WORLD CUSTOMS ORGANIZATION
ORGANISATION MONDIALE DES DOUANES

Guidance for Customs Administrations

How to Build an
Advance Passenger Information (API) /
Passenger Name Record (PNR)
Programme

[July 2017]

Contents

For the purposes of this document, any reference to Border Control Agencies includes; Customs, Immigration, Police, and all other border enforcement agencies.

1.   INTRODUCTION

Statistics show that there is a steady rise in the volume of commercial air travellers from year to year as more destinations become more accessible and the frequency of flights increases. More and more countries are therefore looking to improve their risk management capabilities by providing border control agencies, including customs, immigration and law enforcement, with key information on air travellers in advance of their travel to or departure from the country.

The ability by border control agencies to identify persons of concern in advance of their arrival or departure is considered significant in supporting a government's commitment to ensuring the safety and security of its citizens. It is also a key component of any risk management programme and can help facilitate travel for low-risk passengers.

For most border control agencies, routine examination of all passengers and their possessions has become an impractical method of securing the border. Taking into account the resources available, control agencies now prefer a more selective approach based on intelligence analysis, behavioural patterns, risk management, and other efficient methods of targeting, while also leaving some room for the use of random selection. It is widely recognized that using such selection methods produces better results than unsystematic or intensive inspections.

Air travel security has changed dramatically over the past decade. Overnight, Advance Passenger Information (API) and Passenger Name Record (PNR) programmes went from being a voluntary initiative in some countries to being a priority for many. The importance of API, in particular, has long been recognized by ICAO in its Standards and Recommended Practices (SARPs) found in Annex 9 — *Facilitation* to the *Convention on International Civil Aviation* (the "Chicago Convention"). In September 2014, the UN Security Council passed Resolution 2178, which, at paragraph 9, calls on states to require airlines operating in their territories provide advance passenger information to the appropriate national authorities to help identify individuals with links to terrorism and report on their movements.

While API is used more broadly for general border control purposes, PNR is primarily used for identifying individuals who are or may be involved in or linked to terrorism, organized crime or other serious crimes.

According to the International Air Transport Association's (IATA) World Tracker, in June 2016, more than 60 countries had an API programme in place and 14 countries had an operational PNR programme. The ever-present threat of terrorist attacks means that many more countries are now also looking to establish these programmes.

2.   PURPOSE

This document has been developed to set out the elements to be considered at a strategic level when setting out to "build" an API and/or PNR programme.

This document is intended for use by representatives of countries that have not yet begun to develop an API and/or PNR programme, or by those that are in the process of developing or making improvements to their API and/or PNR programmes. The document will outline the recommended steps to consider as you begin the journey towards increasing your country's cross-border security by applying improved risk assessment methodologies.

An API and/or PNR programme requires both the establishment of procedures for obtaining advance information on travellers, as well as the development and implementation of automated tools to assist border control agencies in analysing this information. This document will touch upon these procedures and give a preliminary overview of the finer details that are outlined in the WCO "Guidance for Customs administrations on the use of Passenger Name Record (PNR) / Advance Passenger Information (API)" document.

3.   UNDERSTANDING AIR TRAVEL

The decision to develop an API and/or PNR programme is a big one, and a significant amount of preliminary information needs to be taken into consideration. In an effort to begin to determine the level of effort that will be required to successfully implement an API and/or PNR programme in your country, it is first recommended that you look into the following details. In order to determine the magnitude or scale of the programme you wish to develop, you should first identify:

a) the number of international flights operating daily/annually into/out of your country
b) the number of air carriers that operate in your country;
c) the number of international passengers flying into/out of your country daily/annually;
d) the airports that manage international flights;
e) whether the programme will include inbound and outbound flights;
f) whether the programme will include domestic flights;
g) whether a legislative/regulatory framework already exists;
h) whether the programme will include non-commercial (private and corporate) carriers as well;
i) source countries for international flights and any legal/privacy requirements they may have (e.g., European Union); and
j) the number of times and the intervals at which you will require aircraft operators to provide API and/or PNR data, to ensure the most accurate and up-to-date information will be used for risk assessment.

Once you have determined the scope of the programme you wish to develop, this analysis will be a critical tool that will help to inform the discussions you will have with your internal and external partners and stakeholders. Engaging with WCO and International Civil Aviation Organization (ICAO) members that have already implemented an API and/or PNR programme to obtain information on lessons learned and seek assistance or guidance as you move forward will be very helpful.

In addition, early engagement with the aircraft operators that operate in your country, and their related associations, is extremely beneficial in seeking their perspective and finding out more about their respective business models and the time that they may require to become compliant with an API and/or PNR programme in your country.

4.   INTERNATIONAL STANDARDS AND REFERENCE MATERIAL

What is API

Elements of Advance Passenger Information can be obtained from the machine-readable area of a passport. Aircraft operators collect API data as passengers check in. Advance Passenger Information (API) includes the name, date of birth, gender, citizenship, and travel document data (e.g. passport number). In addition to this biographical information, other basic travel information, including the number of checked baggage items and their weight and the seat number may also be captured.

What is PNR

A Passenger Name Record (PNR) is the generic name given by the air transport industry to the record created by aircraft operators or their authorized agents for each journey booked by or on behalf of any passenger, either directly, using the aircraft operator's reservation system, or indirectly, using a sales organization's reservation system. The specific PNR data that is collected varies from one aircraft operator to the next. It includes: in addition to API data, type of ticket, date of travel, travel itinerary, payment information, frequent flyer information, etc. PNR data is captured for the first time when a flight reservation is booked and may be modified several times from that point until the departure of the flight.

With an increasing number of border control agencies requiring air carriers to provide passenger data, there is a need to reinforce the global data format standards that have been developed and approved jointly by the WCO, ICAO, and IATA in order to maintain a good level of standardization and ensure ongoing compliance.

International Standards

The use of international standard message formats for the provision of API and PNR information helps to make automated processes more streamlined and reduces the need for aircraft operators and states to manage multiple individual data provision specifications.

