivery of medical supplies and organs for transplantations worldwide.

The role air cargo has played in delivering medical supplies, including personal protective equipment and vaccines, during the COVID-19 pandemic has been instrumental in fighting it. Air cargo has also proved pivotal in keeping the air transport industry alive, as it continued to operate at nearly full capacity while passenger operations were almost halted due to international travel restrictions.

According to the Air Transport Action Group (ATAG), the largest economic benefit of increased air cargo connectivity lies in its impact on the long-term performance of the wider economy through enhancement of the overall level of productivity. It opens up new markets, boosts exports and, at the same time, increases competition and choice in the home market from foreign-based producers.

4 Economic Performance of the Airline Industry, 4 October 2021. International Air Transport Association (IATA), <https://www.iata.org/en/iata-repository/publications/economic-reports/airline-industry-economic-performance---october-2021---report/>

# 65.6

million tonnes of freight handled by air in 2021

# 68.4

million tonnes of freight handled by air in 2022 (estimated)



### Business Case: Zhengzhou Airport Economy Zone (ZAEZ)

In November 2011, Chinese city Zhengzhou opened a 5-square-kilometre, Customs-free bonded zone on and adjacent to the airport for high-value, time-critical manufacturing and distribution. Foxconn located a manufacturing campus there that employs 240,000 workers assembling Apple's iPhones and other digital devices. Smartphone output from this campus doubled the value of Henan province exports between 2011 and 2012. A number of new projects up to US \$1 billion each are currently under construction in the ZAEZ. These include, among others, Amer International Group, Cainiao Networks, Fair Friend Precision Machinery Park, IBM, and Microsoft. In 2013, there were 48 new major projects signed, worth a total of US \$24.3 billion.

*(Source: "Gateway Airports: Commercial Magnets and Critical Business Infrastructure", 2014, by John D. Kasarda, Ph.D.)*

## The regulatory framework

Air transport connectivity is the movement of passengers, mail and cargo involving the minimum number of transit points, which makes the trip as short as possible, with optimal user (shipper, consignee or passenger) satisfaction, at the minimum price possible.

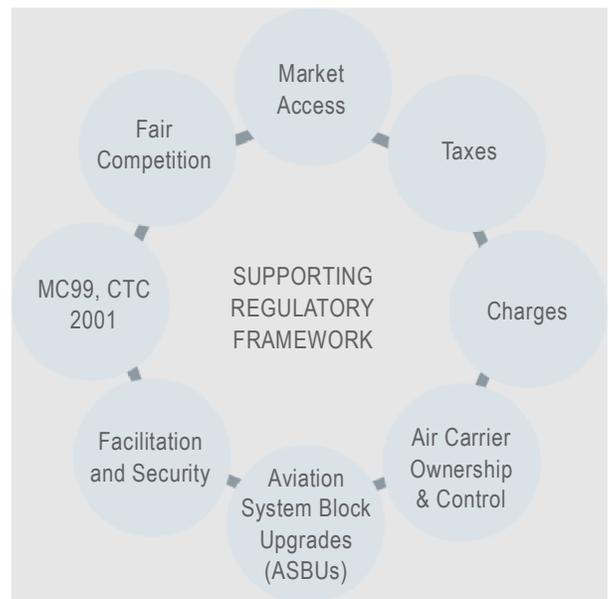
In order to optimize connectivity, a strong supporting framework is needed. This includes market access and liberalization, optimal use of air navigation services (ANS), aircraft and airport systems, as well as enhanced facilitation and security procedures. For the full benefits of air connectivity to materialize, intermodal connections and efficient airline operations are essential.

ICAO actively contributes to improving connectivity in several areas by fostering various initiatives within that framework. This includes the development by ICAO of international agreements to liberalize air transport, including air cargo services.

### Business Case: Kenya

In Kenya, 90,000 jobs (and 500,000 livelihoods) depend on the cut flower industry, which supports 1.6% of the national economy, generating around \$1 billion in foreign exchange each year. (Source: Kenya Flower Council, 2012) Horticulture has been Kenya's fastest growing sector and is ranked third after tourism and tea as a foreign exchange earner. Over 90% of fresh horticultural products are air freighted. An estimated 70% of the flowers are grown at the rim of Lake Naivasha, northwest of Nairobi. There are good road network connections between the Lake Naivasha growing area and Nairobi's Jomo Kenyatta International Airport, a distance of about 80-100 kilometres. Flowers picked in the morning reach markets in Amsterdam by evening.

