



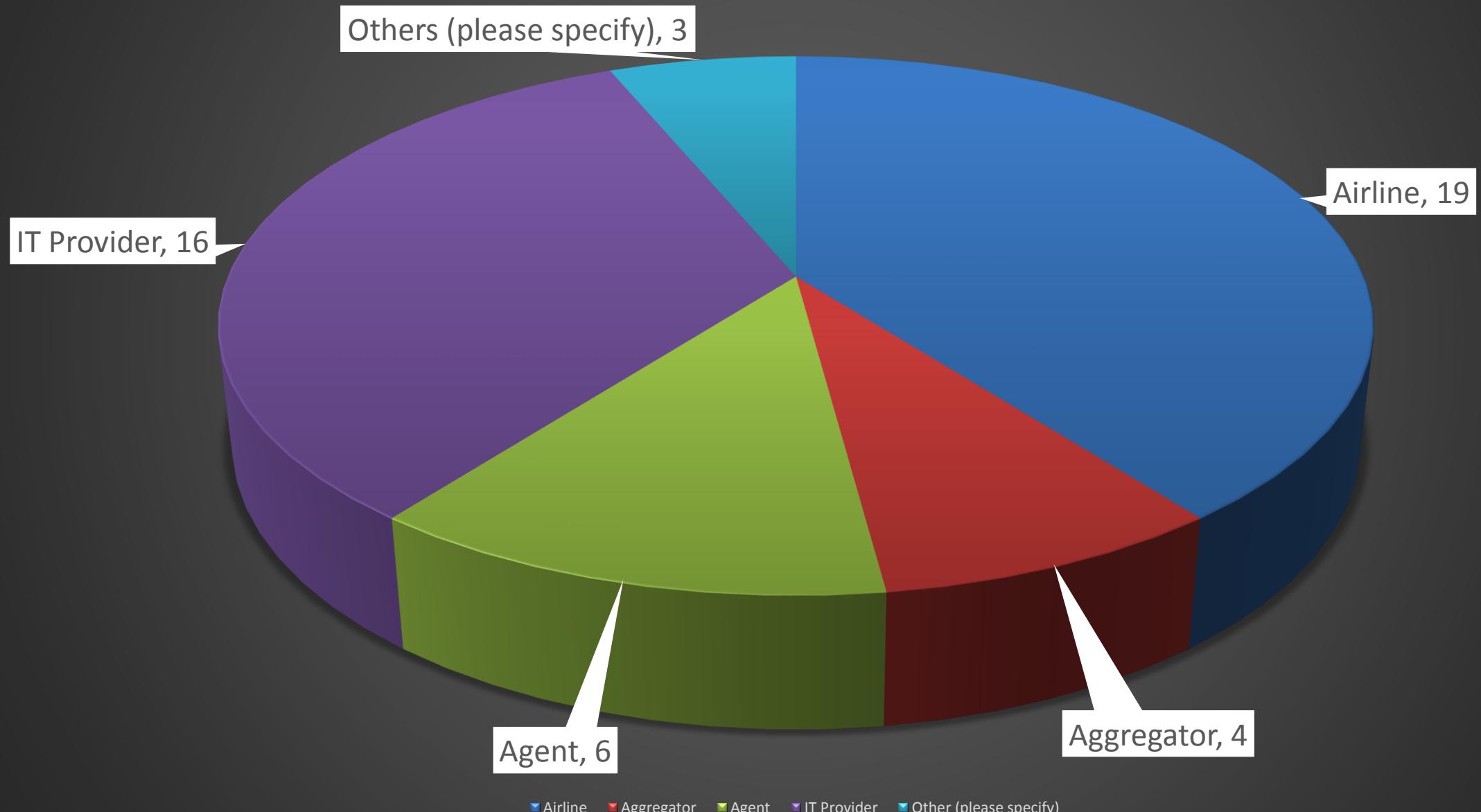
NDC Implementation Forum

Leaderboard Airlines Use of Time Limits, Message Flows

Montreal, 15 – 16 May, 2018



NDC Imp Forum Participants (May 2018)
48 Participants // 34 Organizations

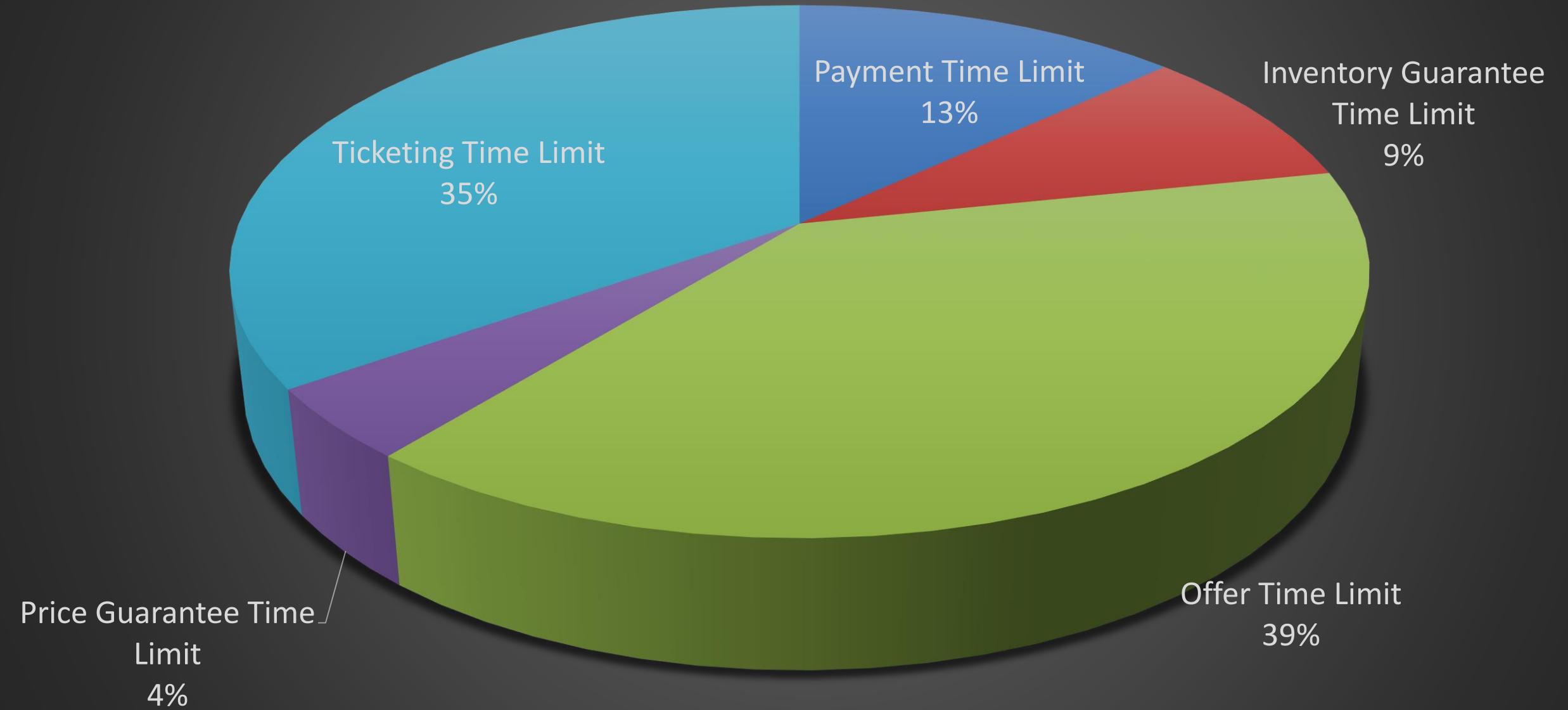


Time Limits

Time Limits Overview

- ▼ The use of Time Limits by airlines is fundamental to the flows and processes. A panel of Leaderboard airlines presented how they used the time limits in their implementation.
- ▼ A key outcome was that the payment time limit and ticketing time limit were always the same value, leading to a potential removal of 1 of these in the schema
- ▼ Next step: refine the implementation guide on time limits and pursue the proposal to consolidate the payment and ticketing time limits. (Offer/Order Group item)

Time Limit Usage by Participants



Time Limits Implemented – LB Airlines in the room

	AA	BA	UA	LHG	AFKL	AY	CZ
Payment Time Limit	N	Y	N	N	Y	Y	Y
Inventory Guarantee Time Limit	Y	N	N	N	N	N	N
Offer Time Limit	Y	Y	N	Y	Y	Y	N
Price Guarantee Time Limit	N	Y	N	N	N	N	N
Ticketing Time Limit	Y	Y	Y	Y	Y	Y	Y