To facilitate the submission of pre-arrival and pre-departure passenger information by aircraft operators to border control agencies, ICAO, the WCO and IATA establish and maintain regulatory global standards on API and PNR data, as part of the work carried out by the WCO/IATA/ICAO API/PNR Contact Committee.

This Contact Committee meets annually to review, maintain and address proposed enhancements to the API (PAXLST) and PNR (PNRGOV) message formats. A formal Data Maintenance Request (DMR) process has been established by the WCO in order to address all proposed enhancements to the API and PNR standard formats.

The establishment of global standards is essential in order to guarantee uniformity in the API/PNR data that aircraft operators must submit to border control agencies. These standards ensure that API and PNR systems are implemented in a cost-effective manner and increase data quality through the use of internationally defined codes.

Message format details and specifications for the API (PAXLST) message and the PNR (PNRGOV) message can be found on the WCO website at www.wcoomg.org.

In addition, "ICAO Doc 9944, PNR Guidelines" will assist you in understanding what PNR data is and how it can be transmitted. This document can be found at www.icao.int.

5. LEGISLATIVE FOUNDATION

In preparation for the development of an API and/or PNR programme it is necessary to review the legislative foundation that you currently have in place and identify if there is a gap that needs to be addressed with new legislation to support an API and/or PNR programme.

The border control agency responsible for the API and/or PNR programme will play an integral role in enhancing your country's national security. Your API and/or PNR programme will be designed to protect your citizens, by helping border control agencies identify travellers who may pose a high level of risk to the safety and security of the country. Therefore, it is vital to develop a national legislative framework to ensure border control agencies have the authority to collect and process API and PNR data. Experience has shown that most aircraft operators will not provide API and/or PNR information if they are not required to do so by law.

This legislative foundation will identify the requirements for aircraft operators on providing specific API and PNR passenger information regarding all individuals on board an aircraft, in advance of the aircraft's arrival or departure. In addition to identifying required passenger information, your legislation may also contain the timing intervals at which API and/or PNR

information must be sent to you for processing (i.e., inbound, outbound, multiple updated versions of traveller information, crew requirements, etc.) and requirements related to the quality of the data and the way in which it is provided.

As well as your own country's legislative foundation, the WCO and ICAO also have specific guidelines and requirements for API and PNR passenger information that aircraft operators and states are expected to comply with. The following documents outline the requirements for technical data formats and guidelines for API and PNR.

<u>API:</u>

- *Guidelines on Advance Passenger Information (API)*
  - o *Appendix IIA: Passenger List Message (PAXLST) Implementation Guide*
  - o *Appendix IIB : API Response Message (CUSRES)*

  http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/tools/api-pnr.aspx

- *Management Summary on Passenger-related Information ('Umbrella Document')*

  http://www.icao.int/Security/FAL/Documents/Umbrella_Document.2013Dec03.pdf

<u>PNR:</u>

- *Annex 9 to the Convention on International Civil Aviation (Facilitation)*

  http://www.icao.int/Security/FAL/Pages/Annex9.aspx

- *Guidelines on Passenger Name Record (PNR) Data (Doc 9944)*

  https://www.iata.org/iata/passenger-data-toolkit/assets/doc_library/04-pnr/New%20Doc%209944%201st%20Edition%20PNR.pdf

- *Air Transport & Travel Industry: Principles, Functional and Business Requirements PNRGOV*
- *Passenger and Airport Data Interchange Standards: EDIFACT Implementation Guide, PNR Data Pushed to Other Authorities, PNR GOV Message*
- *Passenger and Airport Data Interchange Standards: XML Implementation Guide, PNR Data Pushed to Other Authorities, PNR GOV Message*

  http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/tools/api-pnr.aspx

As mentioned earlier, Annex 9 to the Chicago Convention contains Standards and Recommended Practices (SARPs) on API and PNR. Annex 9's Standards have a conditional binding force on ICAO's Member States.

For example, some of the existing Standards are as follows:

- Each Contracting State that introduces an Advance Passenger Information (API) system under its national legislation shall adhere to international recognized standards for the transmission of Advance Passenger Information.
- When specifying the identifying information on passengers to be transmitted, Contracting States shall require only data elements that are available in machine readable form in travel documents conforming to the specifications contained in Doc 9303.
- Contracting States shall ensure that only those data elements that have been incorporated into the UN/EDIFACT PAXLST message are included in the national programme's requirements or follow the WCO's Data Maintenance Request (DMR) process for any deviation from the standard.

6. PRIVACY

API data is collected by aircraft operators to ensure aviation safety and security, and to meet the requirements of border control agencies, while PNR data is collected by aircraft operators for their own business purposes and then shared with states. Once the data is acquired by the aircraft operator, it is stored in the automated reservation and departure control systems of the carrier or a third party service provider.

An API and/or PNR programme is designed to enhance the security of a country. To achieve such objectives, a state must first focus on how to obtain and collect passenger information. In many countries, passenger information is considered sensitive data and must be handled appropriately. Once a passenger's personal information has been collected, controls may also need to be set up in order to manage the use, access, retention, disclosure and deletion of passenger data. In addition, further special handling procedures may be needed to protect aircraft operators' confidential business practices and information.

If it is expected that passenger information will be shared with other internal or external agencies, Information Sharing Arrangements or Memoranda of Understanding (MOUs) may be required with different control agencies in your country or abroad and with aircraft operators, and it is therefore important to account for this when planning your development timeline.

Identifying the scope of your API and/or PNR programme will help you to determine which passenger data elements will need to be collected. It is possible that not all of the available elements from the API and PNR data sets that have been approved by the air industry, the WCO and ICAO will be required to meet the needs of your programme.

7. FUNDING

The development of an API and/or PNR programme will involve initial costs and require ongoing funding and resources to ensure that the programme can be developed and maintained in line with the security and risk management objectives of the country and its border control agencies.