(Source: "Air Freight: A Market Study with Implications for Landlocked Countries", The World Bank, 2009)



## The regulatory framework *(continued)*

ICAO also provides support to States to implement multilateral arrangements, such as the Montreal Convention 1999 (MC99)<sup>5</sup>, which facilitates the use by airlines of electronic records, including electronic air waybills (e-AWB), and the Cape Town Convention 2001 (CTC 2001)<sup>6</sup>, enabling the acquisition of more modern aircraft.

Improved air connectivity is a key element to economic growth and development through air cargo transport.

The WCO supports enhanced facilitation of air shipments while ensuring safety and security of the air cargo supply chain through its several instruments and tools, for example the RKC, Risk Management Compendium, WCO Data Model, Dematerialization of Supporting Documents, Coordinated Border Management Compendium, Single Window Compendium, and Customs-Business Partnership Guidance.

# 34.6%

of global trade by value  
is transported by air (2014)

*(Source: Industry High Level Group (IHLG),  
"Aviation Benefits Report", 2017)*

# 98%

accuracy in predicting the World  
Air Freight growth and the World  
GDP growth (and vice-versa)

*(Source: World Bank,  
"World Development Indicators", 2002)*

<sup>5</sup> Convention for the Unification of Certain Rules for International Carriage by Air, Montreal, 1999.

<sup>6</sup> Convention on International Interests in Mobile Equipment, Cape Town, 2001.

### International Organizations – ICAO

The International Civil Aviation Organization was created in 1944 by the [Convention on International Civil Aviation \(Chicago Convention\)](#) to promote the safe and orderly development of international civil aviation throughout the world. This specialized agency of the United Nations serves as the forum for cooperation in all fields of civil aviation among its 193 Member States, and sets Standards and Regulations necessary for aviation safety, security, efficiency and regularity, as well as for aviation environmental protection. With the collaboration of Member States, ICAO plays an essential leadership role in the field of [aviation security](#), with the ultimate goal of enhancing civil aviation security worldwide. To this end, its efforts are focused primarily on developing and coordinating an effective global policy and legal framework in response to the evolving threat to civil aviation. The most important regulatory function performed by ICAO is the formulation and adoption of Standards and Recommended Practices (SARPs) for international civil aviation.

Aviation-security related SARPs are set out in [Annex 17](#) to the Chicago Convention and all provisions related to facilitation are in [Annex 9](#). A Standard is a specification to which Contracting States are obligated to conform unless they notify the impossibility of compliance, while a Recommended Practice is a specification the application of which is desirable.

The [Aviation Security Manual \(Doc 8973 – Restricted\)](#) assists Member States in implementing Annex 17 SARPs by providing guidance on how to apply the provisions. Annex 17 and the Manual are constantly reviewed and amended in light of new threats and technological developments that have a bearing on the effectiveness of measures designed to prevent acts of unlawful interference. In light of the October 2010 attempted acts of sabotage, in which improvised explosive devices were found concealed in ink cartridges on cargo aircraft, ICAO played an important role in developing new SARPs that are in line with new threats faced by the air cargo environment.

Further, increased cooperation on air cargo security and facilitation frameworks with industry stakeholders and other international organizations, such as the WCO and UPU, demonstrate the importance given to air cargo security and facilitation by the international community. The development of technical expertise and the creation of working groups dedicated to air cargo security are also part of these efforts to increase both the level and quality of air cargo security baseline requirements implemented worldwide. In addition, ICAO provides assistance to States in their efforts to implement Annex 9 and Annex 17 SARPs, including air cargo security aspects. Finally, ICAO plays an important role in monitoring the level of implementation of Annex 17 (and aviation security related SARPs of Annex 9) via its Universal Security Audit Programme – Continuous Monitoring Approach (USAP-CMA).



### International Organizations – WCO

Established in 1952 as the Customs Co-operation Council, the main mission of the World Customs Organization is to ensure the harmonization and standardization of Customs procedures and the development of Customs techniques in order to facilitate and secure international trade. The WCO is a setting in which governments can compare policy experiences, seek answers to common problems, identify best practices and standards, and coordinate Customs policies. The organization is also noted for its work in areas covering the development of global standards relating to trade facilitation, commodity classification, valuation, and rules of origin, as well as compliance issues, the security of the end-to-end supply chain, protection of the health and safety of people, the promotion of integrity, and sustainable Customs capacity-building initiatives.

