

Release Notes: Release Ready

SabreSonic CSS Digital Connect

Shop & Book, Manage Your Booking, Modify Trip Options

Version 3.0



Software version 3.0

Document Edition 1.0 (July 2016)

Template Version 4.5

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Introduction

Digital Connect exposes key capabilities of Sabre's eCommerce platform like shopping, booking, ancillaries, payments, seat selection and ticketing whilst abstracting its underlying booking engine business, architecture and infrastructure, to enable an optimized data set via JSON for airlines to consume and create their own user experiences.

This document contains "Release Ready" Release Notes information for *SabreSonic*® *CSS Digital Connect v3.0*.

It contains high-level information to enable advanced identification of new features and preparation for readiness and deployment.

1.1 Document Overview

This document identifies the functionality provided by the Release Ready release of *SabreSonic*® *CSS Digital Connect v3.0* and the specific services that gives airlines to that functionality. For details, see the Digital Connect API documentation.

Read this document so that you are aware of changes to the solution.

1.2 Release Identification

Release Version	Type (Version, Update, or Update with Patch)	Date	Approved By	Description of Change
3.0	Version	July 2016		

Release Features

2.1 Summary of Features

SabreSonic ® *CSS Digital Connect v3.0* includes the following new and enhanced features by using *Digital Connect v3.0* services:

2.1.1 Ancillaries

The services that provide the ability to obtain and display the ancillaries available for passenger-selected flights and process passenger selections of ancillaries have the following additions and enhancements:

2.1.1.1 Ancillary inventory implementation

Digital Connect v3.0 added the ability to establish an inventory level for those ancillaries that are limited in quantity, track the quantity sold, and indicate when the ancillary is sold out:

- Inventory information is provided in GET response.
- Validation of ancillary selection.
- Error handling associated with ticketing and reserving inventory controlled ancillaries.

This functionality applies to the following flows:

- The Revenue (B2C) Flow
- The Redemption (RBE) Flow
- Manage Your Booking Change Itinerary (MYB:CI) Flow
- Manage Your Booking Modify Trip Options (MYB:MTO) Flow
- Manage Your Booking Book Now Pay Later (MYB:BNPL) Flow

2.1.1.1.1 Highlights

Airlines can now drive information about the ancillary inventory in The Revenue (B2C) Flow with the following sequence of DC service calls:

- 1. The passenger shops for flights and builds an itinerary.
- 2. The airline calls /products/ancillaries GET to obtain list of ancillaries available for the currently selected itinerary. The Airline formats information about available inventory and sold out ancillaries to the passenger.
- 3. When the passenger selects ancillaries, the airline calls /products/ancillaries POST and validates the quantity of the ancillaries selected by the passenger if equal or lower than available inventory. If the validation is successful this operation adds ancillaries to the reservation.
- 4. The airline initiates the purchase and ticketing process by calling /purchase POST; if authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 5. The response indicates whether the purchase is successful. The airline formats this information for display to the passenger.

Airlines can now drive information about the ancillary inventory in the Manage Your Booking – Book Now Pay Later (MYB:BNPL) Flow with the following sequence of DC service calls:

- 1. The passenger booked ancillary inventory controlled in the Booking flow and placed the reservation on hold with the Book Now Pay Later option.
- 2. The passenger selects the option to complete the purchase of a booking that was previously booked with Book Now Pay Later.
- 3. The airline prompts the passenger for the information needed to retrieve the PNR, and the passenger supplies the information.
- 4. The airline calls /pnr/bnpl to retrieve the PNR and initialize the BNPL Purchase flow.
- 5. The airline displays the retrieved PNR to the passenger for review.
- 6. The airline can prompt the passenger to add or remove ancillaries (via /pnr/bnpl/products/ancillaries), seats (via /pnr/bnpl/products/seats), or both, to the BNPL itinerary, in any order. Inventory information will be provided in the GET /pnr/bnpl/products/ancillaries response.
- 7. The passenger indicates the desire to pay for the booking.
- 8. The airline determines the payment options that are available for the booking by calling /pnr/bnpl/paymentOptions.
- 9. The airline displays the available payment options and prompts the passenger to enter payment details for the booking.
- 10. The passenger enters payment details and the airline processes them with /pnr/bnpl/purchase.

Error handling:

1. In case when during shopping ancillaries were available for passenger selection, but they were not yet available during booking, airline can – based on the configuration – inform the passenger about missing ancillaries.

Service Name	Operation	Change
/products/ancillaries /pnr/mto/products/ancillaries /pnr/exchange/products/ancillaries /pnr/bnpl/products/ancillaries	GET - returns a list of ancillaries available for the currently selected itinerary (the itinerary currently held in the session). POST - allows an airline to manage the list of ancillaries associated with an itinerary.	 New field "ancillaryInventory" has been added: "ancillaryInventory": 3 - available number of a particular ancillary on a particular travel part; "ancillaryInventory": 0 - sold out; "ancillaryInventory" missing - no inventory controlled.

2.1.1.1.2 API Modifications

/purchase /pnr/mto/purchase /pnr/exchange/purchase /pnr/bnpl/purchase	POST - authorizes the payment, and, if successful, will book the itinerary and issue the PNR. It will also purchase any ancillaries and issue corresponding EMDs.	Error handling – new object "details" (retrieves information about failed ancillaries per segments)
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2.1.1.2 Ancillary Bundles

Ancillary Bundles - package of extra features and add-ons that airlines can create, for example: noisecancelling headphones, a pillow and blanket .JSON services are now able to support bundled offers defined in Ancillary Bundler. The passenger can now buy, re-associate to the new itinerary (if airline has re- association enabled and re- association criteria are met) or refund ancillary bundles.

Bundle selection is very similar to standard ancillary selection. System reserves the parent AE (for a bundle) and in the background child AEs are added to the parent AE.

This functionality applies to the following flows:

- The Revenue (B2C) Flow
- The Redemption (RBE) Flow
- Manage Your Booking Change Itinerary (MYB:CI) Flow
- Manage Your Booking Modify Trip Options (MYB:MTO) Flow
- Manage Your Booking Book Now Pay Later (MYB:BNPL) Flow

2.1.1.2.1 Prerequisites

Ancillary Bundles feature requires activation and configuration in the Dynamic Retailer.

2.1.1.2.2 Highlights

Airlines can now drive information about the ancillary bundles with the following sequence of DC service calls:

The Revenue (B2C) Flow:

- 1. The passenger shops for flights and builds an itinerary.
- The airline calls /products/ancillaries GET to obtain list of ancillaries available for the currently selected itinerary. The Airline formats information about available ancillary bundles to the passenger.
- 3. When the passenger selects bundle(s) the airline calls /products/ancillaries POST. The airline validates if there is no conflict in selected single ancillaries and bundles (the same benefit cannot be selected twice by the passenger).
- 4. The airline initiates the purchase and ticketing process by calling /purchase POST; if authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 5. The response indicates whether the purchase is successful. The airline formats this information for display to the passenger.

Book Now Pay Later (BNPL) Flow:

- 1. The passenger shops for flights and builds an itinerary.
- The airline calls /products/ancillaries GET to obtain list of ancillary bundles available for the currently selected itinerary. The Airline formats information about available ancillary bundles to the passenger.
- 3. When the passenger selects bundle(s), the airline calls /products/ancillaries POST.
- 2. The airline validates if there is no conflict in selected single ancillaries and bundles (the same benefit cannot be selected twice by the passenger).
- 4. The passenger indicates the desire to pay for the booking.
- The airline determines the payment options that are available for the Book Now Pay Later option by calling /products/bnpl. The airline displays on-hold options for the passenger
- 6. The airline initiates the on-hod purchase (including the hold type and the payment method) by calling /products/bnpl/purchase POST; if authorization is successful, the /products/bnpl/purchase service will create a PNR with on-hold status.
- 7. The response indicates whether the purchase is successful. The airline formats this information for display to the passenger.

Manage Your Booking - Book Now Pay Later (MYB:BNPL) Flow:

- 1. The passenger made a reservation (and booked ancillary bundles) in the Booking flow and placed the reservation on hold with the Book Now Pay Later option.
- 2. The passenger selects the option to complete the purchase of a booking that was previously booked with Book Now Pay Later.
- 3. The airline prompts the passenger for the information needed to retrieve the PNR, and the passenger supplies the information.
- 4. The airline calls /pnr/bnpl to retrieve the PNR and to initialize the BNPL Purchase flow.
- 5. The airline displays the retrieved PNR to the passenger for review.
- 6. The passenger indicates the desire to pay for the booking.
- 7. The airline determines the payment options that are available for the booking by calling /pnr/bnpl/paymentOptions.
- 8. The airline displays the available payment options and prompts the passenger to enter payment details for the booking.
- 9. The passenger enters payment details and the airline processes them with /pnr/bnpl/purchase.

Manage Your Booking - Modify Trip Options (MYB:MTO) Flow:

1. The passenger retrieves a booking either by supplying basic PNR information or by logging in to the passenger's account. If the passenger is logged in, all their reservations are visible.

- 2. The /pnr service GET operation returns information for the PNR specified in the parameters. Airlines can prompt passengers for information that identifies a PNR, retrieve the information and format it for display to the passenger.
- 3. The airline prompts the passenger for the type of update the passenger would like to make.
- 4. The passenger chooses ancillary bundles.
- 5. The airline initiates the MTO: ancillaries flow by calling /pnr/mto/ancillaries.
- The airline calls /pnr/mto/products/ancillaries GET to obtain list of ancillary bundles available for the already purchased itinerary. The Airline formats information about available ancillary bundles to the passenger.
- When the passenger selects ancillary bundles, the airline calls /pnr/mto/products/ancillaries POST and adds bundles to the reservation.
 For newly selected bundles/ancillaries airline validates if there is no conflict in selected single ancillaries and bundles (the same benefit cannot be selected twice by the passenger).
- 8. When the passenger indicates that shopping is complete the airline obtains available payment options for the current itinerary by calling /pnr/mto/paymentOptions GET.
 - a. The airline can format the information for display to the passenger.
- 9. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /pnr/mto/purchase POST; if authorization is successful, the /pnr/mto /purchase service will create a PNR, EMD(s), etc.
- 10. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 11. The passenger specifies a PNR for review.
- 12. The airlines submits a /pnr GET request.
 - a. The airline can format the information for display to the passenger.

Manage Your Booking - Change Itinerary (MYB:CI) Flow:

- 1. The passenger retrieves a booking either by supplying basic PNR information or by logging in to the passenger's account. If the passenger is logged in, all their reservations are visible.
- 3. The /pnr service GET operation returns information for the PNR specified in the parameters. Airlines can prompt passengers for information that identifies a PNR, retrieve the information and format it for display to the passenger.
- 2. After the passenger selects one or more flights to be exchanged, the airline calls pnr/exchange request, GET operation to initialize Exchange process.
- 3. The passenger shops for flights and builds an itinerary.
- The airline calls /pnr/exchange/products/ancillaries GET to obtain list of ancillaries available for the currently selected itinerary. The Airline formats information about available ancillaries to the passenger.
- 5. When the passenger selects ancillaries, the airline calls /pnr/exchange /products/ancillaries POST and adds ancillaries to the reservation.

For newly selected bundles/ ancillaries airline validates if there is no conflict in selected single ancillaries and bundles (same benefit cannot be selected twice by the passenger).

- 6. When the passenger indicates that shopping is complete the airline obtains available payment options for the current itinerary by calling /pnr/exchange /paymentOptions GET.
 - a. The airline can format the information for display to the passenger.
- 7. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /pnr/exchange /purchase POST; if authorization is successful, the /pnr/exchange /purchase service will create a PNR, EMD(s), etc.
- 8. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 9. The passenger specifies a PNR for review.
- 10. The airlines submits a /pnr GET request.
 - a. The airline can format the information for display to the passenger

2.1.1.2.3 API Modifications

Service Name	Operation	Change
/products/ancillaries /pnr/mto/products/ancillaries /pnr/exchange/products/ancillaries /pnr/bnpl/products/ancillaries	GET - returns a list of ancillaries available for the currently selected itinerary (the itinerary currently held in the session).	New validation error messages have been added.
	POST - allows an airline to manage the list of ancillaries associated with an itinerary.	

2.1.1.3 An enhancement to return required SSR codes (where applicable) as part of the ancillary price list response in the Post Booking flows.

Some ancillaries require a SSR to be created as part of the reservation process, so that other airline departments will receive notification of the ancillary sale.

The requirement to add an SSR (or not) is defined by the airline as part of the OC filing, where the airline can define if an SSR code is required, and what is the SSR form to complete the booking of the ancillary.

To employ this functionality carriers will need to file SSR's associated to their ancillaries. Passengers, when presented with selected ancillaries will be instructed to supply information such as dimensions, selection of type or defined free text defined information.

Digital Connect v3.0 enhances the ancillary pricing response in the post booking flows to return the SSR codes (where applicable) and rules associated for the completion of the AE. The SSR codes will be added into the AE field as part of the AE creation process.

OC/AE/EMD process will still manage the pricing/sale of the ancillary and ticketing, but the SSR will be used to complete the reservation of the ancillary.

PNR processing would ensure that the deletion of the AE would delete the related SSR.

This functionality applies to the following flows:

- Manage Your Booking Change Itinerary (MYB:CI) Flow
- Manage Your Booking Book Now Pay Later (MYB:BNPL) Flow

It also gives an option to purchase a placed on hold booking that includes ancillaries with associated SSR's (in the Book Now Pay Later (BNPL) Flow). Ancillaries will be held for the chosen 'on hold' option. When the passenger returns in Manage Your Booking – Book Now Pay Later (MYB:BNPL) Flow, the ancillaries and seats put 'on hold' must be purchased and no additional selections can be made.

Service Name	Operation	Change
/pnr/exchange/products/ancillaries /pnr/bnpl/products/ancillaries	GET	The same changes already done for 2.0 in The Revenue (B2C) Flow – reusing:
		GET:
		 "AncillarySpecialService" has been added to Ancillary
		AncillarySpecialService consists of SSR code, type (STRUCTURED, REQUIRED, NOTALLOWED, OPTIONAL), required properties (Keyword Property Definitions, Property definitions or dimensions)
		POST:
		 "AbstractAncillarySSR" has been added to "AncillaryOperationResult".
		 "AbstractAncillarySSR" is generalization of "AncillarySSRDescription" and "AncillaryStructuredTexts".
		 "AncillaryStructuredTexts" will contain list of "AbstractAncillaryStructuredText".
		 "AbstractAncillaryStructuredText" is generalization of "AncillaryKeywordPropertyDefinition" and "AncillaryPropertyDefinition"
/pnr/exchange/purchase /pnr/bnpl/purchase	POST	PNRUpdateReservation must send SSR and structured tex/free text informationto create AE's as stored in T1.

