Interactive Cargo

Standard Operating Procedures IoT device handling

Introduction to the SOP

Shippers, cargo handlers and stakeholders of the air cargo supply chain wish to know with confidence the procedures and requirements for the approval and use of tracking devices and data loggers used to locate, track, monitor, or alert on transportation conditions.

This Standard Operating Procedures (SOP) document contains the operational steps that stakeholders of the air cargo supply chain should follow when using tracking devices or data loggers for the purpose of registering data of the status of the shipment and when handling cargo that includes tracking devices and data loggers.

These procedures are not location specific. In addition to following these generic procedures, stakeholders will also have to comply with any rule that may have been defined in relation to cargo tracking devices. It is important to note that stakeholders may feel that they need to adjust their procedures not only based on specific location rules, but also based on their internal procedures and systems or to comply with any local practice or agreement they may have with their partners, suppliers and customers.

SOP scope and framework

The scope of this Standard Operating Procedure is to outline the activities and responsibilities of the stakeholders of the air cargo industry related to the handling of tracking devices and data loggers used in air cargo.

The Standard Operating Procedure IoT device handing is based on the following documents, that provide the framework:

• Industry Master Operating Plan (MOP)

• IATA Cargo Handling Manual (ICHM)

• Recommended Practice 1693 Device Approval for Air Cargo

IATA

Definitions

- **Portable electronic device (PED)** means any kind of electronic device, typically but not limited to consumer electronics, brought on board the aircraft by crew members, passengers, or as part of the cargo, that is not included in the configuration of the certified aircraft. It includes all equipment that consume electrical energy. The electrical energy can be provided from internal sources such as batteries (chargeable or non-rechargeable) or the devices may also be connected to specific aircraft power sources.

- **Cargo tracking device/data logger** means a PED attached to or included in airfreight (e.g., in or on containers, pallets, parcels, mail bags, and baggage), with the purpose of monitoring parameters such as location, temperature, humidity, vibrations,etc. The cargo tracking device may transmit these parameters remotely by means of radio frequency (RF) emissions.

NOTE: Please refer to Recommended Practice 1693 Device Approval for Air Cargo for details.

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Device approval by airline

Why a device approval is necessary?

- Portable Electronic Devices (PEDs) in cargo may interfere with aircraft avionics and electrical systems.

- As per EASA ("AMC1 CAT.GEN.MPA.140," 2019) and FAA (*AC 91.21-1D*, 2017), it is the operator's responsibility to authorize the use of PEDs onboard an aircraft, in compliance with the Air Operator Certificate (AOC).

- It is recognized that the final decision regarding the approval of the device is up to the operator and the approval process must comply with all applicable international/national regulations.

- Using unauthorized/undeclared cargo tracking devices may result in cargo hold, delay or return, and increase the safety risks associated with lithium batteries and electromagnetic interferences onboard aircraft.

- Most of these devices use lithium metal or lithium-ion cells or batteries as a power source. Lithium cells and batteries are classified as dangerous goods and therefore must meet all the applicable provisions of the IATA Dangerous Goods Regulations (DGR) when shipped by air. This applies regardless of whether the lithium cells or batteries are shipped as cargo by themselves or whether the lithium cells or batteries are installed in a small device such as a data logger that is placed inside or attached to packages of cargo. In addition, to be permitted in transport all lithium cell and battery types must have passed the applicable tests set out in Subsection 38.3 of the UN Manual of Tests and Criteria. Please refer to the 2021 Guidance Document – Battery Powered Cargo Tracking Devices / Data Loggers

NOTE: Please refer to Recommended Practice 1693 Device Approval for Air Cargo for details.

Device approval by airline

Recommended Practice 1693 Device Approval for Air Cargo

IATA has published the Recommended Practice on Device Approval for Air Cargo (RP 1693) to provide guidelines for the approval process of tracking devices and data loggers (referred to as PED in the RP1693) used for the purposes of air cargo.

