

Air Transport & Travel Industry

Principles, Functional and Business Requirements
PNRGOV

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1 INTRODUCTION

This document is intended to provide guidance to airlines, System Suppliers and States who are implementing the PNRGOV message. The information contained in this document should be utilized in conjunction with the current PNRGOV implementation Guide. This document is a living document and will be updated for any future requirements / principles as agreed by the Working Group.

The PNRGOV message is designed to comply with States' Legislation for the provision of PNR data from Carriers.

1.1 Purpose

The purpose of this document is to clearly define the business requirements, Functional requirements and the underlying principles for the PNRGOV message. This document is a living document which although under version control does not require PADIS Board approval for any future changes / updates.

1.2 Scope

The scope of this document is to provide relevant information in conjunction with the implementation guide to ensure a consistent approach to implementation. It will also identify, where necessary, any bilateral agreements that need to be implemented for the usage of the PNRGOV message.

This document, although targeted at the implementation of the EDIFACT message, will also serve as a reference point for the development of the XML PNRGOV message.

1.3 Background

The PNRGOV message has been developed under the auspices of the PADIS Board. The message structure and the contents of the message are designed to provide a consistent approach for all airlines required to provide PNR information to States. Although not mandated for usage, currently it is envisaged that the message may provide the opportunity to rationalize data provision in the future. Within this document, Governments are referred to as States and Airlines as Carriers.

The basis for the development of the PNRGOV message was PADIS Standard v08.1

1.4 References

PADIS Codeset Directory

PADIS Message Standards

ICAO Doc 9944 Guidelines on Passenger Name Record (PNR) Data

Payment Card Industry – Data Security Standards (PCI – DSS)

<https://www.pcisecuritystandards.org/index.shtml>

1.5 Assumptions and Constraints

1.5.1 Assumptions

It is assumed that the message structure provided is the same for all States and that there are no additional requirements beyond those clearly identified within this document or in the associated Implementation Guide. It is further assumed that, through bilateral agreement, States will publish individual Implementation Guides conforming to said States legislative and regulatory authorities.

The basis for the legal provision of data required by any State is described in ICAO *Doc 9944 Guidelines on Passenger Name Record (PNR) Data* document.

1.5.2 Constraints

- Only data available in the operating Carriers' systems is passed to the States. There is no mandate for the provision of additional data not presently stored or provided within the systems.
- In line with the PCI –DSS requirements, standards for the storage of credit card details can be found at <https://www.pcisecuritystandards.org/index.shtml>. According to applicable laws, individual States expect to receive credit card details and thus the delivery method and any encryption needed must be addressed between States and Carriers. See section 3.1.7 for further details
- The protocol for message delivery depends on the capability of the States and Carriers. The protocol to be used is agreed on a bilateral basis.

1.6 Document Overview

This document addresses 3 key areas for the structure and delivery of the PNRGOV message. These are

1. **Principles** – This section provides guidance for all Carriers and States wishing to implement PNRGOV and identifies specific entities and other resources which provide guidance for usage and/or delivery. It also addresses the availability of data.
2. **Business Processes** – This section identifies the areas of the PNRGOV message which need to be managed according to the limitations of the data held by the operating Carrier and the data requirements of the States.
3. **Functional Processes** – This section provides an overview of the functional requirements of the States regarding submissions of data, communication protocols and system interaction.