2.1.1.4 Support Dynamic Retailer with Special Service Requests for discounting ancillaries in the post booking flows for Manage Your Booking – Modify Trip Options (MYB:MTO) Flow and Manage Your Booking – Change Itinerary (MYB:CI) Flow

Airlines can now pass promotional codes to Ancillaries service in the Post Booking flows, and those services will obtain the information needed to sell and issue documents for the promoted ancillaries from ATPCO OC records. Note that the ancillary promotions must be previously set up with ATPCO.

If the Ancillaries request includes promotional codes, the Ancillaries services will be able to obtain applicable information, including SSR codes, from the ATPCO OC record, and return it as part of the

pricing response. If the passenger selects and purchases on of these ancillaries, the SSR codes will be added into the AE field as part of the AE creation process.

Airline will determine whether a promotion applies and if so, will need to use a specific custom SSR to drive the discount in the ancillaries request.

- SSR driven discounts for ancillaries. An enhancement in the /pnr/mto/ancillaries, /pnr/exchange/ancillaries contract to accept SSRs for ancillaries.
- Rule ID exposure in the response. GET /pnr/mto/products/ancillaries and /pnr/exchange/products/ancillaries response will include rule ID coming back from the Dynamic Retailer.
- Shopping cart update to display original and discounted amount. Once discounted ancillary is added to the shopping cart, *Digital Connect v3.0* will provide original amount and discounted amount in /pnr/mto/products and /pnr/exchange/products services.

Airline can add the SSRs and/or remarks to the PNR by using PNR utility in the Purchase Request. See also the PNR Remarks section for related functionality.

2.1.1.4.1 Highlights

Airlines can now drive discounts for ancillaries with the following sequence of DC service calls:

An example flow of the services for Manage Your Booking – Change Itinerary (MYB:CI) Flow:

- 1. The passenger retrieves a booking either by supplying basic PNR information or by logging in to a Frequent Flyer account. If the passenger is logged in, all their reservations are visible. Airlines can prompt passengers for information that identifies a PNR, retrieve the information and format it for display to the passenger.
- 2. The /pnr/exchange service GET operation returns information for the PNR specified in the parameters and initializes Exchange process.
- 3. The airline obtains search criteria from the passenger and submits a /pnr/exchange/products/air/search request, POST operation to get a list of flights matching the search criteria. Display the returned flights to the passenger.
- 4. After the passenger selects one or more flights, the airline submits the /pnr/exchange/products/air POST operation to add the flights to the itinerary and store the itinerary in the session.
- 5. After checking the re-association criteria, the airline uses /pnr/exchange /products/ancillaries operations to show passengers the ancillaries available on the flights they have exchanged and to add any ancillaries selected by the passenger to the itinerary.
- 6. The airline provides also SSR codes (promoSSRs) in GET /pnr/exchange/products/ancillaries to obtain possible discounts for ancillaries (possible discounts are based on different factors, like tier level).
- When the passenger selects ancillaries, the airline calls POST /pnr/exchange/products/ancillaries to add any ancillary products selected by the passenger to the itinerary
- 8. The airline can call /pnr/exchange/products GET operation to obtain a current list, with prices of products that the passenger has added to the itinerary and use this information to build and

display a shopping cart. The response for the ancillaries and seats will include breakdown of original amount, discount and discount amount

- 9. When the passenger is ready to purchase the itinerary, the airline adds field values for all applicable remarks, SSRs, and OSIs to the /pn/exchange/purchase POST request.
- 10. The airline initiates the purchase and ticketing process by calling /pnr/exchange/purchase POST ; if authorization is successful, the /pnr/exchange/purchase service will create a PNR, EMD(s), etc. EMDs will be issued with discounted values.
- 11. The response indicates whether the purchase is successful.
- 12. The airline formats this information for display to the passenger.
- 13. The airline submits a /pnr/exchange GET request; the results will include remarks.
- 14. The airline can format the information for display to the passenger.

2.1.1.4.2 API Modifications

Service Name	Operation	Change
/pnr/mto/products/ancill aries	GET - Returns a list an ancillary products available on flights that have been	Enhanced to accept and pass the SSR (more a promo code) parameter in the query request to the downline system.
selected by th	selected by the passenger.	Response will include rule ID coming back from Dynamic Retailer and will be exposed.
/ancillaries ancillary products available	Enhanced to accept and pass the SSR (more a promo code) parameter in the query request to the downline system.	
	selected by the passenger.	Response will include rule ID coming back from Dynamic Retailer and will be exposed.
/pnr/mto/products	GET - Returns the latest price breakdown for the current booking.	The response will include original breakdown of original amount, discount and discount amount.
/pnr/exchange/products	GET - Returns the latest price breakdown for the current booking.	The response will include original breakdown of original amount, discount and discount amount.

2.1.2 Error handling - Enhanced descriptive messaging

Digital Connect v3.0 enhances error handling in all flows. All services that can have an error message will be enhanced in the following way:

- Unique error code for different error message;
- There will be no more java stack trace errors;
- More detailed error messages containing a proper and unique error code for each error scenario;

- More precise error messages (providing greater details);
- Fixing Ancillary service validation errors;
- Where Code is invalid or Segment information is invalid.

2.1.2.1 Prerequisites

All error codes needs to be in enumerated format.

2.1.2.2 API Modifications

All Revenue (B2C) Flow services that can have an error message will be enhanced. Please find below detailed list of enhanced services:

The Revenue (B2C) Flow:

- 1. /login
- 2. /passengers
- 3. /passengers/contactAddress
- 4. /paymentOptions
- 5. /paymentOptions/details/AWARD
- 6. /paymentOptions/details/BT
- 7. /paymentOptions/details/GC
- 8. /pnr
- 9. /pnr/passengers
- 10. /pnr/passengers/contactAddress
- 11. /prodcuts/air/farerules
- 12. /prodcuts/air/farerules/mini
- 13. /prodcuts/upgrade
- 14. /product/air/metasearch
- 15. /product/air/search
- 16. /product/air/search/latest
- 17. /product/cart
- 18. /products
- 19. /products/air
- 20. /products/air/bags
- 21. /products/ancillaries
- 22. /products/insurance
- 23. /products/obfees
- 24. /products/obfees/available
- 25. /products/obfees/updateOBFeesTypeR
- 26. /products/obfees/waive
- 27. /products/obfees/waiverCodes
- 28. /products/seats
- 29. /products/seats/preview
- 30. /products/upsell
- 31. /profile
- 32. /profile/myTrips
- 33. /profile/resetPassword
- 34. /profile/resetPasswordKey

- 35. /profile/update
- 36. /purchase

Book Now Pay Later (BNPL) Flow & Manage Your Booking – Book Now Pay Later (MYB:BNPL) Flow:

- 1. BOOKING (B2C) FLOW /products/bnpl
- 2. BOOKING (B2C) FLOW /products/bnpl/purchase
- 3. MYB /pnr/bnpl
- 4. MYB /pnr/bnpl/paymentOptions
- 5. MYB /pnr/bnpl/products
- 6. MYB /pnr/bnpl/products/ancillaries
- 7. MYB /pnr/bnpl/products/insurance
- 8. MYB /pnr/bnpl/products/seats

Manage Your Booking – Modify Trip Options (MYB:MTO) Flow:

- 1. /pnr/mto/ancillaries
- 2. /pnr/mto/passengers/contactAddress
- 3. /pnr/mto/paymentOptions
- 4. /pnr/mto/products/
- 5. /pnr/mto/products/air/bags
- 6. /pnr/mto/products/ancillaries
- 7. /pnr/mto/products/seats
- 8. /pnr/mto/purchase
- 9. /pnr/mto/seats

Manage Your Booking - Change Itinerary (MYB:CI) Flow:

- 1. /pnr/exchange
- 2. /pnr/exchange/passengers
- 3. /pnr/exchange/passengers/contactAddress
- 4. /pnr/exchange/paymentOptions
- 5. /pnr/exchange/products
- 6. /pnr/exchange/products/air
- 7. /pnr/exchange/products/air/search
- 8. /pnr/exchange/products/ancillaries
- 9. /pnr/exchange/products/seats
- 10. /pnr/exchange/purchase

Manage Your Booking – Cancel and Refund (MYB:CR) Flow:

- 1. /pnr/cancelAndRefund
- 2. /pnr/cancelAndRefund/cancel
- 3. /pnr/cancelAdnRefund/confirm

Manage Your Booking – Upgrade (MYB:FFU) Flow:

- 1. /pnr/upgrade
- 2. /pnr/upgrade/offers
- 3. /pnr/upgrade/paymentOptions
- 4. /pnr/upgrade/products
- 5. /pnr/upgrade/products/ancillaries
- 6. /pnr/upgrade/products/seats
- 7. /pnr/upgrade/purchase

2.1.3 Flight Advisory and Marketing Messages (FAMs)

This feature allows airlines to set up advisory or marketing messages and publish them to passengers. Airlines control which passengers see messages by associating each message with one or more business rules, which specify the criteria such as: booking dates, travel dates, point of departure, and so on. That determines when the message is published.

Each type of flight advisory messages uses shared engine, which is responsible for evaluating rules. If rule expression returns true and technical switch for FAM is enabled, engine will return message which will be displayed in a component.

This functionality applies to the following flows:

- The Revenue (B2C) Flow
- Manage Your Booking Change Itinerary (MYB:CI) Flow
- The Redemption (RBE) Flow

2.1.3.1 Prerequisites

The Airline must configure Flight Advisory Messaging and Rules.

2.1.3.2 Highlights

2.1.3.2.1 The Revenue (B2C) and the Redemption (RBE) Flows

- 1. The airline calls /products/air/search POST to obtain the list of available flights to the passenger.
 - a. The airline can format the information for display to the passenger.
- 2. The passenger selects a flight.
- 3. The airline submits /products/air POST to add selected flight to the itinerary.
- 4. The airline uses a /products GET operation to obtain a current list, with prices of products that the passenger has added to the itinerary.
- 5. The airline prompts passenger for passenger's details e.g. passport information.
- 6. The airline uses /passengers POST to add passenger to the itinerary.
- 7. The passenger can continue shopping by selecting seats and ancillaries, according to the airline's shopping sequence. Product cart is updated.

- 8. When the passenger indicates that shopping is complete the airline obtains available payment options for the current itinerary by calling /paymentOptions GET.
 - a. The airline can format the information for display to the passenger.
- 9. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /purchase POST; if authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 10. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 11. The passenger specifies a PNR for review.
- 12. The airlines submits a /pnr GET request.
 - a. The airline can format the information for display to the passenger

2.1.3.2.2 Manage Your Booking - Change Itinerary (MYB:CI) Flow

- 1. The passenger retrieves a booking either by supplying basic PNR information or by logging in to a Frequent Flyer account. If the passenger is logged in, all their reservations are visible.
 - a. The /pnr service GET operation returns information for the PNR specified in the parameters. Airlines can prompt passengers for information that identifies a PNR, retrieve the information and format it for display to the passenger.
- 2. After the passenger selects one or more flights to be exchanged, the airline calls pnr/exchange request, GET operation to initialize Exchange process.
- 3. The airline calls /pnr/exchange /products/air/search POST to obtain the list of available flights to the passenger.
 - a. The airline can format the information for display to the passenger.
- 4. The passenger selects a flight.
- 5. The airline submits /pnr/exchange /products/air POST to add selected flight to the itinerary.
- 6. The airline uses a /pnr/exchange /products GET operation to obtain a current list, with prices of products that the passenger has added to the itinerary.
- 7. The airline prompts passenger for passenger's details e.g. passport information.
- 8. The airline uses /pnr/exchange /passengers POST to add passenger to the itinerary.
- 9. The passenger can continue shopping by selecting seats and ancillaries, according to the airline's shopping sequence. Product cart is updated.
- 10. When the passenger indicates that shopping is complete the airline obtains available payment options for the current itinerary by calling /pnr/exchange /paymentOptions GET.
 - a. The airline can format the information for display to the passenger.
- 11. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /pnr/exchange /purchase POST; if authorization is successful, the /pnr/exchange /purchase service will create a PNR, EMD(s), etc.

- 12. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 13. The passenger specifies a PNR for review.
- 14. The airlines submits a /pnr GET request.
 - a. The airline can format the information for display to the passenger

2.1.3.3 API Modifications

Service Name	Operation	Change
/product/air/search /products/air/search/latest /pnr/exchange/products/air/search	POST	AirSearch was extended to include Flight Advisory messages in the response.

For Global Message Handling:

- 1. Global (Advisory)
 - a. Will be returned as part of the AirSearchResults Element (outside bundled or unbundled offers)
 - b. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List component
- 2. FLC_DAY (Advisory)
 - a. Will be returned as part of the AirSearchResults/travelPartAdvisories (Inbound/Outbound)
 - b. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List component
- 3. FLC_ROW -- the holder for flight row messages (Advisory)
 - a. Will be returned as part of the Offer / itineraryPart Element
 - b. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List component
- 4. FLC_FLIGHT -- the holder for flight messages (Advisory)
 - a. Will be returned as part of the **Offer/Itinerarypart/Segments/Flight** Element (Inside the shopping basket hash)
 - b. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List component

- 5. FLC_FARE -- the holder for fare messages (Advisory)
 - a. Will be returned as part of the Offers Element (Inside each shopping basket hash
 - b. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List component
- 6. FLC_ITINERARY Display in FLC Component on Top of the page (Advisory)
 - a. Will be returned as part of the **AirSearchResults**/ (Outside the Inbound/Outbound)
 - b. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List component

Service Name	Operation	Change
/products /pnr/exchange/products	POST	Products service was extended to include Global, Fare and Flight advisories in the response. The Global advisories list will not include the Itinerary advisories.
/products/cart /pnr/exchange/products/cart		The products cart response is quite similar to the products response, with just an extra parent element: <i>productsInformation.</i>

For Global Message Handling:

- 1. Global (Advisory) [Nagen] itineraryInformation/Advisories
 - a. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List componen
- 2. FLC_FLIGHT the holder for flight messages (Advisory) [Nagen] itineraryInformation/ offersSelected/itineraryPart/segments/Flight
 - a. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List componen
- 3. FLC_FARE the holder for fare messages (Advisory) [Nagen] itineraryInformation/ offersSelected/
 - a. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List component

Service Name	Operation	Change
/purchase /pnr/exchange/purchase	POST	Purchase service was extended to include Global, Fare and Flight advisories in the response. The Global advisories list will not include the Itinerary advisories.

