FLIGHT SEARCH, QUOTE AND BOOKING VIA THE XML API

ATPI

For use within the ICT department of ATPI

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1. INTRODUCTION

This document describes the usage of our flight search API. The parts covered in this document contains the several ways of doing a flightsearch, the polling mechanism available and the data returned by our API.

Also the quote mechanism and booking of a flight is being covered in this document.

The following action codes are covered in this document:

Actioncode	Purpose
FLIGHTSEARCH	Searching for flights and availability
QRTW	Used for gathering the timetables
FLUSHBUFFER	Our polling mechanism used to get an overview of already found flights during the search. This mechanism can only be used when doing a complete fares (CF) search.
QUOTE	Used to get a price for the selected segments
FLIGHTSBOOK	Used for doing updates on the booking made

2.   SEARCHING FOR FLIGHTS

Searching for flights in our API can be done via the FLIGHTSEARCH action code. This action code needs to be followed with one of the following subaction codes:

Subaction	Purpose
CF	Do a complete faresearch. This way of searching is used in ATPOnline and returns next to the availability a pricing matrix and a list of flight/fare combinations (used for showing + and – prices in ATPOnline)
JF	Used for searching for fares only
AV	Search for availability.
LF	Search for lowest fares.

After providing the subaction you need to provide a triptype. This can be one of the following triptypes.

Trip type	Purpose
SINGLE	Search for a one-way trip
RETURN	Search for a return trip
MULTILEG	Search for a multi-legged trip.

Next to the parameters descibed above there are several other parameters available. These are:

Parameter	Purpose
dateVariable	Search for flexible dates. Can be True or False
directFlightsPreferred	Only search for direct flights. Can be 0 or 1
preferredCarrier	Only search for the carrier provided for example IB for Iberia
serviceLevel	Search only for a particular service level. This can be one of the following: E – Economy B – Business F – First class N – Any Class
withExtraFareFlightLinks	Used for gathering the + and – prices. This field can be 0 or 1.
sendTinyFraeFlightLinks	Should be 1 as default
withContinuousFlightsUpdating	If you want to poll for flights found while doing the search this value should be set to 1 otherwise it should be 0
numberAdult	The number of adults you want to book
numberChild	The number of children you want to book
numberInfant	The number of infants you want to book

2.1. DOING A ONE-WAY TRIP SEARCH

First we start by doing a basic one-way trip search using our API. We are doing this search using the following parameters:

- 2 adults
- 1 child
- 1 infant
- Departs from Amsterdam
- Going to London stanstead
- Departing at: 07-september-2011
- Preferred carrier Easyjet

This will be the following XML request.

```xml
<TWSRequest>
  <actionCode>FLIGHTSEARCH</actionCode>
  <subaction>CF</subaction>
  <tid>IBEXDEV:NLX-1B440YOTPA-T</tid>
  <tripType>single</tripType>
  <withExtraFareFlightLinks>1</withExtraFareFlightLinks>
  <sendTinyFareFlightLinks>1</sendTinyFareFlightLinks>
  <withContinuousFlightsUpdating>1</withContinuousFlightsUpdating>
  <dateVariable>False</dateVariable>
  <directFlightsPreferred>0</directFlightsPreferred>
  <preferredCarrier>U2</preferredCarrier>
  <serviceLevel></serviceLevel>
  <numberAdult>2</numberAdult>
  <numberChild>1</numberChild>
  <numberInfant>1</numberInfant>
  <departCity1>AMS</departCity1>
  <arriveCity1>STN</arriveCity1>
  <departDay1>07</departDay1>
  <departMonth1>092011</departMonth1>
  <departTime1>0000</departTime1>
</TWSRequest>
```

This will return the following XML response. The response showed below only contains the actual flightsearch response. The original response also returns parts of the transaction, request made and the content of the current active booking.

```xml
<TWSResponse schema="AS2CF">
  <searchResults handler="FLIGHTSEARCH" searchType="CF">
    <departCity>AMSTERDAM, Netherlands</departCity>
    <arriveCity>LONDON, United Kingdom</arriveCity>
    <departDate>Wed 07 Sep 2011</departDate>
    <returnDate>Mon 01 Aug 2011</returnDate>
    <fareGroups count="1">
      <item groupId="1" active="No">
        <identity>
          <fareSource>
            <code>L</code>
            <name>Lowcost</name>
            <description>Lowcost</description>
            <database>
              <code>TFUSION</code>
              <description>Lowcost</description>
            </database>
            <destribution/>
            <adjCode/>
          </fareSource>
        </identity>
        <carrier>
```

```xml
      <code>EZY</code>
      <name><![CDATA[easyJet]]></name>
   </carrier>
   <pricingFrom>
      <totalPrice>
         <totalPriceString>EUR 122.97</totalPriceString>
         <currency>
            <code>EUR</code>
            <name>Euro</name>
         </currency>
         <amount>122.97</amount>
      </totalPrice>
      <priceBreakdown>
         <adult count="2">
            <fare>40.99</fare>
            <taxes>0.00</taxes>
            <fees>0.00</fees>
            <total>40.99</total>
         </adult>
         <child count="1">
            <fare>40.99</fare>
            <taxes>0.00</taxes>
            <fees>0.00</fees>
            <total>40.99</total>
         </child>
         <infant count="1">
            <fare>0.00</fare>
            <taxes>0.00</taxes>
            <fees>0.00</fees>
            <total>0.00</total>
         </infant>
      </priceBreakdown>
   </pricingFrom>
</item>
</fareGroups>
<fareOptions groupId="0">
   <fareOption bookId="FLID" value="FL9" NR="1">
      <fare>
         <identity>
            <fareAvId>FL9</fareAvId>
            <fareNumber0>1</fareNumber0>
            <fareId>*VEZMSVZFQExVMkFNU1NUTlg=</fareId>
            <fareSource>
               <code>L</code>
               <name>Low Cost</name>
               <description>Lowcost</description>
               <database>
                  <code>TFUSION</code>
                  <description>Lowcost</description>
               </database>
               <distribution></distribution>
               <adjCode></adjCode>
               <contract></contract>
            </fareSource>
            <fareIsPreferred>No</fareIsPreferred>
            <fareIsSpecial>No</fareIsSpecial>
            <fareIsInclusiveTour>No</fareIsInclusiveTour>
            <fareComment></fareComment>
            <fareGDS>
               <code>TF</code>
               <name>Travelfusion</name>
            </fareGDS>
            <fareGDSaccessCode>TFLIVE</fareGDSaccessCode>
            <fareSupplier></fareSupplier>
            <fareServiceLevel>Economy</fareServiceLevel>
            <fareJourney>OW</fareJourney>
            <farePTC>
               <code>AD</code>
               <name>Adult</name>
            </farePTC>
            <fareBookingClass>X</fareBookingClass>
            <fareAdvancePurchase>
               <code>0</code>
               <description>0 days</description>
            </fareAdvancePurchase>
            <fareMinimumStay>
```

```xml
      <code>0</code>
      <description>0 day(s)</description>
   </fareMinimumStay>
   <fareMaximumStay>
      <code>1Y</code>
      <description>1 year</description>
   </fareMaximumStay>
   <fareBasis>
      <midweek></midweek>
      <weekend></weekend>
   </fareBasis>
   <fareSeason>
      <seasonCode>
      </seasonCode>
      <outbound>
         <start>01JAN00</start>
         <end>31DEC99</end>
      </outbound>
      <inbound>
         <start>01JAN00</start>
         <end>31DEC99</end>
      </inbound>
      <ticket>
         <start>01JAN00</start>
         <end>31DEC99</end>
      </ticket>
   </fareSeason>
   <fareTravelDays>
      <outbound>
         <midweek>MTWTFSS</midweek>
         <weekend>-------</weekend>
      </outbound>
      <inbound>
         <midweek>MTWTFSS</midweek>
         <weekend>-------</weekend>
      </inbound>
   </fareTravelDays>
   <ticketingDeadline></ticketingDeadline>
</identity>
<locality>
   <departure>
      <city>
         <code>AMS</code>
         <name>Amsterdam</name>
      </city>
   </departure>
   <arrival>
      <city>
         <code>STN</code>
         <name>London Stansted</name>
      </city>
   </arrival>
</locality>
<carrier>
   <code>U2</code>
   <name><![CDATA[easyJet]]></name>
</carrier>
<pricing>
   <totalPrice>
      <totalPriceString>EUR 140.97</totalPriceString>
      <currency>
         <code>EUR</code>
         <name>Euro</name>
      </currency>
      <amount>140.97</amount>
   </totalPrice>
   <priceBreakdown>
      <adult count="2">
         <fare>46.99</fare>
         <taxes>0.00</taxes>
         <fees>0.00</fees>
         <total>46.99</total>
      </adult>
      <child count="1">
         <fare>46.99</fare>
         <taxes>0.00</taxes>
```

```xml
            <fees>0.00</fees>
            <total>46.99</total>
          </child>
          <infant count="1">
            <fare>0.00</fare>
            <taxes>0.00</taxes>
            <fees>0.00</fees>
            <total>0.00</total>
          </infant>
        </priceBreakdown>
        <nettNettPrice>
          <currency>
            <code></code>
            <name></name>
          </currency>
          <calculated>1.00</calculated>
          <midweek>1.00</midweek>
          <weekend></weekend>
          <extraWeekend></extraWeekend>
        </nettNettPrice>
        <nettPrice>
          <currency>
            <code></code>
            <name></name>
          </currency>
          <calculated>1.00</calculated>
          <midweek>1.00</midweek>
          <weekend></weekend>
          <extraWeekend></extraWeekend>
        </nettPrice>
        <sellPrice>
          <currency>
            <code>EUR</code>
            <name>Euro</name>
          </currency>
          <calculated>1.00</calculated>
          <midweek>1.00</midweek>
          <weekend></weekend>
          <extraWeekend></extraWeekend>
        </sellPrice>
      </pricing>
      <travelPolicyCompliance/>
      <routingString>via *U2</routingString>
    </fare>
  </fareOption>
</fareOptions>
<flightOptions>
  <flightSegments segmentNo="1">
    <departDate>Wed 07 Sep 2011</departDate>
    <departCity>AMSTERDAM, Netherlands</departCity>
    <arriveCity>LONDON, United Kingdom</arriveCity>
    <AvOption bookId="OID1" value="40">
      <flight id="40">
        <leg>
          <bookId>OID1</bookId>
          <value>40</value>
          <number>1</number>
          <route>1</route>
        </leg>
        <carrier>
          <code>U2</code>
          <name><![CDATA[easyJet]]></name>
        </carrier>
        <flightCode>EZY 3002</flightCode>
        <codeShared>0</codeShared>
        <operator>
          <code>
          </code>
          <name></name>
        </operator>
        <equipment>
          <code>
          </code>
          <name><![CDATA[]]></name>
        </equipment>
        <departure>
```

```xml
            <date>2011-09-07</date>
            <time>09:30:00</time>
            <checkInTimeMinutes>120</checkInTimeMinutes>
            <city>
               <code>AMS</code>
               <name>Amsterdam</name>
            </city>
         </departure>
         <arrival>
            <date>2011-09-07</date>
            <time>09:35:00</time>
            <dayOffset></dayOffset>
            <city>
               <code>STN</code>
               <name>London Stansted</name>
            </city>
         </arrival>
         <stops>0</stops>
         <classCodeList>
            <item>
               <code>X</code>
               <name>Economy</name>
            </item>
         </classCodeList>
         <notes></notes>
      </flight>
      <bestPrice>47</bestPrice>
      <bestWeight>0</bestWeight>
   </AvOption>
 </flightSegments>
 </flightOptions>
 <fareFlightLinks>
    <i f="FL9">
       <s n="1" a="40"/>
    </i>
 </fareFlightLinks>
 </searchResults>
</TWSResponse>
```