Time Limit Discussion Points

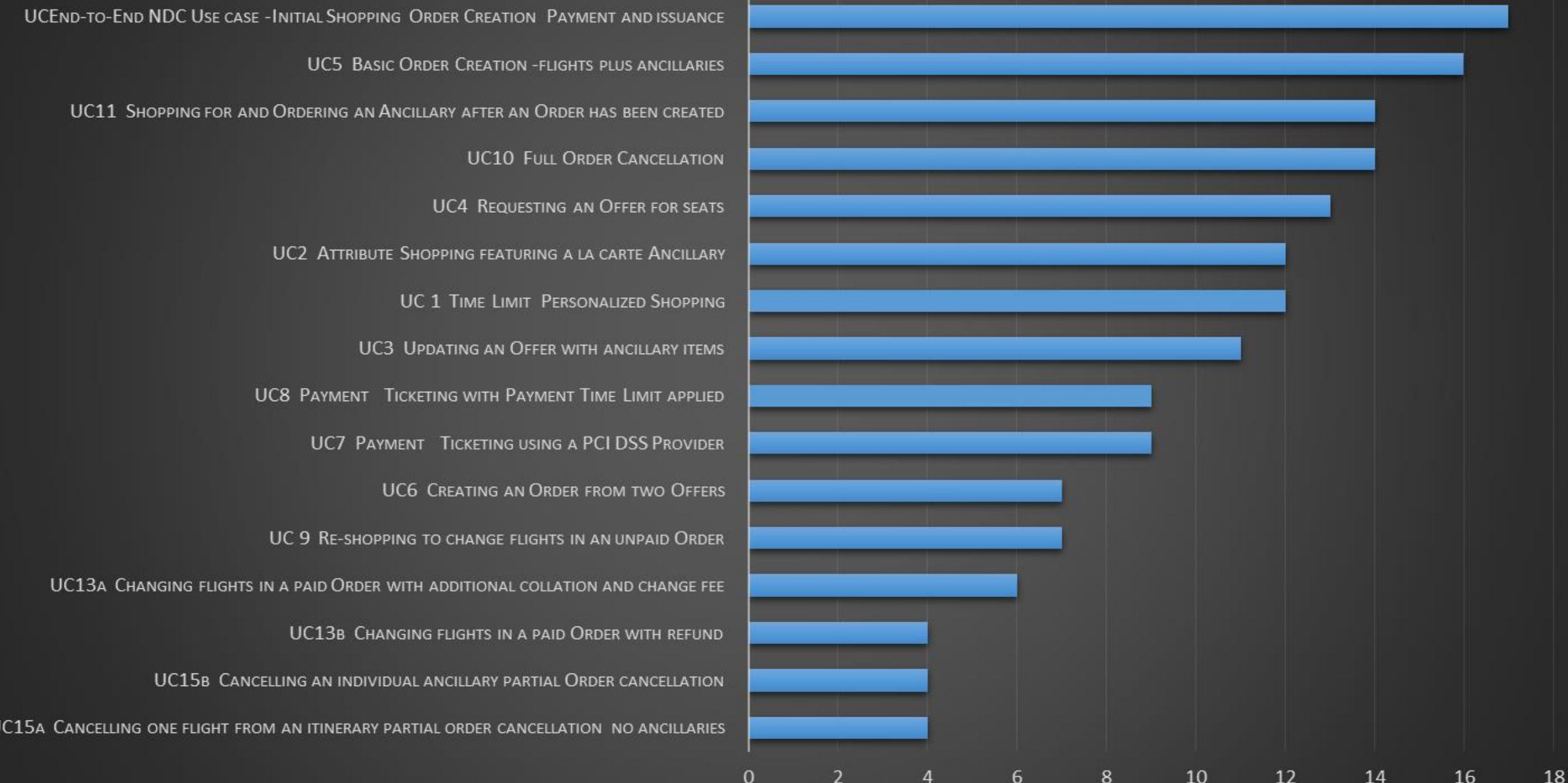
- All airlines present had the same values for payment time limits and ticketing time limits → opportunity for consolidation
- Offer Time Limits were generally around 20 – 30 min
 - positive implication for storage considerations.
 - Offers are optionally updated or refreshed when subsequently accessed.
- Most airlines didn't hold inventory until time of Order Creation when the payment or ticketing time limit came into effect
- Different airlines shared explanations for the time limits they are implementing. See ongoing Time Limit discussions on [AIRTechZone](#)
 - [What are the other airlines doing?](#)
 - [Price Guarantee Time Limit](#)