For Global Message Handling:

- 1. Global (Advisory)
 - a. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List componen
- 2. FLC_FLIGHT the holder for flight messages (Advisory) *pnr/itinerary/itineraryParts/ segments/ flight*
 - a. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List componen
- 3. FLC_FARE -- the holder for fare messages (Advisory) pnr/ itinerary/ itineraryParts
 - a. Response will contain:
 - i. "level": "string",
 - ii. "code": "string", // instead of translationKey
 - iii. "imageHint": "string", //instead of hint
 - iv. "image": "string" //instead of imageKeyFor Flight List component

2.1.4 Flight Results

The service that obtains lists of available flights that match search criteria supplied by passengers and builds an itinerary based on passenger selections has the following additions:

2.1.4.1 Itinerary data: layovers, wet lease

This is part of the scope for providing additional itinerary data. When wet lease applies the solution must provide the correct operating carrier in case that the carrier is part of a wet lease agreement. Same scenario occurs for layover, the information is returned if the itinerary has a layover.

This functionality applies to the:

The Revenue (B2C) Flow:

- 1. api/products/air/search,
- 2. api/products/air,

- 3. api/products,
- 4. api/purchase,
- 5. api/pnr.

The Redemption (RBE) Flow:

- 1. api/products/air/search,
- 2. api/products/air,
- 3. api/products,
- 4. api/purchase.

Manage Your Booking - Change Itinerary (MYB:CI) Flow:

- 1. api/pnr/exchange,
- 2. api/pnr/exchange/products/air/search,
- 3. api/pnr/exchange/products/air,
- 4. api/pnr/exchange/purchase.

Manage Your Booking - Cancel and Refund (MYB:CR) Flow:

1. api/pnr/cancelAndRefund

Manage Your Booking – Modify Trip Options (MYB:MTO) Flow:

- 1. api/pnr/mto/ancillaries,
- 2. api/pnr/mto/products,
- 3. api/pnr/mto/purchase.

Book Now Pay Later (BNPL) Flow:

- 1. api/products/air/search,
- 2. /api/products/air,
- 3. api/products/bnpl/purchase,
- 4. api/pnr/bnpl.

2.1.4.2 Mark-up feature

Digital Connect v3.0 gives Sabre hosted carriers an automated solution to mark up itineraries based on specific needs.

The Mark Up capability streamlines the sales process and improves airline workflow with ability to autoprice an itinerary with a specified amount at point-of-sale, and it gives carriers greater sales control to earn the highest margin with an easy-to-use Mark-Up feature.

Both markup and discount can be applied at the same time (NOTE: If a carrier wants to choose plus-up (markup) and discount at the same time, then the precedence will be (MUST BE) set in DR through rules).

2.1.4.2.1 Highlights:

- 1. The airline calls /products/air/search POST to obtain the list of available flights to the passenger. New field - *Trendindicator* passes with the shopping request. *trendIndicator* string has to match the same exact string set up in Dynamic Retailer (Flight Promotion) rule, otherwise the mark up will not applied. If the passenger returned to the same search X times, price increase is added to the basic fare. Taxes are increased and recalculated accordingly to the new total prices.
 - a. The airline can format the information for display to the passenger.
- 2. The passenger selects a flight.
- 3. The airline submits /products/air POST to add selected flight to the itinerary.
- 4. The airline prompts passenger for passenger details e.g. passport information.
- 5. The airline uses /passengers POST to add passenger to the itinerary.
- 6. The passenger can continue shopping by selecting seats and ancillaries, according to the airline's shopping sequence. Product cart is updated.
- 7. When the passenger indicates that shopping is complete the airline obtains available payment options for the current itinerary by calling /paymentOptions GET.
 - a. The airline can format the information for display to the passenger.
- 8. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /purchase POST. If authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 9. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 10. The passenger specifies a PNR for review.
- 11. The airlines submits a /pnr GET request.
 - a. The airline can format the information for display to the passenger

2.1.4.2.2 API Modifications

Service Name	Operation	Change
/products/air/search	POST	A new field <i>trendIndicator</i> is added to the parent tag in the request
		<i>trendIndicator</i> string has to match the same exact string set up in Dynamic Retailer (Flight Promotion) rule, otherwise the mark-up will not applied.

2.1.4.3 Displaying Booking Code - Flight Advisory and Marketing Messages

Digital Connect v3.0 will provide ability to display the booking code next to the price on the flight results page. By using booking codes airline can inform the passenger about the potential miles accrual and the benefits of the different fare classes. The booking code is displayed at the Leg level which is actually derived from the booking codes available at segment level.

As the mile point accrual is based on the fare options associated to a particular Booking Class. The presence of the booking class at the flight results page helps the passenger to make an informed decision while choosing the flights.

This functionality applies to the Revenue (B2C) Flow, Manage Your Booking – Change Itinerary (MYB:CI) Flow, Redemption (RBE) Flow.

2.1.4.3.1 Highlights:

1. The airline calls /products/air/search POST to obtain the list of available flights to the passenger. New field – *bookingClass* passes with the shopping response at Leg level in unbundled as well as bundled offers.

The airline can format the information for display it to the passenger on the flight results page next to the price.

- 2. The passenger selects a flight.
- 3. The airline submits /products/air POST to add selected flight to the itinerary.
- 4. The airline prompts passenger for passenger details e.g. passport information.
- 5. The airline uses /passengers POST to add passenger to the itinerary.
- 6. The passenger can continue shopping by selecting seats and ancillaries, according to the airline's shopping sequence. Product cart is updated.
- 7. When the passenger indicates that shopping is complete the airline obtains available payment options for the current itinerary by calling /paymentOptions GET.

The airline can format the information for display to the passenger.

- 8. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /purchase POST. If authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 9. The response indicates whether the purchase is successful.

The airline formats this information for display to the passenger.

- 10. The passenger specifies a PNR for review.
- 11. The airlines submits a /pnr GET request.

The airline can format the information for display to the passenger

2.1.4.3.2 API Modifications

Service Name Operation	Change
------------------------	--------

/product/air/search	POST	AirSearch was extended to
/product /air		include booking code in the response, it is displayed next to a price.

2.1.5 Managing Brands

The airline can configure various brands so the display on the Flights page identifies flights by brand, and provides information about what constitutes the brand (brand benefits).

2.1.5.1 Price by Brand

Airlines will now be able to price and ticket each reservation at the specific brand/fare that was selected by the passenger, even if the system default for automated pricing is set to price the lowest fare for the RBD used (which may not be the fare requested by the passenger).

2.1.5.1.1 Prerequisites:

The airlines must have branded fares filed in the Merchandising Manager.

2.1.5.1.2 Highlights:

- 1. The airline calls /products/air/search POST to obtain the list of available flights to the passenger.
 - a. The airline can format the information for display to the passenger.
- 2. The passenger selects a flight.
- 3. The airline submits /products/air POST to add selected flight to the itinerary.
- 4. The airline prompts passenger for passenger's details e.g. passport information.
- 5. The airline uses /passengers POST to add passenger to the itinerary.
- 6. The passenger can continue shopping by selecting seats and ancillaries, according to the airline's shopping sequence. Product cart is updated accordingly.
- As an optional step the airline can call /products PUT to trigger an additional re-pricing before the passenger selects the payment (on the Payment Page). This new method recalculates products prices based on given context (e.g. prices based on *awardSwitchState* can be recalculated between points and cash; or it can simply recalculates price of basket when it is based on *reprice*).
- 8. When the passenger indicates that shopping is complete the airline obtains available payment options for the current itinerary by calling /paymentOptions GET.
 - a. The airline can format the information for display to the passenger.
- 9. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /purchase POST; if authorization is successful, the /purchase service will create a PNR, EMD(s), etc.

- 10. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 11. The passenger specifies a PNR for review.
- 12. The airlines submits a /pnr GET request.
 - a. The airline can format the information for display to the passenger

2.1.5.1.3 API Modifications

Service Name	Operation	Change
/products	PUT - Recalculates products prices based on given context (e.g. based on <i>awardSwitchState</i> prices can be recalculated between points and cash; or, based on <i>reprice</i> , simply recalculate price of basket).	New HTTP method has been added.

2.1.5.2 AER Ticket Exchange by Brand

This feature should be available to all customers which will use Price by Brand concept of filing fares (which simplifies relation between RBD and brands mapping, allowing airline to brand RBD to certain fare basis for certain brand). This is extension of mentioned project for exchange path.

This new feature requires changes in the AER process – if the old way of pricing (selecting cheapest brand for certain RBD) would be used, then passengers would not have any possibility to select desired brand. Therefore additional parameter has been added to the AER_RQ (Action: Exchange) to provide the brand ID to allow AER to select expected brand.

2.1.5.2.1 Prerequisites

- 1. Fares have to be filed with accordance to the Price by Brand concept,
- 2. RBD vs Brand mapping have to be also setup according to Price by Brand concept.

2.1.5.2.2 Highlights:

- 1. The passenger retrieves a booking either by supplying basic PNR information or by logging in to the passenger's account.
- 2. The airline identifies a PNR, retrieves the information and formats it for display to the passenger. If the PNR is found, all the flight details are returned, including the payment details, such as forms of payment used.
- 3. After the passenger selects flight to be exchanged, the airline calls pnr/exchange request GET to initialize an Exchange process.
- 4. The airline obtains search criteria from the passenger and calls /pnr/exchange/products/air/search POST to get a list of flights matching the search criteria.
 - a. The airline can format the information for display to the passenger.

- 5. The passenger selects a flight.
- 6. The airline submits /pnr/exchange/products/air POST to add selected flight to the itinerary.
- 7. After checking the re-association criteria, the airline uses /pnr/exchange/products/ancillaries operations to obtain the ancillaries available on the flights they have exchanged and to add any ancillaries selected by the passenger to the itinerary.
- 8. The airline uses /pnr/exchange/products/seats operations to show passengers the seats available on the flights they have exchanged and to add any seats selected by the passenger to the itinerary
- 9. After the passenger has completed exchange process with changing the itinerary in the session (including exchange process for the ancillaries and seats) the airline obtains available payment options for the current itinerary by calling /pnr/exchange/paymentOptions GET.
 - a. The airline can format the information for display to the passenger.
- 10. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /pnr/exchange/purchase POST; if authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 11. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.

2.1.5.2.3 API Modifications:

There will be no changes in the API. As exchange flight selection services bases on the shopping hash reference there is no change in the contract and in already existing services.

2.1.6 Fare Lock functionality (payment at time of booking, automatic ticketing at the end of the Fare Lock period).

Airline can enable fare lock for on hold bookings.

If an airline has fare lock configured for on hold bookings instead of BNPL (Book Now Pay Later), the pricing needs to reflect a lock for each Passenger. [POST] /products/bnpl/purchase needs to handle the change to the time limit and the fee per Passenger.

Simple testing effort to confirm that a fare lock itinerary is returned properly (The JSON services needs to retrieve the PNR that was placed on hold with fare locking).

2.1.6.1 API Modifications

There will be no changes in the API. Pricing will be handled by the downlines.

2.1.7 Forms of Payment

This section covers the setup of forms of payment that will be available to passengers. In addition to setting up forms of payment, an airline can define the specific conditions under which each form of payment will be available, such as for all flights, for domestic flights only, or for international flights only.

2.1.7.1 Forms of Payment in the Booking flows

Newly supported forms of payment in the Revenue Booking (B2C) flow include:

- Direct Debit SEPA;
- E-Voucher Option to retrieve the balance;
- Points.

2.1.7.1.1 Multiple Forms of Payment support in the Booking Flows

Digital Connect v3.0 gives the airline possibility to offer some more combinations of forms of payment in the booking flow.

Booking: Revenue (B2C) Flow:

- 1. Combination of the two non 3-DS Credit Cards (including Credit Card and UATP);
- 2. Combination of the Credit Card and E-Voucher/ Gift Card;
- Combination of the Credit Card and AFOP (Alternative Forms of Payment); AFOP is form of payment other than typical ones (e.g. major Credit Card, Travel Bank) with twostaged authorization.
- 4. Combination of Gift Card and Dynamic 3DSecure Credit Cards;
- 5. Combination of the Direct Debit SEPA and Credit Card;
- 6. Combination of the Direct Debit SEPA and Dynamic 3DSecure Credit Cards;
- 7. Combination of the Direct Debit SEPA and AFOP;
- 8. Combination of Direct Debit and eVoucher;
- 9. Combination of Credit Cards with Local Cards;
- 10. Combination of Local Card with Dynamic 3D Secure Card (please keep this order);
- 11. Combination of Credit Cards with Paypal (not via AFOP);
- 12. Combination of the E-Voucher and AFOP.

Booking: Redemption (RBE) Flow:

- 1. Combination of the Miles and Direct Debit SEPA;
- 2. Combination of the Miles and Dynamic 3DSecure Credit Cards.

Booking: Book Now Pay Later (BNPL) Flow:

- 1. Combination of the two non 3-DS Credit Cards (including Credit Card and UATP);
- 2. Combination of the Credit Card and Direct Debit SEPA;
- 3. Combination of the Credit Card and E-Voucher/ Gift Card
- 4. Combination of the E-Voucher and Direct Debit SEPA;
- 5. Combination of Credit Card and Paypal (not via AFOP);
- 6. Combination of E-Voucher and Dynamic 3DSecure Credit Cards.

2.1.7.2 Forms of Payment in Post-booking flows

Newly supported forms of payment include:

- Direct Debit SEPA;
- E-Voucher Option to retrieve the balance;
- Travel Bank Option to retrieve the balance;
- Support for real-time AFOP (with immediate response for authorization of refunds). There will be a new rule to change the group configuration for affected post-booking flow.

2.1.7.2.1 Multiple Forms of Payment support in the Post-booking Flows

Digital Connect v3.0 gives the airline possibility to offer multiple form of payment in the post-booking flows (Manage Your Booking – Book Now Pay Later (MYB:BNPL) Flow, Manage Your Booking – Change Itinerary (MYB:CI) Flow and Manage Your Booking – Modify Trip Options (MYB:MTO) Flow).

Manage Your Booking - Book Now Pay Later (MYB:BNPL) Flow:

- 1. Combination of the two non 3-DS Credit Cards (including Credit Card and UATP);
- 2. Combination of the Credit Card and E-Voucher/ Gift Card;
- 3. Combination of the Credit Card and Travel Bank;
- 4. Combination of the Direct Debit SEPA and Credit Card;
- 5. Combination of the E-Voucher and Direct Debit;
- 6. Combination of the E-Voucher and Dynamic 3DSecure Credit Cards.

Manage Your Booking - Change Itinerary (MYB:CI) Flow:

- 1. Combination of the two non 3-DS Credit Cards (including Credit Card and UATP);
- 2. Combination of the Credit Card and AFOP (Alternative Forms of Payment); AFOP is form of payment other than typical ones (e.g. major Credit Card, Travel Bank) with twostaged authorization.
- 3. Combination of the Direct Debit SEPA and Credit Card;
- 4. Combination of the Direct Debit SEPA and AFOP;
- 5. Combination of E-Voucher and Direct Debit;
- 6. Combination of E-Voucher and Credit Card (non-3DS);
- 7. Combination of E-Voucher and AFOP;
- 8. Combination of E-Voucher and Dynamic 3DSecure Credit Card;
- 9. Combination of Direct Debit and Dynamic 3DSecure Credit Card.