Within the XML response the faregroups section contains the information needed for the pricing matrix shown on top in ATPOnline. This is being followed by the fare options. This contains all information needed about the fare itself. After the fareoptions the flightoptions are available. This contains all of the information about the flight itself such as departure date, flight number etc. It also contains the lowest available price we were able to find for that flight. This is being returned in the bestPrice node.

The fare options and flight options are bound together using the fareFlightLinks. Within the XML they look as followed:

```xml
   <i f="FL9">
      <s n="1" a="40"/>
   </i>
```

In this case the fareoption with the value FL9 is bound to the availability option with the value of 40 meaning that the flight (EZY 3002 departing at 07-09-2011 at 9:30 from Amsterdam to London Stansted on the Economy class) has a price of EUR 140.97.

2.2. DOING A RETURN FLIGHT SEARCH

Now let look at the return flight search using our API. We are doing this search using the following parameters:

- 1 adult
- Departs from Amsterdam
- Going to London stanstead
- Departing at: 07-september-2011
- Return at: 14-september-2011
- Preferred carrier Easyjet

This will be the following XML request.

```xml
<TWSRequest>
    <actionCode>FLIGHTSEARCH</actionCode>
    <subaction>CF</subaction>
    <tid>IBEXDEV:NLX-1B440YOTPA-T</tid>
    <tripType>return</tripType>
    <withExtraFareFlightLinks>1</withExtraFareFlightLinks>
    <sendTinyFareFlightLinks>1</sendTinyFareFlightLinks>
    <withContinuousFlightsUpdating>1</withContinuousFlightsUpdating>
    <dateVariable>False</dateVariable>
    <directFlightsPreferred>0</directFlightsPreferred>
    <preferredCarrier>U2</preferredCarrier>
    <serviceLevel></serviceLevel>
    <numberAdult>1</numberAdult>
    <numberChild>0</numberChild>
    <numberInfant>0</numberInfant>
    <departCity1>AMS</departCity1>
    <arriveCity1>STN</arriveCity1>
    <departDay1>07</departDay1>
    <departMonth1>092011</departMonth1>
    <departTime1>0000</departTime1>
    <departTime2>0000</departTime2>
    <departDay2>14</departDay2>
    <departMonth2>092011</departMonth2>
</TWSRequest>
```