Message Flows

Message Flow Overview

- ▼ Implementation Guide use cases were categorized into 5 main scenarios 1) New Order and Payment Flows 2) New Order and Ancillaries 3) Changing an Order 4) Cancelling an Order and 5) Order Change Notifications.
- ▼ The most popular use cases by implementers in the room (next slide)
- ▼ Airlines were able to confirm the scenarios where they followed the recommendation in the Imp Guide. For others, they articulated their deviations.
- ▼ **8 message flows covering 15 use cases were reviewed.** There was consensus and clarification on most of these with suggestions for alternate ways of implementing others. Additional scenarios were also raised where flows needed to be defined.
- ▼ Next step: Communicate the widely agreed / implemented flows; continue discussions on scenarios with alternate flows (message flow sub group of Offer/Order)

Implementation Guide Use Cases Implemented



Implementation Guide Use Cases Implemented

UCEND-TO-END NDC USE CASE - INITIAL SHOPPING ORDER CREATION PAYMENT AND ISSUANCE

UC5 BASIC ORDER CREATION -FLIGHTS PLUS ANCILLARIES

UC11 SHOPPING FOR AND ORDERING AN ANCILLARY AFTER AN ORDER HAS BEEN CREATED

UC10 FULL ORDER CANCELLATION

Message Flow Patterns

1. New Order and Payment Flows

2. New Order and Ancillaries

3. Changing an Order

4. Cancelling an Order

5. Order Change Notification

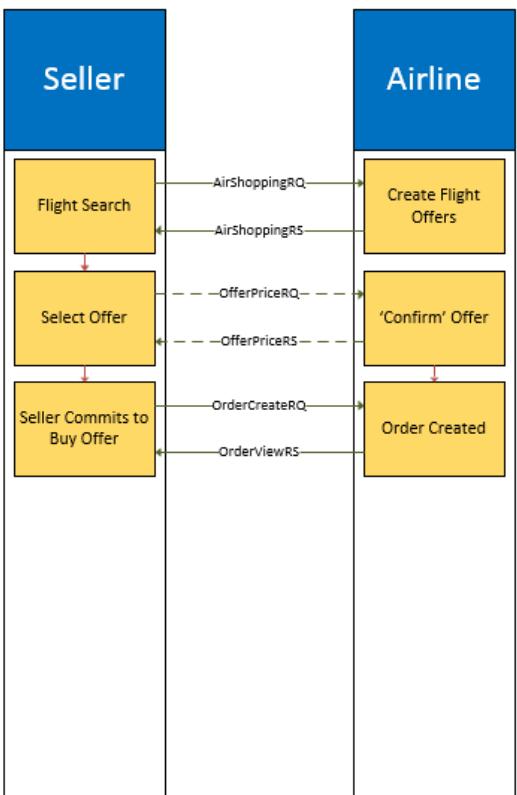
Implementation Guide v4.2 use cases were categorized into the following groups and message flow patterns discussed:

1. New Order and Payment Flows
2. New Order and Ancillaries
3. Changing an Order
4. Cancelling an Order
5. Order Change Notification