Structure of RP 1693

1. The RP1693 defines the relevant terms related to the approval.

2. The RP describes the two aspects of evaluation of PED:

   a) Electromagnetic compatibility (EMC) with the aircraft

   b) The battery contained in the PED

3. The RP explains the approval request process

NOTE: Please refer to Recommended Practice 1693 Device Approval for Air Cargo for details.

IATA

Device approval by airline

**Approval request process**

The RP1693 includes an Approval Request Form for the Use of Portable Electronic Device Onboard Aircraft for Air Cargo.

This form, accompanied by all supporting documents listed, is intended for use by device manufacturers in order to submit approval requests to airlines.

Airline evaluation is based on the submitted documents and verification of compliance on the two aspects of evaluation.

Based on the evaluation, an airline has the right to either approval or reject the use of PED.

In case of approval, a Letter of Approval is issued by the airline.
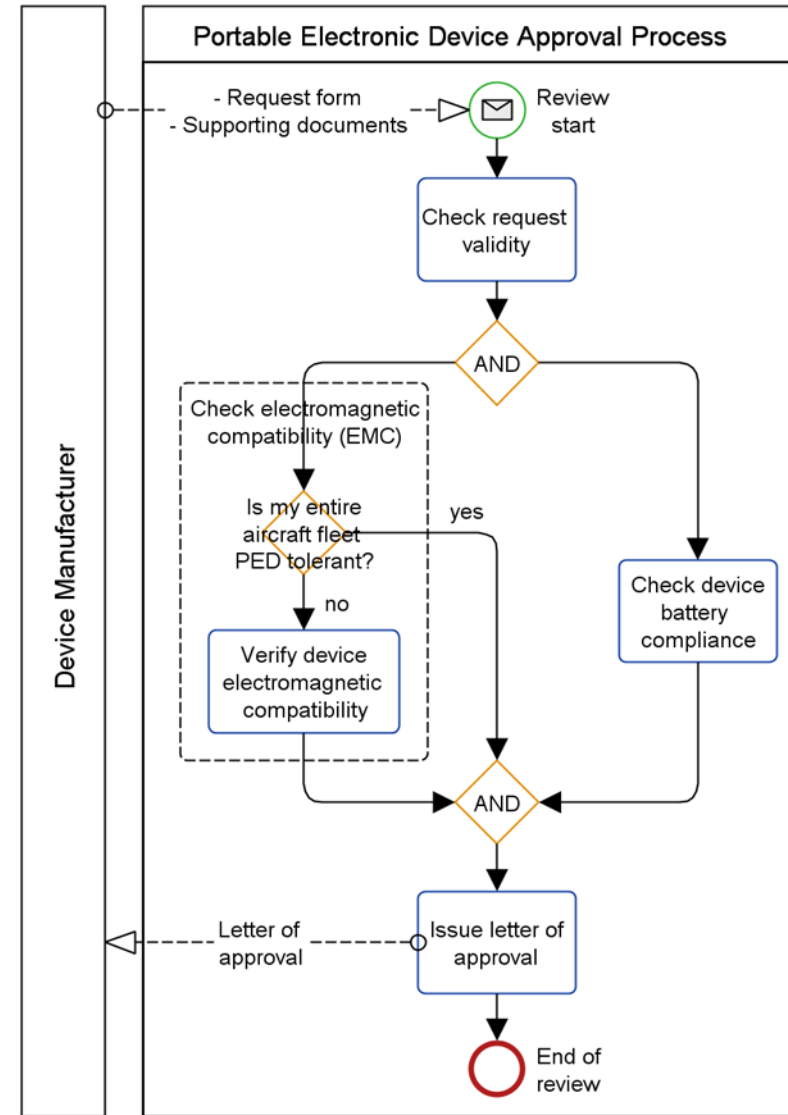
NOTE: Please refer to Recommended Practice 1693 Device Approval for Air Cargo for details.

