Datalex: NDC 18.1 Implementation

Experience Migrating from 15.2 to 18.1
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IATA NDC Forum: Geneva, November 2018
Topics

- About Datalex
- Schema Differences 15.2 v 18.1
- Recommendations
Market leader in digital commerce for travel retail:

• Enabling a travel marketplace of over one billion shoppers
• Covering all parts of the globe
• Driven by some of the world’s most innovative airline retail brands.

Our Digital Commerce Platform:

• Combines pricing, offer and order management with customer insights
• Delivers a competitive and differentiated airline retail experience on every device, across every sales channel and at every touchpoint in the travel journey.
Datalex NDC Capabilities

- Air + Ancillary Product & Pricing Management
- Supplier – Product & Pricing Management
- Optimization & Contextual Merchandising
- Trip Management
- Dynamic Customer Profiling, Segmentation

Offer Management

- Omni Channel Order Create, Order Pay, Order Fulfill
- Cancel & refund, Reprice, Rebook
- Order Orchestration
- Financial Systems
- Partner Settlement
- Disruption Management - IROPs

Order Management

- Independent to maintain / upgrade
- Easy to be replaced by any other technology (RESTful)
- Completely Decouple the business from the interface

Architecture
Datalex Open Platform API Ecosystem

REST-Enabled Applications
- B2C UIs
- Desktop UIs
- Mobile Apps
- Call Center UIs

General Partner Applications
- Kiosk Check-in
- B2C UIs
- Social Apps

NDC-enabled Applications
- Seller Apps
- Aggregator Apps
- B2B Apps
- B2C & B2B Apps / UIs
- CC / Agent Apps / UIs

REST API

NDC API

CORE Business Services (SOAP)
- Offer Management
- Order Management
- Payment Management
- Marketplace Management

Datalex Business Components

External Systems Integration Layer

External Hosts / Systems

Commercial
- Loyalty
- RM
- Schedule
- Analytics
- Redemption

Airline Ops
- Crew
- Flight
- Gate
- DCS
- Tarmac

Corporate
- HR
- Finance
- Employee

(Datalex Logo)

(Datalex Logo)
NDC Solution Components

AIRLINE TA, PARTNERS

AWS NDC Environment

TA, DDCP Core Business Services

TA, DDCP Environment

External Hosts / Systems
Schema Differences 15.2 v 18.1: General

- Lack of common types
- Lack of references
- `xs:token (constraint xs:key/xs:keyword) used instead of xs:ID/xs:IDREF`
- No mechanism for multiple languages
- No Augmentation Points (present in 18.2)
Schema Differences 15.2 v 18.1: AirShoppingRQ

- **Party**
  - Common
  - Small changes

- **Parameters**
  - Common
  - Small changes

- **Anon/Recog Travs -> Paxs**
  - Common
  - In some messages this is in DataList

- **ServiceFilter**
  - Much more restrictive. Group/SubGroup -> RFIC/RFISC 😞

- **CoreQuery -> FlightRequest**
  - Internals changed, but nothing massive

- **Preferences -> ShoppingCriteria**
  - Lots of tweaks: fare, aircraft, connx...
  - Preferences level absent: RBD, Cabin 😊

**No change really made it any easier to do anything.**
### Schema Differences 15.2 v 18.1: AirShoppingRS

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warnings</strong></td>
<td>• bit less restrictive (common)</td>
</tr>
<tr>
<td><strong>Offer Structure</strong></td>
<td>• Big changes, bit neater</td>
</tr>
<tr>
<td></td>
<td>• Associations: No ref to FareList. Used internal FareDetail instead</td>
</tr>
<tr>
<td></td>
<td>• PriceDetails changed</td>
</tr>
<tr>
<td><strong>Checked/CarryOn Bags</strong></td>
<td>• Combined to BaggageAllowance (common)</td>
</tr>
<tr>
<td><strong>Itinerary (common)</strong></td>
<td>• Flight -&gt; PaxJourney</td>
</tr>
<tr>
<td></td>
<td>• FlightSegment -&gt; PaxSegment</td>
</tr>
<tr>
<td></td>
<td>• OriginDestination -&gt; OriginDestination</td>
</tr>
<tr>
<td><strong>PriceClassList</strong></td>
<td>• No ability to reference anything</td>
</tr>
<tr>
<td><strong>ServiceBundle &amp; Service</strong></td>
<td>• Fair bit of re-work</td>
</tr>
</tbody>
</table>