1. New Order and Payment Flows

A1. New Order with Instant Payment

7 Payment & Ticketing using a PCI DSS provider
1 – Time Limit / Personalized Shopping

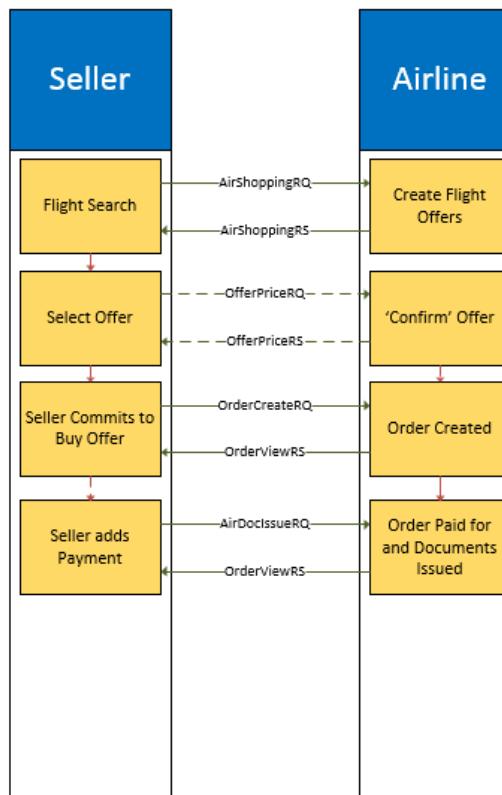


Points to note

1. The entire flow takes place before creation of the Order.
2. Instant payment with no redirection (i.e. assume this is a basic Visa/Mastercard with CVV auth only / not 3D secure)
3. This is a order that is created in one go, instantly from start to finish without any delay (i.e. a person is on a website and goes all the way through)

A2. New Order with Deferred Payment

3.4 End to End Booking NDC use Case
8 - Payment & Ticketing with Payment Time Limit applied



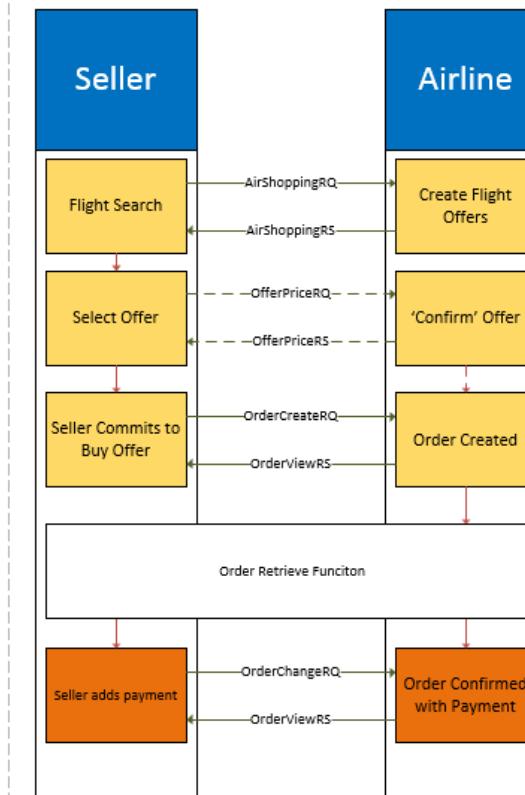
Points to note

1. The entire flow takes place before creation of the Order.
2. This is a pay later scenario and payment is not sent initially in the OrderCreateRQ



Most preferred flow discussed

New Order with Deferred Payment (alternate flow)



Points to note

- * this is not in the Imp guide, but a flow that was suggested for the Imp Guide.
- 1. The entire flow takes place before creation of the Order.
- 2. This one is using OrderChangeRQ as opposed to AirDocIssueRQ.
- 3. Time between the deferred payment isn't mentioned. There could be a Order Retrieve optional call here depending on the delay. E.g. 5 mins edeferred maybe it may not be required, but for 5 days it may well be.

Points shared in meeting: The majority used OrderChangeRQ to pay for an order, instead of the AirDocIssueRQ due to limitations in the functionality in AirDocIssue and for efficiency. E.g. selecting and paying for an additional ancillary or a repriced offer in 1 OrderChangeRQ call instead of 2 calls; OrderChangeRQ refers to Orders, future proof for ONE Order.

Discussion Points

Details returned in AirShoppingRS

- Airlines are not all returning the full details of the offer in the AirShoppingRS – most common reason is the size of the message. This results in a common practice (even required by some airlines) to make a OfferPriceRQ/RS call before the final confirmation in OrderCreateRQ.
Since airlines are returning different level of details in the Shopping response messages, it has an impact on the aggregation of information by the seller.
 - The recommendation is that a core set of data is consistently returned to help consumers.