Manage Your Booking - Modify Trip Options (MYB:MTO) Flow:

- 1. Combination of the two Credit Cards (including Credit Card and UATP);
- 2. Combination of the Credit Card and E-Voucher/ Gift Card;
- Combination of the Credit Card and AFOP (Alternative Forms of Payment); AFOP is form of payment other than typical ones (e.g. major Credit Card, Travel Bank) with twostaged authorization.

- 4. Combination of the Direct Debit SEPA and Credit Card;
- 5. Combination of the Direct Debit SEPA and AFOP;
- 6. Combination of E-Voucher and Direct Debit;
- 7. Combination of E-Voucher and Dynamic 3DSecure Credit Card.

Combination of Credit Card and Paypal (not via AFOP)

2.1.7.3 An ability to pay in points in the Revenue (B2C) flow.

The passenger is now able to switch to points as his preferred form of payment in the revenue flow. During the switch, a re-price occurs of the current reservation and the products breakdown is returned in points.

Once the passenger selected the switch and he decides to change anything in his reservation [adds/removes ancillaries or seats] reservation will automatically default back to cash. The passenger would need to select switch again to re-price the updated reservation into points.

2.1.7.3.1 Highlights

Airlines can support passenger paying with points (as a single and multiple Form of Payment) with the following sequence of DC service calls:

- 1. The passenger supplies his frequent flyer credentials, and the airline uses the /login POST service to log the passenger in. This Login call can be done at any time, but the passenger must be logged in to be able to pay with points. The passenger needs to log in before switching to points (/products PUT call).
- 2. The airline uses /login GET service to retrieve the passenger profile details, including point balance.
- 3. The airline prompts the passenger for search criteria and perform a booking search by initiating /products/air/search request with the awardBooking flag set to false. The service returns flights, priced in both cash.
 The sirling formation for a booking for a booking flag set to false. The service returns flights, priced in both cash.

The airline formats this information for display to the passenger.

- 4. The passenger continues shopping by selecting flights, seats, and ancillaries, according to the airline's shopping sequence. Product cart is updated accordingly.
- 5. When the passenger indicates that shopping is complete, the airline calls the /paymentOptions GET service. The results will include the available award payment types (depends on configuration could return LP or/and FF award payment type but the passenger cannot pay with points without switching to points see point 8).
- 6. The airline switches to points modes and makes a call to re-pricing by executling /product PUT.
- 7. The airline calls the /paymentOptions GET service to retrieves available forms of payment. In POINTS mode the results will include only award payment types (depends on configuration - could return LP or/and FF award payment).
- 8. When the passenger selects type of payment, the airline calls GET /paymentOptions/details/AWARD to obtain fare slider (possible combinations of points and cash used to pay for fare) and ancillary toggles (possible cash/points options per ancillary/seat group). In addition, this service also returns the current (selected or initial) slider position + (selected or initial) current ancillary/seat toggle statuses.

- 9. The passenger can set the desired amount for VCR by using the dynamic Slider (amount can be divided between cash and points the airline can set the minimum number of points required for the VCR). For the EMDs (ancillaries and seats) the passenger can select toggles (points or cash without any division). The airline calls /paymentOptions/details/award POST and provides information about the slider position and toggles selections. The response will indicate if the passenger's selection is being saved.
- If Multiple forms of payment identified based on passenger's selection, the POST /paymentOptions is required to obtain the second cash payment options with residual cash values. In request AWARD payment has to be sent with correct points amount based on current user selection (done via POST /paymentOptions/details/AWARD).
- 11. Airline calls /purchase POST to initiate the payment and ticketing process. The process will confirm that the passenger's point balance is sufficient to pay for the itinerary. If user did not switch to points then error will be returned "Award FOP not allowed"
- 12. If payment is successful, the PNR and other supporting documents are issued, and the airline's application receives results indicating success.
- 13. The airline can call /pnr GET to retrieve PNR details, which can be formatted for display to the passenger.

2.1.7.3.2 API Modifications

Service Name	Operation	Change
/paymentOptions/details/AWARD	GET	New service has been added.
/paymentOptions/details/AWARD	POST	New service has been added.
/products	PUT	New service has been added.

2.1.7.4 An ability to pay in points for ancillaries and seats in the Manage Your Booking – Modify Trip Options (MYB:MTO) Flow.

The passenger now has an option to pay for ancillaries and seats in points in the Manage Your Booking – Modify Trip Options (MYB:MTO) Flow. He is also able to decide which ancillaries or seats he would like to purchase with his points.

The restriction is that each EMD can only be issued as cash or points (combination for a single EMD of cash or points is not supported).

Prerequisites

Ancillaries need to be filed in Merchandising Manager or ATPCO.

2.1.7.4.1 Highlights

Airlines can support passenger paying with points for ancillaries and/or seats (as a single or multiple Form of Payment) in the Manage Your Booking – Modify Trip Options (MYB:MTO) Flow with the following sequence of DC service calls:

- 1. The airline retrieves PNR information and initializes Manage Your Booking Modify Trip Options (MYB:MTO) Flow (with verification of MYB Rules) by calling:
 - a. /pnr/mto/ancillaries for Ancillaries flow where the passenger can managed ancillaries and seats;
 - b. /pnr/mto /seats for Seats flow -where the passenger can manage only seats.
- 2. The airline calls /pnr/mto/products/ancillaries GET to obtain list of ancillaries available for the currently selected itinerary (returned as per configuration cash only, points only or cash or points).

The Airline formats information about available inventory and sold out ancillaries to the passenger.

- 3. When the passenger selects ancillaries, the airline calls /pnr/mto/products/ancillaries POST and validates the quantity of the ancillaries selected by the passenger if equal or lower than available inventory. If the validation is successful this operation adds ancillaries to the reservation.
- 4. The airline calls /pnr/mto/products/seats GET to obtain seat map for the currently selected itinerary (returned as per configuration cash only, points only or cash or points). The Airline formats information about the seat map and available seats to the passenger.
- 5. When the passenger selects seats, the airline calls POST /pnr/mto/products/seats to add seats selected by the passenger to the itinerary.
- 6. The airline can call /pnr/mto/products GET operation to obtain a current list, with prices of products that the passenger has added to the itinerary and use this information to build and display a shopping cart.
- 7. When the passenger indicates that modified shopping is complete, the airline calls the /pnr/mto/paymentOptions GET service to obtain available forms of payment (including Award FOP dependent on configuration could return LP or/and FF award payment, but user cannot pay with Award without switching to points). If the passenger previously switched to points, only Award will be returned.
- 8. The passenger supplies frequent flyer credentials, and the airline uses the /login POST service to log the passenger in (login can be done at any previous stages).
- 9. The airline uses /login GET service to retrieve the passenger profile details, including point balance.
- 10. The airline switches to points modes and made re-pricing by calling /pnr/mto/product PUT.
- 11. The airline calls the /pnr/mto/paymentOptions GET service to retrieves available forms of payment.In POINTS mode the results will include only award payment types (dependent on configuration could return LP or/and FF award payment).
- 12. When the passenger selects type of payment, the airline calls GET /pnr/mto/paymentOptions/details/AWARD to obtain ancillary toggles (possible cash/points options per ancillary/seat group). In addition, this service also returns the current (selected or initial) current ancillary/seat toggle statuses.
- 13. The passenger can set the proper amount the EMDs (ancillaries and seats) by using toggles (points or cash without any division). The airline calls /pnr/mto/paymentOptions/details/award POST and provides information about toggles positions. The response will indicate if the passenger selection is being saved.

- 14. If Multiple forms of payment identified based on user selection, the POST /pnr/mto/paymentOptions is required to obtain the second cash payment options with residual cash values. In request AWARD payment has to be sent with correct points amount based on current user selection (done via POST /pnr/mto/paymentOptions/details/AWARD).
- 15. Airline calls /pnr/mto/purchase POST to initiate the payment and ticketing process. The process will confirm that the passenger's point balance is sufficient to pay for the itinerary. If user did not switch to points then error will be returned "Award FOP not allowed"
- 16. If payment is successful, the PNR and other supporting documents are issued, and the airline's application receives results indicating success.
- 17. The airline can call /pnr GET to retrieve PNR details, which can be formatted for display to the passenger.

2.1.7.4.2	API Modifications

Service Name	Operation	Change
/pnr/mto/products	PUT	New service has been added - to switch between Points and Cash.
/pnr/mto/paymentOptions/de tails/AWARD	GET	New service has been added - Initial toggle options in cash or points for ancillaries and seats.
/pnr/mto/paymentOptions/de tails/AWARD	POST	New service has been added - Toggle options selection.

2.1.7.5 Direct Debit SEPA

The passenger will be able to purchase the booking with Direct Debit (form of payment supporting the new SEPA requirements). This Form of Payment (FOP) allows customers to purchase their travel arrangements using electronic withdrawals from their personal bank accounts. It additionally provides the passengers with the benefit of not paying any FOP surcharge.

There will be support for purchasing the booking with combination of Direct Debit and Credit Card or E-Voucher. In multiple form of payment scenarios, the JSON request should send the Direct Debit payment as the second (final) FOP. In order to do that Airline needs to properly configure combinability property for the FOPs involved.

In case of combination with the E-Voucher, the E-Voucher will be authorized first, before the Direct Debit. This behavior is required for any Multiple FOP with the E-Voucher.

Direct Debit SEPA can be also combined with Miles. For more information please refer to Redemption Purchase (Award) chapter.

The Rules Engine makes it possible to set up additional conditions for when Direct Debit will be offered as an FOP. The possible rules include: the transaction currency, market and the purchase time before departure.

2.1.7.5.1 Highlights

Airlines can offer Direct Debit SEPA as a single form of payment with the following sequence of DC service calls:

- The airline calls /paymentOptions GET and obtains a list of payment options for the current itinerary including Direct Debit SEPA (if applicable). The current itinerary is the list of flights selected by the passenger and held in the current session.
 - a. The airline formats this information for display to the passenger.
- 2. The passenger chooses Direct Debit as the payment option.
- 3. The Airline initiates the purchase and ticketing process by calling /purchase POST; if the authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 4. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 5. The airline can call /pnr GET to PNR details, which can be formatted for display to the passenger
- 6. Airlines can also offer Direct Debit SEPA in multiple form of payment scenarios, combined with a credit card or an E-Voucher, with the following sequence of DC service calls:
- 7. The airline calls /paymentOptions GET and obtains a list of first payment options for the current itinerary. (The current itinerary is the list of flights selected by the passenger and held in the current session.)
- 8. The passenger chooses the first form of payment.
- 9. The airline calls /paymentOptions GET and obtains a list of second (final) payment options that are combinable with the selected first payment option. The airline has been configured so that Direct Debit is combinable with a credit card or an E-Voucher, which makes Direct Debit an option for the second form of payment.
 - a. The airline formats this information for display to the passenger.
- 10. The passenger selects Direct Debit as the final payment option.
- 11. The Airline initiates the purchase and ticketing process by calling /purchase POST; the Direct Debit must be listed as the second (final) form of payment. If the authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 12. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 13. The airline can call /pnr GET to PNR details, which can be formatted for display to the passenger

2.1.7.5.2 API Modifications

Service Name	Operation	Change
/purchase	POST - will authorize the payment, and, if successful, will book the itinerary and issue the PNR. It will also purchase any	New value : "DIRECT_DEBIT" was added to Field: /@type

ancillaries and issue corresponding EMDs.	
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2.1.7.6 Redemption Purchase (Award)

- An enhancement to the payment and ticketing process that allows passengers who are loyalty program members with sufficient point balances to use their points to pay for an itinerary (including taxes, ancillaries and seats). Hotels, cars, and insurance cannot be paid with points.
- The airline may configure awards to apply as many points as possible and leave the remaining amount to be covered with a 2nd FOP. Alternatively, the Airline can force the user to use only one FOP. An airline can enable points as a default payment or not.

Note that the passenger must be logged in to a frequent flyer account to make use of redemption payment functionality.

See also the Frequent Flyer section for related functionality.

2.1.7.6.1 Highlights

Airlines can support passenger paying with points (as a single and multiple Form of Payment) with the following sequence of DC service calls:

- 1. The passenger supplies frequent flyer credentials, and the airline uses the /login POST service to log the passenger in.
- 2. The airline uses /login GET service to retrieve the passenger profile details, including point balance.
- 3. The airline can offer the passenger the choice to make an award booking search when it prompts the passenger for search criteria.
- 4. If the passenger chooses to perform an award booking search, the airline initiates a /products/air/search request with the awardBooking flag set to true. The service returns flights, priced in both cash and points. For Redemption booking in response we receive information about the min points threshold (minimum number of points required for specific flights new field: requiredMinThreshold).The airline formats this information for display to the passenger.
- 5. If, at this time, the passenger selects a flight priced in award points, the passenger must be logged in. If the passenger is not logged in airline can prompt the passenger to log in here.
- 6. The passenger supplies frequent flyer credentials, and the airline uses the /login POST service to log the passenger in.
- 7. The airline uses /profile GET service to retrieve the passenger profile details, including point balance.
- 8. The passenger can continue shopping by selecting flights, seats, and ancillaries, according to the airline's shopping sequence. Product cart is updated accordingly.
- 9. When the passenger indicates that shopping is complete, the airline calls the /paymentOptions GET service. The results will include the available award payment types (dependent on configuration could return LP or/and FF award payment type).

- 10. When the passenger selects type of payment, the airline calls GET /paymentOptions/details/AWARD to obtain fare slider (possible combinations of points and cash used to pay for fare) and ancillary toggles (possible cash/points options per ancillary/seat group). In addition, this service also returns the current (selected or initial) slider position + (selected or initial) current ancillary/seat toggle statuses.
- 11. The passenger can set the desired amount for VCR by using the dynamic Slider (amount can be divided between cash and points the airline can set the minimum number of points required for the VCR). For the EMDs (ancillaries and seats) the passenger can select toggles (points or cash without any division). The airline calls /paymentOptions/details/award POST and provides information about the slider position and toggles selection. The response will indicate if the passenger selection is being saved.
- 12. If Multiple forms of payment identified based on user selection, the POST /paymentOptions is required to obtain the second cash payment options with residual cash values. In request AWARD payment has to be sent with correct points amount based on current user selection (done via POST /paymentOptions/details/AWARD).
- 13. Airline calls /purchase POST to initiate the payment and ticketing process. The process will confirm that the passenger's point balance is sufficient to pay for the itinerary. If user did not switch to points then error will be returned " Award FOP not allowed"
- 14. If payment is successful, the PNR and other supporting documents are issued, and the airline's application receives results indicating success.
- 15. The airline can call /pnr GET to retrieve PNR details, which can be formatted for display to the passenger.

Service Name	Operation	Change
/paymentOptions/details/AWARD	GET	New service has been added.
/paymentOptions/details/AWARD	POST	New service has been added.