Device declaration at booking

- Using unauthorized cargo tracking devices may result in cargo hold, delay or return, and increase the safety risks associated with lithium batteries and electromagnetic interferences onboard aircraft.

- Information on authorized cargo tracking devices is available at the airlines and at the device manufacturers. Verifying that the tracking device/data logger included in/attached to the shipment is approved by the airline is essential when planning and booking shipment. It is the responsibility of the carrier to confirm devices are approved. In case interlining is included , all involved carriers must confirm devices are authorized.

- Sharing information and communicating accurately between Shippers and Airlines is a must and the role of the Freight Forwarding companies is key, as in most cases the shippers do not have direct communication with airlines. Accurate information on the devices can ease the process of monitoring important aspects of the shipment and being able to detect any potential deviation of the circumstances required to ensure shipment condition and timely arrival at destination.

- The following steps of MOP are affected by Interactive Cargo related activities

  - 1.1 Receive Shippers' Request & Check Security Status
  - 1.2 Receive Shipper Freight Information
  - 1.4 Request Capacity Against Forwarder or Carrier Inventories - Cargo Reservations – Contents of Information
  - 1.5 Confirm Capacity
  - 5.4 Create Shipment Record & Consolidation Manifest -Completion of the Electronic Air Waybill
  - 6.3 Transmit Forwarder Information to Carrier
  - 8.3 Validate information against the booking and update

NOTE: Please refer to the IATA Cargo Handling Manual for additional information. Please read section 1.1, 1.2, 1.4, 1.5, 5.4 and 6.3.

Shipment acceptance at carrier's facility

At shipment acceptance, carrier/GHA shall perform a validation of tracking devices/data loggers.

This verification shall be a document check against booking, not a physical verification, and shall consist of the following elements.

1. Verification of presence of the Electronic Monitoring Device (EMD) code under Handling information,

2. Verification of the device model and confirmation against the list of approved devices by the carrier.

There is no generic process for determining the maximum number of tracking devices/data loggers present on the aircraft at the same time.

Airlines may decide to limit the number of tracking devices/data loggers that can be loaded on the same aircraft, based on their internal risk assessment.

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# Responsibilities
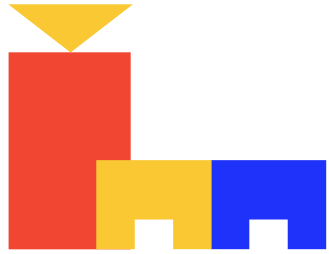
SHIPPER

Booking

- Request approval from the carrier on the device used following the IATA RP1693 on Device Approval for Air Cargo

- Include information on the used tracking devices within the Shipment Information, mentioning in which box or pallet the tracking device is inserted, specifying the serial number of each tracking device. Each tracking device must be linked to the box or pallet where is located.
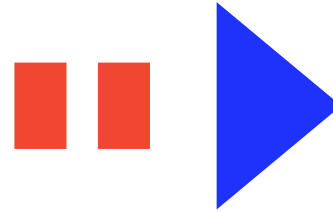
FORWARDER

Booking

- Freight Forwarder must include the type/model/serial number of the device in their flight booking with carrier and the same information declared in the AWB under Handling Information or in the specific field in the FWB.
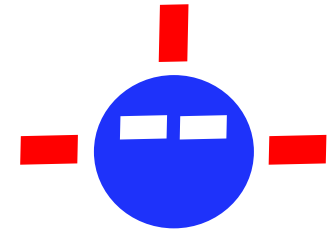
CARRIER

Booking

- Confirm that devices included in the shipment are approved.

- Booking with Special Handling Code (EMD) based on approved device to be sent to GHA.

Shipment acceptance

- Verification of presence of the Electronic Monitoring Device (EMD) code under Handling information.

- Verification of presence of information on device model and confirmation against the list of approved devices by the carrier.

NOTE: Please refer to the IATA Cargo Handling Manual for additional information. Please read section 1.1, 1.2, 1.4, 1.5, 5.4 , 6.3 and 8.3.