2 PRINCIPLES

In order to provide a consistent approach to the provision of the PNRGOV message and the data that it might contain, a number of principles have been identified and should be adhered to, where possible. These principles include but are not limited to:

1. Messages are constructed in accordance with the PNRGOV structure as documented in the current PNRGOV Implementation Guide.
2. Promote the consistent use of the examples as displayed in the Implementation Guide for all government, carrier and system suppliers inquiries and exchange of information. All examples shown in Appendix B of the Implementation Guide have been reviewed and agreed by the PNRGOV Working Group.
3. It is the responsibility of the State to ensure that data privacy laws, with regard to the data received through PNRGOV message, are addressed and that the data is protected.
4. It is the responsibility of the Carrier to ensure that data privacy laws, with regard to the data collected and transmitted through PNRGOV message, are addressed and that the data is protected.
5. The requirement for PNR data transfer should be governed by explicit legal provisions and should include departure, arrival and overfly where applicable.
 - The reason for requiring PNR data should be clearly explained by the laws or regulations of the State, or in explanatory material accompanying such laws or regulations, as appropriate. (ICAO's Doc 9944 Section 2.4 Laws or Regulations).
 - A Carrier is obliged to observe the laws of both the State from which it transports passengers (State of departure) and the State to which these passengers are transported (Destination State). Therefore, when a State legislates for its PNR data transfer requirements, it should recognize that existing laws of other States may affect a Carrier's ability to comply with these requirements. In addition where a carrier operates flights outside the borders of its own country, the laws of the home state must also be adhered to.
 - Where a conflict arises between any two States, or where a Carrier advises of a conflict, the parties involved should consult with each other to determine how affected Carriers can continue to operate within the law of both States. (See ICAO's Doc 9944 Section 2.4 Laws or Regulations)
 - The Carrier will provide to the State that PNR data which is available within the Carrier's system(s). This has been defined by ICAO as: "States should not require an operator to provide PNR data that are not already collected or held in the operator's reservation or departure control systems. The specific data elements that might be available from an aircraft operator's system will also

depend on the type of air transport services provided by the operator.” (See ICAO's Doc 9944 Section 2.4 Laws or Regulations), and by how and by whom the passengers' reservations were finalized.

6. The delivery schedules of the messages may vary according to each State. The delivery mechanism for the message may vary according to each State. Clarity regarding the sending, receiving, processing time periods is beneficial for all.
7. All data for the flights is sent in the initial message. Additionally, and in accordance with national requirements, the full PNR details including all changes to information previously transmitted is sent subsequently at the times specified by the States. Alternatively, and subject to national requirements and/or through bilateral agreement, only changes to the PNR(s) previously transmitted plus new PNR(s) may be sent at the specified times.
8. An acknowledgement message has been defined for States to be able to confirm to Carriers the receipt of the PNRGOV message. This enables automatic retransmission of messages not received / delivered. Where possible, it is in the best interests for this acknowledgement to be used to ensure messages are received and that the Carriers have fulfilled their obligations for the successful delivery. However, depending on the bilateral agreements in place between States and Carriers, it may not be applicable. See section 3.2.2 for further information.
9. The PNRGOV message does not replace any existing messages, but may result in reduction of other messages in the future.
10. It is responsibility of the Carrier to ensure timely generation and submission of the PNRGOV message in accordance with each State's legislation and /or regulations. States need to be aware it can take a variable amount of time for the Carriers or the intermediaries to construct a message within their system(s), transmit the message to the State and for States to receive the message. If the variability is a concern for the state, bilateral agreements between the State and Carrier may be needed to clarify the time period of receipt of data.
11. If retransmission of messages is applicable, details of the timings and the acknowledgement (ACK) message used to trigger this action can be found in section 3.2.2.
12. For split PNR data, the information provided is the record locator(s) of the split PNR(s) and the number of passengers split. No additional data is provided.
13. Emergency Lock procedures (i.e. process to control data release following an emergency or incident involving a particular flight) are based upon bilateral agreements between States and Carriers. System providers may be required to implement the capability to override data transmission restrictions put in place during an emergency lock.

