Carrier Interface Overview

March 2023
Table of Content

- Legal Context
- Carrier Interface Overview
- Carrier Interface – Query/Reply
- Carrier Interface – Web Portal/ Mobile Application
- Illustrations
- Carrier Implementation and registration process
Legal Context
Legal context

EU regulations: 2021/1217 (the “EES Regulation”) and 2021/1224 (the “ETIAS Regulation”) set out the necessity to query EES and ETIAS in order to receive details regarding the status of third country nationals travellers arriving to Member States territory.

➢ The Entry/Exit System (EES) will replace the manual stamping of passports of third country-nationals, within the scope of the system, with an electronic record of entries and exits. Carriers will need to verify whether third-country nationals travelling to the EU on a short-stay, be it a single or double entry visa, have already used the number of entries authorised by their visa.

➢ The European Travel Information and Authorisation System (ETIAS) will require carriers to verify, prior to boarding, that their visa-exempt passengers have a valid travel authorisation to enter Member States territory.
Carrier Interface Overview
Carrier Interface Overview

EU Central System
- EES and ETIAS
  - Read only DB for carriers

Carrier Interface
- System to System
- Web Portal and Mobile Application

Response for each passenger:
- OK
- NOK EES
- NOK ETIAS
- NA

Response time:
- 2 sec for 1 passenger per message
- 4 sec for up to 99 passengers

BOOKING H - 48
- Carrier's query up to 99 passengers
- Carrier System
- Carrier Authorised Staff

DEPARTURE TIME
- Carrier's query up to 99 passengers
- Carrier System
- Carrier Authorised Staff

ARRIVAL
- PUBLIC

BORDER CONTROL
Carrier Web Portal and Mobile Application

Input Data

Passenger details can be provided:
• Manually
• Via an import of csv file
• Via MRZ scanner (optical scanning) for ICAO Passports

Carrier's query up to 99 passengers

Response for each passenger:
• OK
• NOK EES
• NOK ETIAS
• NA

Carrier Authorised Staff

Web Portal and Mobile Application
**System to System Communication Protocol Options**

**Communication Protocol Options**

**IBM MQ over Ipsec VPN:**
- An Ipsec VPN must be set up between the DCS/Carrier and the Carrier Interface before exchanging the UN/EDIFACT messages over the IBM MQ.
- The Carrier Interface shall issue a private certificate 2048-bit Rivest-Shamir-Adleman (RSA) keys to the Carrier for each eu-LISA primary site (including secondary site).
- Both eu-LISA and the Carriers shall provide the communication means and technical details during the implementation phase (such as Internet Protocol (IP) addresses/Uniform Resource Locators (URLs), IBM MQ addresses/queues numbers to be contacted and certificates).

**REST API over mTLS:**
- The Carrier Interface supports the REST standard for the transmission of JSON or XML based messages between the Carrier and the CI.
- These messages must be exchanged over a secure connection based on the mTLS.
- Both eu-LISA and the Carriers shall provide the communication means and technical details during the implementation phase (including IP addresses/URLs to be contacted and certificates).
- To ensure data privacy and integrity between eu-LISA and the Carriers, TLS 1.3 shall be used as the communication standard.
System to System message formats

The carrier Interface manages the below message formats:

- **WCO PAXLST (version 15B)** and **CUSRES (12B)** definitions by IATA implementation guidelines
- **XML 1.0 (Fifth Edition)** as published at [https://www.w3.org/TR/xml/](https://www.w3.org/TR/xml/)
- **JSON the baseline standard is STD90 (RFC8259)** as published at [https://tools.ietf.org/html/std90](https://tools.ietf.org/html/std90)
Carrier Interface – Query/Reply
## Query – Passenger Data

<table>
<thead>
<tr>
<th>#</th>
<th>Attribute description</th>
<th>Mandatory (M) or Optional (O)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Surname (family name)</td>
<td>M</td>
</tr>
<tr>
<td>2</td>
<td>First name or names (given names)</td>
<td>M</td>
</tr>
<tr>
<td>3</td>
<td>Date of birth</td>
<td>M</td>
</tr>
<tr>
<td>4</td>
<td>Sex</td>
<td>M</td>
</tr>
<tr>
<td>5</td>
<td>Nationality</td>
<td>M</td>
</tr>
<tr>
<td>6</td>
<td>Type of the Travel Document</td>
<td>M</td>
</tr>
<tr>
<td>7</td>
<td>Number of the Travel Document</td>
<td>M</td>
</tr>
<tr>
<td>8</td>
<td>Three letter code of the issuing country of the TD</td>
<td>M</td>
</tr>
<tr>
<td>9</td>
<td>Date of expiry of the validity of the TD</td>
<td>M</td>
</tr>
</tbody>
</table>
## Query – Itinerary Data

