THE NEEDS FOR DATA EXCHANGE BETWEEN AIRPORT MANAGING BODIES AND AIR CARRIERS

Functional specifications (Deliverable #3)

FACILITATION AND CUSTOMER SERVICES COMMITTEE
TASK FORCE ON DATA EXCHANGE

13 January 2017

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1. BACKGROUND

As highlighted during the Airport Exchange 2013 IT Facilitation and Customer Service Conference, the need for new data exchange between Airport Managing Bodies and other actors involved in the passenger journey has been increasing over the last years.

Mobile tools keep travellers connected at home and on the move. There is also a need for integrated data (including other aspects like accessibility).

An increasing number of passengers enter the terminal having already performed different airport procedures; therefore, Airport capacity management requires updated information on passenger status. This information is necessary to manage passengers at touch-points like bag-drop, security check or border control.

Airport Managing Bodies are required to coordinate activities and run their service processes according to Service Level Agreements with challenging quality targets; more and more often airports commit on such targets by subscribing Agreements with National Authorities.

The ACI EUROPE Facilitation and Customer Services Committee made the information exchange for integrated passenger flow management one of its priorities.

The Board of ACI EUROPE endorsed the initiative and within the Facilitation and Customer Services Committee, the Task Force on Data Exchange developed this document.

Starting from the Task Force Deliverable#2 [requirement specifications], this document describes new needs for data exchange in terms of functional specifications.

2. THE BENEFITS OF PASSENGER DATA EXCHANGE

This section provides a brief summary of the key benefits for Airport Managing Bodies and other stakeholders derived from New Data Exchange, in order to improve the passenger journey and the daily operations. The more data is shared, the more benefits for everybody.

Stakeholder	Challenges	Required data	Shared data
Airport Managing Body	Keep the SLAs, Increase non-aeronautical revenue, Improve operational workflow	Passenger information	Location of the passenger in the terminal, Terminal situation and environment, Retail offers
Air Carrier	Meet the TOBT	Location of the passenger in the terminal	Passenger information
Passenger	Improve travel experience, Find best deals in retail	Travel updates Live information at the airport, Guidance, Retail vouchers	Passenger information, Current status and location
Border police	Keep the SLAs, Reduce operational costs	Updated and expected passenger flow information	Resource allocation
Security company	Keep the SLAs, Reduce operational costs	Updated and expected passenger flow information	Resource allocation
Ground Handler	Reduce operational costs	Baggage information	

A-CDM (Airport Collaborative Decision Making) is the best way to ensure the provision of services when several stakeholders are involved.

1. Passenger satisfaction increases (WOW factor) because:

   A. Services are seamless
   B. Passengers appreciate not to be “bounced” between different operators
   C. Passengers do not understand easily that there is no unique actor responsible for each touchpoint (the processing system is viewed as a whole).

2. Reduction in the number of complaints

3. Reduction in the extra costs for Air Carriers and Airport Managing Bodies:
   A. No need for extra staff
   B. No need for extra counters / desks
   C. No need for overtime
   D. Staff under less pressure

4. Airport Managing Bodies and Air Carriers prevent and avoid disservice and poor service instead of “patching up” services:
   A. Less need for overbooking
   B. Less need for lay over expenses
   C. Less need for re-scheduling/re-routing passenger flights

5. A satisfied passenger spends more money (up to 45% more than an unhappy passenger).

3. PRIORITIES FOR NEW DATA EXCHANGE

This section provides the list of Data recognized as required, by Airport Managing Bodies to be exchanged with Air Carriers, in order to best manage passenger and baggage services.

Follow a list of passenger information to be sahred:

- Passenger details (available at booking / check-in time)
  - Travel schedule (flights, connections, final destination and time schedule)
  - Type of travel (business, vacation)
  - Passenger category (single, frequent-flyer, family with children, group of friends, reduced mobility, elderly…)
  - Baggage information (number of pieces, weight, additional cabin piece, special baggage)
  - Use of bag-drop
  - Use of security fast-track / priority-boarding
  - Mode of transport to the airport (private car or public transportation)
  - Passenger preferences (meal, hobbies (question: is hobby relevant can this info be available?), previous experiences in the airports) → important for understanding and influencing the retail behaviour
  - Preferred communication channel (E-Mail, Phone, Shared App)
  - Transfer rebooking in case of missed connections

- Real-time passenger location:
  - Status (Booked, Checked-in from home, Travelling to airport including estimated time of arrival - especially if late arrival, Checked-in at the airport, Passed security, Passed emigration, Boarded)
  - Best-known current location.