As an intergovernmental organization, the WCO is the centre of excellence that provides leadership in Customs matters at the international level and advises Customs administrations worldwide on management practices, tools, and techniques to enhance their capacity to implement efficient and effective cross-border controls, along with standardized and harmonized procedures to facilitate legitimate trade and travel, and to interdict illicit transactions and activities. The WCO has gained a reputation as a positive force, enabling governments to attain their policy objectives through strengthening cooperation between Customs administrations, and implementing WCO instruments and international best practices, as global challenges transcend borders and call for worldwide responses.

Securing trade and combatting illegal trafficking and commercial fraud without disrupting legal trade requires a high degree of cooperation between States, and the application of uniform methods and standards which are recognized and applied by all. As a frontline border agency dealing primarily with the cross-border movement of goods, people and means of transport, Customs is best placed to ensure the security of international trade, thus contributing to national economic competitiveness.

The WCO, with its 184 Members that are responsible for processing over 98 per cent of world trade, aims to be the voice of Customs and the global centre of excellence for the development and delivery of effective, efficient, and modern Customs procedures and standards, underpinned by international cooperation, knowledge sharing, good

governance and leading capacity-building programmes, thereby meeting the needs of governments and society for a better world by being visionary, relevant and indispensable.

### International Organizations – UPU

Created in 1874 by the Treaty of Berne, the Universal Postal Union is an intergovernmental organization and specialized agency of the United Nations based in Berne, Switzerland. The rules applicable to the international postal service are given in the Universal Postal Convention, which are binding on all 192 member countries.

The UPU is the primary forum for cooperation between governments, designated operators and other stakeholders from the worldwide postal sector. It maintains a universal network that provides modern products and services and works to stimulate mail volume growth and improve the quality of service for customers. National postal networks are interconnected through regulations, standards and technological applications that help ensure coherence and improve the quality of postal services throughout the world.

The global postal sector faces many challenges stemming from market liberalization, increased competition and evolving communication technologies. These challenges are changing the face of postal services worldwide. Designated operators today are diversifying into postal financial services, parcels and small-package delivery, logistics and postal e-services to meet these new market needs. UPU resources are being increasingly directed towards developing these new opportunities and meeting emerging challenges.

The UPU Secretariat, the International Bureau, has about 250 employees from all over the world, and provides logistical and technical support to the UPU's bodies. It serves as an office of liaison, information and consultation, and promotes technical cooperation among Union members in a wide range of areas, ranging from helping member countries improve their quality of postal services to developing postal e-services and managing relationships with Customs, aircraft operators, and standardization bodies. The UPU also operates the post sponsored top-level domain, a secure internet space for the postal industry to interconnect and secure global postal services.

## International Organizations – UPU (continued)

The UPU also has a long tradition in the areas of safety and security, which have their first origins in Customs controls. International mail has been subject to Customs controls since the time organized mail services were first established. Traditionally, individual postal packages and parcels have always been scrutinized at the point of acceptance for Customs purposes. With the advent of organized terrorism in the 1970s and early 1980s, postal security efforts were mainly directed towards the identification and elimination of explosives in the mail. Today, postal security units over the world work in cooperation with national law enforcement agencies to protect employees and customers, protect assets and revenue, and preserve the integrity of the mail. In response to the need to strengthen postal safety and security efforts worldwide and foster the development of a robust security culture within the global UPU community, the UPU established a Postal Security Group in 1996. The UPU also collaborates with other international and intergovernmental organizations to ensure that mail remains safe for transport.

## International Organizations – UNODC

The United Nations Office on Drugs and Crime (UNODC) was established in 1997 through a merger between the United Nations Drug Control Programme and the Centre for International Crime Prevention. Its mandate is to support Governments in the fight against illicit traffic in drugs, transnational organized crime and terrorism, under three international conventions:

- The United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances
- The United Nations Convention against Transnational Organized Crime
- The United Nations Convention against Corruption

The UNODC operates in all regions of the world through an extensive network of field offices. The three pillars of the work programme are capacity building in Member States to counter the illicit traffic of drugs, crime and terrorism; research and analytical work to increase knowledge and understanding of drugs and crime-related issues; and assisting States with the ratification and implementation of the relevant international treaties.

