Staying in Sync

NDC Implementation Forum

May 2020

Duffel

Staying in Sync

How do we stay up to date as our NDC orders change?

A quick introduction to Duffel 👋

Why does keeping track of updates to our orders matter?

How can we track changes to orders today?

What can airlines do to make life easier for travel sellers?

A quick introduction to Duffel 👋

We started Duffel with a simple observation

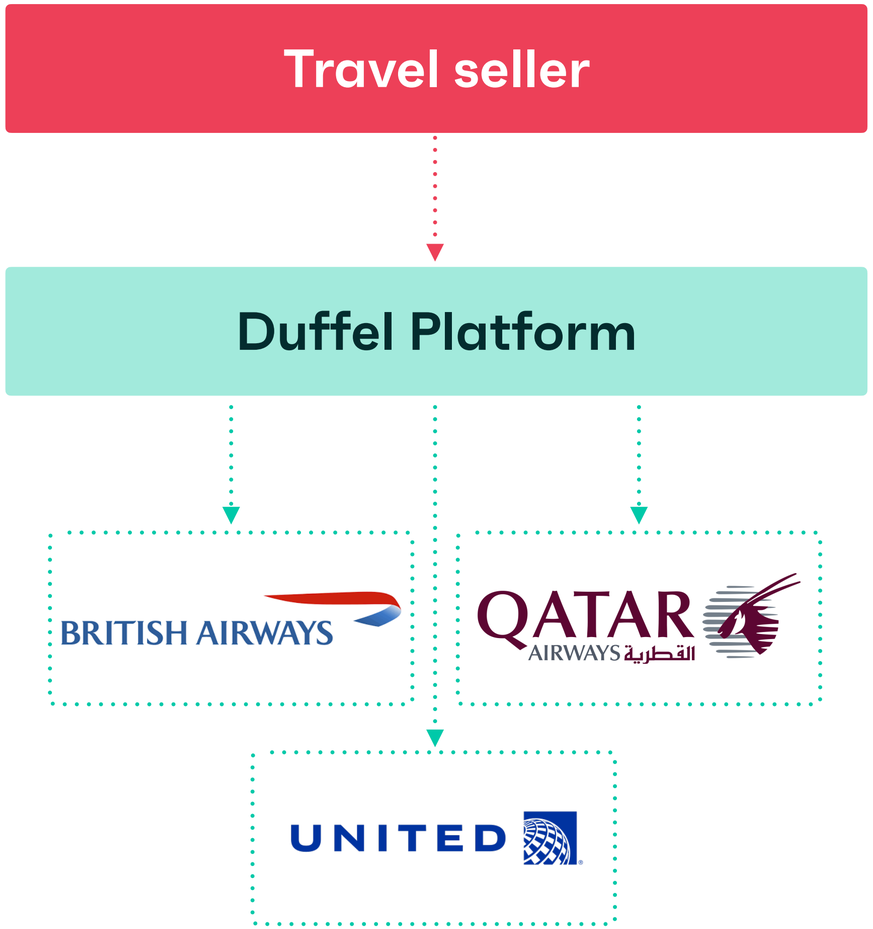
Building a great flight booking experience is *really hard*