4. Directive (UE) 2016/681 relative à l'utilisation des données des dossiers passagers (PNR) pour la prévention et la détection des infractions terroristes et des formes graves de criminalité, ainsi que pour les enquêtes et les poursuites en la matière

This Directive refers to information provided by passengers and collected by Air Carriers during reservation and check-in procedures.

Non-exhaustive data include:

- **PNR** record locator
- Date of reservation/issue of ticket
- Date(s) of intended travel
- Name(s)
- Address and contact information (telephone number, e-mail address)
- All forms of payment information, including billing address
- Complete travel itinerary for specific PNR
- Frequent flyer information
- Travel agency/travel agent
- Travel status of passenger, including confirmations, check-in status, no show or go show information
- Split/divided PNR information
- General remarks (including all available information on unaccompanied minors under 18 years, such as name and gender of the minor, age, language(s) spoken, name and contact details of guardian on departure and relationship to the minor, name and contact details of guardian on arrival and relationship to the minor, departure and arrival agent)
- Ticketing field information, including ticket number, date of ticket issuance and one-way tickets, Automated Ticket Fare Quote fields
- Seat number and other seat information
- Code share information
- All baggage information
- Number and other names of travellers on PNR
- Any Advance Passenger Information (API) data collected (inter alia document type, document number, nationality, country of issuance, date of document expiration, family name, given name, gender, date of birth, airline, flight number, departure date, arrival date, departure port, arrival port, departure time, arrival time)
- All historical changes to the PNR listed in the previous fields

The date of publication in the Official Journal of the EU is 27 April 2016. Member states will have two years to transpose the legislation into their national laws from 27 April 2016.

5. Reduced PNR (RPNR)

If we select from the standard PNR structure the set of information useful to meet the additional data exchange needs identified, we can extract a sort of "Reduced PNR" **(in bold)**

- **PNR record locator**
- Date of reservation/issue of ticket
- **Date(s) of intended travel**
- Name(s)
- Address and contact information (telephone number, e-mail address)
- All forms of payment information, including billing address
- **Complete travel itinerary for specific PNR**
- Frequent flyer information
- Travel agency/travel agent
- **Travel status of passenger, including confirmations, check-in status, no show or go show information**
- **Split/divided PNR information**
- **General remarks** (including all available information on unaccompanied minors under 18 years, such as name and gender of the minor, age, language(s) spoken, name and contact details of guardian on departure and relationship to the minor, name and contact details of guardian on arrival and relationship to the minor, departure and arrival agent)
- Ticketing field information, including ticket number, date of ticket issuance and one-way tickets, Automated Ticket Fare Quote fields
- Seat number and other seat information
- **Code share information**
- **All baggage information**
- **Number and other names of travellers on PNR**
- Any Advance Passenger Information (API) data collected (inter alia document type, document number, **nationality,** country of issuance, date of document expiration, family name, given name, **gender,** date of birth, **airline, flight number, departure date, arrival date, departure port, arrival port, departure time, arrival time**)
- **All historical changes to the PNR listed in the previous fields**

A more detailed analysis of PNR contents can be found in paragraph 8.

6. Benefits for the different stakeholders

Member States/ National authorities

At the airport, passengers circulate through various touch and check-points. Most of them are treated either by the carrier or their agents (ticketing, check-in & boarding) or by national authorities (border control and in some cases security).
Airport Managing Bodies ensure that only passengers with valid boarding passes enter airside and sometimes perform security control. As this is nowadays mostly done by scanning boarding passes, this process creates valuable information for instant overview about the entry of passengers into the secured area of an airport. By sending this status information as addition to the PNR, this could enhance the overall picture and complement the security related investigations while keeping the granted baseline for data privacy on a single user's basis.

Air Carriers

Air carriers have relevant information on passengers and their behaviour (check-in, baggage drop, boarding) which produces valuable data to use for tactical and strategical purposes. Airport Managing Bodies could provide additional information in order to facilitate forecasting. Besides additional timestamps of airport operated touchpoints, these could include current capacity of check-points, current waiting and dwell times in certain areas, actual demand and forecasts at check-points).