UNODC's technical support has always had a strong focus upon border management. Towards achieving this end, it has engaged not only nationally with Member States and their competent authorities but also in broader regional and global initiatives with international partners such as the World Customs Organization, the Universal Postal Union and Interpol among others, to strengthen practice, procedure and security at the border.

In 2004 UNODC and the WCO commenced the Container Control Programme-Sea (CCP-Sea), supporting, inter alia, trade supply security in the maritime sector. This initiative continues to expand and now operates in 102 ports in 73 countries. It has helped authorities to successfully identify and seize hundreds of maritime containers containing illicit goods, contraband and dangerous commodities.

In 2015, the UNODC and WCO partnered with ICAO to implement the Container Control Programme (CCP) in airports by applying the similar risk assessment methodology successfully employed by CCP in seaports and land border crossings. Inter-agency Air Cargo Control Units (ACCU'S) have so far been established in over 27 airports, resulting in regular seizures of narcotics, CITES and intellectual property rights (IPR) goods plus other illicitly trafficked goods. Air cargo security, trade facilitation and focused law enforcement activities have been consistent in all the ACCUs activities.

### National authorities – aviation security

As required by Annex 17, a unique appropriate authority for aviation security shall be designated in each State. This authority is usually the Ministry of Transport or the Directorate General of Civil Aviation (Civil Aviation Authority). The appropriate authority has several responsibilities and tasks aimed at implementing SARPs at the national level. Further, the appropriate authority devises air cargo policies and regulations to comply with international obligations, and to effectively manage the risk to the air cargo supply chain, bearing in mind known threats and vulnerabilities, with threat assessment provided by national intelligence assessment agencies.

The appropriate authority is responsible for approving, through a designated process, the regulated agent status of candidate entities. The appropriate authority ensures that the regulated agent security programme fully conforms to applicable regulations in force at the national level and provides for a satisfactory level of security for all cargo to be loaded on to an aircraft.

If the security programme is considered satisfactory, the appropriate authority conducts an on-site verification of the implementation, effectiveness and efficiency of the security measures detailed therein. Following successful validation, the entity is considered to be a regulated agent for a limited period of time. The appropriate authority continues its oversight in order to ensure that the security programme is updated as needed and that the level of implementation of security measures is maintained throughout the period of validity of the regulated agent agreement. To that end, it may exercise its right to require information or documents and to conduct inspections. The appropriate authority may suspend or withdraw the regulated agent agreement if deficiencies are identified or reported, and the entity cannot act as a regulated agent until the identified deficiencies have been corrected.



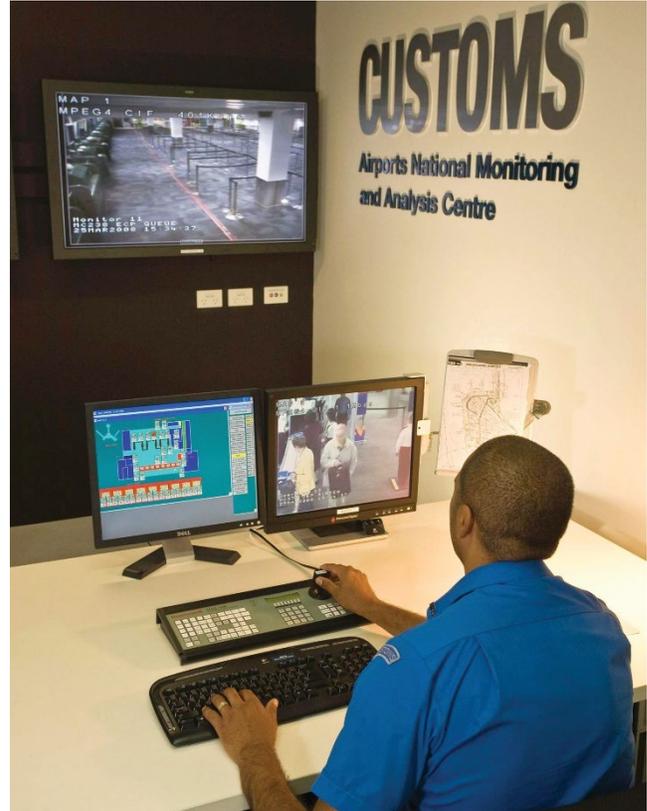
## National authorities – aviation security

*(continued)*

States should also enact the appropriate legislation or regulatory framework that establishes a known consignor regime, defining the security requirements to be implemented by known consignors, as well as the approval and revocation process for entities wishing to operate as known consignors, and the roles and responsibilities to enable the effective implementation of a known consignor security programme.

