



Considerations for Collaboratively Improving Advance Passenger Information Data Quality

*This guidance material has been developed by the **IATA Control Authorities Working Group (CAWG)**. It is the outcome of collaborative working arrangements between governments and the airline industry to find mutually acceptable solutions for border management. For more information on the [IATA CAWG](#).*

Summary

This document¹ highlights the importance of ensuring Advance Passenger Information (API) data is of the best possible quality, i.e. that the API data submitted to authorities accurately matches that in the travel document. Both authorities and airlines recognize the importance of accurate API data for border security and passenger facilitation and a collaborative approach is most appropriate to overcoming data quality issues. This document provides one avenue to assist in limiting the operational and administrative burdens on airlines when API transmission is required from authorities².

1. Importance of API Data Quality

- 1.1 Addressing border security threats along with improving the facilitation of genuine arriving and departing passengers requires significant use of API data to identify persons of interest. Many countries are also relying on accurate API to check travel credentials such as electronic travel authority and to facilitate arrival or departure via e-gates or other automated processes. It is therefore essential that API data collected and transmitted by airlines matches the data held in the passenger or crew member's travel document. In particular, it should match the data in the Machine Readable Zone (MRZ) of standard Machine Readable Travel Documents (MRTDs).
- 1.2 API data should be accurately collected by the first airline in the case of a multi-segment journey involving two or multiple airlines, in order to ensure efficient onward boarding and avoid penalties being applied to an aircraft operator by the transit and/or destination country.
- 1.3 Both authorities and airlines have a vested interest in improving the way API data is collected and transmitted. Airlines play a key role in enhancing border security, notably through the collection and transmission of API data. Therefore, approaching data quality issues is best achieved when a collaborative and timely approach is established between authorities and airlines.

¹ This document is based on a [Working Paper](#) presented by the United Kingdom and IATA on behalf of the IATA CAWG at the [12th Meeting of the ICAO Facilitation Panel](#).

² ICAO Annex 9 – *Facilitation*, Standard 9.13: If a Contracting State requires API data interchange, then it shall seek, to the greatest extent possible, to limit the operational and administrative burdens on aircraft operators, while enhancing passenger facilitation.

2. API Capture and Verification

- 2.1 Inherent in any data collection process is the validation and verification of that data. For the purposes of this document, **validation** is understood as an automatic check to ensure that the data entered is sensible and reasonable, i.e., it does not imply checks for the accuracy of data, while **verification** is performed to ensure accuracy, i.e., that the data entered exactly matches the original source.
- 2.2 In the legacy approach to passenger processing, the entirety of the collection and verification processes occurred at an airport's manned check-in desk. Manned check-in desks are still being operated as automation is not available to all aircraft operators and at all ports. However, for the past 20 years, the aviation industry accelerated the automation of the check-in process at the airport through self-service kiosks and/or off-airport through mobile or web check-in. Some of these fully automated or semi-automated methods allow the capture of MRZ data or the passport biodata page.
- 2.3 Measures embedded in software and applications to assist passengers and airline agents to enter accurate data lead to data capture and validation improvements. Indeed, there is a correlation between poor data quality and the manual input of data by the passenger or the airline agent. However, this diversification of check-in platforms also means that each passenger is not processed in a homogeneous way including for the purposes of API data collection and verification.

3. Improving Data Quality

- 3.1 Despite the data quality improvement with the automation of API data collection, there is no process that will lead to completely error free data. Authorities and airlines must work together to address data quality issues. This should include timely and detailed notification of errors to the airline by the authority when discrepancies are identified. This helps both parties to better define the source of the problem whether it is on the sender or on the recipient end, and identify what measures need to be taken to improve data quality or compliance. Such improvements could be linked, for instance, to IT system configurations, system's validation capabilities, to the training of aircraft operator ground staff collecting the data at a specific station, to the MRTDs in circulation that are not issued in compliance with the technical specifications of ICAO Doc 9303³, or to the technical capabilities of check-in kiosks/desks in automatically capturing MRZ information from passports.
- 3.2 Importantly, a Contracting State's API or interactive API (iAPI) data program should be limited to the identity information of each passenger contained in the MRZ of their travel document, as mandated by ICAO Annex 9 Standard 9.10. Any requirements that deviate from this standardized set of data elements implies a reduction of process automation as this data needs to be entered manually. Standardized passenger data programs present considerable benefits, including swift compliance by airlines, minimization of costs, optimization of data accuracy, enhancements to border security and improved passenger facilitation.
- 3.3 When an API data quality issue is identified by the authority, the list of guiding questions in Appendix can help to determine the cause and possible resolution through a collaborative approach. The Appendix can also be used by airlines to self-assess their processes for API data collection, validation and verification