2.1.7.6.2 API Modifications

2.1.8 Frequent Flyer/Loyalty

This section covers the services airlines use to give passengers access to frequent flyer/loyalty programs. *Digital Connect v3.0* adds and enhances the functionality in this area in the following ways.

• Configuration for adding Multiple Frequent Flyer has been changed (set at each PassengerType level). Passenger Configuration for each Passenger Type has been added in the /Passenger Service.

2.1.8.1 Sending Frequent Flyer number and tier of the logged-in passenger to the airline during shopping and pricing.

Airlines are now able to adjust their availability display based on Frequent Flyer Tier of a particular customer. It makes airlines more customer-focused and allows them to offer better flight availability to their most loyal passengers. Customers with high Frequent Flyer tier are thus rewarded by the airline with an option to choose flights which may be closed for sale for other passengers.

The only restriction of this functionality is that the customer must be logged in prior to searching for an availability and must also be a passenger or one of the passengers in the booking.

This functionality works in the following flows:

- The Revenue (B2C) Flow,
- Book Now Pay Later (BNPL) Flow,
- Manage Your Booking Book Now Pay Later (MYB:BNPL) Flow,
- Manage Your Booking Change Itinerary (MYB:CI) Flow.

2.1.8.1.1 Prerequisites

The airline must participate in the profile system and loyalty program to enable this feature. The loyalty program must be integrated with Customer Insight.

2.1.8.1.2 Highlights

Frequent Flyer Tier level will be retrieved from logged-in user's data stored in Customer Insight Data Base and will be send in the shopping request via SE and IntelliSell to airline inventory for the availability response.

This functionality applies to the following flows:

- The Revenue (B2C) Flow,
- Book Now Pay Later (BNPL) Flow,
- Manage Your Booking Book Now Pay Later (MYB:BNPL) Flow,
- Manage Your Booking Change Itinerary (MYB:CI) Flow.

2.1.8.1.3 API Modifications

There is a new warning message which will be returned by POST /Passenger service response based on the validation logic for FF tier if the logged in user is not a passenger or one of the passengers.

No other API Modifications.

2.1.8.2 The highest tier privileges extension to all travelers

Airlines may configure the IBE to apply the highest tier level benefits of a passenger in a PNR to all passengers in the PNR. For example, if one passenger in the booking is a gold-level (highest tier passenger in the booking), then gold-level seat benefits may be extended to all passengers in the itinerary. Availability and pricing of seats will be presented upon selection of the seat on the seat map. The offering may also only apply to some but not all passengers in the booking and when this is the case, the appropriate messaging and pricing will be presented on a per passenger basis.

Seat discounts available to the passenger with the highest tier level may be applied to all passengers in the booking. If no passenger in the booking is a loyalty member, standard seat prices will apply to all of the passengers.

This functionality applies to the following flows:

- The Revenue (B2C) Flow,
- Manage Your Booking Change Itinerary (MYB:CI) Flow,
- Manage Your Booking Modify Trip Options (MYB:MTO) Flow,
- The Redemption (RBE) Flow,
- Book Now Pay Later (BNPL) Flow.

2.1.8.2.1 Prerequisites

The /passengers service must be called before the /products/seats service – it will validate tier-level statuses of all travelers and will store the highest level in the session.

2.1.8.2.2 Highlights

- 1. The airline calls /products/air/search POST to obtain the list of available flights to the passenger.
- 2. The passenger selects a flight.
- 3. The airline submits /products/air POST to add selected flight to the itinerary.
- 4. The airline prompts passenger for passenger details e.g. passport information.
- 5. The airline uses /passengers POST to add passenger to the itinerary.

New feature - The highest tier privileges extension to all travelers sends each FF numbers entered to CI to validate the tier-level status, than compares all the FF numbers and stores the highest tier level in our session.

- 6. The passenger can continue shopping by selecting seats and ancillaries, according to the airline's shopping sequence.
- 7. The airline uses /products/seats operations to show passengers the seats available on the flights they have exchanged and to add any seats selected by the passenger to the itinerary

New feature - The highest tier privileges extension to all travelers passes FF tire level in the /products/seats Service.

- 8. Product cart is updated.
- 9. When the passenger indicates that shopping is complete the airline obtains available payment options for the current itinerary by calling /paymentOptions GET. The airline can format the information for display to the passenger.
- 10. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /purchase POST. If authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 11. The response indicates whether the purchase is successful.

- a. The airline formats this information for display to the passenger.
- 12. The passenger specifies a PNR for review.
- 13. The airlines submits a /pnr GET request.
 - a. The airline can format the information for display to the passenger

2.1.8.2.3 API Modifications

Service Name	Operation	Change
/passenger	POST	Send each FF numbers entered to CI to validate the tier-level status,
		Compare all the FF numbers,
		Store the highest tier level in our session.
/product/seats	POST	Send each FF numbers entered to CI to validate the tier-level status.

2.1.9 Irregular Operations

Digital Connect v3.0 implemented new feature that helps manage bookings in case of an irregular operation e.g. scheduled change. The passengers are now able to manage their own flights directly on web page using MYB path, instead of calling a call center.

This feature will help the Airline with:

- 1. Managing offload from the plane.
- 2. Supporting SC/WK statuses.
- 3. Involuntary changes support (Manage Your Booking Change Itinerary (MYB:CI) Flow / Manage Your Booking Cancel and Refund (MYB:CR) Flow) e.g. fare difference waive, change fee waive, refund fee waive (based on rules set up in re-accommodation manager Dynamic Retailer).
- 4. Exercising the promotions fare difference waive, change fee waive, refund fee waive (based on rules set up in re-accommodation manager Dynamic Retailer).

In order to prevent user from using MYB:MTO (Modify Trip Options), BNPL (Book Now Pay Later), Manage Your Booking – Upgrade (MYB:FFU), Edit passenger flows under IROP conditions – additional rule was provided.

Entering above flows is disabled if:

- PNR flights with status SC/WK are present, or
- Segments from booking not match with segments in VCR.

2.1.9.1 Highlights:

Airlines can now offer a self-service re-booking option to the passengers to give them control over IROPs events with the following sequence of DC service calls:

1. The passenger searches, selects and purchases a flight.

- 2. The airline retrieves /pnr and sets SC/WK status on flight that is under IROP situation using *eligibilities* field.
- 3. Airline calls /pnr/offloadpassenger (optional).
 - a. The /pnr/offloadpassenger will checkout passengers by changing VCR status from CKIN to OK, which gives passengers an option to initiate an exchange or refund process.
- 4. The Airline is responsible for passing an information that the irregular operations event occurred and passenger's reservation can be applicable for exchange or refund with benefits (based on rules defined in the re-accommodation manager).
- 5. Passenger provides their credentials and calls /pnr/irop.
 - a. The /pnr/irop retrieves the PNR and confirms initialization of Exchange flow.

2.1.9.2 API Modifications

Service Name	Operation	Change
/pnr/offloadpassenger	POST - changes VCR status from CKIN to OK, in order to give passengers an option to initiate an exchange or refund process, when the originally booked and checked in flight is under IROP situation (eg. flight is cancelled or delayed).	New service has been added.
/pnr/irop	POST - cleans up PNRs with SC/WK status by confirming new flights	New service has been added.

2.1.10 Itinerary re-pricing before Payment

Currently pricing is supported on Select flights and on Payment Page once the payment is already selected. *Digital Connect v3.0* adds this functionality by enhancing /products service with a PUT method that will trigger a re-pricing before payment.

2.1.11 OB Fees (Payment Fee Display)

DC 3.0 includes the following additions and enhancements for the display and collection of OB fees:

• Enables the Airline to utilize the applicable OB Fee Type R Fees returned at the time of the initial shopping response to disclose option charges to the passenger sooner (on the flight selection display and at time of presenting payment options).

2.1.11.1 Prerequisites

Airline need to have OB Fees enabled and OB Fee Type R filed via ATPCO.

2.1.11.2 Highlights

In the shopping flow, airlines can now apply and display OB fees with the following sequence of DC service calls:

- 1. Passenger at the flight search page enters flight search criteria; the airline calls /products/air/search.
 - a. Product/air/search response will expose the Ob Fee Type T and R. The mandatory T Fees are included in the price and the R Fees are not.
- 2. The passenger selects flights.
- 3. Airline calls /products/air POST to create the itinerary.
- 4. Airline also calls /products, updates shopping cart. Any type T OB fees are displayed in the cart. At this point in the process no type R Fees have been associated with the booking.
- 5. The airline prompts the passenger for passenger details.
 - a. The passenger adds passenger details, and the airline processes the passenger details by calling /passengers POST.
- 6. The airline calls /products/obfees, which returns all currently selected type T OB fees.
- 7. The airline calls /products/obfees/available.
- 8. The airline is able to add or remove type R fees, by calling /products/obfees/updateOBFeesTypeR.
- 9. The airline obtains a list of OB fee waiver codes, calls /products/obfees/waiverCodes.
- 10. If necessary, the airline application waives one or more fees, by calling /products/obfees/waive and supplying a valid waiver code.

Service Name	Operation	Change
/products/obfees	GET - obtains a list of any Type R OB fees that are tentatively associated with the itinerary in the current session.	A new service that retrieves any Type R OB fees tentatively associate with a booking.
/products/obfees/available	GET - obtains a list of all OB fees potentially applicable to the current itinerary.	A new service that retrieves any Type R or Type T OB fees that could be associated with a booking.
/products/obfees/updateOBFees	POST - adds or removes Type R OB fees from the current itinerary. Note that fees can also be waived with the /products/obfees/waive service.	A new service that adds Type R OB fees to a booking, or removes them.
/products/obfees/waive	POST - Requests must include valid waiver codes, which are obtained via /products/obfees/wavierCodes.	A new service that allows the application to waive OB fees tentatively associated with a booking.
/products/obfees/waiverCodes	GET - returns OB fee waiver codes that are available for the itinerary in the current session. These can be used to waive any fees that might otherwise be applied to the itinerary. To actually waive a fee, the airline must submit a /prodcuts/obfees/waive POST	A new service that returns a list of valid codes for waiving OB fees. An OB fee waiver code is required to waive an OB fee.

2.1.11.3 API Modifications

request, including a valid waiver code.	
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2.1.12 Passengers

The services that provide the ability to collect passenger data have the following additions and enhancements:

2.1.12.1 An option to allow National ID and NEXUS cards as travel documents.

An enhancement to the /passengers service that allows passengers to recognize, accept, store, and transmit National ID Cards and NEXUS Cards as Travel Documents.

For airlines that choose to activate this functionality, passengers can now specify that they are supplying Nation ID Cards as their travel documents.

Entered values will be stored in the PNR with the same format as Passport, with the document codes:

- "I" for the National ID Card,
- "IN" for the NEXUS ID Card.

This applies to the following IBE flows: The Revenue (B2C) Flow, MYB Change passenger details, and B2B.

2.1.12.1.1 Highlights

Airlines can now accept National ID Cards and NEXUS Cards as Travel Documents with the following sequence of DC service calls:

- 1. The airline calls /products/air/search POST and obtains a list of flight results with connection information.
 - a. The airline formats this information for display to the passenger.
- 2. The passenger can continue shopping by selecting flights.
- 3. The airline prompts the passenger for the passenger's details (including Travel Documents type National ID or NEXUS ID).
 - a. After an itinerary has been stored in the session, the airline calls /passengers POST operation to add passengers to the itinerary.
- 4. When the passenger completes the itinerary and decides to purchase the airline initiates the purchase and ticketing process by calling /purchase POST; if authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 5. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 6. The airline can call /pnr GET and retrieve the PNR details including the National ID and NEXUS Card (if applicable), which can be formatted for display to the passenger.

7. When the passenger wants to modify passenger details (e.g. National ID or NEXUS ID), the airline initiates and finalizes this change by calling /pnr/passengers POST.

2.1.12.1.2 API Modifications

JSON schema was not affected by this feature. No changes involved.

2.1.12.2 Ability to Add and Retrieve Trip Contact Information

A new service, /passengers/contactAddress, allows airlines to collect trip contact information, add it to the current booking, and redisplay the information to the passenger.

This applies to the Revenue (B2C) Flow. Similar functionality has been added to the post booking flows.

The ability to retrieve and update trip contact information in the Manage Your Booking (MYB) paths:

- The ability to retrieve and update trip contact information in the Manage Your Booking Modify Trip Options (MYB:MTO) ancillaries and seats flow
- The ability to retrieve and update trip contact information in the MYB: Change Passenger Details flow

Several new services, such as /pnr/mto/passengers/contactAddress, allow the airline to display current trip contact information and process updates to it.

As explained below, the sequence of calls is slightly different in each of these flows.

2.1.12.2.1 Highlights

Airlines can now add and redisplay trip contact information in the Booking flow with the following sequence of DC service calls:

1. The airline calls /products/air/search POST and obtains a list of flight results with connection information.

The airline formats this information for display to the passenger.

- 2. The passenger can continue shopping by selecting flights.
- 3. The airline processes the passenger's selections with /products/air POST.
- 4. The airline prompts the passenger for the passenger's details.
- 5. The airline processes passenger input by calling /passengers POST.
- 6. The airline prompts the passenger for trip contact details.
- 7. The airline processes passenger input by calling /passengers/contactAddress POST.
- 8. The airline can retrieve the contact address from the cart by calling /products/cart GET
- 9. When necessary, such as reviewing the itinerary before purchase, the airline can retrieve the trip contact information for redisplay to the passenger, by calling /passengers/contactAddress GET.

In the Manage Your Booking – Modify Trip Options (MYB:MTO): ancillaries and seats flow, airlines can now redisplay and update trip contact information in the flow with the following sequence of DC service calls:

1. The airline calls /pnr to retrieve a booking.

- a. The airline formats the PNR information for display to the passenger.
- 2. The airline prompts the passenger for the type of servicing option the passenger would like to make.
- 3. The passenger chooses ancillaries and seats.
- 4. The airline initiates the MTO:ancillaries and seats flow by calling /pnr/mto/ancillaries.
- 5. The airline obtains trip contact information for the booking with /pnr/mto/passengers/contactAddress GET.
 - a. The airline displays this to the passenger.
- 6. If the passenger updates trip contact details, the airline processes the update with /pnr/mto/passengers/contactAddress POST.

In the Manage Your Booking – Modify Trip Options (MYB:MTO): seats flow, airlines can now redisplay and update trip contact information in the flow with the following sequence of DC service calls:

- 1. The airline calls /pnr to retrieve a booking.
 - a. The airline formats the PNR information for display to the passenger.
- 2. The airline prompts the passenger for the type of servicing option the passenger would like to make.
- 3. The passenger chooses seats.
- 4. The airline initiates the MTO:seats flow by calling /pnr/mto/seats.
- 5. The airline obtains trip contact information for the booking with /pnr/mto/passengers/contactAddress GET.
 - a. The airline displays this to the passenger.
- 6. If the passenger updates trip contact details, the airline processes the update with /pnr/
- 7. mto/passengers/contactAddress POST.