Comment [MZ1]: PNRGOV11 Item 19

Comment [MZ2]: PNRGOV 11 Item 19

14. While not currently mandated, the underlying principle guiding development of the PNRGOV message is to provide a standard message structure that may be utilized by States and Carriers.
15. States retain the authority to request information via their existing PNR Pull mechanisms.
16. To ensure consistency, it is recommended that States use the default service characters as defined in ISO9735 – 1 in the PNRGOV message structure. The UNA service segment shall be used if the service characters differ from the defaults.
17. Level A Character set as defined in ISO 9735 standard is used for the PNRGOV messages.
18. Certification procedures and validation of data are defined through a bilateral agreement between the State and Carrier.
19. Where messages are split for delivery due to application or protocol limitations, the data for any one PNR must not be split across transmitted blocks. A single transmission may contain multiple PNRs
20. Carriers will not be required to transmit PNRs that are created solely for the purpose of blocking inventory (i.e. seats) and not intended to contain passenger information. It is accepted that carriers may not be able to prevent the transmission of these PNRs & these PNR's may not contain traveler information. States should be aware of the business impact on their systems of PNRs containing no passenger name data.

Comment [MZ3]: PNRGOV 11 Item 10

3 FUNCTIONAL and BUSINESS REQUIREMENTS

3.1 Business Requirements

3.1.1 Multiple Sector Flights

The following examples are intended to show, based on the PNRGOV requirements of the individual States, to whom the Carrier will submit PNRGOV information.

Example 1 – Flight routing: LHR – CDG – JFK

States to whom PNRGOV message Data Sent

DEP \ ARR	CDG	JFK
LHR	UK, FR	UK, US
CDG	N/A	US

PNRGOV Transmission –

UK - PNRGOV Required for Departing and Arriving passengers

FR - PNRGOV Required for Arriving

US - PNRGOV Required for Departing and Arriving passengers

Example 2 – Flight routing: CDG –JFK – YYZ

States to whom PNRGOV message Data Sent

DEP \ ARR	JFK	YYZ
CDG	US	CA, US
JFK	N/A	US, CA

PNRGOV Transmission

FR - PNRGOV Required for Arriving passengers

US - PNRGOV Required for Departing and Arriving passengers

CA - PNRGOV Required for Arriving passengers

Note1- PNRGOV messages may be required to be sent for in transit flights according to applicable legislation of the State. This is also relevant for both Inbound and Outbound passengers.

Additional information relating to PNRGOV submission and transmission can be found in section 3.2.1.

3.1.2 Multiple State Requirements

In order to minimize the scale of development on both the Carrier(s) and State(s), the PNRGOV message defines all of the requirements as agreed through the PNRGOV working group. The governing principle is that all States should utilize the defined standard message to ensure greater interoperability.

3.1.3 Multiple System Interaction

Although the PNRGOV message is a standard message as adopted by the PADIS Board, the method of message delivery may vary according to the State receiving it and the carrier or provider sending it.

3.1.4 Overflights

Individual States may require information for flights overflying their territory to be sent to them in the PNRGOV format. This is anticipated to be catered for by each Carrier in their establishment of the rules for the data submission on a State by State basis.

3.1.5 Operating Carrier v Marketing Identification and Message Structure

The structure and the information contained in the PNRGOV is based on the Operating Carrier and the system(s) it uses to support the storage of flight data. The message structure is designed to also accommodate information relating to the Marketing Carrier.

3.1.6 Message Sizing

The size of the message is governed by the transport protocol or application used by the States and Carriers according to their system capabilities. If the message must be split into smaller component parts, this functionality may occur at the application or protocol layer; however, in no case should an individual PNR be split between messages. Depending on the solution to the splitting of the message, each Carrier / State is responsible for ensuring that the method adopted adheres to the individual audit requirements.

3.1.7 PCI – DSS Compliance

Due to the requirements of the PCI Security Standards Council (PCI –SSC) for securing credit card numbers and other associated sensitive data, when that data is stored within the Carrier's system that storage must be in accordance with their own PCI-DSS compliancy policy. Where the information is to be submitted to the States in line with relevant legislation and applicable PNRGOV requirements, the Carrier must adopt one of the following minimum standards for security relating to the data transmission:

- Secure Socket Layer (SSL) v3
- Transport Layer Security (TLS) v1.0
- Secure File Transfer protocol (SFTP) using SSH Secure Shell (SSH-2)
- IPsec over IPv4
- Other requirements as advised by PCI Security Standards Council.