It is recommended that you conduct a cost benefit analysis to identify the options available and enable you to decide whether to build and maintain the technical and operational solutions in-house or to engage an external provider. It is possible to include a mixture of in-house and external solutions.

With the push to have all countries develop an API and/or PNR programme, in some cases funding is being arranged at state level and may include funds from outside sources.

However, in other cases, the development of an API and/or PNR programme is needed to meet the objectives of more than one government agency and funding may be sought from internal sources. For example, if the customs, immigration and air transportation functions are undertaken by separate entities within your government, and they will all benefit from an API and/or PNR programme, then funding to build the programme may come from multiple sources. A "Single Window" concept, whereby the data is collected once and distributed to multiple domestic recipient agencies, can be beneficial for a multi-agency programme.

8. PROJECT MANAGEMENT CHECKLIST

Ensuring that you have a well-structured approach to establishing and implementing an API and/or PNR programme, with due attention paid to how its objectives can be met, will mean that you will be much better placed to ensure successful implementation.

The following steps provide an overview of what to consider when building and implementing an API and/or PNR programme:

1) Appoint a Project Manager.
2) Take the budget into consideration and appoint project team members from participating departments and organizations.
3) Determine the benefits and objectives of the programme to be implemented. This includes developing a project strategy and business case.
4) Define the scope and legal basis of the programme to be implemented.
5) Review and analyse international documentation, industry standards and regulatory guidance.
6) Define IT requirements, including whether the development will be done in-house or by a third party provider.
7) Plan a realistic project timeframe, including policy making steps.
8) Develop a communications plan.

9) Begin to engage and consult with internal and external stakeholders and partners and convene periodical meetings.

10) Design and develop business and technical processes. Once developed, begin operational and system testing to ensure that what has been developed meets programme objectives.

11) Complete all training, provide for ongoing service support and prepare for go-live.

12) Conduct a post-implementation review to ensure deliverables and objectives were met, and then close the implementation project.

The following gives you items to think about once your system has been developed and implemented:

1) Evaluate and plan for data quality assurance and compliance.

2) Plan and budget for a process to enable regular upgrades and system enhancements.

3) Future possibility of expansion to other modes of transport (land, rail or maritime), or other programmes (Interactive API).

9. SYSTEM DEVELOPMENT

Before you can start developing the technical system, you need to identify the business requirements that the automated system is being built to meet.

This section, as well as sections 10, 11, 12 and 13 provide a more detailed outline of the business and technical components that are necessary to meet the objectives of the project and will also help you to identify technical system requirements.

Data collection and transmission options

By now, you should have decided whether you will be developing an API and/or PNR programme. You now need to determine how you are going to collect the passenger information from aircraft operators. The choice of whether to build a direct interface in-house or to engage with a third party service provider can be determined by a number of factors including cost, timeframe, objectives and available in-house technical expertise.

There are multiple Electronic Data Interchange (EDI) techniques available for acquiring passenger information, and many states use more than one. Message Queue (MQ) is currently the safest and most reliable method, however others are available:

- Web-based applications or services
- E-mail
- Type B
- FTP/SFTP
- MATIP
- Contract with a third party service provider

Section 4, above, specifically outlines the use of industry standards for the provision and acquisition of API and PNR data. The use of the PAXLST and PNRGOV industry standard message formats contributes significantly to reducing the timeframe involved in developing the programme. Many aircraft operators and states worldwide have already adopted these standards, and consulting them about lessons they have learned will assist you in your research and development.

Data processing and display

In addition to building an IT solution used to acquire passenger information, you will also need an IT solution that displays the passenger information to enable border control agencies to analyse the data for risk assessment purposes. Any information you receive will need to be cleansed in line with requirements or restrictions on sensitive data and to ensure that the data is displayed in a more user-friendly format

Data protection and privacy legislation already exists in many countries in order to protect a person's right to privacy. For this reason, it is critically important that data protection be considered when automating the collection, processing and display of passenger information.

"Push" vs "Pull" methodology

Traditionally, countries would obtain PNR data by accessing aircraft operator reservation systems and "pulling" (screen scraping) passenger information and saving it to their risk assessment applications. As a result of privacy concerns, however, there has been a shift to the "push" method for data acquisition. The "push" method requires aircraft operators to "push" passenger information, using industry standard formats, to the requiring country by using their own IT solution. Doc 9944 recommends that a State consider the adoption of the "push" method.

Determining whether to use the "pull" or "push" methodology will depend on your objectives and business requirements, as well as other factors that may favour you choosing one method over the other (i.e., data privacy and legal directives).

System configuration and architecture

To ensure that the appropriate infrastructure is in place to support a new API and/or PNR programme, you must first look at any existing hardware, software and databases that your country may have that can be used or developed further. This will make it easier to decide which additional hardware and software products you need.

Since there are multiple IT solutions available to choose from, budget, timeframes and the programme objectives must be considered when setting out the definitive requirements for the architecture of your system.

Preparing business and technical documentation

Once you have chosen your IT solution, you should start to document business and technical requirements. These requirements will specify exactly what the expected outcomes are to be from a business perspective (identify high-risk passengers while facilitating travel for low-risk passengers) and from a technical perspective (automated risk assessment).

This documentation will significantly assist you in preparing test cases and packages that will be used internally to ensure that the business and technical objectives of the project have been met.

System security and user access

The very nature of an API/PNR programme means that access to passenger information is very often restricted to only those individuals that require this information to perform their day-to-day activities.

For this reason it is necessary to have strict individual user access profiles established for each person that has access to passenger information. With these user access profiles, an audit trail can also be established to ensure that data protection commitments are being upheld.

Continuity and disaster recovery plan

Although programmes are built on the premise that they will be available 24/7, 365 days a year, you should also put in place some precautionary procedures to follow in the event of a system outage or loss of passenger information. These system and support procedures should include manual back-up processes and the ability to retrieve back-up data to stabilize the programme.