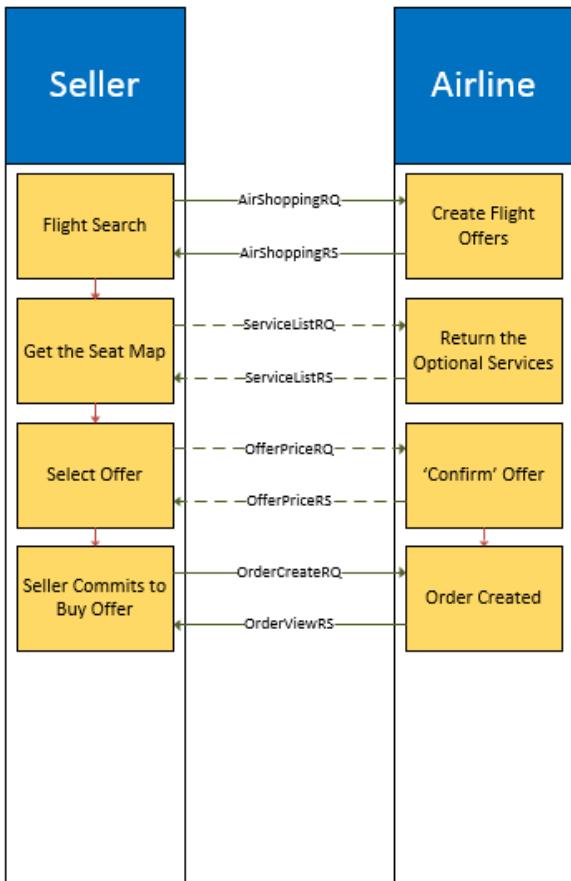
AirDocIssue or OrderChange to add payment

- Generally preferred approach discussed in meeting - OrderChangeRQ to add payment (see points in slide)

2. New Order and Ancillaries

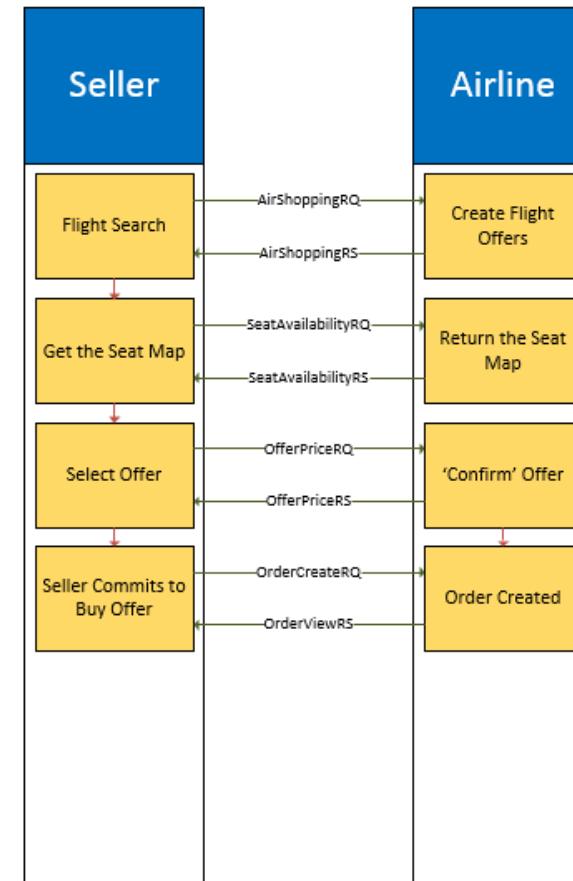
B1. Adding Services after Shopping

- 3 – Updating an Offer with ancillary items
- 2 – Attribute Shopping featuring à la Carte Ancillary
- 6 – Creating an Order from two Offers



B2. Getting and Assign Seats to a New Order

- 4 – Requesting an Offer for Seats



Points to note

1. The entire flow takes place before creation of the Order.
2. For adding an ancillary before an Order is created, the workflow implemented by the actors in this use case involves the receiving of flight Offers, the Customer making a flight selection, then requesting additional ancillaries afterwards. The result is a combined Offer for both flights and ancillaries.

Note: for Use Case Scenario 2, the ServiceList is not required. For Use Case Scenario 3, the Service List is required.