3.1.8 PNR Data Elements

The data elements that are required by the States are managed through a bilateral arrangement between the States and Carriers as defined by national legislation. In an effort to standardize the PNRGOV message structure, the following table identifies the current position of the 18 items as required by States with the 19th Item being the

historical data of the previously identified 18 items. The governing principle is that all States should utilize the defined standard message to ensure greater interoperability. Information around these 19 items is defined in ICAO Document 9944 “Guidelines for Passenger Name Record (PNR) Data” to which ICAO Annex 9 Recommended Practice 3.47 refers.

If a Carrier maintains cancelled PNR’s within its reservation system States may expect to receive those records – even if stored only as historical records within that system. If Carriers do not maintain these types of PNR records, then States would not receive them.

19 PNR Data Elements
PNR record locator code
Date of reservation / issue of ticket
Date(s) of intended travel
Name(s) on the PNR
Available frequent-flyer information (free tickets, upgrades, etc)
Other names on PNR, including numbers of travelers on the PNR
All available contact information (including originator information)
All forms of payment information and billing information (not including other transactions details linked to a credit card or account and not connected to the travel transaction)
Travel itinerary for specific PNR
Travel agency and Travel agent
Code share PNR information
Split / Divided PNR information
Travel status of passenger (including confirmations and check-in status)
Ticketing information including Ticket number, one way tickets, and Automated Ticket fare quotes
All baggage information
Seat information include seat number
General remarks including OSI and SSR information
Any collected APIS information
All historical changes to the PNR listed in data types 1 to 18 above

3.1.9 Context

Due to the nature of the information contained within individual PNRs and the rules pertaining to the provision of data, the PNRGOV data may need to be sent to multiple States. The timing of those individual transmissions may vary, and are dependent on the specific requirements of individual States.