³ The challenges stemming from passports not issued in compliance with the technical specifications of ICAO Doc 9303 is widely recognized and ICAO is engaging with these States to accelerate their national compliance.

and work to maximize the quality of the data submitted either to other airlines or to authorities. Given the complexities of dealing with passenger data, a measured approach is needed when sanctioning carriers in case of failure with data quality. Better outcomes are to be expected from collaboration than from sanctions imposed on aircraft operators which should be used as a last resort.

- 3.4 Despite the continuous improvements that can be performed to the current processes, existing solutions such as the technical specifications of the [ICAO Digital Travel Credential \(DTC\)](#) and of other digital identities may assist in improving data quality. Digital identities imply that the passport data is extracted directly from the eMRTD's Integrated Circuit (IC) chip and integrate an authentication process to ensure its authenticity. Digital identities have tremendous potential of enhancing the accuracy of the data at the source itself and early in the travel continuum. Data quality will therefore be ensured in the subsequent processes where data is shared between airlines, and between airlines and authorities. The biometric contained in digital identities would facilitate the deployment of biometrically-enabled touchpoints.

Appendix

Guiding Questions for Improving API Data Quality

1. Contracting States

Source of the issue

- Is the issue an isolated case?
- A recurring error is coming from a specific segment or station?
- Are errors caused by a particular document type (passport or identity card)?
- Are issues triggered by specific national travel documents that are not being issued in compliance with the technical specifications contained in ICAO Doc 9303?
- Are issues triggered by a different travel documents use by the traveller for check-in than the one used for border controls⁴?

Data quality reports

- Is a review and reporting mechanism with aircraft operators in place?
- What is the average time that elapses between the identification of the data quality issue by the Contracting State and notification to the aircraft operators?

Cooperation

- Is there a cooperation mechanism in place with aircraft operators to work around identified data quality issues?
- Are notifications issued only in case of relevant data quality issues?
- How often data quality penalties imposed are contested by aircraft operators?

Does an API message with data quality issues fail altogether or are measures in place to omit the low-quality portion and still process the remaining information?

2. Aircraft Operators

Manual Entry of API by the Passenger

What check-in channels allow manual entry of data?

- Airport agent or airline staff
- Airport self-service kiosk
- Web or mobile application
- InterAirline Through Check-In (IATCI)
- Other

Are validation measures in place in the systems to assist passengers or staff entering their data manually, such as:

⁴ ICAO Annex 9 contains the Standard 9.11 to the effect that aircraft operators should not be penalized or held responsible for inconsistencies arising from the use of multiple travel documents by a passenger within one travel journey.

- Date of birth: date in the future not allowed and only numbers are allowed
- Document expiry: date in the past not allowed and only numbers are allowed
- Drop down lists for country codes, document type, sex
- Incorrect field entry highlighted as the passenger or staff enters the data
- Possibility for the passenger or the staff to review the data entered as a final step
- Instructions on how to proceed with non standard data such as the primary name field left blank

When the information collected at reservation is it used to pre-populate in the check-in API collection, are measures in place to correct the data that will be sent through API?

Electronic Capture of API

Are methods in place for semi-electronic or fully electronic capture of API data?

- Swipe
- Scan
- Mobile app to capture MRZ or data from passport photo page or the IC chip from eMRTDs
- Data from loyalty programs reused
- Are there checks for expired documents?

If both manual entry and electronic capture take place, does the electronic capture overwrite the manual entry?

Are the systems programmed to identify passengers for which the verification of API data has not occurred for gate resolution?

Do you have agreements with carriers where trust arrangements on the data verification exist? If no, is the data subsequently verified?