The impact that a system outage or slow-down may have on aircraft operators' ability to remain compliant with legislative requirements should also be taken into consideration.

10. INDUSTRY ENGAGEMENT

At an early stage in the analysis, development and implementation of your programme, in addition to your internal consultations and discussions, it is highly recommended that you develop and maintain an ongoing communication strategy with aircraft operators and other external industry partners, including other countries, international organizations (WCO, ICAO, IATA) and service providers. In order to manage engagement with industry, it may be beneficial to use the "Carrier Account Management" model, whereby support personnel are assigned to specific air carriers and maintain an ongoing relationship with them.

Through these consultations you will gain invaluable information on lessons learned by aircraft operators, service providers (vendors), and other countries who have already implemented an API and/or PNR programme. In addition, they will be able to provide you with an insight into cutting-edge technology, and provide you with more technical information on how to implement an API and/or PNR programme.

As the infrastructure of your programme begins to take shape, one-on-one consultation with each aircraft operator that will be affected by your new programme requirements will allow you to learn more about their business model. This, in turn, will enable you to establish a testing strategy, create technical guidance for aircraft operators, decide on a realistic timeline, and develop an action plan that will help to bring aircraft operators on board at a specified time in a way that meets your project needs and fits in with your planned timeframe.

11. COMPLIANCE

The success of any API and/or PNR programme is dependent on the quality and quantity of passenger data that is received, processed and used for risk assessment. Many countries have implemented legislation and regulations that set out data provision requirements alongside penalty and mitigation regimes that may/will be imposed on aircraft operators, if the quality and quantity of passenger information is not maintained.

Data quality has quickly become a high priority for both states and aircraft operators. States require high quality data in order to identify high risk passengers and many aircraft operators strive to ensure continued high quality data in order to avoid penalties and fees, but also to ensure the safety of their aircraft, crew and passengers and to avoid errors in the targeting process as a result of poor quality data.

In addition, incentive programmes may be considered for highly compliant aircraft operators who continually meet the obligations of your API and/or PNR programme. This would ensure continued compliance and may encourage those less compliant to strive for a higher level of conformity.

12. CREATING/IMPLEMENTING A PASSENGER INFORMATION UNIT (PIU)

To support an effective API and/or PNR programme a PIU must be established to support the legislative framework that has been implemented by your country. The PIU has the critical task of identifying high risk passengers, based on the passenger information received from aircraft operators.

Targeting officers will need to be trained to identify, interpret, research and analyse a significant volume of diverse and complex information to determine the level of risk posed by a passenger and pursue appropriate action. Below is a high-level overview of what is needed to build and support a PIU. It is strongly encouraged that you discuss more detailed requirements for setting up a PIU with other countries that already have a well-established programme.

Infrastructure

When establishing a PIU it is necessary to identify the best physical location to conduct risk assessment activities. It may be feasible to have just one national PIU or you may wish to set up PIUs across national airports. Either way you must ensure that the day-to-day objectives of

detecting and interdicting high-risk passengers at the earliest point in the travel continuum can be met.

The facility may also require the following:
- IT systems and on-site security
- Heating/air conditioning
- Transport options (train, bus, parking facilities)
- Housing for other government agencies (police, border control, etc.).

Human Resources

Based on the scope of the programme you are implementing, you will need staff to fill the targeting officer, support and management positions in the PIU. For example, if your programme operates on a 24/7, 365 days a year basis, then it is possible that you will need three times the number of staff needed for a normal 8 hour working day.

The positions that these staff occupy may range from office support to senior management levels, and cleaning and maintenance staff. Of critical importance is the need to create a unit of specialized targeting officers and it is recommended that these individuals come from a cross-section of agencies that will allow them to deal with customs, immigration and police issues. If the programme is to be integrated with programmes or databases from other agencies within your government, it may be necessary to include staff from those agencies in your human resource and infrastructure planning as well.

The PIU must have a clear governance structure detailing, among other aspects, how different partner agencies will cooperate to successfully manage the PIU.

To ensure that the programme can be established and well maintained, resource and staffing requirements need to be well documented when determining your initial and ongoing budget requirements.

Scope of Functions

To ensure the PIU can meet its objectives, it may be best to separate the PIU into different functioning and operational areas. These areas may include:

- technical and infrastructure support;
- programme support (legislation and policy);
- recruitment and training;
- communication, including stakeholder and client engagement;
- inbound/outbound passenger risk assessment;
- data quality and compliance; and
- corporate and stakeholder reporting.

Training

The development of training materials is required to ensure that internal staff and the newly appointed targeting officers can process passengers using the automated IT solutions that have been put in place and to guarantee that the operational requirements that are needed to support the development, implementation and the ongoing maintenance of the programme are in place.

In addition, it is recommended that technical specifications and training materials be developed for aircraft operators. This material will assist them in their development activities that will allow them to comply with your programme. The material can also be used by aircraft operators to train their staff on the legislative and operational requirements of your API and/or PNR programme.

Of significant importance is the need to have an ongoing training programme in place for new and existing targeting officers that will allow them to stay on top of new developments and understand new trends and areas of concern.

Interagency Cooperation

To provide for a very effective programme that supports the prevention, detection and prosecution of terrorist acts and serious crime, cooperation with other agencies may be required. Early engagement will significantly contribute to a successful and robust API and/or PNR programme.

The integrity of an API and/or PNR programme can be further enhanced if passenger information can be verified and validated against other enforcement programmes within your state.

Cross-border Coordination

As you start to develop an API and/or PNR programme, there are significant benefits to coordinating with other cross-border states on the technical and operational components of your programme. For example, if a bordering state already has an established API and/or PNR programme, it is likely that their business model is similar to yours and learning from their experiences could be very useful when defining the scope of your own programme.

If the bordering state does not have an established API and/or PNR programme, by coordinating your research and development, you may find savings.