This will return the following XML response. The response showed below only contains the actual flightsearch response. The original response also returns parts of the transaction, request made and the content of the current active booking.

```xml
<TWSResponse schema="AS2CF">
    <searchResults handler="FLIGHTSEARCH" searchType="CF">
        <departCity>AMSTERDAM, Netherlands</departCity>
        <arriveCity>LONDON, United Kingdom</arriveCity>
        <departDate>Wed 07 Sep 2011</departDate>
        <returnDate>Wed 14 Sep 2011</returnDate>
        <fareGroups count="1">
            <item groupId="1" active="No">
                <identity>
                    <fareSource>
                        <code>L</code>
                        <name>Lowcost</name>
                        <description>Lowcost</description>
                        <database>
                            <code>TFUSION</code>
                            <description>Lowcost</description>
                        </database>
                        <destribution/>
                        <adjCode/>
                    </fareSource>
                </identity>
```

```xml
            <carrier>
               <code>EZY</code>
               <name><![CDATA[easyJet]]></name>
            </carrier>
            <pricingFrom>
               <totalPrice>
                  <totalPriceString>EUR 73.70</totalPriceString>
                  <currency>
                     <code>EUR</code>
                     <name>Euro</name>
                  </currency>
                  <amount>73.70</amount>
               </totalPrice>
               <priceBreakdown>
                  <adult count="1">
                     <fare>59.98</fare>
                     <taxes>13.72</taxes>
                     <fees>0.00</fees>
                     <total>73.70</total>
                  </adult>
                  <child count="0">
                     <fare>0.00</fare>
                     <taxes>0.00</taxes>
                     <fees>0.00</fees>
                     <total>0.00</total>
                  </child>
                  <infant count="0">
                     <fare>0.00</fare>
                     <taxes>0.00</taxes>
                     <fees>0.00</fees>
                     <total>0.00</total>
                  </infant>
               </priceBreakdown>
            </pricingFrom>
         </item>
      </fareGroups>
      <fareOptions groupId="0">
         <fareOption bookId="FLID" value="FL10" NR="2">
            <fare>
               <identity>
                  <fareAvId>FL10</fareAvId>
                  <fareNumber0>1</fareNumber0>
                  <fareId>*VEZMSVZFQExVMkFNU1NUTlg=</fareId>
                  <fareSource>
                     <code>L</code>
                     <name>Low Cost</name>
                     <description>Lowcost</description>
                     <database>
                        <code>TFUSION</code>
                        <description>Lowcost</description>
                     </database>
                     <distribution></distribution>
                     <adjCode></adjCode>
                     <contract></contract>
                  </fareSource>
                  <fareIsPreferred>No</fareIsPreferred>
                  <fareIsSpecial>No</fareIsSpecial>
                  <fareIsInclusiveTour>No</fareIsInclusiveTour>
                  <fareComment></fareComment>
                  <fareGDS>
                     <code>TF</code>
                     <name>Travelfusion</name>
                  </fareGDS>
                  <fareGDSaccessCode>TFLIVE</fareGDSaccessCode>
                  <fareSupplier></fareSupplier>
                  <fareServiceLevel>Economy</fareServiceLevel>
                  <fareJourney>RT</fareJourney>
                  <farePTC>
                     <code>AD</code>
                     <name>Adult</name>
                  </farePTC>
                  <fareBookingClass>X</fareBookingClass>
                  <fareAdvancePurchase>
                     <code>0</code>
                     <description>0 days</description>
                  </fareAdvancePurchase>
```

```xml
<fareMinimumStay>
    <code>0</code>
    <description>0 day(s)</description>
</fareMinimumStay>
<fareMaximumStay>
    <code>1Y</code>
    <description>1 year</description>
</fareMaximumStay>
<fareBasis>
    <midweek></midweek>
    <weekend></weekend>
</fareBasis>
<fareSeason>
    <seasonCode>
    </seasonCode>
    <outbound>
        <start>01JAN00</start>
        <end>31DEC99</end>
    </outbound>
    <inbound>
        <start>01JAN00</start>
        <end>31DEC99</end>
    </inbound>
    <ticket>
        <start>01JAN00</start>
        <end>31DEC99</end>
    </ticket>
</fareSeason>
<fareTravelDays>
    <outbound>
        <midweek>MTWTFSS</midweek>
        <weekend>-------</weekend>
    </outbound>
    <inbound>
        <midweek>MTWTFSS</midweek>
        <weekend>-------</weekend>
    </inbound>
</fareTravelDays>
<ticketingDeadline></ticketingDeadline>
</identity>
<locality>
    <departure>
        <city>
            <code>AMS</code>
            <name>Amsterdam</name>
        </city>
    </departure>
    <arrival>
        <city>
            <code>STN</code>
            <name>London Stansted</name>
        </city>
    </arrival>
</locality>
<carrier>
    <code>U2</code>
    <name><![CDATA[easyJet]]></name>
</carrier>
<pricing>
    <totalPrice>
        <totalPriceString>EUR 78.70</totalPriceString>
        <currency>
            <code>EUR</code>
            <name>Euro</name>
        </currency>
        <amount>78.70</amount>
    </totalPrice>
    <priceBreakdown>
        <adult count="1">
            <fare>64.98</fare>
            <taxes>13.72</taxes>
            <fees>0.00</fees>
            <total>78.70</total>
        </adult>
        <child count="0">
            <fare>0.00</fare>
```

```xml
                <taxes>0.00</taxes>
                <fees>0.00</fees>
                <total>0.00</total>
            </child>
            <infant count="0">
                <fare>0.00</fare>
                <taxes>0.00</taxes>
                <fees>0.00</fees>
                <total>0.00</total>
            </infant>
        </priceBreakdown>
        <nettNettPrice>
            <currency>
                <code></code>
                <name></name>
            </currency>
            <calculated>1.00</calculated>
            <midweek>1.00</midweek>
            <weekend></weekend>
            <extraWeekend></extraWeekend>
        </nettNettPrice>
        <nettPrice>
            <currency>
                <code></code>
                <name></name>
            </currency>
            <calculated>1.00</calculated>
            <midweek>1.00</midweek>
            <weekend></weekend>
            <extraWeekend></extraWeekend>
        </nettPrice>
        <sellPrice>
            <currency>
                <code>EUR</code>
                <name>Euro</name>
            </currency>
            <calculated>1.00</calculated>
            <midweek>1.00</midweek>
            <weekend></weekend>
            <extraWeekend></extraWeekend>
        </sellPrice>
    </pricing>
    <travelPolicyCompliance/>
    <routingString>via *U2</routingString>
</fare>
</fareOption>
</fareOptions>
<flightOptions>
    <flightSegments segmentNo="1">
        <departDate>Wed 07 Sep 2011</departDate>
        <departCity>AMSTERDAM, Netherlands</departCity>
        <arriveCity>LONDON, United Kingdom</arriveCity>
        <AvOption bookId="OID1" value="4">
            <flight id="4">
                <leg>
                    <bookId>OID1</bookId>
                    <value>4</value>
                    <number>1</number>
                    <route>1</route>
                </leg>
                <carrier>
                    <code>U2</code>
                    <name><![CDATA[easyJet]]></name>
                </carrier>
                <flightCode>EZY 3010</flightCode>
                <codeShared>0</codeShared>
                <operator>
                    <code>
                    </code>
                    <name></name>
                </operator>
                <equipment>
                    <code>
                    </code>
                    <name><![CDATA[]]></name>
                </equipment>
```

```xml
            <departure>
               <date>2011-09-07</date>
               <time>21:30:00</time>
               <checkInTimeMinutes>120</checkInTimeMinutes>
               <city>
                  <code>AMS</code>
                  <name>Amsterdam</name>
               </city>
            </departure>
            <arrival>
               <date>2011-09-07</date>
               <time>21:35:00</time>
               <dayOffset></dayOffset>
               <city>
                  <code>STN</code>
                  <name>London Stansted</name>
               </city>
            </arrival>
            <stops>0</stops>
            <classCodeList>
               <item>
                  <code>X</code>
                  <name>Economy</name>
               </item>
            </classCodeList>
            <notes></notes>
         </flight>
         <bestPrice>39</bestPrice>
         <bestWeight>0</bestWeight>
      </AvOption>
   </flightSegments>
   <flightSegments segmentNo="2">
      <departDate>Wed 14 Sep 2011</departDate>
      <departCity>LONDON, United Kingdom</departCity>
      <arriveCity>AMSTERDAM, Netherlands</arriveCity>
      <AvOption bookId="OID2" value="8">
         <flight id="8">
            <leg>
               <bookId>OID2</bookId>
               <value>8</value>
               <number>1</number>
               <route>2</route>
            </leg>
            <carrier>
               <code>U2</code>
               <name><![CDATA[easyJet]]></name>
            </carrier>
            <flightCode>EZY 3009</flightCode>
            <codeShared>0</codeShared>
            <operator>
               <code>
               </code>
               <name></name>
            </operator>
            <equipment>
               <code>
               </code>
               <name><![CDATA[]]></name>
            </equipment>
            <departure>
               <date>2011-09-14</date>
               <time>19:05:00</time>
               <checkInTimeMinutes>120</checkInTimeMinutes>
               <city>
                  <code>STN</code>
                  <name>London Stansted</name>
               </city>
            </departure>
            <arrival>
               <date>2011-09-14</date>
               <time>21:10:00</time>
               <dayOffset></dayOffset>
               <city>
                  <code>AMS</code>
                  <name>Amsterdam</name>
               </city>
```

```xml
          </arrival>
          <stops>0</stops>
          <classCodeList>
             <item>
                <code>X</code>
                <name>Economy</name>
             </item>
          </classCodeList>
          <notes></notes>
        </flight>
        <bestPrice>37</bestPrice>
        <bestWeight>0</bestWeight>
      </AvOption>
    </flightSegments>
  </flightOptions>
  <fareFlightLinks>
    <i f="FL10">
        <s n="1" a="4"/>
        <s n="2" a="8"/>
    </i>
  </fareFlightLinks>
 </searchResults>
</TWSResponse>
```

Within the XML response the faregroups section contains the information needed for the pricing matrix shown on top in ATPOnline. This is being followed by the fare options. This contains all information needed about the fare itself. After the fareoptions the flightoptions are available. This contains all of the information about the flight itself such as departure date, flight number etc. It also contains the lowest available price we were able to find for that flight. This is being returned in the bestPrice node.