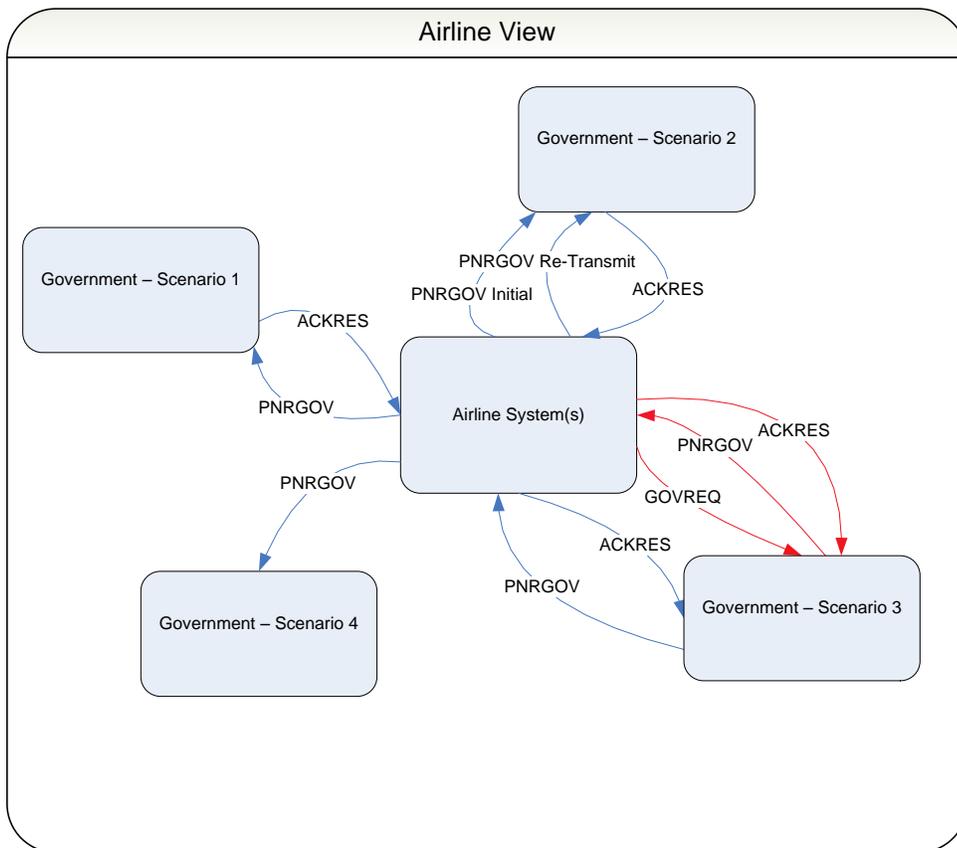


Exhibit 2 - Generic Context Diagram (airline perspective)

- Government - Scenario 1: Airline system sends PNRGOV and Government system returns ACKRES.
- Government - Scenario 2: Airline system sends PNRGOV and Government system does not return ACKRES. Airline system re-sends PNRGOV and government returns ACKRES.
- Government - Scenario 3: Airline system sends PNRGOV, Government returns ACKRES. Government also sends ad hoc GOVREQ, Airline system sends PNRGOV and Government returns ACKRES.
- Government - Scenario 4: Airline system sends PNRGOV and Government does not return ACKRES.

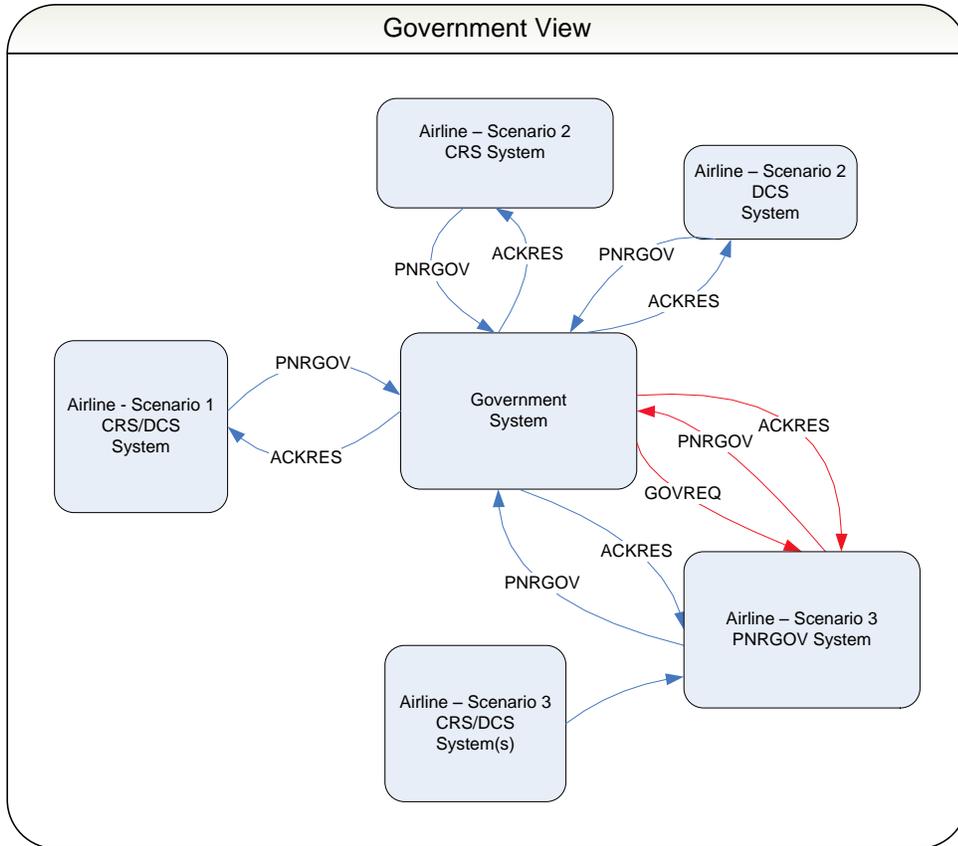


Exhibit 3 - Generic Context Diagram (government perspective)

CRS = Computer Reservation System (sometimes referred to as Global Distribution System)

DCS = Departure Control System

Airline - Scenario 1: Airline sends PNRGOV from a combined CRS and DCS system and Government returns ACKRES.