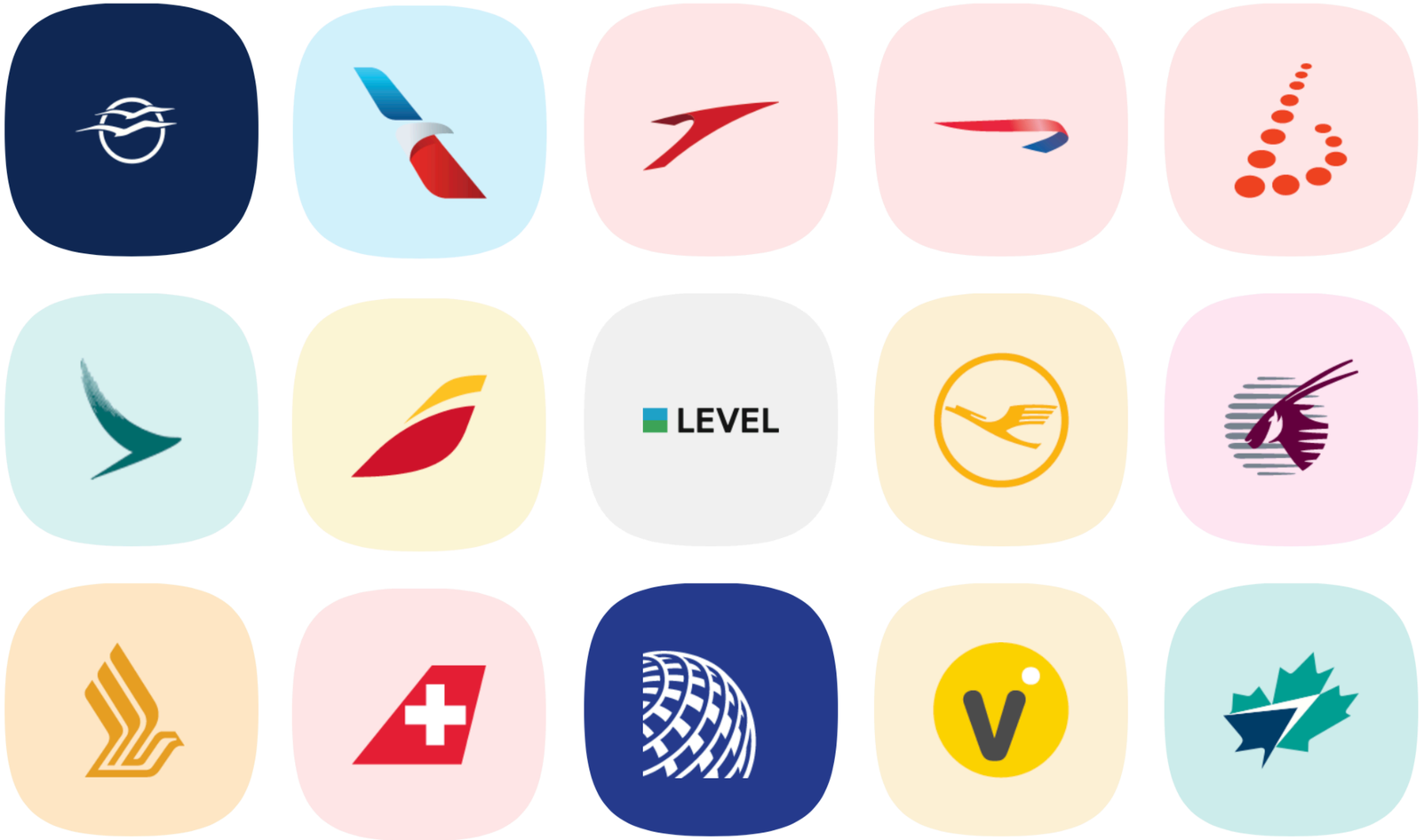
The infrastructure that powers our industry gets in the way

A new airline distribution platform for the 21st century

We power connections between airlines and where people book

With Duffel, travel sellers can access direct connect content from 20+ airlines through one platform




LEVEL

With Duffel, building your integration takes days — not months per airline

We smooth over the differences between airlines, so travel sellers can turn on new carriers in one click

Why does keeping track of updates to our orders matter?

Order Q9VC74 CONFIRMED

Orders > Q9VC74

Flight summary

Tue 7 Jul, 2020 — Sun 12 Jul, 2020

British Airways BA0778

Euro Traveller · Airbus A319 · British Airways

11:25 · Heathrow Airport (LHR)

Journey duration: 03h 35m

15:00 · Stockholm-Arlanda Airport (ARN)

British Airways BA0781

Euro Traveller · Airbus A320neo · British Airways

18:00 · Stockholm-Arlanda Airport (ARN)

Journey duration: 01h 45m

19:45 · Heathrow Airport (LHR)

This order can change

Itinerary changes

Other changes

The “source of truth” is the Offer Responsible Airline (ORA)