In the new MYB: Change Passenger Details flow, airlines can redisplay and update trip contact information in the flow with the following sequence of DC service calls:

- 1. The airline calls /pnr to retrieve a booking.
 - a. The airline formats the PNR information for display to the passenger.
- 2. The airline prompts the passenger for the type of servicing option the passenger would like to make.
- 3. The passenger chooses trip contact.
- 4. The airline obtains trip contact information for the booking with /pnr/passengers/contactAddress GET.
 - a. The airline displays this to the passenger.

5. If the passenger updates trip contact details, the airline processes the update with /pnr/passengers/contactAddress POST.

2.1.12.2.2 API Modifications

Service Name	Operation	Change
/passenger/contactAdress	GET – Returns the trip contact details for the booking POST – Adds/updates trip contact details for the booking	New service has been added.
/pnr/mto/passengers/contactAddress	GET- returns the current trip contact details for the booking. POST- updates the trip contact details for the booking	New service has been added.
/pnr/passengers/contactAddress	GET- returns the current trip contact details for the booking. POST- updates the trip contact details for the booking.	New service has been added.

2.1.13 Payment and Ticketing Operations

This section covers the services that airlines use to present passengers with the forms of payment that are available for an itinerary, to collect payment information, to authorize the payment information, and to ticket the booking. These services are available to both initial booking and post-booking (such as exchanges) situations.

The service that returns a detailed price breakdown of all products and passenger details in the itinerary currently held in the session has the following additions and enhancements:

2.1.13.1 Taxes – Breakdown per the Passenger type

The service that returns a detailed price breakdown of all products and passenger details in the itinerary currently held in the session has the following enhancement:

New way of showing fare/taxes/fuel surcharges in the *Digital Connect v3.0* responses – all fares, taxes and fuel surcharges split by the passenger type code PTC (except fees and discounts).

This feature applies in the following flows:

- The Revenue (B2C) Flow,
- The Redemption (RBE) Flow,
- Manage Your Booking Change Itinerary (MYB:CI) Flow,
- Manage Your Booking Modify Trip Options (MYB:MTO) Flow,
- Book Now Pay Later (BNPL) Manage Your Booking Book Now Pay Later (MYB:BNPL) Flows.

Specific behavior for The Redemption (RBE) Flow:

- /products, /products/cart, /products/air/search services- responses will be able to provide taxes split by tax codes;
- /purchase, /pnr as the only information stored in payfields are regarding total, there is no way to display by certain tax code, providing exact information on each code.

Special handling for Manage Your Booking – Change Itinerary (MYB:CI) Flow:

• /pnr/exchange/products – split by PTC will be only in part for new booking summary, old booking summary remain with no changes

2.1.13.1.1 Highlights

Please find below some simple scenarios:

The Revenue (B2C) and the Redemption (RBE) Flows:

- 1. The airline calls /products/air/search POST to obtain the list of available flights to the passenger.
 - a. The airline can format the information for display to the passenger.
- 2. The passenger selects a flight.
- 3. The airline submits /products/air POST to add selected flight to the itinerary.
- 4. The airline uses a /products GET operation to obtain a current list, with prices of products that the passenger has added to the itinerary. Prices will be divided by Passenger Type (PTC).
- 5. The airline prompts passenger for passenger's details e.g. passport information.
- 6. The airline uses /passengers POST to add passenger to the itinerary.
- 7. The passenger can continue shopping by selecting seats and ancillaries, according to the airline's shopping sequence. Product cart is updated.
- 8. When the passenger indicates that shopping is complete the airline obtains available payment options for the current itinerary by calling /paymentOptions GET.
 - a. The airline can format the information for display to the passenger.
- 9. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /purchase POST; if authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 10. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 11. The passenger specifies a PNR for review.
- 12. The airlines submits a /pnr GET request.
 - a. The airline can format the information for display to the passenger.

Manage Your Booking – Change Itinerary (MYB:CI) Flow:

- 1. The passenger retrieves a booking either by supplying basic PNR information or by logging in to a Frequent Flyer account. If the passenger is logged in, all their reservations are visible.
- 3. The /pnr service GET operation returns information for the PNR specified in the parameters. Airlines can prompt passengers for information that identifies a PNR, retrieve the information and format it for display to the passenger.
- 2. After the passenger selects one or more flights to be exchanged, the airline calls pnr/exchange request, GET operation to initialize Exchange process.
- 3. The airline calls /pnr/exchange /products/air/search POST to obtain the list of available flights to the passenger.
 - a. The airline can format the information for display to the passenger.
- 4. The passenger selects a flight.
- 5. The airline submits /pnr/exchange /products/air POST to add selected flight to the itinerary.
- 6. The airline uses a /pnr/exchange /products GET operation to obtain a current list, with prices of products that the passenger has added to the itinerary.
- 7. The airline prompts passenger for passenger's details e.g. passport information.
- 8. The airline uses /pnr/exchange /passengers POST to add passenger to the itinerary.
- 9. The passenger can continue shopping by selecting seats and ancillaries, according to the airline's shopping sequence. Product cart is updated.
- 10. When the passenger indicates that shopping is complete the airline obtains available payment options for the current itinerary by calling /pnr/exchange /paymentOptions GET.
 - a. The airline can format the information for display to the passenger.
- 11. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /pnr/exchange /purchase POST; if authorization is successful, the /pnr/exchange /purchase service will create a PNR, EMD(s), etc.
- 12. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 13. The passenger specifies a PNR for review.
- 14. The airlines submits a /pnr GET request.
 - a. The airline can format the information for display to the passenger

2.1.13.1.2 API Modifications

Service Name	Operation	Change
/products (B2C)	GET	Response - please see below description for contract change

/products/cart (B2C)	GET	Response - please see below description for contract change
/purchase (B2C)	POST	Response - please see below description for contract change
/products (B2C BNPL)	GET	Response - please see below description for contract change
/products/cart (B2C BNPL)	GET	Response - please see below description for contract change
/products/bnpl/purchase (B2C BNPL)	POST	Response - please see below description for contract change
/pnr/bnpl/products (MYB BNPL)	GET	Response - please see below description for contract change
/pnr/bnpl/purchase (MYB BNPL)	POST	Response - please see below description for contract change
/pnr/exchange/products (MYB:CI)	GET	Special handling – split by PTC will be only for new booking summary (description below).
/pnr/exchange/purchase (MYB:CI)	POST	Response - please see below description for contract change
/pnr/mto/purchase (MYB:MTO)		Response - please see below description for contract change
/pnr (after B2C, MYB:Cl, MYB:MTO)	GET	Response - please see below description for contract change
/products (RBE)	GET	Response - please see below description for contract change
/products/cart (RBE)	GET	Response - please see below description for contract change
/purchase	POST	Response - please see below description for contract change
/pnr	GET	Separate handling, taxes are not split by tax code, only per passenger type code, please see below additional explanation

Change in the contract – applies to above listed services (any exceptions below):

Structure of the response: type: air

- 1. Total (air fare)
- 2. Breakdown elements:
 - a. BASE_FARE
 - i. price total for base fare
 - ii. breakdown element assignments (referenced to itinerary):
 - iii. sub-elements (breakdown per Passenger Type Code (PTC):
 - 1. label (passenger type)
 - 2. price (total for all paxes within the same type)
 - a. price plus currency

3. price per unit (price per single passenger within PTC) - NEW FIELD

a. price plus currency

b. TAXES

- i. price (total for all taxes)
- ii. breakdown element assignments (referenced to itinerary)
- iii. sub-elements (breakdown per PTC):
 - 1. label (passenger type)
 - 2. price (total of all taxes for all passengers within the PTC)
 - a. price plus currency
 - 3. price per unit (total of all taxes per single passenger within PTC) NEW FIELD
 - a. price plus currency
 - 4. breakdown element assignment: passenger type and quantity

This structure applies to:

- air,
- taxes,
- fuel surcharge (which will be split out of taxes part, if configured).

No changes apply for:

- 1. Discounts,
- 2. Fees (payment fee, booking fee, OB fees).
 - a. TAXES
 - i. price (total for all taxes)
 - ii. breakdown element assignments (referenced to itinerary)
 - iii. sub-elements (breakdown per PTC):
 - 1. label (passenger type)
 - 2. price (total of all taxes for all passengers within the PTC)
 - a. price plus currency

2.1.13.2 Custom Tax Breakdown for Loyalty

DC 3.0 includes the following enhancements to the tax breakdown feature:

- 1. The Airline can now display total sum tax for all passengers and total tax for each passenger without tax code breakdown.
- 2. Taxes are shown as a single line item during booking and for PNR retrieval.
- 3. This feature is introduced to secure any rounding issues which might happen after converting taxes.
- 4. The tax breakdown is lined in the following way:
 - a. Sum of taxes
 - i. Taxes for passenger 1,
 - ii. Taxes for passenger 2,
 - iii. etc.

^{4.} breakdown element assignment: passenger type and quantity

Custom tax breakdown impacts only the Redemption bookings.

2.1.13.2.1 Prerequisites

This feature cannot be used in case the tax code breakdown is needed.

2.1.13.2.2 Highlights

- 1. The airline calls /products/air/search POST to obtain the list of available flights to the passenger.
- 2. The passenger selects a flight.
- 3. The airline submits /products/air POST to add selected flight to the itinerary.
- 4. The airline prompts passenger for passenger details e.g. passport information.
- 5. The airline uses /passengers POST to add passenger to the itinerary.
- 6. The passenger can continue shopping by selecting seats and ancillaries, according to the airline's shopping sequence.
- 7. The airline can call /products GET operation to obtain a current list, with prices of products that the passenger has already added to the itinerary and use this information to build and display a shopping cart. The response for seats will include breakdown of original amount, discount and discount amount.
 - a. If Custom tax breakdown configuration is turned on, the response will be displayed in the described way.
- 8. When the passenger is ready to purchase the itinerary, the airline adds field values for all applicable remarks, SSRs, and OSIs to the /purchase POST request.
 - a. If Custom tax breakdown configuration is turned on, the response will be displayed in the described way.
- 9. The airlines submits a /pnr GET request; the results will include remarks.
 - a. If Custom tax breakdown configuration is turned on, the response will be displayed in the described way.
 - b. The airline can format the information for display to the passenger.

Service Name	Operation	Change
/products (RBE)	GET	Please see below listed information how the tax will be split in the response.
/products/cart (RBE)	GET	Please see below listed information how the tax will be split in the response.
/purchase (RBE)	POST	Please see below listed information how the tax will be split in the response.
/pnr (applies to booking paid with miles)	GET	Please see below listed information how the tax will be split in the response.

2.1.13.2.3 API Modifications

Notes regarding taxes and fare split for above listed services:

Fare and taxes has to be split in following way:

- 1. Fare:
 - a. no changes to fare display.
- 2. Taxes:
 - a. show total taxes for all passenger;
 - b. show total tax for each passenger (do not group by passenger code, do not split by tax codes).
- 3. Example:
 - 2 ADT 2000 pts fare, taxes 500 pts + 50 PLN for each ADT;
 - 1 CHD 1800 pts fare, 500 pts + 40 PLN tax;
 - a. total taxes: 1500 pts + 140 PLN
 - i. ADT1 500 pts + 50 PLN
 - ii. ADT2 5000 pts + 50 PLN
 - iii. CHD1 500 pts + 40 PLN

2.1.14 PNR Retrieval

The service that retrieves PNR information for an existing booking has the following enhancement:

- Services that retrieve PNR details will now retrieve remarks. Requests for PNR details will include remarks in the returned details:
 - When the remark is an historical or general remark;
 - When the remark matches a regexp defined;
 - To change the behavior, the regexp can be edited.

This applies to all PNR retrieval, including the following flows:

- The Revenue (B2C) Flow including Book Now Pay Later (BNPL) Flow;
- The Redemption (RBE) Flow;
- Manage Your Booking Change Itinerary (MYB:CI) Flow;
- Manage Your Booking Cancel and Refund (MYB:CR) Flow;
- Manage Your Booking Modify Trip Options (MYB:MTO) Flow;
- Manage Your Booking Upgrade (MYB:FFU) Flow.
- Exposing the price breakdown per document (VCR & EMD) in the PNR retrieval response.
- Ability to retrieve reservation when it has more than one AE for same subcode. *Digital Connect v3.0* gives an option to show on the View Itinerary Page and on the Confirmation Page correct number of bag ancillaries (with types and prices), when more than one AE item for the same benefit is reserved.

3.0 services will determine also when the passenger should be blocked from entering Manage Your Booking – Change Itinerary (MYB:CI) Flow - when AEs for the same subcode are issued for unflown legs.

2.1.14.1 Services that retrieve PNR details will now retrieve remarks.

The response to retrieve PNR requests will now include PNR remarks. Requests for PNR details will include remarks in the returned details:

- When the remark is an historical or general remark
- When the remark matches a regexp defined in the gds.sabre.command.remark.retrievableRemarkRegexp configuration

Note that the default value of the gds.sabre.command.remark.retrievableRemarkRegexp is .*CUSTOM.*, meaning that historical, general and custom remarks will be returned. The intention is to not return remarks containing PCI information.

• To change the behavior, the regexp can be edited.

This applies to all PNR retrieval, including the following flows:

- Booking (including Book Now Pay Later (BNPL)),
- Redemption Booking,
- Modify Trip Options.

2.1.14.1.1 Prerequisites

There is an existing booking that can be retrieved.

2.1.14.1.2 Highlights

Airlines can retrieve the PNR and expose the remarks with the following sequence of DC service calls:

- 1. The passenger specifies a PNR for review.
- 2. The airline submits any type of /pnr GET request.

2.1.14.1.3 API Modifications

Service Name	Operation	Change
/pnr	GET - returns information for the PNR specified in the parameters	New fields to return PNR remarks.
/pnr/bnpl	GET - returns information for the PNR specified in the parameters	New fields to return PNR remarks.
/pnr/mto/ancillaries	GET - returns information for the PNR specified in the parameters	New fields to return PNR remarks.
/pnr/mto/seats	GET - returns information for the PNR specified in the parameters	New fields to return PNR remarks.

2.1.14.2 Exposing the price breakdown per document (VCR & EMD) in the PNR retrieval response

PNR retrieval response will include price breakdown per document (VCR & EMD):

- VCR
 - BaseFare Amount and CurrencyCode
 - Taxes Amount, Tax CurrencyCode and TaxCode
 - VCR Status
 - Endorsements

- Tourcode
- EMD
 - For each EMD (EMD-A, EMD-S) document
 - Total Amount and CurrencyCode
 - Taxes Amount, Tax CurrencyCode, TaxCode
 - EMD Doc Number
 - o Commercial Name

Applies to all flows:

- The Revenue (B2C) Flow;
- Manage Your Booking Book Now Pay Later (MYB:BNPL);
- Manage Your Booking Change Itinerary (MYB:CI) Flow;
- Manage Your Booking Cancel and Refund (MYB:CR) Flow;
- Manage Your Booking Modify Trip Options (MYB:MTO) Flow.