<table>
<thead>
<tr>
<th>#</th>
<th>Attribute description</th>
<th>Mandatory (M) or Optional (O)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Scheduled location of entry</td>
<td>M</td>
</tr>
<tr>
<td>11</td>
<td>Scheduled local date and time of arrival at a location</td>
<td>M</td>
</tr>
<tr>
<td>12</td>
<td>Scheduled local date and time of departure</td>
<td>M</td>
</tr>
<tr>
<td>13</td>
<td>Identification number of scheduled means of transportation</td>
<td>M</td>
</tr>
<tr>
<td>14</td>
<td>Carrier operator</td>
<td>M (applicable for Sys2Sys channel)</td>
</tr>
<tr>
<td>15</td>
<td>Traveller in transit flag</td>
<td>O (if applicable)</td>
</tr>
<tr>
<td>16</td>
<td>Traveller out of scope flag</td>
<td>O (if applicable)</td>
</tr>
<tr>
<td>17</td>
<td>Query submission date and time in UTC time</td>
<td>M (applicable for Sys2Sys channel)</td>
</tr>
<tr>
<td>18</td>
<td>Passenger request identifier</td>
<td>M (applicable for Sys2Sys channel)</td>
</tr>
<tr>
<td>19</td>
<td>Notification request identifier</td>
<td>M (applicable for Sys2Sys channel)</td>
</tr>
<tr>
<td>20</td>
<td>Multiple entries required</td>
<td>M (if applicable) for land and maritime carriers only</td>
</tr>
</tbody>
</table>
Traveller classification as per EES and ETIAS EU regulations

**EES**

**Travellers with visa in scope of EES**
Third country nationals and holders of single or double entries visas

**Travellers - out of scope of EES**
Third country nationals as per article 2 (3) of EES regulation, such as:
- Holders of a residence card or residence permit
- Holders of a Long-stay visa
- Holders of Diplomatic passport or laissez-passer
- Persons exempt as per Article 6a(3) of the Regulation (EU) 2016/399
- EU nationals
- Nationals of Andorra, Monaco and San Marino and holders of a passport issued by the Vatican City State or the Holy See

For more details, please refer to EES and ETIAS regulations

**ETIAS**

**Travelers in scope of ETIAS**
Nationals from visa exempt countries and not holders of any ETIAS out of scope category (reference to Article 2(2))

**Travelers from countries with visa requirements in scope of ETIAS**
Third country nationals exempt from the visa requirement as described in Article 2(1) b and c of the ETIAS Regulation (e.g., school pupils etc.)

**ETIAS out of scope**
Third country nationals as per article 2 (2) of ETIAS regulation, such as:
- Holders of a residence card or residence permit
- Holders of long-stay visa
- Refugee or stateless persons
- Holders of diplomatic passport or laissez-passer
- EU nationals
- Nationals of Andorra, Monaco and San Marino and holders of a passport issued by the Vatican City State or the Holy See

For more details, please refer to EES and ETIAS regulations
Carrier Interface replies
Before ETIAS entry into operation

**In scope - EES**

- Visa single or double entries
- Response: OK or NOK EES

**In scope - ETIAS**

- Exempt from the visa requirement as per article 2(1) of ETIAS regulation (ex: School pupil)
- Nationals from visa exempt countries*
- Response: NA

*Nationals from visa exempt countries and not under any of ETIAS out of scope cases

**Carrier Interface**

- System to System
- Web Portal and Mobile Application

PUBLIC
Carrier Interface replies
After ETIAS entry into operation

- **In scope – EES**
  - Visa single or double entries
  - Response: OK or NOK EES

- **In scope - ETIAS**
  - Exempt from the visa requirement as per article 2(1) of ETIAS regulation (ex: School pupil)
  - Nationals from visa exempt countries*
  - Response: OK or NOK ETIAS

*Nationals from visa exempt countries and not under any of ETIAS out of scope cases*
Carrier Interface replies

Nationality checks

Out of scope – EES and ETIAS

Nationals from AND, MCO, SMR and VAT

Response: NA

Out of scope – EES and ETIAS

Nationals from Member States

Response: NA

Carrier Interface

System to System

Web Portal and Mobile Application
Carrier’s queries during the online check-in

Option 1

- During the online check-in, carriers may decide to send all passengers data to the carrier interface and receive a Not OK EES or Not OK ETIAS for out of scope passengers.

- In case a Not OK EES or Not OK ETIAS is returned, carriers need to check the travel documents of the passengers to clarify if they fulfil the conditions to enter the Schengen area.