Prior to approval as a known consignor, an applicant should be inspected by the appropriate authority (or an entity appointed to act on its behalf) to confirm that national security requirements for known consignors are implemented efficiently on site.

If an applicant meets the necessary requirements, the appropriate authority may designate the entity as a known consignor and add its name to the official air cargo database or list administered by the appropriate authority. Guidance on security requirements for known consignors, including a model known consignor security programme template, can be found in the *ICAO Aviation Security Manual* (Doc 8973 – Restricted).



## National authorities – Customs

Customs is the national authority responsible for collecting and safeguarding Customs duties and for controlling the flow of passengers and goods, including animals, transport conveyances, personal effects and hazardous items, in and out of a territory.

Customs enforces the rules and regulations related to the prohibited or restricted import or export of goods and is well-positioned to play a role in coordinated border management, involving cooperation among all relevant authorities and agencies concerned with border security and regulatory requirements that apply to passengers, goods, and conveyances moved across borders. Within the coordinated border management framework, Members have set up Single Windows as facilities that allow parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfil all import, export, and transit-related regulatory requirements. Not only does this facilitate trade, it also makes risk management for government agencies more effective and efficient.

**ICAO and the WCO would like to thank the following stakeholders for their contribution to this publication. The sections below were developed by ACI, FIATA, GEA, IATA and TIACA respectively.**

### **ACI – Airports Council International**

Airports Council International (ACI), the only worldwide association of airports, has 717 member airport authorities, which operate 1,950 airports in 185 countries. ACI's mission is to promote professional excellence in airport management and operations, and this mandate is carried out through the organization's multiple training opportunities, as well as the Airport Service Quality customer service benchmarking programme, a wide range of conferences, industry statistical products and best practice publications.

Airports act as facilitators within the air cargo supply chain and provide the infrastructure and facilities that enable the smooth flow of trade by air cargo carriers. The relationship between the airport operator and the air cargo carrier will depend, to a large extent, on the type of air cargo operation and the mix of aircraft operations (all cargo, express carriers, all passenger carriers) and the specific requirements of each component.

Ensuring the security of air cargo at an airport depends upon the physical configuration of the airport, the relationship between all entities operating at the airport and the regulatory framework in place for the State.

### **FIATA – International Federation of Freight Forwarders Associations**

FIATA, (from the French *Fédération Internationale des Associations de Transitaires et Assimilés*, in English, International Federation of Freight Forwarders Associations), was founded in Vienna, Austria on 31 May 1926.

FIATA today is the leading non-governmental organization in the field of transportation and logistics, representing in excess of 40,000 companies employing up to 10 million people in more than 150 countries. Its institutional Membership consists of 112 Association Members with voting rights and over 5,600 Individual Members. FIATA is therefore best placed to represent the unique position of the forwarder in the global supply chain. Its Members' expertise touches on all aspects of international transport and logistics and is fostered through an autonomous training programme that is deployed in almost 100 countries.

FIATA actively pursues its mandate to define, craft and promote the role of the forwarder in international air cargo with strong efforts to improve the professional standards of forwarders in air cargo, in regards to facilitation, safety and security. All these objectives are enshrined in the FIATA statutes that are available on the FIATA website ([www.fiata.com](http://www.fiata.com)) together with a wealth of additional information on freight forwarding and logistics.

### **GEA – Global Express Association**

The Global Express Association is a non-governmental organization that represents the three leading express delivery carriers: DHL Express, FedEx, and UPS. GEA was established in Switzerland in 1983 as the International Express Carriers' Conference, and has observer status with the United Nations, UPU, and the WCO. GEA participates frequently in several ICAO bodies and committees.