Airport Managing Bodies

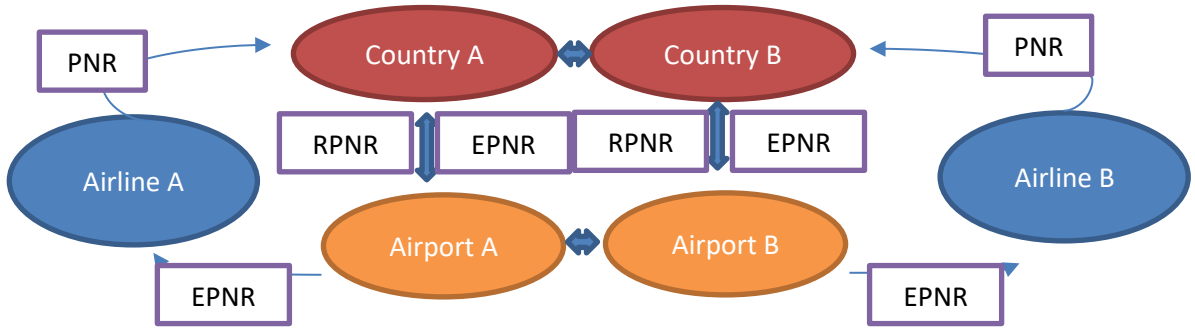
There are various benefits for Airport Managing Bodies receiving the reduced PNR information as requested. Information like passenger status or nationality could be helpful for tactical operational and forecasting resources and use of infrastructure.

All stakeholders

PNR is therefore the most detailed and comprehensive information available and would make the request for a separate data stream from air carriers obsolete.

7. Data Flow Overview

The current PNR Directive foresees the exchange of data between air carriers and Member States and between Member States.
The table below shows how Airport Managing bodies could be integrated in the information flow. It should be noted, however, that Airport Managing Boodies should not receive personal information (like names or credit card numbers). A reduced PRM (RPRM) could be sent to the concerned Airport Managing body as shown in the table.
Airport Managing bodies could also add valuable information and therefore provide an enhanced PNR (EPNR) to air carriers and Member States/ National authorities.



8. DIFFERENCES BETWEEN EU DIRECTIVE 2016/681 (PNR) AND NEW DATA EXCHANGE REQUIRED INFORMATION

PRIORITIES FOR NEW DATA EXCHANGES	**In common with EU DIRECTIVE 2016/681 (PNR)** =	**Different from EU DIRECTIVE 2016/681 (PNR)** ≠
Passenger details (available at booking / check-in time)		**PNR** record locator
Travel schedule (flights, connections, final destinations and the corresponding time schedule)	-Date(s) of intended travel -Complete travel itinerary for specific PNR	Date of reservation/issue of ticket
Type of travel (business, vacation)		
Passenger category (single, frequent-flyer, family with children, group of friends, reduced mobility, elderly…)	-Frequent flyer information - Number and other names of travellers on PNR	Name(s)
Luggage information (quantity, weight, additional cabin piece, special luggage)	-All baggage information	Address and contact information (telephone number, e-mail address)
Use of bag-drop	-All baggage information	All forms of payment information, including billing address
Use of security fast-track / priority-boarding		Travel agency/travel agent
Mode of transport to the airport		General remarks (including all available information on unaccompanied minors under 18 years, such as name and gender of the minor, age, language(s) spoken, name and contact details of guardian on departure and relationship to the minor, name and contact details of guardian on arrival and relationship to the minor, departure and arrival agent)

PRIORITIES FOR NEW DATA EXCHANGES	In common with EU DIRECTIVE 2016/681 (PNR) =	Different from EU DIRECTIVE 2016/681 (PNR) ≠
Passenger preferences (meal, hobbies, previous experiences in the airports) → important for understanding and influencing the retail behaviour		Ticketing field information, including ticket number, date of ticket issuance and one-way tickets, Automated Ticket Fare Quote fields
Preferred communication channel (E-Mail, Phone, Shared App)		Seat number and other seat information
Transfer rebooking in case of missed connections		Code share information
Real-time passenger location:		Number and other names of travellers on PNR
Status (Booked, Checked-in from home, Travelling to airport including estimated time of arrival - especially if late arrival, Checked-in at the airport, Passed security, Passed emigration, Boarded)	-Travel status of passenger, including confirmations, check-in status, no show or go show information	Any Advance Passenger Information (API) data collected (inter alia document type, document number, nationality, country of issuance, date of document, expiration, family name, given name, gender, date of birth, airline, flight number, departure date, arrival date, departure port, arrival port, departure time, arrival time)
Best-known current location		All historical changes to the PNR listed in the previous fields