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Schema Differences 15.2 v 18.1: FlightPrice -> OfferPrice

**Request**
- Minor changes
- Can specify OfferID and not just OfferItemID
- Shares many of AirShoppingRQ changes

**Response**
- Lots of changes
- Same as AirShoppingRS changes
Schema Differences 15.2 v 18.1: ServiceList, ServicePrice, SeatAvail

ServiceList
- RQ: similar to AirShoppingRQ
- RS: similar to AirShoppingRS
  - Can have offers! 😊😊😊

ServicePrice
- No longer exists
- Ported to ServiceList

SeatAvailability
- Lots of small changes
- Can have offers! 😊😊😊
Schema Differences 15.2 v 18.1: OrderCreate

Request

- Passengers
- Offers/OfferItems
- Contact Info

Response

- Passengers
- Total Price
- Order Items: very different
- Baggage/Services/Seats
- Flights/Segments/ODs
Schema Differences 15.2 v 18.1: OrderReshop

Request

• Using Reshop/ServiceOrder only
  • Replacement
  • Neater 😊

Response

• Simpler, more logical structure
• ReshopOffer = AS Offer (almost)
  • Add/Delete elements
  • Differential: was at offer level
    • Now at OfferItem level
Schema Differences 15.2 v 18.1: OrderChange

**Request**
- Lots of changes to most elements
- Looks neater for specify changes

**Response**
- Same as for OrderCreate
Schema Differences 15.2 v 18.1: OrderRetrieve/OrderCancel

OrderRetrieve
- Minor changes to RQ
- RS same as for OrderCreate

OrderCancel
- Can specify refund card 😊
- Cannot cancel just parts of order 😞
  - Use OrderChange instead

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## Recommendations 1

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identify Service Flows</strong></td>
<td>• Do they meet business needs?</td>
</tr>
<tr>
<td><strong>Data needed from one message in next</strong></td>
<td>• Usually OfferID, OfferItemID, OrderID</td>
</tr>
<tr>
<td></td>
<td>• May be others</td>
</tr>
<tr>
<td><strong>References</strong></td>
<td>• How to reference key data</td>
</tr>
<tr>
<td></td>
<td>• Are the references flexible enough?</td>
</tr>
<tr>
<td><strong>Elements changed to/from single/multi instance</strong></td>
<td>• May restrict your functionality</td>
</tr>
<tr>
<td><strong>Think of the Client</strong></td>
<td>• They have to use the API</td>
</tr>
<tr>
<td></td>
<td>• Make it easy</td>
</tr>
<tr>
<td><strong>Clear, accurate Documentation</strong></td>
<td>• Clear, accurate</td>
</tr>
<tr>
<td></td>
<td>• Flows, examples</td>
</tr>
</tbody>
</table>
### Recommendations 2

<table>
<thead>
<tr>
<th>Category</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check all fields</td>
<td>• Look for 18.1 equivalent</td>
</tr>
<tr>
<td>Operations</td>
<td>• Functionality retained?</td>
</tr>
<tr>
<td>Existing Flows</td>
<td>• Will they be altered?</td>
</tr>
<tr>
<td>Anything new?</td>
<td>• New operations/flows</td>
</tr>
<tr>
<td>Alternative Flows</td>
<td>• How to recover from errors</td>
</tr>
</tbody>
</table>