## IATA – International Air Transport Association

The International Air Transport Association was founded in Cuba in 1945. IATA is the prime vehicle for inter-airline cooperation in promoting safe, reliable, secure and economical air services, for the benefit of the world's consumers. The international scheduled air transport industry is now more than 100 times larger than it was in 1945. Few industries can match the dynamism of that growth, which would have been much less spectacular without the standards, practices and procedures developed within IATA. At its founding, IATA had 57 members from 31 nations, mostly in Europe and North America. Today it has some 290 members from 120 nations in every part of the globe, representing 83 per cent of total air traffic. The modern IATA is the successor to the international air traffic association founded in The Hague in 1919, the year of the world's first international scheduled services. Air transport is one of the most dynamic industries in the world, and IATA is its global trade organization. Over 75 years, IATA has developed the commercial standards that built a global industry.

## TIACA – The International Air Cargo Association

TIACA is a global non-profit trade association representing all the major segments of the air cargo and air logistics industry, including passenger and all-cargo aircraft operators, forwarders, airports, ground handlers, road carriers, Customs brokers, logistics companies, shippers, information technology companies, aircraft and equipment manufacturers, trade press and educational institutions.

To accomplish its mission, TIACA engages in activities that seek to improve industry cooperation, promote innovation, share knowledge, enhance quality and efficiency and promote education. TIACA aims to inform both the public and its membership about the role and importance of air cargo, industry developments, and technical trends. TIACA engages with relevant authorities and publishes position papers on industry issues as well as the TIACA Times newsletter. The TIACA website is a valuable industry resource which contains a fully searchable database of information on industry issues. TIACA has developed research relationships with several universities through joint projects and student scholarship programmes.



## Glossary

---

### Airside

---

The movement area of an airport, adjacent terrain and buildings or portions thereof, access to which is controlled.

---

### Cargo

---

Any property carried on an aircraft other than mail, stores and accompanied or mishandled baggage.

---

### Consignment

---

One or more items accepted by the carrier from one shipper at one time and at one address, receipted in one lot and moving on one air waybill or shipment record to one consignee at one destination address.

---

### Consolidation

---

A consignment of multiple packages which has been originated by more than one entity, each of which has made an agreement for carriage with a freight forwarder.

Usually a consolidation implies the issuing of a master air waybill to which are linked several house air waybills and a cargo manifest.

---

### Landside

---

The area of an airport and buildings to which both travelling passengers and the non-travelling public have unrestricted access (non-restricted area).

---

### Mail

---

All postal items tendered by and intended for delivery to designated postal operators to operate the postal service in accordance with the Universal Postal Union Acts.

---

### Security Restricted Area

---

Those areas of the airside of an airport which are identified as priority risk areas where, in addition to access control, other security controls are applied.

---

### Transfer Cargo and Mail

---

Cargo and mail departing on an aircraft other than that on which it arrived.

# Moving Air Cargo Globally

The purpose of this publication is to promote awareness of the air cargo and mail supply chain, with an emphasis on the related security and facilitation procedures developed by the International Civil Aviation Organization (ICAO), the World Customs Organization (WCO), the Universal Postal Union (UPU) and also the United Nations Office on Drugs and Crime (UNODC).

The intent is to provide a better understanding of supply chain security for those who work in the cargo field, and more broadly, anyone who might benefit from knowing more about international air cargo and mail security standards.

This document familiarizes readers with the roles and responsibilities of all entities involved in the transport of cargo and mail by air. It covers the various operational aspects, security factors, facilitation processes and documentation of that supply chain.

The reader will gain an understanding of the applicable regulatory frameworks and efforts made by International Organizations and their members to support information sharing and continued development of a secure air cargo industry. These provisions and activities enhance the movement of goods by promoting effective end-to-end supply chain security.



ICAO

## SECURITY AND FACILITATION

International Civil Aviation Organization  
999 Robert-Bourassa Boulevard  
Montréal, QC, Canada  
H3C 5H7

Email: [asp@icao.int](mailto:asp@icao.int)  
Tel.: +1 514-954-8219  
[www.icao.int/security/aircargo](http://www.icao.int/security/aircargo)



World Customs Organization  
Organisation mondiale des douanes

World Customs Organization  
Rue du Marché, 30  
B-1210 Brussels, Belgium

Email: [facilitation@wcoomd.org](mailto:facilitation@wcoomd.org)  
Tel.: +32 (0)2 209 92 11  
Fax : +32 (0)2 209 92 62  
[www.wcoomd.org](http://www.wcoomd.org)