The fare options and flight options are bound together using the fareFlightLinks. Within the XML they look as followed:

```xml
<i f="FL10">
    <s n="1" a="4"/>
    <s n="2" a="8"/>
</i>
```

In this case the fareoption with the value FL10 is bound to the availability options with the values 4 and 8 meaning that the flights

EZY 3010 departing at 07-09-2011 at 21:30 from AMS to STN on Economy class
EZY 3009 departing at 14-09-2011 at 19:05 from STN to AMS on Economy class

have a price of EUR 78.70

2.3. DOING A ROUNDTRIP FLIGHT SEARCH

Now let look at the roundtrip flight search using our API. We are doing this search using the following parameters:

- 1 adult
- First leg: AMS-PAR 03-08-2011
- Second leg: PAR-TXL 04-08-2011
- Third leg: TXL-AMS 05-08-2011
- Airline: LH

This will be the following XML request.

```xml
<TWSRequest>
  <actionCode>FLIGHTSEARCH</actionCode>
  <subaction>AV</subaction>
  <tripType>MULTILEG</tripType>
  <tid>IBEXDEV:NLX-1B466K9NB5-T</tid>
  <numberAdult>1</numberAdult>
  <numberChild>0</numberChild>
  <numberInfant>0</numberInfant>
  <dateVariable>False</dateVariable>
  <directFlightsPreferred>0</directFlightsPreferred>
  <preferredCarrier>LH</preferredCarrier>
  <serviceLevel></serviceLevel>
  <departCity1>AMS</departCity1>
  <arriveCity1>PAR</arriveCity1>
  <departDay1>03</departDay1>
  <departMonth1>082011</departMonth1>
  <departTime1>0000</departTime1>
  <departCity2>PAR</departCity2>
  <arriveCity2>TXL</arriveCity2>
  <departDay2>04</departDay2>
  <departMonth2>082011</departMonth2>
  <departTime2>0000</departTime2>
  <departCity3>TXL</departCity3>
  <arriveCity3>AMS</arriveCity3>
  <departDay3>05</departDay3>
  <departMonth3>082011</departMonth3>
  <departTime3>0000</departTime3>
</TWSRequest>
```

Notice within the flight search request the action is now AV and the order of parsing the city codes and departure dates. This request leads to the following response.

```xml
<TWSResponse schema="AS2AV">
  <searchResults handler="FLIGHTSEARCH" searchType="AV">
    <departCity>AMSTERDAM, Netherlands</departCity>
    <arriveCity>PARIS AREA, France</arriveCity>
    <departDate>Wed 03 Aug 2011</departDate>
    <returnDate>Thu 04 Aug 2011</returnDate>
    <flightOptions>
      <flightSegments segmentNo="1">
        <departDate>Wed 03 Aug 2011</departDate>
        <departCity>AMSTERDAM, Netherlands</departCity>
        <arriveCity>PARIS AREA, France</arriveCity>
        <AvOption bookId="OID1" value="59">
```

```xml
        <flight id="59">
            <leg>
                <bookId>OID1</bookId>
                <value>59</value>
                <number>1</number>
                <route>1</route>
            </leg>
            <carrier>
                <code>LH</code>
                <name><![CDATA[Lufthansa]]></name>
            </carrier>
            <flightCode>LH 1003</flightCode>
            <codeShared>0</codeShared>
            <operator>
                <code>
                </code>
                <name></name>
            </operator>
            <equipment>
                <code>319</code>
                <name><![CDATA[Airbus A319]]></name>
            </equipment>
            <departure>
                <date>2011-08-03</date>
                <time>07:05:00</time>
                <checkInTimeMinutes>90</checkInTimeMinutes>
                <city>
                    <code>AMS</code>
                    <name>Amsterdam</name>
                </city>
            </departure>
            <arrival>
                <date>2011-08-03</date>
                <time>08:15:00</time>
                <dayOffset></dayOffset>
                <city>
                    <code>FRA</code>
                    <name>Frankfurt Intl</name>
                </city>
            </arrival>
            <stops>0</stops>
            <classCodeList>
                <item>
                    <code>W</code>
                    <name>Economy</name>
                </item>
            </classCodeList>
            <notes></notes>
        </flight>
    </flightSegments>
    <flightSegments segmentNo="2">
        <departDate>Thu 04 Aug 2011</departDate>
        <departCity>PARIS AREA, France</departCity>
        <arriveCity>BERLIN, Germany</arriveCity>
        <AvOption bookId="OID2" value="68">
            <flight id="68">
                <leg>
                    <bookId>OID2</bookId>
                    <value>68</value>
                    <number>1</number>
                    <route>2</route>
                </leg>
                <carrier>
                    <code>LH</code>
                    <name><![CDATA[Lufthansa]]></name>
                </carrier>
                <flightCode>LH 3243</flightCode>
                <codeShared>0</codeShared>
                <operator>
                    <code>
                    </code>
                    <name></name>
                </operator>
                <equipment>
                    <code>733</code>
                    <name><![CDATA[Boeing 737-300]]></name>
```

```xml
        </equipment>
        <departure>
          <date>2011-08-04</date>
          <time>15:15:00</time>
          <checkInTimeMinutes>60</checkInTimeMinutes>
          <city>
            <code>CDG</code>
            <name>Paris C De Gaulle</name>
          </city>
        </departure>
        <arrival>
          <date>2011-08-04</date>
          <time>16:50:00</time>
          <dayOffset></dayOffset>
          <city>
            <code>TXL</code>
            <name>Berlin Tegel</name>
          </city>
        </arrival>
        <stops>0</stops>
        <classCodeList>
          <item>
            <code>K</code>
            <name>Economy</name>
          </item>
        </classCodeList>
        <notes></notes>
      </flight>
      <bestPrice></bestPrice>
      <bestWeight>0</bestWeight>
    </AvOption>
</flightSegments>
<flightSegments segmentNo="3">
  <departDate>Fri 05 Aug 2011</departDate>
  <departCity>BERLIN, Germany</departCity>
  <arriveCity>AMSTERDAM, Netherlands</arriveCity>
  <AvOption bookId="OID3" value="81">
    <flight id="81">
      <leg>
        <bookId>OID3</bookId>
        <value>81</value>
        <number>1</number>
        <route>3</route>
      </leg>
      <carrier>
        <code>LH</code>
        <name><![CDATA[Lufthansa]]></name>
      </carrier>
      <flightCode>LH 171</flightCode>
      <codeShared>0</codeShared>
      <operator>
        <code>
        </code>
        <name></name>
      </operator>
      <equipment>
        <code>320</code>
        <name><![CDATA[Airbus A320-100/200]]></name>
      </equipment>
      <departure>
        <date>2011-08-05</date>
        <time>06:05:00</time>
        <checkInTimeMinutes>60</checkInTimeMinutes>
        <city>
          <code>TXL</code>
          <name>Berlin Tegel</name>
        </city>
      </departure>
      <arrival>
        <date>2011-08-05</date>
        <time>07:15:00</time>
        <dayOffset></dayOffset>
        <city>
          <code>FRA</code>
          <name>Frankfurt Intl</name>
        </city>
      </arrival>
```

```xml
        </arrival>
        <stops>0</stops>
        <classCodeList>
            <item>
                <code>W</code>
                <name>Economy</name>
            </item>
        </classCodeList>
        <notes></notes>
    </flight>
    <flight id="81">
        <leg>
            <bookId>OID3</bookId>
            <value>81</value>
            <number>2</number>
            <route>3</route>
        </leg>
        <carrier>
            <code>LH</code>
            <name><![CDATA[Lufthansa]]></name>
        </carrier>
        <flightCode>LH 988</flightCode>
        <codeShared>0</codeShared>
        <operator>
            <code>
            </code>
            <name></name>
        </operator>
        <equipment>
            <code>733</code>
            <name><![CDATA[Boeing 737-300]]></name>
        </equipment>
        <departure>
            <date>2011-08-05</date>
            <time>08:55:00</time>
            <checkInTimeMinutes>60</checkInTimeMinutes>
            <city>
                <code>FRA</code>
                <name>Frankfurt Intl</name>
            </city>
        </departure>
        <arrival>
            <date>2011-08-05</date>
            <time>10:00:00</time>
            <dayOffset></dayOffset>
            <city>
                <code>AMS</code>
                <name>Amsterdam</name>
            </city>
        </arrival>
        <stops>0</stops>
        <classCodeList>
            <item>
                <code>W</code>
                <name>Economy</name>
            </item>
        </classCodeList>
        <notes></notes>
    </flight>
    <bestPrice></bestPrice>
    <bestWeight>0</bestWeight>
</AvOption>
            </flightSegments>
        </flightOptions>
    </searchResults>
</TWSResponse>
```