In the case of Exchange flow we will only display the price breakdown of the new VCR and EMD.

2.1.14.2.1 API Modifications

Service name	Operation	Change
/pnr	GET - returns information for the	PNR retrieval response will include
/pnr/mto/ancillaries	PNR specified in the parameters.	price breakdown per document (VCR & EMD).
/pnr/mto/seats		
/pnr/exchange		
/pnr/bnpl		
/pnr/upgrade		

2.1.14.3 Ability to retrieve reservation when it has more than one AE for same subcode.

Digital Connect v3.0 gives an option to show on the View Itinerary Page and on the Confirmation Page correct number of bag ancillaries (with types and prices), when more than one AE item for the same benefit is reserved.

3.0 services will determine also when the passenger should be blocked from entering Manage Your Booking – Change Itinerary (MYB:CI) Flow - when AEs for the same subcode are issued for unflown legs.

2.1.15 PNR Remarks

This is a continuation of last release work were the carrier could add and retrieve custom remarks in the Revenue (B2C) Flow.

/Purchase service will be modified to be able to pass custom remarks, SSRs and OSIs, and queue place the PNR in the following flows:

- Manage Your Booking Modify Trip Options (MYB:MTO) Flow,
- Manage Your Booking Change Itinerary (MYB:CI) Flow,
- Manage Your Booking Book Now Pay Later (MYB:BNPL) Flow,
- The Redemption (RBE) Flow.

2.1.15.1 API Modifications

Service name	Operation	Change
/pnr/mto/purchase /pnr/exchange/purchase /pnr/bnpl/purchase	POST - authorizes payments as needed and updates the booking records with the new values.	Service /purchase will be able to pass custom remarks, OSI and/or SSRs and queue number with PIC.
/pnr	GET - returns information for the PNR specified in the parameters	The PNR Retrieval will expose the SSR (code and description) and OSI (code and description).

2.1.16 Post-booking Operations (Cancellations, Exchanges, etc.)

This section covers the services airlines use to give passengers access to booked itineraries and potentially update, cancel, exchange, etc., those itineraries. Generally, the passenger must retrieve a PNR for a specific itinerary before making any changes.

Digital Connect v3.0 adds and enhances the functionality in this area in the following ways.

Note that any changes that require additional payment (such as an exchange to a higher value ticket or addition of ancillaries) will also require Payment and Ticketing functionality, which obtains payment information from passengers, authorizes the payment, and tickets the booking, may also be used by postbooking operations, and is therefore covered separately.

2.1.16.1 Cancel and Refund (Manage Your Booking – Cancel and Refund (MYB:CR) Flow)

Digital Connect v3.0 services will introduce some enhancements to the Manage Your Booking – Cancel and Refund (MYB:CR) Flow and allow airlines to support the following scenarios:

EMD Refunds:

The passenger who bought refundable ancillaries (or seats) during booking process will be able to get refund during the cancellation process. *Digital Connect v3.0* gives exact information which documents can be refunded and which will be forfeited (kept in the reservation, but respective AE items will be dropped during cancelling of the itinerary).

Highlights

- 1. The passenger can retrieve a booking either by supplying basic PNR information or by logging in to the passenger's account. If the passengers are logged in, all their reservations are visible. Airlines can prompt passengers for information that identifies a PNR, retrieve the information and format it for display to the passenger.
- 2. The /pnr/cancelAndRefund service GET operation initializes Cancellation process, checks (validates) MYB rules (separate for logged-in and guest user) and returns information for the PNR specified by the parameters (PNR locator, first name, last name and email). If the PNR is found all the flight details will be returned (including the payment details).
- 3. The airline submits /pnr/CancelAndRefund/cancel request, GET operation to obtain information about refund targets and cancel fees (GET request is based on the information stored in the session).
- 4. If the passenger accepts the calculated refund amount, the airline uses /pnr/CancelAndRefund/confirm request, POST operation to finalize the 'Cancel and Refund' process and to get the cancellation refunds.

API Modifications

Service Name	Operation	Change
/pnr/cancelAndRefund/cancel	GET	Changes described below.
/pnr/cancelAndRefund/confirm	POST	Changes described below.

Detailed information about the changes:

New section: *documentsRefundInfo* has been added to the response. It contains the following data:

List of documents:

- 1. document type (VCR, EMD);
- 2. document number;
- 3. refund amount containing price breakdown (base, tax, currencies);
- 4. ancillaries details object (only for EMD documents):
 - a. refundability indicator (refundable, non-refundable, exchangeable),
 - b. group code,
 - c. sub code,
 - d. name,
 - e. quantity.
- 5. passenger data (to be used already existing passenger part from DC contracts);
- 6. travel part (to be used already existing travel part from DC contracts)
 - a. Note: TravelPart is not eligible for EMD-S.

Following types of documents will be listed in the response:

1. VCRs

- 2. EMDs:
 - a. EMD-S
 - b. EMD
 - c. Refundable
 - d. Non-Refundable
 - e. Exchangeable
 - f. In OK coupon status
 - g. In mixed USED and OK status

Enhanced ways of handling cancellation and refunds process:

Airlines have extensive control over which of these potential transactions are allowed, how much of the original payment is refundable, and how the refund is allocated.

Digital Connect v3.0 gives airlines two ways of possible handling for cancellation and refunds of bookings:

- 1. Automated cancel and refund process (by using AER):
 - a. Refund to Travel Bank.

Many airlines do not allow user to refund any parts (besides taxes) for certain fares. A Travel Bank refund (flights, ancillaries, seats) allows airlines to cancel itineraries (with cancel fee) to Travel Bank account ("soft money"). Refund amount can be used to buy another ticket within the same airline in the future.

Refund to Travel Bank is used in following scenarios in DC:

- Refund for tickets paid with Travel Bank,
- Refund in situation when AER responds: "REFUND TO VOUCHER ONLY" Airlines might setup for certain fares that the refund is to voucher only. In case of *Digital Connect v3.0* it is configurable if application will be refunding this to Travel Bank or showing an error message,
- Refund of VCR(s) paid with Multiple Forms of Payment,
- Refund of EMD(s) paid with Single or Multiple Forms of Payment,
- Refund of Dynamic Reward tickets,
 - Information about original fare is stored in the payfields, so *Digital Connect v3.0* is able to retrieve information about original fare/taxes and based on this present refund information on the cancel review page.
- b. Multiple Forms of Refund (MFOR) option allows tickets paid with multiple forms of payment to be refunded to the respective FOPs:
 - Fare and ancillaries need to be refundable.
 - Documents [VCR(s), EMD(s)] cannot be already exchanged;
 - Maximum number of unique forms of payments across booking cannot exceed 3(in case of 4 or more unique FOPs in the booking, refund targets will be determined by configuration).

- 2. Refund using manual handling (accounting process):
 - *Digital Connect v3.0* is not sending any calls to AER,
 - Itinerary is cancelled,
 - Booking is put on configurable accounting queue (separate for fixed and dynamic fares bookings, separate for EMD(s)),
 - OTH segment (that keeps PNR active) is being added (only for loyalty bookings).
 - a. This is valid for:
 - i. dynamic and fixed rewards
 - ii. VCR or EMD paid with MFOP if configuration of refund target is set as Accounting
 - b. In case of fixed rewards only when fare is being zeroed out and there is no information stored in payfields regarding the original fare (no possibility to return miles to Frequent Flyer account).

In general online cancellation flow gives the following benefits to airlines:

- Customer can cancel booking on its own without need to call to customer center,
- Even while doing cancellation with accounting refund, inventory is being freed as itinerary is cancelled (while refund has to be handled manually).

There are also security checks based on the configuration describing which account can be used for refund. Security check allows the airline to control who can claim the refund that is made to the Travel Bank account:

- If the passenger is already logged-in security check in /pnr/cancelAndRefund/cancel service,
- If the passenger logs after /pnr/cancelAndRefund/cancel service using /login service then verification in /pnr/cancelAndRefund/confirm service,
- If the passenger provides login data in /pnr/cancelAndRefund/confirm POST then verification in /pnr/cancelAndRefund/confirm service.

API Modifications

Service Name	Operation	Change
/pnr/cancelAndRefund/cancel	GET	Travel Bank refund target:
		 Refund target is set as TRAVEL_BANK There is a reference to the ticket which will be refunded, ticket is in the section <i>refundDocumentInfoList</i>

In order to allow airline display the Travel Bank balance before and after cancellation /pnr/cancelAndRefund/cancel service has been improved – this will contain information regarding current

and original Travel Bank balance. The only restriction is that if the passenger logs in after /pnr/cancelAndRefund/cancel, then in order to get balance after cancellation /pnr/cancelAndRefund/cancel call has to be sent one more time (note: AER calls will not be sent).

Service Name	Operation	Change
/pnr/cancelAndRefund/cancel	GET	Additional information about refund target - TRAVEL_BANK: "accountBalanceInfo" : { "balanceBeforeTransaction" : { (amount object) }, "balanceAfterTransaction" : { (amount object)

2.1.16.2 Exchanges (Manage Your Booking – Change Itinerary (MYB:CI) Flow)

2.1.16.2.1 Refunds (Manage Your Booking – Change Itinerary (MYB:CI) Flow)

DC 3.0 services will introduce some enhancements to the Manage Your Booking – Change Itinerary (MYB:CI) Flow and allow airlines to support the following refund scenarios in case of refund to Travel Bank:

- Refund for tickets (VCR) paid with Travel Bank;
- Refund in situation when AER responds: "REFUND TO VOUCHER ONLY".
- Refund of VCR(s) paid with Multiple Forms of Payment;
- Create new TB account during refund.

Highlights

- 1. The airline retrieves PNR information and initializes Exchange flow by calling GET /pnr/exchange (with reloc as a request parameter).
- 2. The airline calls /pnr/exchange/products/air/search GET to pass search criteria from the passenger, POST operation obtains a list of flights matching the search criteria.
- 3. The airline can display the returned flights to the passenger.
- 4. After the passenger selects one or more flights, use the /pnr/exchange/products/air POST operation to add the flights to the itinerary and store the itinerary in the session.
- 5. When the passenger indicates that modified shopping is complete, the airline calls the /pnr/exchange/paymentOptions GET service to obtain refund targets and available forms of payment (including Award FOP depends on configuration could return LP or/and FF award payment, but user cannot pay with Award without switching to points). If the passenger previously switched to points, only Award will be returned.
- 6. The airline check if the passenger has profile in the webservice and Travel Bank, if not it creates one or both using /profile Service.
- 7. At this time, the passenger selects a flight priced in award points, the passenger must be logged in. If the passenger is not logged in airline can prompt the passenger to log in here.
- 8. The passenger supplies frequent flyer credentials, and the airline uses the /login POST service to log the passenger in.
- 9. The airline uses /profile GET service to retrieve the passenger profile details, including point balance.
- 10. Airline calls /pnr/exchange/purchase POST to initiate the payment and refund process. If payment is successful, the PNR and other supporting documents are issued, and the airline's application receives results indicating success.
- 11. The airline can call /pnr GET to retrieve PNR details, which can be formatted for display to the passenger

API Modifications

Service Name	Operation	Change
/pnr/exchange/pay mentOptions	GET	Response will include Travel Bank account number as a refund target, balance before and after transaction if user is logged in to Travel Bank account.
/profile	POST	Added new option autologin, which allows to be logged in automatically after new profile creation (doesn't require additional login call).
/pnr/exchange /purchase	POST	Validation, if user is logged in. Response will include balance before and after transaction.

2.1.16.2.2 AER Ticket Exchange by Brand

This feature should be available to all customers which will use Price by Brand concept of filing fares (which simplifies relation between RBD and brands mapping, allowing airline to brand RBD to certain fare basis for certain brand). This is extension of mentioned project for exchange path.

This new feature requires changes in the AER process – if the old way of pricing (selecting cheapest brand for certain RBD) would be used, then passengers would not have any possibility to select desired brand. Therefore additional parameter has been added to the AER_RQ (Action: Exchange) to provide the brand ID to allow AER to select expected brand.

Prerequisites

- Fares have to be filed with accordance to the Price by Brand concept,
- RBD vs Brand mapping have to be also setup according to Price by Brand concept.

Highlights

- 1. The passenger retrieves a booking either by supplying basic PNR information or by logging in to the passenger's account.
- 2. The airline identifies a PNR, retrieves the information and formats it for display to the passenger. If the PNR is found, all the flight details are returned, including the payment details, such as forms of payment used.
- 3. After the passenger selects flight to be exchanged, the airline calls pnr/exchange request GET to initialize an Exchange process.
- 4. The airline obtains search criteria from the passenger and calls /pnr/exchange/products/air/search POST to get a list of flights matching the search criteria.
 - a. The airline can format the information for display to the passenger.
- 5. The passenger selects a flight.
- 6. The airline submits /pnr/exchange/products/air POST to add selected flight to the itinerary.
- 7. After checking the re-association criteria, the airline uses /pnr/exchange/products/ancillaries operations to obtain the ancillaries available on the flights they have exchanged and to add any ancillaries selected by the passenger to the itinerary.
- 8. The airline uses /pnr/exchange/products/seats operations to show passengers the seats available on the flights they have exchanged and to add any seats selected by the passenger to the itinerary
- 9. After the passenger has completed exchange process with changing the itinerary in the session (including exchange process for the ancillaries and seats) the airline obtains available payment options for the current itinerary by calling /pnr/exchange/paymentOptions GET.
 - a. The airline can format the information for display to the passenger.
- 10. When the passenger selects form of payment, completes the payment and decides to purchase, the airline initiates the purchase and ticketing process by calling /pnr/exchange/purchase POST; if authorization is successful, the /purchase service will create a PNR, EMD(s), etc.
- 11. The response indicates whether the purchase is successful.

4. The airline formats this information for display to the passenger.

API Modifications:

There will be no changes in the API. As exchange flight selection services bases on the shopping hash reference there is no change in the contract and in already existing services.

2.1.16.3 Modify Trip Options (Manage Your Booking: Manage Trip Options flow)

Digital Connect v3.0 will introduce enhancements to the Manage Your Booking: Modify Trip Options flow:

2.1.16.3.1 An option to manage already purchased ancillary - including bundles (exchange, refund & forfeit).

- PNR with discounted ancillaries/seats present ("Refund and New Sale" flow)
 - The passenger will be able to enter the MTO path, purchase new ancillaries or new ancillaries of the same type even if there are ancillary bundles, discounted ancillary or discounted seats in the original reservation;
 - An Airline can refund already existing ancillaries (including bundles and discounted ancillaries or discounted seats).
- PNR with discounted seats present (New flow)
 - The passenger will be able to enter the MTO path, exchange a discounted seat for a more expensive one or purchase seats even if there are unpaid AEs (including the same type) even if there are ancillary bundles, discounted ancillary or discounted seats in the original reservation.
 - Removing unpaid AE's was descoped from DC 3.0.
- PNR with ancillary Bundles present
 - The passenger will be able enter the MTO path even if there are ancillary bundles, discounted ancillary or discounted seats in the original reservation;
 - New ancillaries or seats will be offered without any bundling or discounting, even if there are ancillary bundles, discounted ancillary or discounted seats in the original reservation.