In addition, during the research stage and while finalizing the legislative infrastructure necessary to support an API and/or PNR programme, the need for sharing information with other states should be discussed and appropriate data sharing and data protection requirements included if necessary. The sharing of passenger information between states can further support an API and/or PNR programme and help to confirm or disprove the level of risk presented by a

passenger. Additionally, the benefit of sharing passenger information between states significantly helps to support the safety and security of the citizens and the border of that state.

13. REPORTING

Preparing reports is extremely useful in being able to gauge the success and integrity of your programme. Reports can be used to identify trends and areas of interest based on the results of risk assessment that has been completed over a period of time, and to allocate resources in areas of high risk. For example, producing statistics on the number of flights or travellers that have arrived in your country can help to ensure that you have the proper infrastructure in place and that sufficient resources are being deployed to manage current/increasing volumes of air travel.

Reports can also be developed to provide specific details or summaries of passenger risk assessments (e.g., number of targets issued, number of passengers subject to enforcement actions / arrest, number of penalties/fees issued, etc.). Aircraft operator compliance reports can also be generated to identify areas of concern related to data integrity. These reports will allow you to work with aircraft operators on areas where there is a need for improvement.

In addition, reports can be developed to monitor and ensure the integrity of your IT solutions so that you can continue to maintain a high level of performance. For example, calculating processing times can highlight where there are system performance issues. Reports can also provide statistics on what the peak times are for incoming messages and thus determine when system performance is critical. Tracking system interruptions and outages will help you to better analyse your system's performance and identify when aircraft operators may not be compliant.

14. CONCLUSION

This document has provided a very high-level overview of the key elements that need to be researched, analysed, documented and developed in order to "build" an API and/or PNR programme. From an initial concept or idea to the migration of aircraft operators onto your system, this document will serve as an introductory document to the "How to "use" an API / PNR Programme" document, which will provide further guidance on how to process the incoming data.

Throughout this document there have been references to existing documentation, standards and API and/or PNR programmes. If you are considering building an API and/or PNR programme you are strongly encouraged to read the documentation that is available on the WCO, ICAO and IATA websites. Familiarizing yourself with the technical industry message standards will serve you well as you begin your discussions with aircraft operators and other air industry partners. There are multiple lessons to be learned from colleagues in other countries that have already implemented an API and/or PNR programme, and in some cases an Interactive API programme. Learning from them will prove to be invaluable, especially when looking to develop a PIU.

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ICAO WCO IATA

Management Summary on Passenger-related Information

['Umbrella Document' version 2.0 – July 2017]

Published by the International Civil Aviation Organisation (ICAO), the World Customs Organisation (WCO) and the International Air Transport Association (IATA)

Introduction

1. The purpose of this document is to provide a high-level executive brief that describes and distinguishes between the different sources and systems for passenger-related information that is required to be provided by international aircraft operators to border control agencies. General aviation operations are excluded from the scope of this executive brief, although the term "aircraft operators" is used throughout the document for the sake of consistency. Consequently, this document should not be considered a foundation for the evolution of API and PNR requirements for application to all international air transport.

2. A growing number of States require aircraft operators to provide information on passengers that intend to travel to, from or overfly their territory. The information usually exists in the aircraft operator's reservation system and departure control system operated by the aircraft operator. Some States also require passenger related information from other modes of transport.

3. Taking into account the increasing number of air passengers, the increase in security related measures, the environmental and efficiency-driven innovations which result in bigger airplanes, together with the need for more efficient passenger flows at airports, it is necessary to develop more intelligent and efficient methods to check passengers and their baggage. This means that decisions to check passengers will have to be made more on the basis of pre-flight risk analysis instead of generally increasing (level or number) of checks at immigration or cross border desks and baggage claim areas.

4. Mainly as part of increased border controls, passenger-related information, available in the systems of the aircraft operators, are being used by border control authorities to manage in advance the cross border movement of persons and goods. Security-related controls are increasingly applied even before the passenger boards the aircraft at the beginning of the journey. In any case, such controls have to be applied before the arrival of the passenger in the country of destination, in order to perform risk-based targeted controls of persons and goods. Without substituting for border controls these measures also facilitate the flow of low-risk passengers at airports.

5. The use of passenger related information is often challenged by persons and organizations that are concerned about the protection of the privacy of personal

information. API data is generally not required for aircraft operator processes, thus it is only collected and stored in case of a legal requirement. In most jurisdictions, it is only permissible to use passenger-related information for law enforcement purposes, when ensuring proper guarantees for the protection of such information that authorities receive. This ensures that the privacy of the passenger is safeguarded and misuse is prevented.

6. Adoption of Resolutions 2178 (2014) and 2309 (2016) by the UN Security Council, which encouraged States to require airlines to provide passenger related Advance Passenger Information, will see the increase of passenger information regimes globally. Requirements based on standards enable seamless, cost efficient and timely implementation.

Passenger-related information

7. The flow of passenger-related information from the aircraft operators to border control authorities can be divided into three main streams:

   1. Passenger Name Record (PNR)

      a. Reservation Data
         A reservation can be made from approximately 360 days before departure until such time prior to departure the aircraft operator has decided they can no longer operationally process new passengers and ensure an on time departure (depending on the airport and route). Approximately 48 to 24 hours before departure all PNRs are transferred from the aircraft operator Reservation System to the Departure Control System (DCS)[1]. In the DCS the operational handling of the flight will take place, at check-in (e.g. intake of baggage and issuing of boarding passes).

      b. Passenger Manifest
         From information available, the passenger manifest can be generated. When States require a passenger manifest, the information requirements are limited (ICAO Annex 9, Standard 2.13 and Appendix 2). This passenger manifest can be sent digitally or in hard copy. Some aircraft operators forward the passenger manifest to the airport of destination for operational purposes (passenger and baggage handling). Annex 9, Standard 3.48.7 requires that States requiring passenger data to be transmitted electronically shall not also require a passenger manifest in paper form.