2.4. USING THE POLLING MECHANISM DURING THE FLIGHT SEARCH

To poll our API during the flight search the following request can be executed. Please note that the initial flight search request should contain the following:

```xml
<withContinuousFlightsUpdating>1</withContinuousFlightsUpdating>
```

The XML request to do a poll to our system regarding your flight search is

```xml
<TWSRequest>
   <actionCode>FLUSHBUFFER</actionCode>
   <tid>IBEXDEV:ENX-1B41TC9NB5-T</tid>
</TWSRequest>
```

This polling mechanism returns the following response:

```xml
<TWSResponse schema="STREAMBUFFER">
   <BUFFER>[{"type":"TFareAvailabilityOption","data": {"departureCityName":"NEW
YORK","arrivalCityName":"AMSTERDAM","grandTotal":"626.31","carrier":"EI","fareSource":"L","faoId":"FL137"}},{"t
ype":"TFareAvailabilityOption","data": {"departureCityName":"NEW
YORK","arrivalCityName":"AMSTERDAM","grandTotal":"1232.32","carrier":"EI","fareSource":"L","faoId":"FL138"}},{"
type":"TFareAvailabilityOption","data": {"departureCityName":"NEW
YORK","arrivalCityName":"AMSTERDAM","grandTotal":"499.32","carrier":"EI","fareSource":"L","faoId":"FL139"}},{"t
ype":"TFareAvailabilityOption","data": {"departureCityName":"NEW
YORK","arrivalCityName":"AMSTERDAM","grandTotal":"1359.31","carrier":"EI","fareSource":"L","faoId":"FL140"}},{"
type":"TFareAvailabilityOption","data": {"departureCityName":"NEW
YORK","arrivalCityName":"AMSTERDAM","grandTotal":"1965.32","carrier":"EI","fareSource":"L","faoId":"FL141"}}]</
BUFFER>
   <status>1</status>
   <action>completeFare</action>
   <comment>Process Fares</comment>
   <schposit>36</schposit>
   <schtotal>260</schtotal>
   <schpercent>13</schpercent>
   <resposit>5</resposit>
   <restotal>619</restotal>
   <respercent>0</respercent>
   <respercent10></respercent10>
   <timeelapse>5</timeelapse>
   <timeremain>25</timeremain>
   <timefinish>30</timefinish>
   <timepercent>16</timepercent>
</TWSResponse>
```

An overview of what has been found is stored in the BUFFER part of the response.

The polling mechanism should be stopped when the action changes to "ready". This means that the API has done searching flights and there will be no more data available.

2.5. GETTING THE TIMETABLES

Timetables are available from within our system. Please note that we aren't able to get all of the timetables out of the GDS. We are gathering the timetables based on the frequency of use in flight searches. So for popular destinations we are getting more timetables.To get the timetable from our API the following XML command can be used.

```xml
<TWSRequest>
    <actionCode>QRTW</actionCode>
    <subAction>FLIGHTTIMETABLES</subAction>
    <tid>IBEXDEV:ENX-1B43PU9NB5-T</tid>
    <departCode>AMS</departCode>
    <arriveCode>NYC</arriveCode>
    <departDate>20110907</departDate>
    <weeks>2</weeks>
    <carrier></carrier>
    <carrier2></carrier2>
    <carrier3></carrier3>
    <excludeCodeshare>0</excludeCodeshare>
</TWSRequest>
```

This request returns the following response:

```xml
<TWSResponse schema="flightTimeTables">
    <searchResults>
        <flight>
            <departure>
                <dateStart>2011-09-05</dateStart>
                <city>
                    <code>AMS</code>
                    <name>Amsterdam</name>
                </city>
                <airport>
                    <code>AMS</code>
                    <name>Amsterdam</name>
                </airport>
                <time>0915</time>
            </departure>
            <arrival>
                <city>
                    <code>NYC</code>
                    <name>New York</name>
                </city>
                <airport>
                    <code>EWR</code>
                    <name>New York Newark</name>
                </airport>
                <time>1140</time>
                <dateOffset>0</dateOffset>
            </arrival>
            <carrier>
                <code>CO</code>
                <name>Continental Airlines</name>
            </carrier>
            <flightCode>CO 71</flightCode>
            <codeShared>false</codeShared>
            <stops>0</stops>
            <daysOperating>
                <weekString>MTWTFSS</weekString>
                <Days_Mo>TRUE</Days_Mo>
                <Days_Tu>TRUE</Days_Tu>
                <Days_We>TRUE</Days_We>
                <Days_Th>TRUE</Days_Th>
                <Days_Fr>TRUE</Days_Fr>
                <Days_Sa>TRUE</Days_Sa>
                <Days_Su>TRUE</Days_Su>
            </daysOperating>
        </flight>
        <flight>
```

```xml
        <departure>
          <dateStart>2011-09-05</dateStart>
          <city>
             <code>AMS</code>
             <name>Amsterdam</name>
          </city>
          <airport>
             <code>AMS</code>
             <name>Amsterdam</name>
          </airport>
          <time>0915</time>
        </departure>
        <arrival>
          <city>
             <code>NYC</code>
             <name>New York</name>
          </city>
          <airport>
             <code>EWR</code>
             <name>New York Newark</name>
          </airport>
          <time>1140</time>
          <dateOffset>0</dateOffset>
        </arrival>
        <carrier>
          <code>LH</code>
          <name>Lufthansa</name>
        </carrier>
        <flightCode>LH7963</flightCode>
        <codeShared>TRUE</codeShared>
        <stops>0</stops>
        <daysOperating>
          <weekString>MTWTFSS</weekString>
          <Days_Mo>TRUE</Days_Mo>
          <Days_Tu>TRUE</Days_Tu>
          <Days_We>TRUE</Days_We>
          <Days_Th>TRUE</Days_Th>
          <Days_Fr>TRUE</Days_Fr>
          <Days_Sa>TRUE</Days_Sa>
          <Days_Su>TRUE</Days_Su>
        </daysOperating>
      </flight>
   </searchResults>
</TWSResponse>
```

2.6.   DOING A JUST-FARES SEARCH

The Just-Fares search is used to get an overview of available fares on a route. To get this overview the following XML request needs to be executed:

```xml
<TWSRequest>
   <actionCode>FLIGHTSEARCH</actionCode>
   <subaction>JF</subaction>
   <tid>IBEXDEV:ENX-1B43PU9NB5-T</tid>
   <tripType>return</tripType>
   <numberAdult>1</numberAdult>
   <numberChild>0</numberChild>
   <numberInfant>0</numberInfant>
   <dateVariable>False</dateVariable>
   <directFlightsPreferred>0</directFlightsPreferred>
   <preferredCarrier></preferredCarrier>
   <serviceLevel></serviceLevel>
   <departCity1>AMS</departCity1>
   <departDay1>09</departDay1>
   <departMonth1>082011</departMonth1>
   <departTime1>0900</departTime1>
   <arriveCity1>BCN</arriveCity1>
   <departDay2>12</departDay2>
   <departMonth2>082011</departMonth2>
   <departTime2>0000</departTime2>
</TWSRequest>
```