To get the latest state of an order, we should *always* go direct to the airline

But travel sellers need to know about these changes as they happen

Keep the passenger up-to-date

Apply business rules

Flag bookings requiring manual intervention

Keep my local copy of the order up-to-date

I can’t rely on the *original state* of the order when I created it

I can’t query the airline’s system to filter based on the *latest state*

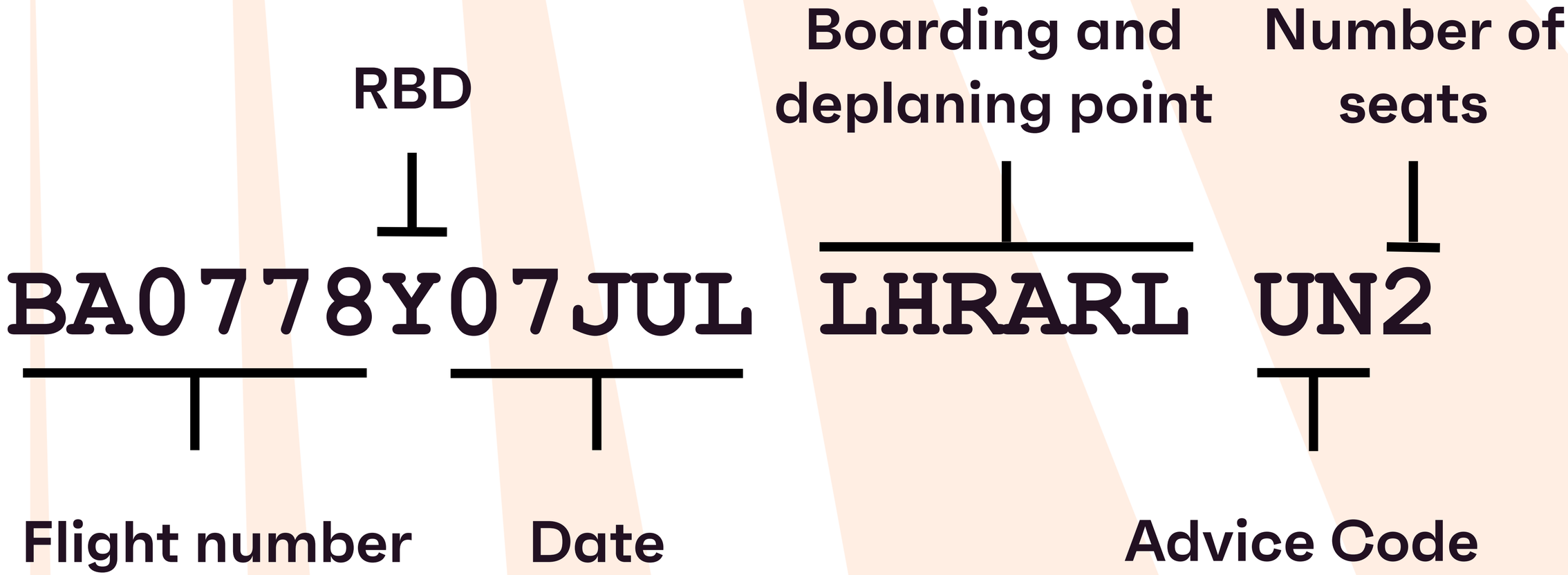
For NDC *at scale*, we need to be able to support these use cases

How can we track changes to orders today?

How are changes to bookings tracked in the GDS environment?

GDSs stay up to date on traditional bookings using Type B messages

Type B messages are pushed from the PSS to the GDS


RBD
Boarding and deplaning point
Number of seats
BA0778Y07JUL
LHRARL
UN2
Flight number
Date
Advice Code

The GDS uses this data to update its local copy of the booking

The GDS adds updated bookings to queues, surfacing them to agents

The GDS adds updated bookings to queues, powering automations

What are our options in NDC?

We have a pull option: OrderRetrieve*

* There are actually two pull options - more on this later

The “source of truth” is the Offer Responsible Airline (ORA)

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To stay up to date, I have to “poll” an order

On the other hand, I have a push option, OrderChangeNotif

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```

So what are the advantages and disadvantages of these two approaches?

What are the differences between OrderChangeNotif and OrderRetrieve?

- How technically complex is the implementation for:
  - airlines?
  - travel sellers?
- How quickly do travel sellers know about changes?
- Is it possible to communicate any change to an order?
- Can the travel seller understand why a change happened?

What are the differences between OrderChangeNotif and OrderRetrieve?

- **How technically complex is the implementation for:**
  - **airlines?**
  - travel sellers?
- How quickly do travel sellers know about changes?
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Delivering push notifications is more complex for the airline

You need to know when changes have happened

You need some way of registering customers' endpoints

You need some kind of message queue to deliver notifications

...including a way to handle notifications that can't be delivered

OrderRetrieve means more load on airlines' systems

What are the differences between OrderChangeNotif and OrderRetrieve?

- **How technically complex is the implementation for:**
  - airlines?
  - **travel sellers?**
- How quickly do travel sellers know about changes?
- Is it possible to communicate any change to an order?
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Receiving push notifications is more complex for the customer

You need to understand a new kind of message

Using OrderRetrieve is simple - you already need to be able to understand OrderViewRS

You need to have an open endpoint to receive notifications

What are the differences between OrderChangeNotif and OrderRetrieve?