9. DATA DICTIONARY

This section provides **a data dictionary** of the selected priorities for new data exchanges (according to the criteria proposed by the ACI EUROPE Guidelines for Passenger Services):

1) Travel schedule

Data	Flight Itinerary: STD scheduled time departure of flight STA scheduled time arrival of flight Connections, Final destination Flight number e.g. DL 00070
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data) [5] Security companies [6] Ground Handlers [7] National Authorities (e.g. Customs, Border Police, …)
Goal	Resource allocation (check-in desks, bag drop off desks, security check points, transit desks, etc.) Improve the passenger experience Increase airport revenue Reduce operational cost Improve A-CDM Performance
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 30 days before STD (for long term forecasts) -2) At 24/36 hours before STD (for short term forecasts)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea)
Exchange Mode: • Via PNR	Via PNR
• ACRIS relevant	

2) Type of travel

Data	Purpose of flight: business flight,vacation (holiday/leisure flight)
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data) [10] Retail, food and beverage
Goal	Resource allocation (check-in desks, bag drop off desks, security check points, transit desks, etc.) Improve the passenger experience Increase airport revenue Provide additional and **"**personalized**"** services for passengers (shopping support, special fares, etc.)
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 24/36 hours before STD (for short term forecastsn)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea) Direct contact with passengers (via mail, phone call, website, mobile app, etc.)
Exchange Mode: • Via PNR	
• ACRIS relevant	ACRIS relevant

3) Passenger categorization

Data	Passenger category: Single passenger Frequent –flyer passenger, family with children, (perhaps only partially) Group of friends, (perhaps only partially) PRM, Elderly, UM (unaccompanied minor) Economy/business/first class (perhaps only partially)
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data) [5] Security companies [6] Ground Handlers [7] National Authorities (e.g. Customs, Border Police, …)
Goal	Resource allocation (check-in desks, bag drop off desks, security check points, transit desks, etc.) Improve the passenger experience Increase airport revenue Provide additional and personalized services (shopping support, special fares, etc) Improve A-CDM Performance
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 30 days before STD (for long term forecasts) -2) At 24/36 hours before STD (for short term forecasts)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea), Direct contact with passengers (via mail, phone call, website, mobile app, etc.)
Exchange Mode: • Via PNR	Via PNR
• ACRIS relevant	ACRIS relevant

4) Baggage

Data	Baggage information: number of pieces, weight, cabin baggage, special luggage
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data) [5] Security companies [6] Ground Handlers [7] National Authorities (e.g. Customs, Border Police, …)
Goal	Resource allocation (check-in desks, bag drop off desks, security check points, transit desks, etc.) Improve the passenger experience Increase airport revenue Reduce operational cost Improve A-CDM Performance
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 30 days before STD (for long term forecasts) -2) At 24/36 hours before STD (for short term forecasts)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea), Direct contact with passengers (via mail, phone call, website, mobile app, etc.)
Exchange Mode: • Via PNR	Via PNR
• ACRIS relevant	

5) Use of bag-drop

Data	Use of bag drop off desks (perhaps only partially)
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data) [6] Ground Handlers
Goal	Resource allocation (check-in desks, bag drop off desks, security check points, baggage piers, etc.) Improve passenger experience Increase airport revenue Reduce operational cost Improve A-CDM Performance
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 30 days before STD (for macro long term forecasts) -2) At 24/36 hours before STD (for short term forecasts)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea), Direct contact with passengers (via mail, phone call, website, mobile app, etc.)
Exchange Mode: • Via PNR	Via PNR
• ACRIS relevant	ACRIS relevant

6) Use of security fast-track / priority-boarding

Data	Use of security fast-track Use of priority-boarding
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data) [5] Security companies [7] National Authorities (e.g. Customs, Border Police, …)
Goal	Resource allocation (check-in desks, bag drop off desks, security check points, fast-track points, boarding gates, etc.); Improve the passenger experience Increase airport revenue; Provide additional and **"**personalized**"** services for passengers (shopping support, special fares, etc.); Reduce operational cost; Improve A-CDM Performance
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 30 days before STD (for long term forecasts) -2) At 24/36 hours before STD (for short term forecasts)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea), Direct contact with passengers (via mail, phone call, website, mobile app, etc.)
Exchange Mode: • Via PNR	
• ACRIS relevant	ACRIS relevant