- If verification of travel documents reveal that traveller has no such documents (example: Resident Permit, Long stay Visa…etc), meaning traveller is in the scope of the carrier interface. And by receiving a previous Not OK, it would mean that the traveller has neither a single and double entry visa nor ETIAS and therefore not able to enter the Schengen area.
Carrier’s queries during the online check-in
Option 2

- During the **online check-in**, carriers may decide to ask the passenger if he/she is **out of scope** before submitting the query to the carrier interface
- Carriers may decide to submit or not queries with out of scope passengers. If the carrier sends a query for out of scope passengers, the query should **include the out of scope indicator**

[Diagram showing the flow from carrier online check-in interfaces to passenger out of scope, then to carrier's system, with out of scope indicator and carrier interface, with response: Not applicable]
Carrier Interface
Web portal and Mobile Application
Carrier Web Portal and Mobile Application

Input Data

Passenger details can be provided:
• Manual data input
• Via an import of csv file
• Via MRZ scanner (optical scanning) for ICAO Passports

Carrier’s query up to 99 passengers

Response for each passenger:
• OK
• NOK EES
• NOK ETIAS
• NA

Carrier Interface
Carrier Web Portal and Mobile Application
Option 1: Manual Data Input

The carrier authorised users provide manually the travel information for all concerned passengers:

1. Travel Information
   - Country of destination: Italy
   - Scheduled local date of arrival: 15 MAR 22
   - Identification number: AIRLINE-00307252

2. Scheduled local date and time of departure:
   - 15 MAR 22 12:30 PM

3. Passenger Data 2
4. Passenger Data 3
5. Passenger Data 4

*All screenshots are not considered as final version*
Carrier Web Portal and Mobile Application

Option 1: Manual Data Input

The carrier authorised users provide manually the passenger travel document details:

- Surname, First name
- Date of birth
- Sex
- Nationality
- Number of travel document
- Type of travel document
- Issuing country
- Date of expiration

*All screenshots are not considered as final version*
Carrier Web Portal and Mobile Application

Option 2: Import Passenger List From a File

maximum of 99 passengers are allowed to be submitted in one CSV file

*Screenshots are not considered as final version*
Option 3: Input using MRZ Scanner

The Carrier Authorised users are able to input passenger information by scanning the Travel Document using a MRZ scanner. Imported data can then be manually edited before verification.

The MRZ Scanner is limited to ICAO Standards Travel documents

*All screenshots are not be considered as final version
## Carrier Web Portal and Mobile Application

### Browse Results of Verification

Results of the verification can be exported to a CSV file by the Carrier Authorised users.

New list could be submitted overwriting the previous one.

*All screenshots are not be considered as final version*
Illustrations – Air regular flights
Use Case 1: Passenger with single or double entries visa

- Passenger with valid single or double entries visa
- Single or double entries visa applied

- Booking confirmed
- Booking

- The passenger provide the passport details with China nationality to the carrier
- Travel documents verification
- Boarding accepted

- The carrier submit the query to the carrier interface
- Travel documents verification
- Boarding accepted

- Flight take off with boarded passengers

Query 1:
Passenger reference XX001
Chinese passport details with no in/out of scope flag

Reply 1:
Passenger reference XX001
OK
Illustrations
Use Case 2: Passenger with short stay Schengen visa with number of entries consumed

- Single or double entries visa applied
- Booking confirmed
- The passenger provide the passport details with Moroccan nationality to the carrier
- The carrier submit the query to the carrier interface
- Travel documents verification
- Boarding not accepted
- Flight take off with boarded passengers

Query 1:
Passenger reference XX002
Moroccan passport details with no in/out of scope flag

Reply 1:
Passenger reference XX002
NOK EES
Illustrations
Use Case 3: Passenger with no valid visa

- Passenger with no valid visa
  - Not prepared

- Booking
  - Booking confirmed

- Check-in
  - The passenger provide the passport details with Tunisian nationality to the carrier
  - The carrier submit the query to the carrier interface

- Departure verification and Boarding
  - Travel documents verification
  - Boarding not accepted

- Take-off
  - Flight take off with boarded passengers

Departure Control System

Query 1:
Passenger reference YY002
Tunisian passport details with no in/out of scope flag

Reply 1:
Passenger reference YY002
NOK EES
Use Case 4: Passenger from Visa holders countries with Resident Permit

Option 1: The carrier decides to not send the "out of scope" flag in the query

Passenger from Visa required country with Resident Permit

The carrier send a query to the Carrier Interface for all passengers

Before the departure, the agent verify the passenger Travel documents

The Passengers is “Out of scope”, no need to send a new query to the Carrier Interface