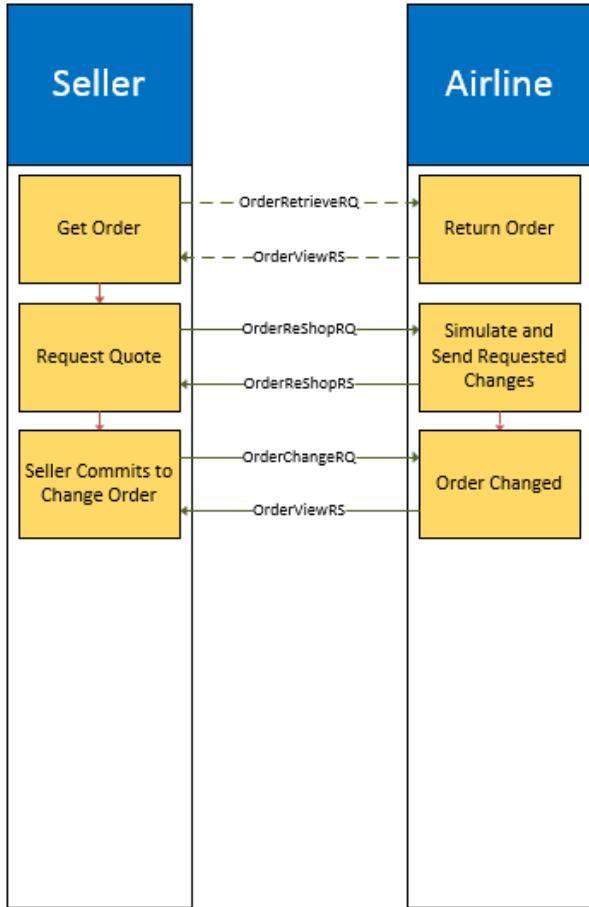
Points to note

1. The entire flow takes place before creation of the Order.
2. The Seller decides to share personal Customer information (such as Frequent Flyer number) with the ORA when requesting seat availability.

3. Changing an Order

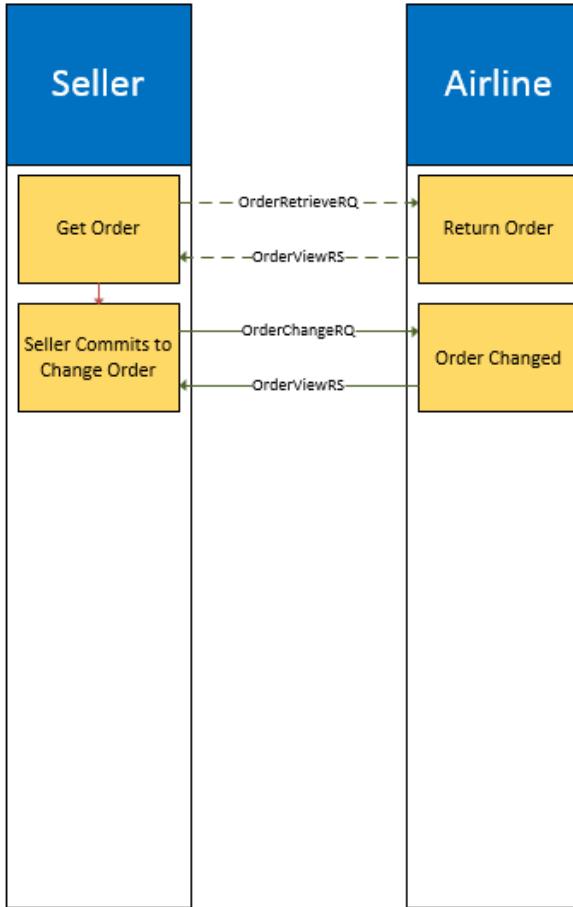
C1. Changing an Existing Order

11 – Shopping For and Ordering An Ancillary After An Order Has Been Created
13a – Changing flights in a paid Order with additional collection and change fee
9 – Re-shopping to change flights in an unpaid Order
13b – Changing flights in a paid Order with refund
12 – Change of Name in a paid Order



C2. Change Contact Details in an Existing Order

TBC



Points to note

1. Optional path to refresh the order.

Points to note

It was widely understood that the OrderResShop-->OrderChangeRQ orchestration covers the servicing flows. There were some other nuances highlighted – e.g. some airlines do not use implement ServiceList.