   2. Advance Passenger Information (API)
      As API data is not generally required for aircraft operator processes, it will normally be collected and stored only in case of a legal requirement[2]. Depending on the timeframe of collecting the data, two methods are employed:
      a. the data can be entered manually:
         i. at the moment of reservation by the travel agent or by the passenger entered in the reservation record;
         ii. at the moment of check-in by the passenger on the internet or mobile application check-in (entered into the API section of the DCS;
      b. the data can be entered automatically from the machine readable zone of the travel document, if available:

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[1] A number of aircraft operators use one system, which accommodates both PNR and DCS information.

[2] EU based aircraft operators are bound by strict privacy legislation and are therefore only allowed to collect and disclose API data in case of a legal obligation

      i.   by the passenger at the kiosk check-in;
     ii.   by the aircraft operator agent at the desk check-in;
    iii.   at the moment of boarding(for exceptions) by the aircraft operator agent.

The registration by the passenger at the moment of reservation is operationally the best moment. Manually entered information has the risk that incorrect information is supplied (e.g. a zero instead of the letter 'O'). The best option from a data quality perspective is the collection of the machine-readable information via an automated process.

Passenger Name Record (PNR)

8.   PNR information is the generic name given to records created by the aircraft operators for each flight a passenger books. PNR records contain information provided by the passenger and information used by the aircraft operator for their operational purposes. PNR information may include elements of API. PNR provides a mechanism for all the different parties within the aviation industry (including travel agents, aircraft operators and handling agents at the airports) to identify each passenger using a common format, and have access to all information relevant to his/her journey; departure and return flights, connecting flights (if any) and special services required on board the flight.

9.   The amount and the nature of the information in a PNR record can vary from aircraft operator to aircraft operator and from passenger to passenger, often depending on how the reservation was made. A PNR may contain as little information as a name, or may contain full address, contact details, credit card information and all data pertaining to the booking.

10.   A passenger or a travel agent may make a reservation for a flight with an aircraft operator even if a visa application or travel authorization has not been submitted. Passengers are able to make reservations in various ways, most commonly through direct contact with the aircraft operator via its website, mobile application, telephone reservations office, travel agents or via aircraft operator partners. Not all of the available PNR information involved in this reservation process is routinely transferred to the aircraft operator's PNR system.

11.   PNR records are created at a time when a passenger requests a reservation on a flight or series of flights, typically from one year before intended departure date up to the day of departure for immediate travel. Information contained within the PNR may increase or be amended between time of creation and time of travel.

12.   The basic information of a PNR <u>may</u> include:
    a.   passenger name (first, last and title);
    b.   details of the intended travel;
    c.   method of payment details, which may include (partial masked) credit card information;
    d.   special Service Requests (SSR) such as preferred seating, assistance for persons with reduced mobility etc., as requested by the passenger;
    e.   Contact information;
    f.   frequent flyer number;
    g.   travel document information, which may include biographic information, as part of the obligation for aircraft operators to provide API information to the border control authorities in the country of departure or destination;
    h.   additional remarks or comments (if any).

13. PNR information is used by governments to conduct analysis that helps to identify possible high-risk individuals that may have been otherwise unknown to government authorities and make, where appropriate, the necessary interventions. PNR information can be provided by aircraft operators by sending the information electronically ("Push" method) or allowing the appropriate authorities to access the parts of their reservation systems where the PNR information is stored ("pull" method). However, internationally there is an agreement to utilize the "Push" method, for data privacy reasons.

14. To ensure interoperability, relevant international messaging standards have been used to develop a push method message format called PNRGOV. PNRGOV is the international standard that must be used for the transmission of PNR information to the appropriate government authorities.

15. The information included in PNR records may not only relate to reservation information but also information gathered at check-in when the passenger presents himself to the aircraft operator representatives at the airport. Check-in Procedures are normally undertaken using the DCS of aircraft operators or the contracted handling agent, designed specifically to perform airport handling functions.

16. Check-in generally describes a procedure by which an aircraft operator is alerted to a confirmation that a passenger intends to utilize the seat for which a reservation is held and to actually board and travel as intended. This procedure may vary significantly between different aircraft operator business models and airports. This may include self-service check-in by internet, mobile telephone, airport kiosk or through-check when travelling on a sequence of connecting flights for which participating aircraft operators have commercial arrangements in place, including code-share agreements. Conventional agent check-in at the airport is decreasing as self-service options become more available and utilized.

17. Given that DCS systems are normally deployed in airport environments to facilitate functions associated with airport activity, check-in records are created very close to departure, normally not earlier than approximately 48 hours, although this time will vary by aircraft operator system business model.

18. The processes implemented by aircraft operators vary and some separate check-in formalities into distinct steps, which may be performed separately and several hours apart, for example, web check-in the night before baggage is checked at the airport. Where appropriate, and dependent on each airline's business practice, the check-in process may involve:
    a. seat allocation or confirmation of a previously requested seat assignment;
    b. recording information such as number of pieces or weight of baggage which is assigned to the hold of the aircraft;
    c. collection of API (biographic information), to comply with any API program of the country/countries involved in the journey for which check-in is performed;
    d. confirmation or action of any special requests;
    e. some but not all systems may indicate whether passengers form part of a group or party.

19. In some cases aircraft operators conduct checks during the boarding process in order to satisfy security procedures, including baggage reconciliation, i.e. that baggage and its owner travel together. This does not necessarily involve the collection of information, but might include automatic (or automated) system functions that change a check-in record status from 'checked-in' to 'boarded'.

20. When necessary (for exceptions) check-in (seat assignment) and/or the collection of API data can be performed during the boarding process. Examples may include:
    a. passengers who are in transit and connecting from another flight where check-in was not performed due to technical restrictions between aircraft operator systems;
    b. API data was not previously collected because a data sharing agreement is not in place due to technical or legal reasons.

It is perhaps noteworthy that, where seat assignment is offered by aircraft operators as a service component, seat numbers may change several times for various operational reasons or upon passenger request both before and after boarding has taken place. Passengers may not occupy their assigned seat once on board.