This will lead to the following XML response:

```xml
<TWSResponse schema="AS2JF">
   <searchResults handler="FLIGHTSEARCH" searchType="JF">
      <departCity>AMSTERDAM, Netherlands</departCity>
      <arriveCity>BARCELONA, Spain</arriveCity>
      <departDate>Tue 09 Aug 2011</departDate>
      <returnDate>Fri 12 Aug 2011</returnDate>
      <fareObject>
         <id>*MUc3SDA5OkFDI0FIQUtAUElCQU1TQkNOUFBSVE5WWQ==</id>
        <data>
           <identity>
              <fareAvId></fareAvId>
              <fareNumber0>2</fareNumber0>
              <fareId>*MUc3SDA5OkFDI0FIQUtAUElCQU1TQkNOUFBSVE5WWQ==</fareId>
              <fareSource>
                 <code>P</code>
                 <name>Published</name>
                 <description>Published</description>
                 <database>
                    <code>PUB</code>
                    <description>Published</description>
                 </database>
                 <distribution></distribution>
                 <adjCode></adjCode>
                 <contract>PRTNVY</contract>
              </fareSource>
              <fareIsPreferred>No</fareIsPreferred>
              <fareIsSpecial>No</fareIsSpecial>
              <fareIsInclusiveTour>No</fareIsInclusiveTour>
              <fareComment></fareComment>
              <fareGDS>
                 <code>1G</code>
                 <name>Galileo</name>
              </fareGDS>
              <fareGDSaccessCode>1G7H09</fareGDSaccessCode>
              <fareSupplier></fareSupplier>
              <fareServiceLevel>Economy</fareServiceLevel>
              <fareJourney>RT</fareJourney>
              <farePTC>
                 <code>AD</code>
                 <name>Adult</name>
              </farePTC>
              <fareBookingClass>P</fareBookingClass>
```

```xml
      <fareAdvancePurchase>
        <code>+</code>
        <description></description>
      </fareAdvancePurchase>
      <fareMinimumStay>
        <code>
        </code>
        <description>none</description>
      </fareMinimumStay>
      <fareMaximumStay>
        <code>12M</code>
        <description>12 months</description>
      </fareMaximumStay>
      <fareBasis>
        <midweek>PRTNVY</midweek>
        <weekend></weekend>
      </fareBasis>
      <fareSeason>
        <seasonCode>
        </seasonCode>
        <outbound>
          <start></start>
          <end></end>
        </outbound>
        <inbound>
          <start></start>
          <end></end>
        </inbound>
        <ticket>
          <start></start>
          <end>01JAN00</end>
        </ticket>
      </fareSeason>
      <fareTravelDays>
        <outbound>
          <midweek>MTWTFSS</midweek>
          <weekend>-------</weekend>
        </outbound>
        <inbound>
          <midweek>MTWTFSS</midweek>
          <weekend>-------</weekend>
        </inbound>
      </fareTravelDays>
      <ticketingDeadline></ticketingDeadline>
    </identity>
    <locality>
      <departure>
        <city>
          <code>AMS</code>
          <name>Amsterdam</name>
        </city>
      </departure>
      <arrival>
        <city>
          <code>BCN</code>
          <name>Barcelona</name>
        </city>
      </arrival>
    </locality>
    <carrier>
      <code>IB</code>
      <name><![CDATA[Iberia]]></name>
    </carrier>
    <pricing>
      <totalPrice>
        <totalPriceString>EUR 0.00</totalPriceString>
        <currency>
          <code>EUR</code>
          <name>Euro</name>
        </currency>
        <amount>0.00</amount>
      </totalPrice>
      <priceBreakdown>
        <adult count="1">
          <fare>0.00</fare>
          <taxes>0.00</taxes>
```

```xml
                    <fees>0.00</fees>
                    <total>0.00</total>
                </adult>
                <child count="0">
                    <fare>0.00</fare>
                    <taxes>0.00</taxes>
                    <fees>0.00</fees>
                    <total>0.00</total>
                </child>
                <infant count="0">
                    <fare>0.00</fare>
                    <taxes>0.00</taxes>
                    <fees>0.00</fees>
                    <total>0.00</total>
                </infant>
            </priceBreakdown>
            <nettNettPrice>
                <currency>
                    <code>EUR</code>
                    <name>Euro</name>
                </currency>
                <calculated>16.00</calculated>
                <midweek>16.00</midweek>
                <weekend></weekend>
                <extraWeekend></extraWeekend>
            </nettNettPrice>
            <nettPrice>
                <currency>
                    <code>EUR</code>
                    <name>Euro</name>
                </currency>
                <calculated>16.00</calculated>
                <midweek>16.00</midweek>
                <weekend></weekend>
                <extraWeekend></extraWeekend>
            </nettPrice>
            <sellPrice>
                <currency>
                    <code>EUR</code>
                    <name>Euro</name>
                </currency>
                <calculated>16.00</calculated>
                <midweek>16.00</midweek>
                <weekend></weekend>
                <extraWeekend></extraWeekend>
            </sellPrice>
        </pricing>
    </data>
</fareObject>
<fareObject>
    <id>*MUc3SDA5OkFDI0FIQUtAUElCQU1TQkNOOUFBSWU5WWQ==</id>
    <data>
        <identity>
            <fareAvId></fareAvId>
            <fareNumber0>3</fareNumber0>
            <fareId>*MUc3SDA5OkFDI0FIQUtAUElCQU1TQkNOOUFBSWU5WWQ==</fareId>
            <fareSource>
                <code>P</code>
                <name>Published</name>
                <description>Published</description>
                <database>
                    <code>PUB</code>
                    <description>Published</description>
                </database>
                <distribution></distribution>
                <adjCode></adjCode>
                <contract>PRYNVY</contract>
            </fareSource>
            <fareIsPreferred>No</fareIsPreferred>
            <fareIsSpecial>No</fareIsSpecial>
            <fareIsInclusiveTour>No</fareIsInclusiveTour>
            <fareComment></fareComment>
            <fareGDS>
                <code>1G</code>
                <name>Galileo</name>
            </fareGDS>
```

```xml
<fareGDSaccessCode>1G7H09</fareGDSaccessCode>
<fareSupplier></fareSupplier>
<fareServiceLevel>Economy</fareServiceLevel>
<fareJourney>RT</fareJourney>
<farePTC>
    <code>AD</code>
    <name>Adult</name>
</farePTC>
<fareBookingClass>P</fareBookingClass>
<fareAdvancePurchase>
    <code>+</code>
    <description></description>
</fareAdvancePurchase>
<fareMinimumStay>
    <code>
    </code>
    <description>none</description>
</fareMinimumStay>
<fareMaximumStay>
    <code>12M</code>
    <description>12 months</description>
</fareMaximumStay>
<fareBasis>
    <midweek>PRYNVY</midweek>
    <weekend></weekend>
</fareBasis>
<fareSeason>
    <seasonCode>
    </seasonCode>
    <outbound>
        <start></start>
        <end></end>
    </outbound>
    <inbound>
        <start></start>
        <end></end>
    </inbound>
    <ticket>
        <start></start>
        <end>01JAN00</end>
    </ticket>
</fareSeason>
<fareTravelDays>
    <outbound>
        <midweek>MTWTFSS</midweek>
        <weekend>-------</weekend>
    </outbound>
    <inbound>
        <midweek>MTWTFSS</midweek>
        <weekend>-------</weekend>
    </inbound>
</fareTravelDays>
<ticketingDeadline></ticketingDeadline>
</identity>
<locality>
    <departure>
        <city>
            <code>AMS</code>
            <name>Amsterdam</name>
        </city>
    </departure>
    <arrival>
        <city>
            <code>BCN</code>
            <name>Barcelona</name>
        </city>
    </arrival>
</locality>
<carrier>
    <code>IB</code>
    <name><![CDATA[Iberia]]></name>
</carrier>
<pricing>
    <totalPrice>
        <totalPriceString>EUR 0.00</totalPriceString>
        <currency>
```

```xml
            <code>EUR</code>
            <name>Euro</name>
          </currency>
          <amount>0.00</amount>
        </totalPrice>
        <priceBreakdown>
          <adult count="1">
            <fare>0.00</fare>
            <taxes>0.00</taxes>
            <fees>0.00</fees>
            <total>0.00</total>
          </adult>
          <child count="0">
            <fare>0.00</fare>
            <taxes>0.00</taxes>
            <fees>0.00</fees>
            <total>0.00</total>
          </child>
          <infant count="0">
            <fare>0.00</fare>
            <taxes>0.00</taxes>
            <fees>0.00</fees>
            <total>0.00</total>
          </infant>
        </priceBreakdown>
        <nettNettPrice>
          <currency>
            <code>EUR</code>
            <name>Euro</name>
          </currency>
          <calculated>16.00</calculated>
          <midweek>16.00</midweek>
          <weekend></weekend>
          <extraWeekend></extraWeekend>
        </nettNettPrice>
        <nettPrice>
          <currency>
            <code>EUR</code>
            <name>Euro</name>
          </currency>
          <calculated>16.00</calculated>
          <midweek>16.00</midweek>
          <weekend></weekend>
          <extraWeekend></extraWeekend>
        </nettPrice>
        <sellPrice>
          <currency>
            <code>EUR</code>
            <name>Euro</name>
          </currency>
          <calculated>16.00</calculated>
          <midweek>16.00</midweek>
          <weekend></weekend>
          <extraWeekend></extraWeekend>
        </sellPrice>
      </pricing>
    </data>
  </fareObject>
</searchResults>
</TWSResponse>
```

For each fare found in the GDS a fare node is being created. This fare node contains all information needed to know about a particular fare such as the faresource, servicelevel, min-max stay etc.