Option 2: The carrier decides to send the “out of scope” flag in the query after the Travel document verification

Passenger from Visa required country with Resident Permit

The carrier send a query to the Carrier Interface for all passengers

Before the departure, the agent verify the passenger Travel documents

The Passengers is “Out of scope”, the carrier send a new query to the Carrier Interface with the “Out of scope” flag
Use Case 4: Passenger from Visa holders countries with Resident Permit

- Valid resident permit issued by EU member state
- Booking confirmed
- The passenger provide the passport details with Indian nationality to the carrier
- The carrier submit the query to the carrier interface
- Travel documents verification with presence of valid Resident Permit
- Boarding accepted as passenger is considered out of scope of EES and ETIAS verifications
- Flight take off with boarded passengers

No need to send a new query to the Carrier Interface as the passenger is considered “Out of scope” after travel documents verification

Option 1: The carrier decides to not send the “out of scope” flag in the query
Use Case 5: Passenger from Member States

- **Travel document preparation**
  - Valid MS passport

- **Booking**
  - Booking confirmed

- **Check-in**
  - The passenger provide the passport details with French nationality to the carrier
  - The carrier submit the query to the carrier interface

- **Departure verification and Boarding**
  - Travel documents verification
  - Boarding accepted

- **Take-off**
  - Flight take off with boarded passengers

---

**Departure Control System**

**Query 1:**
Passenger reference EE001 with French passport details with no in/out of scope flag

**Reply 1:**
Passenger reference EE001 NA
Illustrations – Business Aviation Operators
Illustrations

Use Case 1: Passenger with single or double entries visa

- **Travel document preparation**
  - Single or double entries visa applied

- **Booking**
  - Booking confirmed

- **Pre-departure verification**
  - Passenger data collection
  - Travel documents verification
  - Boarding accepted

- **Take-off**
  - Flight take off with boarded passengers

- **Carrier Interface**

- **Carrier Authorised Staff**

Query 1: Passenger reference XX001

Reply 1: Passenger reference XX001 OK

- **No check-in process**
- **No Departure Control System**
Use Case 2: Passenger with long stay Visa

- Long stay visa applied
- Booking confirmed
- Passenger data collection
- Travel documents verification
- Boarding accepted
- Flight take off with boarded passengers

• No check-in process
• No Departure Control System

After travel document verification, the traveller is considered out of the scope for EES and ETIAS obligations

Therefore, the carrier do not send any query to the Carrier Interface for this passenger
Illustrations – Charter Airlines
Use Case 1: Group of passengers transported by a charter flight

- **Group of passengers**
  - Valid travel documents prepared

- **Travel document preparation**
- **Booking**
  - Booking confirmed

- **Pre-departure verification**
  - Passenger data collection
  - Travel documents verification
  - Boarding accepted for OK or Out of scope passengers

- **Take-off**
  - Flight take off with boarded passengers

**Query**
Collected list of passengers’ details under EES and ETIAS obligations

**Reply**
- OK
- NOT OK ETIAS
- NOT OK EES
- NA

The query could be submitted between 48h before the departure and the time of the departure.
Use Case 2: Group of EU nationals transported by a charter flight

- Valid EU passports for all passengers
- Booking confirmed
- Passenger data collection
- Travel documents verification
- Boarding accepted for all passengers
- Flight take off with boarded passengers

After travel document verification, all the travellers are considered out of the scope for EES and ETIAS obligations.
Therefore, the carrier do not send any query to the Carrier Interface for this passenger.
Illustrations – Cruise Lines
Use Case 1: Passenger with Visa single entry consumed

1. The passenger takes the flight from China to Spain
2. The Single Visa entry is consumed when entering in Spain

He plans to have a Mediterranean cruise trip with Turkey as a one stop in the journey with an expected new entry in the Schengen area.
Use Case 1: Passenger with Visa single entry consumed

- Visa single entry consumed during the first entry in Spain
- Booking confirmed
- Passenger data collection
- Travel documents verification
- Embarkation not authorized

The query could be submitted between 48h before the departure and the time of the departure
Use Case 2: Passenger with Visa double entries not consumed

1. The passenger takes the flight from China to Spain
2. The Single Visa entry is consumed when entering in Spain

He plans to have a Mediterranean cruise trip with Turkey as a one stop in the journey with an expected new entry in the Schengen area

Passenger with valid double entries Visa – China nationality
Use Case 2: Passenger with Visa double entries not consumed

- Visa single entry consumed during the first entry in Spain
- Booking confirmed
- Passenger data collection
- Travel documents verification
- Embarkation authorized