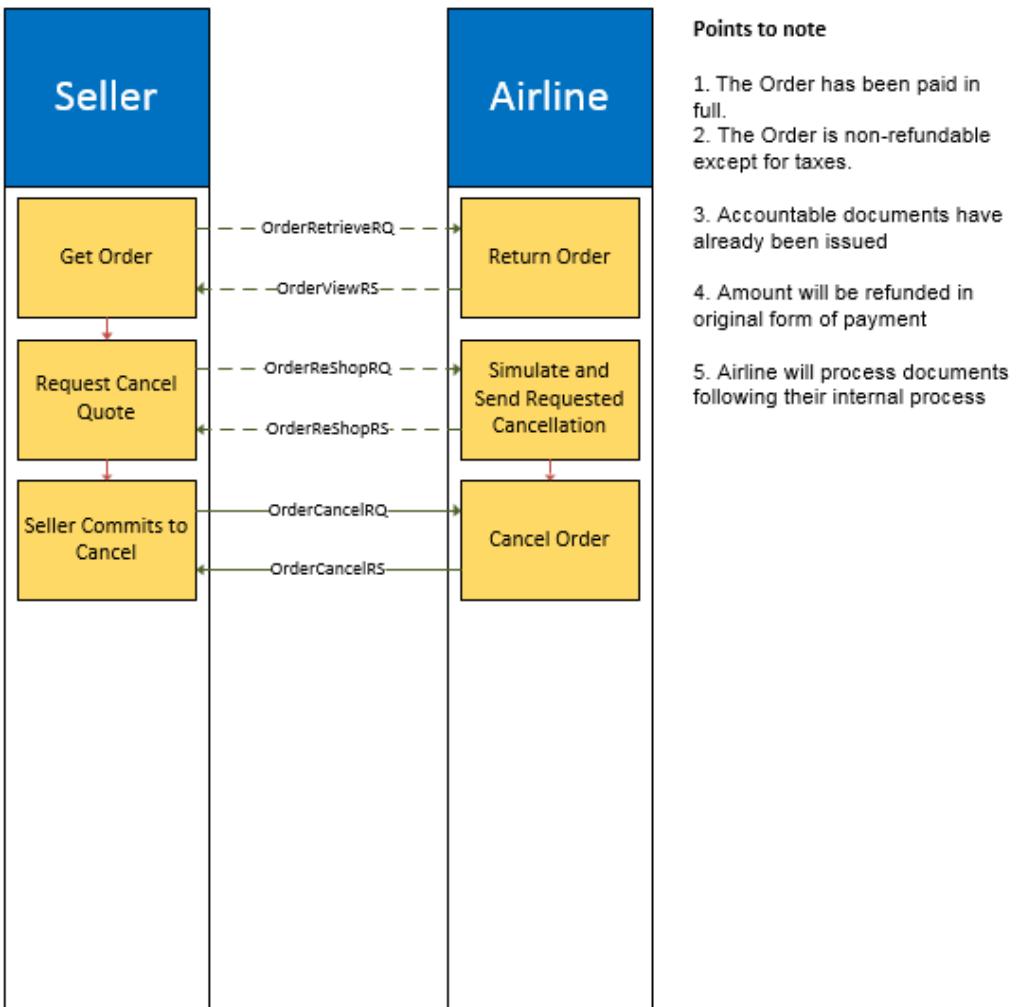
Other topics discussed:

- How to manage the backend functionality of splitting of a PNR in non-homogenous Order Servicing scenarios.
- How / when does the airline inform customers that the taxes have changed during ticket issuance?

4. Canceling an Order

D1. Cancel a Order

(10 – Full Order Cancellation)



Question raised for further discussions:

OrderCancelRQ/RS cancels the Order (and the PNR). However there is no clear process to retrieve and use the ticket that is still active.
Need implementation guidance for the common practice of voiding and reusing an unused ticket. Note the CR 053 currently being submitted for 18.2 release to cover paying using an unused ticket.

Other topics highlighted

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- How to manage the backend functionality of splitting of a PNR in non-homogenous Order Servicing scenarios.
- How / when does the airline inform customers that the taxes have changed during ticket issuance?
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- Need implementation guidance for the common practice of voiding and reusing an unused ticket.
 - Noted CR 053 currently being submitted for 18.2 release to handle paying using an unused ticket.

OrderChange Notification (Airlines → Agents)

- What is sent to the agent – In Standard topic scope
 - Order Reference Only vs. Full Order Image vs Changes only vs Full Order and Changes
 - How it is delivered – In Implementation Topic scope
 - Integration with agent processes and workflow (queues)
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- **Next steps:** capture input from Agent and airline NDC Implementers
 - Ongoing topic on <https://airtechzone.iata.org>