2.7. DOING A AVAIL SEARCH

The AV search is used to do a flight availability search which is sorted on time. To get this overview the following XML request needs to be executed:

```xml
<TWSRequest>
  <actionCode>FLIGHTSEARCH</actionCode>
  <subAction>AV</subAction>
  <tid>MOBIBEX:ENX-1C1UAV01U7-T</tid>
  <trip>Return</trip>
  <departCity1>AMS</departCity1>
  <arriveCity1>BCN</arriveCity1>
  <departDay1>12</departDay1>
  <departMonth1>122011</departMonth1>
  <departTime1>1000</departTime1>
  <departDay2>18</departDay2>
  <departMonth2>122011</departMonth2>
  <departTime2>1600</departTime2>
</TWSRequest>
```

This will lead to the following XML response:

```xml
<TWSResponse schema="AS2AV">
  <data>
    <sr handler="FLIGHTSEARCH" st="AV">
      <cd>AMSTERDAM, Netherlands</cd>
      <ca>BARCELONA, Spain</ca>
      <dd>Mon 12 Dec 2011</dd>
      <rd>Sun 18 Dec 2011</rd>
      <flightOptions>
        <segments segmentNo="1">
          <depDate>Mon 12 Dec 2011</depDate>
          <depCity>AMSTERDAM, Netherlands</depCity>
          <arrCity>BARCELONA, Spain</arrCity>
          <AvOption bookId="OID1" quotedOn="True" value="21">
            <flight id="21">
              <leg>
                <bookId>OID1</bookId>
                <value>21</value>
                <number>1</number>
                <route>1</route>
              </leg>
              <cx>
                <code>VY</code>
                <name>Vueling Airlines</name>
              </cx>
              <fc>VY 8323</fc>
              <csv>0</csv>
              <operator>
                <code>
                </code>
                <name></name>
              </operator>
              <equip>
                <code>320</code>
                <name>Airbus A320-100/200</name>
              </equip>
              <dep>
                <date>2011-12-12</date>
                <time>07:20:00</time>
                <checkInTimeMinutes>60</checkInTimeMinutes>
                <city>
                  <code>AMS</code>
                  <name>Amsterdam</name>
                </city>
              </dep>
              <arr>
                <date>2011-12-12</date>
                <time>09:30:00</time>
                <dayOffset></dayOffset>
```

```xml
                <city>
                    <code>BCN</code>
                    <name>Barcelona</name>
                </city>
            </arr>
            <stops>0</stops>
            <clCodes>
                <item>
                    <code>Q</code>
                    <name>Economy</name>
                </item>
            </clCodes>
            <notes></notes>
        </flight>
        <bestPrice></bestPrice>
        <bestWeight>0</bestWeight>
    </AvOption>
    <AvOption bookId="OID1" quotedOn="False" value="22">
        <flight id="22">
            <leg>
                <bookId>OID1</bookId>
                <value>22</value>
                <number>1</number>
                <route>1</route>
            </leg>
            <cx>
                <code>KL</code>
                <name>KLM</name>
            </cx>
            <fc>KL 1665</fc>
            <csv>0</csv>
            <operator>
                <code>
                </code>
                <name></name>
            </operator>
            <equip>
                <code>737</code>
                <name>Boeing 737</name>
            </equip>
            <dep>
                <date>2011-12-12</date>
                <time>08:00:00</time>
                <checkInTimeMinutes>60</checkInTimeMinutes>
                <city>
                    <code>AMS</code>
                    <name>Amsterdam</name>
                </city>
            </dep>
            <arr>
                <date>2011-12-12</date>
                <time>10:15:00</time>
                <dayOffset></dayOffset>
                <city>
                    <code>BCN</code>
                    <name>Barcelona</name>
                </city>
            </arr>
            <stops>0</stops>
            <clCodes>
                <item>
                    <code>T</code>
                    <name>Economy</name>
                </item>
            </clCodes>
            <notes></notes>
        </flight>
        <bestPrice></bestPrice>
        <bestWeight>0</bestWeight>
    </AvOption>
</segments>
<segments segmentNo="2">
    <depDate>Sun 18 Dec 2011</depDate>
    <depCity>BARCELONA, Spain</depCity>
    <arrCity>AMSTERDAM, Netherlands</arrCity>
    <AvOption bookId="OID2" quotedOn="True" value="34">
```

```xml
<flight id="34">
    <leg>
        <bookId>OID2</bookId>
        <value>34</value>
        <number>1</number>
        <route>2</route>
    </leg>
    <cx>
        <code>KL</code>
        <name>KLM</name>
    </cx>
    <fc>KL 1672</fc>
    <csv>0</csv>
    <operator>
        <code>
        </code>
        <name></name>
    </operator>
    <equip>
        <code>737</code>
        <name>Boeing 737</name>
    </equip>
    <dep>
        <date>2011-12-18</date>
        <time>13:15:00</time>
        <checkInTimeMinutes>60</checkInTimeMinutes>
        <city>
            <code>BCN</code>
            <name>Barcelona</name>
        </city>
    </dep>
    <arr>
        <date>2011-12-18</date>
        <time>15:35:00</time>
        <dayOffset></dayOffset>
        <city>
            <code>AMS</code>
            <name>Amsterdam</name>
        </city>
    </arr>
    <stops>0</stops>
    <clCodes>
        <item>
            <code>G</code>
            <name>Economy</name>
        </item>
    </clCodes>
    <notes></notes>
</flight>
<bestPrice></bestPrice>
<bestWeight>0</bestWeight>
</AvOption>
<AvOption bookId="OID2" quotedOn="False" value="35">
    <flight id="35">
        <leg>
            <bookId>OID2</bookId>
            <value>35</value>
            <number>1</number>
            <route>2</route>
        </leg>
        <cx>
            <code>VY</code>
            <name>Vueling Airlines</name>
        </cx>
        <fc>VY 8356</fc>
        <csv>0</csv>
        <operator>
            <code>
            </code>
            <name></name>
        </operator>
        <equip>
            <code>320</code>
            <name>Airbus A320-100/200</name>
        </equip>
        <dep>
```

```xml
            <date>2011-12-18</date>
            <time>15:30:00</time>
            <checkInTimeMinutes>60</checkInTimeMinutes>
            <city>
               <code>BCN</code>
               <name>Barcelona</name>
            </city>
         </dep>
         <arr>
            <date>2011-12-18</date>
            <time>17:50:00</time>
            <dayOffset></dayOffset>
            <city>
               <code>AMS</code>
               <name>Amsterdam</name>
            </city>
         </arr>
         <stops>0</stops>
         <clCodes>
            <item>
               <code>J</code>
               <name>Economy</name>
            </item>
         </clCodes>
         <notes></notes>
      </flight>
      <bestPrice></bestPrice>
      <bestWeight>0</bestWeight>
   </AvOption>
   <AvOption bookId="OID2" quotedOn="False" value="36">
      <flight id="36">
         <leg>
            <bookId>OID2</bookId>
            <value>36</value>
            <number>1</number>
            <route>2</route>
         </leg>
         <cx>
            <code>KL</code>
            <name>KLM</name>
         </cx>
         <fc>KL 1674</fc>
         <csv>0</csv>
         <operator>
            <code>
            </code>
            <name></name>
         </operator>
         <equip>
            <code>737</code>
            <name>Boeing 737</name>
         </equip>
         <dep>
            <date>2011-12-18</date>
            <time>17:10:00</time>
            <checkInTimeMinutes>60</checkInTimeMinutes>
            <city>
               <code>BCN</code>
               <name>Barcelona</name>
            </city>
         </dep>
         <arr>
            <date>2011-12-18</date>
            <time>19:40:00</time>
            <dayOffset></dayOffset>
            <city>
               <code>AMS</code>
               <name>Amsterdam</name>
            </city>
         </arr>
         <stops>0</stops>
         <clCodes>
            <item>
               <code>E</code>
               <name>Economy</name>
            </item>
```

```xml
                    </clCodes>
                </flight>
            </AvOption>
          </segments>
        </flightOptions>
      </sr>
    </data>
</TWSResponse>
```

The response returned back is already sorted on time. Bare in mind that the information shown above is just a small part of what the actual response looks like.