The query could be submitted between 48h before the departure and the time of the departure.
Illustrations – Ferry Lines
Illustrations

Use Case 1: Passenger with valid single or double entries visa

Booking - Booking confirmed

Pre-departure verification - Passenger data collection
- Travel documents verification
- Embarkation authorized

Travel document preparation
- Single or double entries visa applied

Passenger with valid visa, with a car would like to take the Ferry from Morocco to Spain

The passenger verification could be performed just before the entry in the Ferry via the Mobile application

Carrier Interface

Query 1: Passenger reference XX001

Reply 1: Passenger reference XX001 OK

Carrier Authorised Staff

PUBLIC
Illustrations

Use Case 2: Passenger with single or double entries visa consumed

- Single or double entries visa applied
- Booking confirmed
- Passenger data collection
- Travel documents verification
- Embarkation not authorized

Passenger with no valid visa, with a car would like to take the Ferry from Morocco to Spain

The passenger verification could be performed just before the entry in the Ferry via the Mobile application
Illustrations – International coaches
Use Case 1: Passenger with valid single or double entries visa

The passenger verification could be performed just before the entry in the coach via the Mobile application.
Use Case 2: Passenger with single or double entries visa consumed

The passenger verification could be performed just before the entry in the coach via the Mobile application.
Carrier Implementation and registration Process
1- Registration Phase

01 Carrier Identity Information
The carrier provides all the identity information in addition to the documents requested under the article 10 of EES Implementing Regulation *.

02 Security Convention
Security Convention to be signed by each carrier contact provided during the registration in the form F01

03 Verification and validation of carrier information
The onboarding and support team verify all the information and documents provided and confirm or reject the registration. If the registration is approved, a carrier submission ID is provided

04 Welcome Package and Technical Documents
The welcome package, the technical guidelines and Predefined Test Cases are shared with the Carrier SPOC and backup SPOC according to the channel selected by each carrier.
2- Implementation Phase
System to System (new implementation)
A: Connectivity

Connection Information
The carrier or System SPOCs provide all the system connection details under F04 and CI connectivity sheets for each system environment to connect. The form F04 with CI connectivity sheets are to be completed only once per system/environment.

Carrier System Information
The carrier provides all the information about the system that needs to be connected in addition to system owner contact details. The System owner can be in the carrier organization or under a Service Provider. The form F03 needs to be completed for each system requesting a connection.

Connectivity Setup
Based on the connectivity information received, eu-LISA and system connectivity experts, exchange all the specific configurations to connect the environments.

System connection confirmed
Eu-LISA and Carrier or System SPOCs confirm that the systems are successfully connected according to the configurations provided.

Steps 02, 03 and 04 are repeated for each system environment connection.
2- Implementation Phase
System to System (new implementation)
B : Pre-Compliance (Optional)

01
Carrier Pre-CT tests start
The carrier or system SPOC confirms to eu-LISA onboarding team that the tests in the simulator start.

02
Carrier Pre-CT tests completed
The carrier or system SPOC confirms to eu-LISA onboarding team that the tests in the simulator are completed according to the Pre-CT test cases.
2- Implementation Phase
System to System (new implementation)
C: Compliance (Mandatory)

- **01**
  - **Carrier CT tests start**
  - The carrier or system SPOC confirms to eu-LISA onboarding team that CT tests can start.

- **02**
  - **Compliance slot confirmed**
  - eu-LISA sends an available slot to run the Compliance test scenarios and the carrier or system SPOC confirm it.

- **03**
  - **Compliance tests execution**
  - The carrier or system SPOC pass all the test cases detailed in the CT TDD document during the scheduled slot.

- **04**
  - **System compliant**
  - eu-LISA confirms that the system is compliant and ready for production activation.

Steps 02 and 03 are repeated until all the CT scenarios are passed.
2- Implementation Phase
System to System (already implemented)

01
Carrier System Information
The carrier provides all the information about the system that need to be connected in addition to system owner contact details. The System owner can be in the carrier organization or under a Service Provider.

02
Connection Information
eu-LISA confirms to the carrier that the declared system is already connected (for each relevant environment), and if applicable compliant with eu-LISA technical guidelines.

03
Compliance exemption
The carrier SPOC confirm the exemption from the compliance considering that the declared system is already compliant with eu-LISA guidelines.

04
Production Readiness
The carrier or System SPOC and eu-LISA confirm the readiness in production.
Thank you!

eu-LISA
European Union Agency for the Operational Management of Large-Scale IT Systems in the Area of Freedom, Security and Justice

Vesilennuki 5, 10415 Tallinn, Estonia

www.eulisa.europa.eu