- How technically complex is the implementation for:
  - airlines?
  - travel sellers?
- **How quickly do travel sellers know about changes?**
- Is it possible to communicate any change to an order?
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OrderChangeNotif is fast

Usually, this won’t really matter

But sometimes, it does

Push is the foundation for rich real-time experiences

What are the differences between OrderChangeNotif and OrderRetrieve?

- How technically complex is the implementation for:
  - airlines?
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- How quickly do travel sellers know about changes?
- **Is it possible to communicate any change to an order?**
- Can the travel seller understand why a change happened?

Today, airlines' implementations of OrderChangeNotif are limited

They only support schedule changes

Ideally, airlines would be able to push any change to an order

...for example, itinerary changes that aren't schedule changes

...or changes to service statuses

Knowing when something has changed in the PSS isn’t necessarily easy

Communicating a full range of changes in a structured way isn’t simple either

```
<Order OrderID="Q9VC74" Owner="BA">
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```

“Services” are the way to do this - but they are hard to use with the PNR underneath

Just using OrderRetrieve doesn’t have these problems

What are the differences between OrderChangeNotif and OrderRetrieve?

- How technically complex is the implementation for:
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- How quickly do travel sellers know about changes?
- Is it possible to communicate any change to an order?
- **Can the travel seller understand why a change happened?**

Voluntary or involuntary?

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    </MarketingCarrier>
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- How technically complex is the implementation for:
  - airlines?
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- How quickly do travel sellers know about changes?
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- Can the travel seller understand why a change happened?

There is a danger of “missing” changes

#1

Initial booking

BA0778 07JUL

01JAN 09:00

#2

IRROPS

~~BA0778 07JUL~~

07JUL 08:00

#3

Rebooked w/ BA

BA0779 07JUL

07JUL 08:05

“Polling” with OrderRetrieve

#1

Initial booking

BA0778 07JUL

01JAN 09:00

#2

IRROPS

~~BA0778 07JUL~~

07JUL 08:00

#3

Rebooked w/ BA

BA0779 07JUL

07JUL 08:05

Waiting for an OrderChangeNotif

#1

Initial booking

BA0778 07JUL

01JAN 09:00

#2

IRROPS

~~BA0778 07JUL~~

07JUL 08:00

#3

Rebooked w/ BA

BA0779 07JUL

07JUL 08:05

Now you understand the challenges

What does Duffel do?

We need to provide a rich, consistent experience across airlines

We want help sellers understand what has changed and why