Advance Passenger Information (API)

21. To facilitate the growth of air passenger traffic, API systems were developed by border services. The scope of the use of these API systems is widening as it is increasingly used for security measures. Identification Data of passengers are sent to authorities in advance (before the arrival of passengers) and can be processed against computer databases before the arrival of the passengers, resulting in faster clearance of low-risk passengers, improved compliance and reduced inspection time.

22. API includes identification details from the passport or other travel document of the passenger together with basic flight information. For the majority of the travellers, the identification details can be obtained from the machine-readable zone of Machine Readable Travel Documents (MRTDs), e.g. passports. The specifications for the machine-readable travel documents are found in ICAO Document 9303.

23. Aircraft operators are responsible for the accuracy, completeness and timeliness of transmission of API data. However, the accuracy of submitted API data will be affected by the time of transmission required by a government authority. Passenger API data may be collected at time of reservation or entered manually by the passenger during self-serve web or mobile check-in. If the authority requires the API data to be transmitted at time of check-in, the travel document information of these passengers will not have been verified, as an aircraft operator representative has yet to examine the travel documents. Passengers using self-service check-in will normally have their travel documents examined by an aircraft operator representative when depositing luggage or at the gate prior to boarding if the passenger has no luggage. At this stage aircraft operators may elect to validate the accuracy of API data previously supplied by the passenger and, if necessary, correct and resubmit the validated API data to the authorities.

24. A definition of *Advance Passenger Information (API) System* can be found in Annex 9 to the (ICAO) Convention on International Civil Aviation ("Chicago Convention"):

    An electronic communications system whereby required data elements are collected and transmitted to border control agencies prior to flight departure or arrival, and made available on the primary line at the airport of entry.

25. A standardized API system should include the following key elements:
    a. an API system should be user-friendly, seamless and facilitate the travel of passengers as a result of API data analysis;
    b. an API system should, as an important part of the required API data, contain the data from the machine readable zone of travel documents (refer ICAO Document 9303);
    c. an API system should take into account the interests of key stakeholders;

d. all relevant data requirements of the requesting border agency must be taken into account. The data requirements should originate from one representative agency of the requesting Border Control Authority;

e. border Control Authorities should work together to respect the data requirements of different Control Authorities;

f. governments should ensure that data is transmitted from an aircraft to a government single window to avoid multiple requests from a government. The single window will perform an analysis of the data and enable other government agencies to have access to that data where the appropriate data sharing agreements and legal grounds are in place;

g. management of contractors and costs in a collective way to ensure unilateral systems are capable of operating in bilateral and multilateral environments, taking account of international recognised standards to achieve a harmonised environment;

h. with respect to the message format for transmission of API and interoperability with aircraft operators, per the Guidelines on Advance Passenger Information (API) published by WCO/ICAO/IATA, systems should be developed to support the use of the UN/EDIFACT PAXLIST messaging standard. However, this should not be seen as constraining the ability to adopt other internationally agreed standards in the longer term;

i. API systems should seek to minimize the impact on existing aircraft operator systems and technical infrastructure;

j. an API system should be capable of round-the-clock operation, with contingency procedures in place to minimize disruption to aircraft operator operations in the event of system failure.

26. Border Control Authorities choosing to introduce API systems should adopt the guidelines contained in this document. However, nothing in this document is to be construed as contradictory to national legislation or regulations.

Interactive API (iAPI)

27. The API approach is being gradually superseded by more demanding approaches in light of increased threats to security. For example in some States, a more sophisticated form of API is being deployed as an instrument to confront potential risks posed by aircraft operator passengers, especially in regard to aviation security, immigration requirements, drug trafficking and other threats to national security. This form of API called interactive API (iAPI) is an additional means of enhancing border security. A distinguishing feature of iAPI is that it provides for passenger-by-passenger real-time interactive interchange of electronic messaging between the aircraft operator and the border control authority in the country of departure or destination. At the instant a passenger checks-in to a flight, passenger information flows from the aircraft operator's DCS to the border control authorities, who in turn transmit (in real time) an electronic message response to the aircraft operator permitting or preventing the boarding of the passenger. This type of system is referred to as "Board/No Board", "Red Light/Green Light System" and "Authority to Carry". The aircraft operator does not issue a boarding pass until a response is received from the government.

28. A definition of interactive API (iAPI) can be found in Annex 9 to the Chicago Convention:

An electronic system that transmits, during check-in, API data elements collected by the aircraft operator to public authorities who, within existing business

*processing times for passenger check-in, return to the operator a response
message for each passenger and/or crew member.*

29. iAPI of benefit to aircraft operators as it reduces the exposure of the aircraft
operators to penalties and removal and detention costs associated with bringing
improperly documented passengers into the country of destination. iAPI may improve
data quality issues as a result of the passenger-by-passenger real-time exchange of
data.

30. Implementation of iAPI poses certain technical challenges in terms of system
availability, training of ground handling staff, outage management, and reliability of
electronic message transmissions, managing service levels, and maintaining data
quality by systems operated by both the aircraft operator and State.

31. The WCO/IATA/ICAO Guidelines on Advance Passenger Information are intended to
address the structure and processes relating to iAPI systems developed internally by
a State, or which are developed by a commercial service provider based on the
State's technical specifications. The WCO/IATA/ICAO Guidelines are not intended to
address systems developed entirely by commercial service providers and then
marketed to a State as a turn-key data exchange solution.

Use of passenger-related information by immigration authorities

32. Immigration authorities are responsible for facilitating the legitimate entry and exit of
passengers and to prevent illegal immigration. With the use of passenger related
information, border control authorities can make a decision if a passenger can be
allowed to enter or leave a country before the passenger has presented himself to the
border control authorities. This can limit the number of physical inspections and
facilitate the flow of passengers at an airport.