7) Mode of transport to the airport

Data	Private car, Public transportation (bus, train, taxi, etc.)
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data) [7] National Authorities (e.g. Customs, Border Police, …) [8] Public Transport Providers
Goal	Resource allocation (check-in desks, bag drop off desks, security check points, parking areas, etc.) Improve the passenger experience Increase airport revenue Provide additional and "personalized" services for passengers (shopping support, special fares, etc.) Reduce operational cost Improve A-CDM Performance
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 30 days before STD (for long term forecasts) -2) At 24/36 hours before STD (for short term forecasts)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea), Direct contact with passengers (via mail, phone call, website, mobile app, etc.)
Exchange Mode: • Via PNR	
• ACRIS relevant	ACRIS relevant

8) Passenger preferences

Data	Passenger preferences: Requested meals Hobbies, Previous experiences/retail in the airports, → important for understanding and influencing the retail behaviour
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data) [6] Ground Handlers [9] Catering companies [10] Duty-free, retail and restaurants companies
Goal	Resource allocation(restaurants, retail and duty free areas, etc.); Improve the passenger experience Increase airport revenue Provide additional and "personalized" services for passengers (shopping support, special fares, etc.)
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 30 days before STD (for long term forecasts) -2) At 24/36 hours before STD (for short term forecasts)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea), Direct contact with passengers (via mail, phone call, website, mobile app, etc.)
Exchange Mode: • Via PNR	
• ACRIS relevant	ACRIS relevant

9) Preferred communication channel

Data	E-Mail Phone Shared App
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data)
Goal	Improve passenger experience Increase airport revenue Provide additional and **"**personalized**"** services for passengers (shopping support, special fares, etc.)
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 30 days before STD (for long term forecasts) -2) At 24/36 hours before STD (for short term forecasts)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea), Direct contact with passengers (via mail, phone call, website, mobile app, etc.)
Exchange Mode: • Via PNR	
• ACRIS relevant	ACRIS relevant

10) Transfer rebooking in case of missed connections

Data	Transfer rebooking in case of missed connections
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data) [5] Security companies [6] Ground Handlers [7] National Authorities (e.g. Customs, Border Police, …)
Goal	Resource allocation (check-in desks, bag drop off desks, security check points, transit desks, ticket counters, etc.) Improve the passenger experience Increase airport revenue Reduce operational cost mprove A-CDM Performance
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 30 days before STD (for long term forecasts) -2) At 24/36 hours before STD (for short term forecasts)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea)
Exchange Mode: • Via PNR	
• ACRIS relevant	ACRIS relevant

11) Status

Data	Booked Home check-in Travelling to airport including estimated time of arrival - especially if late arrival, (perhaps only partially) Checked-in at the airport Passed security (perhaps only partially) Passed Border control (perhaps only partially) Boarded (perhaps only partially)
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data) [5] Security companies [6] Ground Handlers [7] National Authorities (e.g. Customs, Border Police, …) [8] Public Transport Providers [10] Duty-free, retail and restaurants companies
Goal	Resource allocation (check-in desks, bag drop off desks, security check points, boarding gates, etc.) Improve the passenger experience Increase airport revenue Provide additional and **"**personalized**"** services for passengers (shopping support, special fares, etc.) Reduce operational cost Improve A-CDM Performance
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 30 days before STD (for long term forecasts) -2) At 24/36 hours before STD (for short term forecasts)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea), Direct contact with passengers (via mail, phone call, website, mobile app, etc.)
Exchange Mode: • Via PNR	Via PNR
• ACRIS relevant	ACRIS relevant

12) Best-known current location

Data	Best-known current location
Stakeholders	[1] Passengers [2] Air Carriers [3] Airport Managing Body [4] Handlers (incl. security providers for e.g. API data) [5] Security companies [6] Ground Handlers [7] National Authorities (e.g. Customs, Border Police, …) [10] Duty-free, retail and restaurants companies
Goal	Improve passenger experience Increase airport revenue Provide additional and "personalized" services for passengers (shopping support, special fares, etc.)
Availability	From 12 months (booking time) up to check-in time
Required timeframe	If possible, DATA exchanges should be: -1) At 30 days before STD (for long term forecasts) -2) At 24/36 hours before STD (for short term forecasts)
Source	DCS (Air Carrier's own or one of the major platforms, e.g. SITA DCS, Sabre, Amadeus Altea), Direct contact with passengers (via mail, phone call, website, mobile app, etc.)
Exchange Mode: • Via PNR	
• ACRIS relevant	ACRIS relevant