Airline - Scenario 2: Airline sends PNRGOV from separate CRS and DCS systems and Government returns ACKRES.

Airline - Scenario 3: Airline sends PNRGOV from an outside system with a process that gathers data from the CRS/DCS, sends PNRGOV and Government returns ACKRES. Government also sends ad hoc GOVREQ, Airline system sends PNRGOV and Government returns ACKRES.

3.2 Functional Requirements

3.2.1 Data submission

The following table is designed to show examples of the possible requirements by States for the delivery of the data.

State Bodies	No of Messages	Timing	Inbound / Outbound
AAA	1	Wheels Up	Inbound
BBB	2	1) -24hrs 2) Wheels Up	Inbound / Outbound
CCC	4	1) -72hrs, 2) -24hrs 3)-8hrs 4) Wheels up	Inbound / Outbound
DDD	5	1) -72hrs, 2) -24hrs, 3) -2hrs 4) -1hrs 5) Wheels Up	Inbound / Outbound

3.2.2 Message Acknowledgement and Retransmission

In order for the Carriers to be able to comply with, and ensure the delivery of PNRGOV messages to the States, the optimal method is for States to provide an acknowledgement of receipt back to the Carrier. This is an acknowledgement that the State has received the message. The acknowledgement in no way implies that the data has been processed. If the Carrier does not receive a message acknowledging receipt, this will facilitate the retransmission of the message to the relevant State.

An acknowledgement message (ACKRES) has been defined to enable additional information to be provided to the Carriers; such as content errors identified while processing the data. The ACKRES message may be agreed and implemented through a bilateral agreement between individual States and Carriers.

UN CONTRL messages can be used to report syntax errors. This is based on a bilateral agreement between States and Carriers.

3.2.3 Provision of an Ad-hoc request using the GOVREQ message

The State may require an ad-hoc transmission of PNRGOV data, subject to a bilateral agreement between the State and the carrier. The ad-hoc request may be for a specific flight/date or for a specific record locator. This message is to be used only in exceptional situations.

3.2.4 Separate Operational Systems – DCS without full PNR access

A Carrier may have a local DCS or agreements in place with one or more systems to handle their operations at certain stations. It should also be noted that multiple systems may handle the flight throughout its itinerary, e.g., with a flight routing AAA - BBB - CCC – DDD, company one handles the flight out of city AAA, company two handles the flight out of BBB, and the actual operating Carrier handles the flight out of CCC to DDD. The handling systems may not have all of the information which is contained in the original PNR. Instead, they may have only sufficient data needed to identify the passenger and any particular special conditions for the purpose of check-in. In such circumstances, the State and Carrier may bilaterally agree on the information available for inclusion in the PNRGOV message. A Carrier and State may also bilaterally agree to exchange the PNRGOV message with only that data which is currently available within the DCS system used by the operating Carrier or its contracted handling agent to support the flight/station for which the PNR data is required.

3.2.5 Manual DCS operations

There may be times or locations where the check in process is handled in a manual operation, e.g. system outages, small stations, etc. In this case there is no information available to be sent to the States at the stipulated transmission times.

3.3 APPENDIX A - GLOSSARY

Please refer to IATA Passenger Services Glossary of Terms located on IATA Web site:
<http://www.iata.org/whatwedo/passenger/Documents/passenger-glossary-of-terms.xls>.