Use of passenger-related information by customs authorities

33. In most countries the customs authority is responsible for monitoring the cross border
movement of goods and to prevent the entering of prohibited, restricted and regulated
goods. Part of that responsibility includes inspection of carry-on and checked-in
baggage. Passenger information has proved to be useful when following a risk-based
approach in identifying high-risk passengers and to secure and facilitate the entry and
exit of the baggage of passengers with minimal intrusive inspections.

Legal basis

34. The obligation for passengers and aircraft operators to provide passenger-related
information must be based on legal provisions, which should include rules for the
collection, use and storage of passenger related information, together with measures
to protect the information and safeguard privacy.

35. On an international level, basic rules for the use of API, iAPI and PNR are developed
in ICAO Annex 9‒Facilitation to the Convention on International Civil Aviation (Chicago
Convention, 1944) and the Revised Kyoto Convention of the WCO. For API, Standard
3.48 of Annex 9 obliges each Contracting State that introduces an API system under
its national legislation, to adhere to international recognized standards for the
transmission of API. Recommended Practice 3.48.8 has a similar recommendation, for
iAPI systems.

36. The Revised Kyoto Convention states in Recommended Practice 8 of Specific Annex J, Chapter 1 that Customs, in co-operation with other agencies and trade, should seek to use internationally standardized advance passenger information, where available, in order to facilitate the Customs control of travellers and the clearance of goods carried by them.

37. On PNR information, Recommended Practice 3.49 of Annex 9 states that Contracting States requiring PNR access should align their data requirements and their handling of such data to guidelines contained in ICAO Document 9944.

PNR Guidelines

38. The PNR Guidelines were developed by ICAO in close cooperation with IATA and the WCO. Currently, the PNR Guidelines include an explanatory text for the use of PNR information and an Annex with a maximum list of PNR data. The first version of the PNR Guidelines was published in 2006. The latest edition of the PNR Guidelines was published in 2010 as ICAO document 9944. The cooperation between the three organizations was consolidated by the creation of the Contact Committee for the WCO/IATA/ICAO Guidelines on Advance Passenger Information (API) and Passenger Name Record (PNR) Data. Their goal is to secure uniformity in the interpretation and the application, to monitor the implementation and to consider any amendment to these guidelines.

API Guidelines

39. The API Guidelines were developed in 1993 under the auspices of the WCO and IATA. In 2003, ICAO joined the development of the API Guidelines. Further versions of the API Guidelines have been published in 2010 and 2013. The API Guidelines comprise an explanatory section for the use of API, including iAPI details. The Guidelines also consist of a maximum list of API data elements, an Annex with the internationally recognised electronic UN/EDIFACT message (PAXLST) and an implementation guide for the PAXLST message. The iAPI response message details for an UN/EDIFACT message (CUSRES) are also included in a separate Annex to the API Guidelines.

Electronic exchange of passenger related information

40. The electronic exchange of passenger related information is a prerequisite for the efficient application of API, iAPI and PNR information. However, various data exchange requirements, often in different message formats and at various times, have resulted in the proliferation of sometimes conflicting national requirements, causing unnecessary cost and compliance burdens for aircraft operators. Standardized messages for API, iAPI and PNR are necessary to be able to efficiently exchange information between aircraft operators and border control authorities.

41. PAXLST and CUSRES requirements, used in API and iAPI transmissions are in the approved UN/EDIFACT (United Nations rules for Electronic Data Interchange For Administration, Commerce and Transport) format. New message formats for transmission of PAXLST and CUSRES should be approved so as to function as internationally recognized standardized messaging. The PNRGOV message has been developed for reporting PNR data. This message is based on EDIFACT rules and syntax. The message is supported by an aircraft operator industry directory identified as the PADIS directory.

42. The UN/EDIFACT rules comprise a set of internationally agreed standards, directories and guidelines for the electronic interchange of structured data, and in particular that related to trade in goods and services between independent, computerized information systems. The PAXLST message is the standardized message for API and iAPI messages. The CUSRES message is the standardised response message for iAPI. The PNRGOV message is the standardised message for PNR information.

43. The standardised messages are also being supplemented by modern message techniques, such as international XML standards or web-based applications.

International cooperation

44. The developments on API and PNR are discussed and coordinated within each of the three organizations WCO, IATA and ICAO. Interested governments and other stakeholders, including aircraft operators , take part in these discussions with the aim to further develop common Guidelines and to maintain the standardised messages. More specifically, the work related to the maintenance of the API PAXLST and iAPI CUSRES message and the PNRGOV message is carried out by the contact committee for the WCO/IATA/ICAO guidelines on advance passenger information (API) and passenger name record (PNR) data.

NB: This document does not address state requirements for crew-related information.

Structure of the Passenger Information Guidelines and Messages

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┌─────────────────────────────────────────┐
│         ☂ Umbrella document:            │
│  Management Summary on Passenger-        │
│  related information: PNR, API and iAPI  │
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           │                    │
┌──────────────────┐  ┌──────────────────┐
│  ICAO/WCO/IATA   │  │  WCO/IATA/ICAO   │
│      PNR         │  │      API         │
│  Guidelines and  │  │  Guidelines and  │
│                  │  │                  │
└──────────────────┘  └──────────────────┘
           │                    │
┌──────────────────┐  ┌──────────────────┐
│   PNRGOV         │  │  PAXLST and      │
│   Message        │  │  CUSRES          │
│                  │  │  Messages        │
└──────────────────┘  └──────────────────┘
           │                    │
┌──────────────────┐  ┌──────────────────┐
│   PNRGOV         │  │  PAXLST/CUSRES   │
│   Message        │  │  Message         │
│   Implementation │  │  Implementation  │
│   Guide          │  │                  │
│   (MIG)          │  │                  │
└──────────────────┘  └──────────────────┘
           ┆                    ┆
┌ ─ ─ ─ ─ ─ ─ ─ ─ ┐  ┌ ─ ─ ─ ─ ─ ─ ─ ─ ┐
│      XML        │  │      XML        │
│    Schema       │  │    Schema       │
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