API Modifications:

There will be no changes in the API.

2.1.16.3.2 Dynamic rewards (ancillaries, seats, refunds to Travel Bank and Accounting)

The passenger in the Manage Your Booking – Modify Trip Options (MYB:MTO) Flow will be able to remove his refundable ancillaries if paid in points or cash and get a refund to his Travel Bank account. In addition if the passenger is increasing his ancillaries, then the refund for the original refundable ancillaries will go to the Travel Bank.

Highlights

1. The airline retrieves PNR information and initializes Manage Your Booking – Modify Trip Options (MYB:MTO) Flow (with verification of MYB Rules) by calling:

- a) /pnr/mto/ansillaries for Ancillaries flow where the passenger can managed ancillaries and seats;
- b) /pnr/mto /seats- for Seats flow -where the passenger can manage only seats.
- 2. The airline calls /pnr/mto/products/ancillaries GET to obtain list of ancillaries available for the currently selected itinerary (returned as per configuration cash only, points only or cash or points).

The Airline formats information about available inventory and sold out ancillaries to the passenger.

- 3. When the passenger adds or removes ancillaries, the airline calls /pnr/mto/products/ancillaries POST and validates the quantity of the ancillaries selected by the passenger if equal or lower than available inventory. If the validation is successful this operation adds ancillaries to the reservation.
- 4. When the passenger indicates that modified shopping is complete, the airline calls the /pnr/mto/paymentOptions GET service to obtain refund targets and available forms of payment (including Award FOP dependent on configuration could return LP or/and FF award payment, but user cannot pay with Award without switching to points). If the passenger previously switched to points, only Award will be returned.
- 5. If refund target is Travel Bank the passenger must be logged in , if not logged in then airline to prompt login, the airline uses the/login POST service to log the passenger in.
- 6. If the passenger has no Travel Bank account and the refund is to Travel Bank, the airline prompts the passenger for the credentials and creates new web profile by calling /POST profile.
- 7. The airline uses /profile GET service to retrieve the passenger profile details, including point balance.
- 8. Airline calls /pnr/mto/purchase POST to initiate the payment and refund process. If payment/refund is successful, the PNR and other supporting documents are issued/refunded, and the airline's application receives results indicating success.
- 9. The airline can call /pnr GET to retrieve PNR details, which can be formatted for display to the passenger.

API Modifications

Service Name	Operation	Change
/pnr/mto/payment Options	GET	Response will include Travel Bank account number as a refund target, balance before and after transaction if user is logged in to Travel Bank account.
/profile	POST	Added new option autologin, which allows to be logged in automatically after new profile creation (doesn't require additional login call).
/pnr/mto/purchase	POST	Validation, if user is logged in. Response will include balance before and after transaction.

2.1.17 Seat Map

The service that obtains information about seats that are available for any flights that the passenger has selected and populates a seatmap for the passenger has the following additions and enhancements:

Note: Consistent and easy to identify way of showing various seats cost. Seat map will be able to display seat prices with price tiers, by attributes and with consistent coloring.

The seat map request can pass any promo code SSRs supplied by the passengers as query parameters; these will be used in seat price calculations.

The seat pricing responses will return required SSR codes (where applicable) as part of the seat price list response in the Post Booking flows.

The airlines will define the required SSR codes as part of the OC fare record. The SSR code and associated information will be added into the AE field as part of the AE creation process.

The seat map response will return available seating and pricing per passenger with any discounts or waivers applied based upon entitlements provided in the downline systems. The entitlements may be based on passenger's frequent flyer tier, any applicable deals defined in the downline systems (i.e. passenger purchased an ancillary bundle that includes a seat), and any SSRs that have been specified by the passenger.

2.1.17.1 Highlights

The /products/seats request will now generate a response that will take into account any entitlements that are determined to be applicable to the passengers. Seat entitlements can include:

- Fee waivers or discounts applied to seat prices, for the primary passenger and/or traveling companions,
- Specific seats becoming available to the primary passenger and/or traveling companions.

Entitlements can be based on:

- Dynamic retailer discount programs,
- Passenger's frequent flyer tier level, as determined by the passenger's profile information,
- Promotional codes passed with the request.

An example flow of the services for the Manage Your Booking – Change Itinerary (MYB:CI) Flow:

- 1. The passenger retrieves a booking either by supplying basic PNR information or by logging in to a Frequent Flyer account. If the passenger is logged in, all their reservations are visible. Airlines can prompt passengers for information that identifies a PNR, retrieve the information and format it for display to the passenger.
- 2. The /pnr/exchange service GET operation returns information for the PNR specified in the parameters and initializes Exchange process.
- 3. The airline obtains search criteria from the passenger and submits a /pnr/exchange/products/air/search request, POST operation to get a list of flights matching the search criteria. Display the returned flights to the passenger.

- 4. After the passenger selects one or more flights, the airline submits the /pnr/exchange/products/air POST operation to add the flights to the itinerary and store the itinerary in the session.
- 5. The airline calls /pnr/exchange/products/seats GET to obtain seat map for the currently selected itinerary.
- 6. The airline provides also SSR codes (promoSSRs) in GET /pnr/exchange/products/seats to obtain possible discounts for seats (possible discounts are based on different factors, like tier level).
- 7. When the passenger selects seats, the airline calls POST /pnr/exchange/products/seats to add seats selected by the passenger to the itinerary.
- 8. The airline can call /pnr/exchange/products GET operation to obtain a current list, with prices of products that the passenger has added to the itinerary and use this information to build and display a shopping cart. The response for the ancillaries and seats will include breakdown of original amount, discount and discount amount
- 9. When the passenger is ready to purchase the itinerary, the airline adds field values for all applicable remarks, SSRs, and OSIs to the /pn/exchange/purchase POST request.
- 10. The airline initiates the purchase and ticketing process by calling /pnr/exchange/purchase POST ; if authorization is successful, the /purchase service will create a PNR, EMD(s), etc. EMDs will be issued with discounted values.
- 11. The response indicates whether the purchase is successful.
 - a. The airline formats this information for display to the passenger.
- 12. The airline submits a /pnr/exchange GET request; the results will include remarks.
 - a. The airline can format the information for display to the passenger.

Service Name	Operation	Change
/pnr/mto/products/seats /pnr/exchange/products/seats	GET - Gets seat map information POST - Enables an airline to manage the list of seats selected for an itinerary	GET – the request format now includes promo code SSRs; the response now includes discounted prices that the downline service determines are applicable to the passengers.
		For SSRs with required structured and free text it will be also returned in Response.
		Response will include rule ID coming back
/pnr/mto/products /pnr/exchange/products	GET- returns a detailed price breakdown of all products in an itinerary.	Response will include breakdown of original amount, discount and discount amount.
/pnr/mto/passengers /pnr/exchanges/passengers	POST- modifies the passenger information associated with a booking.	Request will accept SSR code. Exposing the RuleID in the response

2.1.17.2 API Modifications

Contacting Customer Care

3.1 About Sabre Airline Solutions Customer Care

Sabre Airline Solutions[®] maintains the *Sabre*[®] *Global Customer Care* help desk that is available for all customers 24 hours a day, 7 days a week. *Customer Care* analysts facilitate the resolution of issues, questions, and requests for *Sabre Airline Solutions* products and services.

When you contact *Customer Care*, an analyst collects specific information about the issue, opens a service request in the tracking system, and then documents the issue to track handling and resolution. This logging and tracking process facilitates complete and accurate communication, which improves the resolution process, implementation process, and design of future enhancements to ultimately prevent recurrence of the issue.

Customer Care analysts manage all service requests throughout the service request's life cycle, from beginning to end. The analysts are committed to resolving all service requests in a professional and timely manner. They coordinate with subject matter experts to resolve issues and escalate as needed to ensure resolution. The analyst does not close a service request until it is fully resolved and communicated back to you.

3.1.1 Sabre Community Portal / eService Tool

Sabre Airline Solutions maintains the Sabre® Community Portal at community.sabre.com that offers:

- Access to the eService tool, from which you can submit and track service requests.
- Access to Sabre hosted applications.
- Training and documentation information.
- Application release notes and patches.
- User forums, news, and events.

3.1.1.1 Registering for Community Portal Access

Access to the *Community Portal* is generally provided within 24 to 48 business hours. If your organization has a Delegated Administrator to approve the request, your access may be granted faster.

To register for Community Portal access

- 1. Go to community.sabre.com.
- 2. Click New Account.

The New User Registration page appears.

- 3. Enter required information.
- 4. Click Submit.

Once your request is approved, you will receive an email with additional information. Follow the instructions within this email to complete the registration process.

3.1.1.2 Requesting Access to eService

Access to eService is generally provided within 24 hours.

Note You should only enter low or medium impact issues in the eService tool. If you have a high or critical impact level issue, you must call *Customer Care* for immediate attention. If you use eService to submit a critical impact level request, the service request will be excluded from time-to-resolution calculations.

To Request Access to eService

- 1. Login to community.sabre.com.
- 2. On the Home page, in the Support Services-eService tool area, click Request Access.

Customer eService Tool	
The eService module allows you to submit Service Requests through the Sabre Community Portal Request Access	If you don't have toll-free access, send us your phone number and we'll call you back.

3.1.2 Telephone

Note To ensure the most expedient response, you must submit all critical and high impact issues directly by phone to *Customer Care*.

Call *Customer Care* at the following toll free number for your country:

Country	ITFS Number
Antigua	888-832-4738
Argentina	0800-666-1664
Australia	1-800-081-993
Austria	800291705
Bahamas	1-800-389-0417
Bahrain	800-00-002 (WSC 5050)
Belarus	880-0114 PIN 375
Belgium	0800.77.029
Bolivia	800-10-0350
Brazil	0800 891 9210
Brunei	800-013 PIN 673
Canada	1-866-598-1706
Chile	800 412555
China Telecom	4001.202.315

Country	ITFS Number
China Network Co.	4001.202.315
Cyprus	800-96110
Colombia	01 800 954 1326
Czech Republic	800-700-117
Denmark	80885884
Egypt - Cairo	800000491
Egypt - Other	800000491
El Salvador	800-0000-0011
Estonia	800.0111.665
Finland	0800 914 860
France	0800-909-657
Germany	0800-181-7245
Greece	00800-16-122-055-533
Hong Kong	800-908-742
Iceland	800 8667
India	000 800 100 6116
Indonesia	001-803-016-1722
Ireland	1-800-657-198
Israel	1809 246 033
Italy	800-787-417
Jamaica	18664026835
Japan	0053-116-0811
Korea	0030 813 1943
Malaysia	1800 813 609
Malta	800-90112 PIN 356
Mexico	1-800-123-8537
Netherland Antilles	US ATT Direct Access, then 888-832-4738
The Netherlands	0800-023 2237
New Zealand	0800-450-960
Norway	800-18-798
Pakistan	00 800 12 001 PIN 5046
Paraguay	009 800 598 1 0004
Peru	0800-52-226

Country	ITFS Number
Philippines	1-800-111-00338
Philippines	1-800-111-00339
Russia	810-800-240-31012
Saudi Arabia	1800-11 PIN 5671
Serbia	0-800-190-138
Singapore	800-101-1651
Spain	900-995-926
Sweden	0200-285-836
Switzerland	0800 894 534
Tahiti	888-832-4738
Thailand	1800 156 203 7722
Trinidad and Tobago	888-870-9002
UK	8000288446
Uruguay	2-518-6642
USA	1-888-421-8889
Venezuela	0800-100-3851
Vietnam	1-201-0288, wait for ATT recording, then 866-947-9059

You can also use the **Call Me** button when you need a *Customer Care* analyst to call you back. You can access the **Call Me** button from the following two locations on the *Community Portal*:

- On the Home page, in the Support Services-eService tool area.
- On the Contacts page, in the **Customer Care** area.

When calling in an issue, the *Customer Care* analyst will ask a number of basic questions to initiate a diagnosis of the issue. Questions may include:

- What is your name and telephone number?
- What is a valid email address?
- What is an alternate contact name and telephone number?
- What is your company name?
- What is the issue description?
- Which application and module were you using when the error occurred?
- What is the applications version number?
- What is the <u>impact on your company's operations</u>?

- Is the application completely disabled?
- Have you restarted the application?
- What error messages are you encountering, if any?
- What sequence of events (keystrokes/button clicks) led to the issue?
- Has the issue occurred before? If Yes, when?
- Does the issue occur on other workstations?
- Have you rebooted the workstation? (Cold/Warm)
- What logon ID were you using?

3.2 Customer Impact Levels

When you submit a service request, you specify the level of impact that the issue causes to your business. The following table defines the customer impact levels:

Impact Level	Conditions	
1 – Critical	System failure causes extreme business impact to operationally critical procedures.	
	 Key personnel are unable to perform operational tasks due to system outage. 	
	 Current business practices cannot be performed due to system failure and continued work stoppage has severe financial consequences. 	
	 Time critical functionality necessary to continue operations and resolution must be made as soon as possible. 	
	 90 – 100% of users are impacted by system failure. 	
2 – High	System failure causes significant business impact.	
	• Workaround exists, but is impractical or labor intensive for extended outage duration.	
	The financial consequence is significant.	
	• 50 – 90% of users are impacted by system failure.	
3 – Medium	Impact to system is noticeable, but has little or no consequence to productivity.	
	Issue exists in a non-business critical function.	
	Workaround exists or is not necessary.	
	Less than 50% of users are impacted.	
4 – Low	Functional impact is negligible or non-existent.	
	Functionality (or system change) not necessary for business to continue.	

3.2.1 Severity Levels

After you submit a service request, a *Customer Care* analyst reviews it and sets the severity level according to the following guidelines:

Severity Level	Description	
1	A complete loss of service. The system is inoperable. Work cannot continue.	
2	A severe loss of service. Issue affects a critical business function. However, work can continue in a restricted operating mode.	
3	A moderate loss of service. A workaround is available.	
4	No loss of service. Issue is minor. No workaround is required.	

3.2.2 Product Availability Levels

All products are classified into the following product availability levels:

Availability Level	Application Type	Description
High	Real time and operational (such as, crew tracking/assignment applications).	Any outage or issue that has a major impact on a customer's ability to conduct day-to-day business operations.
Normal	Business management/planning (such as, planning and scheduling and yield management applications).	Any outage or issue that can potentially affect a customer's ability to conduct day- to-day business operations.