We join together data from OrderRetrieve and OrderChangeNotif

“Snapshots” of an order’s state over time

A series of “events”, showing what changed and when

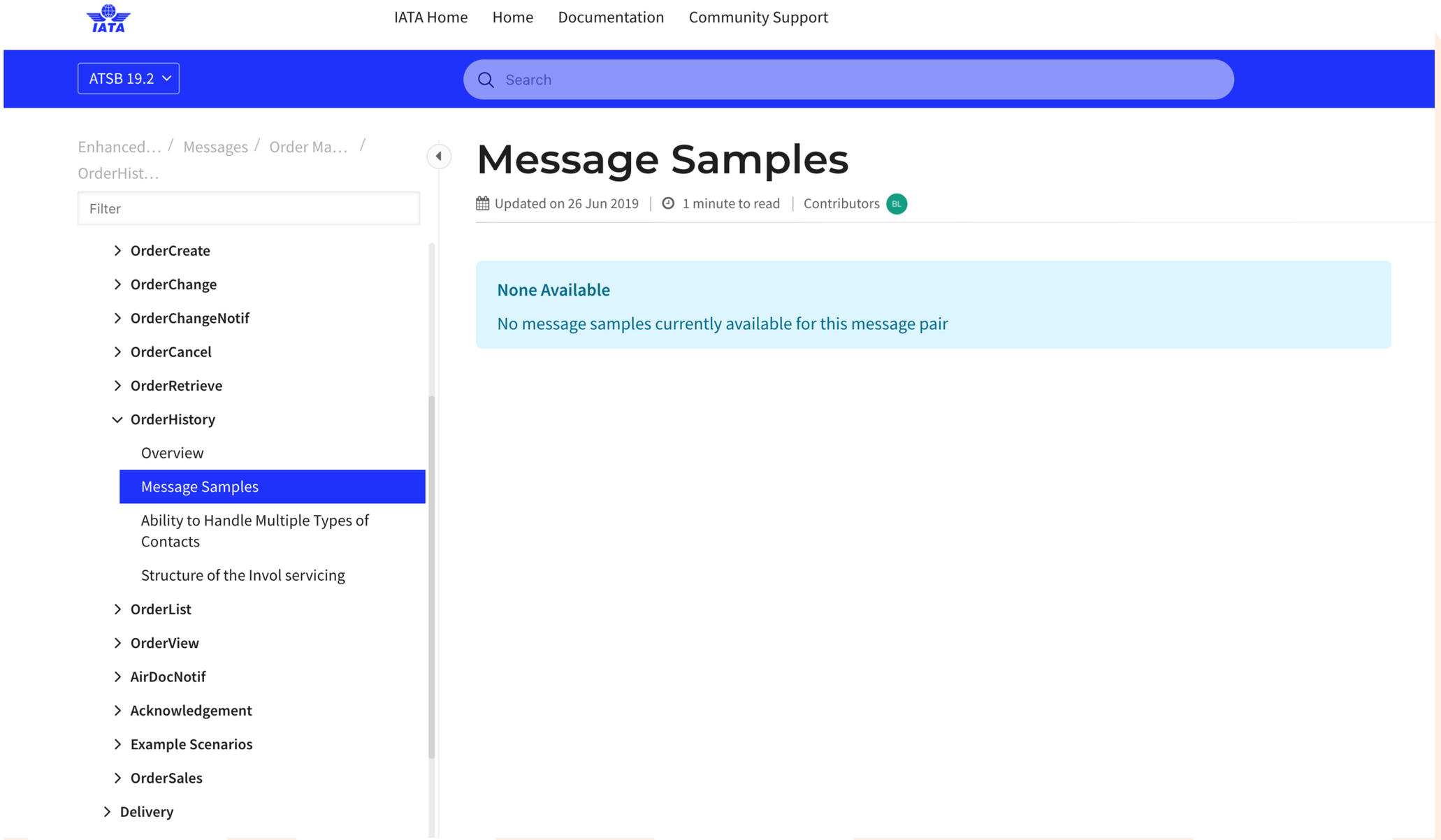
What can airlines do to make life easier for travel sellers?

We have a pull option: OrderRetrieve*

* There are actually two pull options - more on this later

OrderHistory

This has been raised as a blocker by TMCs


IATA
IATA Home
Home
Documentation
Community Support
ATSB 19.2
Search
Enhanced… / Messages / Order Ma… / OrderHist…
Filter
OrderCreate
OrderChange
OrderChangeNotif
OrderCancel
OrderRetrieve
OrderHistory
Overview
Message Samples
Ability to Handle Multiple Types of Contacts
Structure of the Invol servicing
OrderList
OrderView
AirDocNotif
Acknowledgement
Example Scenarios
OrderSales
Delivery
Message Samples
Updated on 26 Jun 2019 | 1 minute to read | Contributors
None Available
No message samples currently available for this message pair

OrderHistory is a way to communicate an order's previous states

Orders have a version number: `OrderVersion`

A `ChangeOperation` gives lots of flexibility to explain the change

You can explain *what* the change is with a `ChangeTypeCode`, `New` state and `Old` state

You can explain *why* a change happened with a `ReasonCode`

What are the differences between OrderChangeNotif and OrderRetrieve?

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There’s no danger of “missing” changes

In NDC 19.2, OrderHistory and OrderChangeNotif are aligned to make this easy

The ideal solution is OrderChangeNotif + OrderHistory

Turn OrderHistory from schema to reality

Can you find a way to communicate more changes than just schedule changes?

Can you communicate why something has changed?

Can you include information about the “next steps” in your notifs?

If you can, for these messages, make the switch to V19.2

If you can, start to invest in Order Management

Travel sellers need to be able to *stay in sync* with their NDC bookings

Keep the passenger up-to-date

Apply business rules

Flag bookings requiring manual intervention

Keep my local copy of the order up-to-date

OrderRetrieve vs OrderChangeNotif

✅ Simple implementation for airline

✅ Simple implementation for travel sellers

✅ Able to detect any change (as long as it can be modelled in NDC)

❌ More load on airline systems

❌ Delayed notification of changes

❌ Danger of missing changes

❌ Can't tell *why* a change happened

✅ Less load on airline systems

✅ Immediate notification as soon as a change happens

✅ Can tell where a change came from

❌ Harder implementation for airlines

❌ Harder implementation for travel sellers

❌ Danger of missing changes

❌ Unable to communicate all changes

Airlines can make life easier for travel sellers with the latest versions of OrderHistory and OrderChangeNotif

Duffel

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