2.8.   DOING A LOWEST FARE SEARCH

The LF search is used to do a flight availability search whereby the system will look for the lowest available price. The result of this search will be sorted on this price. To get this overview the following XML request needs to be executed:

```xml
<TWSRequest>
  <actionCode>FLIGHTSEARCH</actionCode>
  <subAction>LF</subAction>
  <tid>MOBIBEX:ENX-1C1UAV01U7-T</tid>
  <trip>Return</trip>
  <departCity1>AMS</departCity1>
  <arriveCity1>BCN</arriveCity1>
  <departDay1>12</departDay1>
  <departMonth1>122011</departMonth1>
  <departTime1>1000</departTime1>
  <departDay2>18</departDay2>
  <departMonth2>122011</departMonth2>
  <departTime2>1600</departTime2>
</TWSRequest>
```

This will lead to the following XML response:

```xml
<TWSResponse schema="AS2LF">
  <data>
    <sr handler="FLIGHTSEARCH" st="LF">
      <depCity>AMSTERDAM, Netherlands</depCity>
      <arrCity>BARCELONA, Spain</arrCity>
      <depDate>Mon 12 Dec 2011</depDate>
      <retDate>Sun 18 Dec 2011</retDate>
      <fOpt count="69">
        <fareOp bookId="FLID" value="FL42" NR="2">
          <fare>
            <ident>
              <fdavId>FL42</fdavId>
              <number>21</number>
              <fareId>*MUc3SDA5OkFDQFBLTEFNU0JDTlJSU1IzTkw=</fareId>
              <source>
                <code>P</code>
                <name>Published</name>
                <database>
                  <code>PUB</code>
                </database>
                <dist></dist>
                <adjCode></adjCode>
                <contract>RSR3NL</contract>
              </source>
              <pref>No</pref>
              <spec>No</spec>
              <incTour>No</incTour>
              <comment></comment>
              <servLvl>Economy</servLvl>
              <Journey>RT</Journey>
              <advPurc>
                <code>+</code>
              </advPurc>
              <minStay>
                <desc>Saturday night or check notes</desc>
              </minStay>
              <maxStay>
                <desc>6 months</desc>
              </maxStay>
            </ident>
            <locality>
              <dep>
                <city>
                  <code>AMS</code>
                  <name>Amsterdam</name>
                </city>
              </dep>
              <arr>
```

```xml
                    <city>
                        <code>BCN</code>
                        <name>Barcelona</name>
                    </city>
                </arr>
            </locality>
            <cx>
                <code>KL</code>
                <name>KLM</name>
            </cx>
            <pricing>
                <total>
                    <price>EUR 146.85</price>
                    <curr>
                        <code>EUR</code>
                    </curr>
                    <amount>146.85</amount>
                </total>
                <breakdown>
                    <adult count="1">
                        <fare>35.00</fare>
                        <taxes>111.85</taxes>
                        <fees>0.00</fees>
                        <total>146.85</total>
                    </adult>
                    <child count="0">
                        <fare>0.00</fare>
                        <taxes>0.00</taxes>
                        <fees>0.00</fees>
                        <total>0.00</total>
                    </child>
                    <infant count="0">
                        <fare>0.00</fare>
                        <taxes>0.00</taxes>
                        <fees>0.00</fees>
                        <total>0.00</total>
                    </infant>
                </breakdown>
            </pricing>
            <notes>
            </notes>
            <policy/>
            <routing></routing>
        </fare>
        <fltOpts>
            <segments segmentNo="1">
                <depDate>Mon 12 Dec 2011</depDate>
                <depCity>AMSTERDAM, Netherlands</depCity>
                <arrCity>BARCELONA, Spain</arrCity>
                <AvOption bookId="OID1" value="53" quotedOn="True">
                    <flight id="53">
                        <leg>
                            <bookId>OID1</bookId>
                            <value>53</value>
                            <number>1</number>
                            <route>1</route>
                        </leg>
                        <cx>
                            <code>KL</code>
                            <name>KLM</name>
                        </cx>
                        <fc>KL 1673</fc>
                        <csv>0</csv>
                        <operator>
                            <code>
                            </code>
                            <name></name>
                        </operator>
                        <equip>
                            <code>73J</code>
                            <name><![CDATA[]]></name>
                        </equip>
                        <dep>
                            <date>2011-12-12</date>
                            <time>13:00:00</time>
                            <checkInTimeMinutes>60</checkInTimeMinutes>
```

```xml
            <city>
               <code>AMS</code>
               <name>Amsterdam</name>
            </city>
         </dep>
         <arr>
            <date>2011-12-12</date>
            <time>15:05:00</time>
            <dayOffset></dayOffset>
            <city>
               <code>BCN</code>
               <name>Barcelona</name>
            </city>
         </arr>
         <stops>0</stops>
         <clCodes>
            <item>
               <code>R</code>
               <name>Economy</name>
            </item>
         </clCodes>
         <notes></notes>
      </flight>
      <bestPrice>15</bestPrice>
      <bestWeight>0</bestWeight>
   </AvOption>
   <AvOption bookId="OID1" value="54" quotedOn="False">
      <flight id="54">
         <leg>
            <bookId>OID1</bookId>
            <value>54</value>
            <number>1</number>
            <route>1</route>
         </leg>
         <cx>
            <code>KL</code>
            <name>KLM</name>
         </cx>
         <fc>KL 1677</fc>
         <csv>0</csv>
         <operator>
            <code>
            </code>
            <name></name>
         </operator>
         <equip>
            <code>73H</code>
            <name><![CDATA[Boeing 737]]></name>
         </equip>
         <dep>
            <date>2011-12-12</date>
            <time>17:05:00</time>
            <checkInTimeMinutes>60</checkInTimeMinutes>
            <city>
               <code>AMS</code>
               <name>Amsterdam</name>
            </city>
         </dep>
         <arr>
            <date>2011-12-12</date>
            <time>19:20:00</time>
            <dayOffset></dayOffset>
            <city>
               <code>BCN</code>
               <name>Barcelona</name>
            </city>
         </arr>
         <stops>0</stops>
         <clCodes>
            <item>
               <code>R</code>
               <name>Economy</name>
            </item>
         </clCodes>
         <notes></notes>
      </flight>
```

```xml
        <bestPrice>15</bestPrice>
        <bestWeight>0</bestWeight>
    </AvOption>
    <AvOption bookId="OID1" value="55" quotedOn="False">
        <flight id="55">
            <leg>
                <bookId>OID1</bookId>
                <value>55</value>
                <number>1</number>
                <route>1</route>
            </leg>
            <cx>
                <code>KL</code>
                <name>KLM</name>
            </cx>
            <fc>KL 1681</fc>
            <csv>0</csv>
            <operator>
                <code>
                </code>
                <name></name>
            </operator>
            <equip>
                <code>73H</code>
                <name><![CDATA[Boeing 737]]></name>
            </equip>
            <dep>
                <date>2011-12-12</date>
                <time>20:35:00</time>
                <checkInTimeMinutes>60</checkInTimeMinutes>
                <city>
                    <code>AMS</code>
                    <name>Amsterdam</name>
                </city>
            </dep>
            <arr>
                <date>2011-12-12</date>
                <time>22:50:00</time>
                <dayOffset></dayOffset>
                <city>
                    <code>BCN</code>
                    <name>Barcelona</name>
                </city>
            </arr>
            <stops>0</stops>
            <clCodes>
                <item>
                    <code>R</code>
                    <name>Economy</name>
                </item>
            </clCodes>
            <notes></notes>
        </flight>
        <bestPrice>15</bestPrice>
        <bestWeight>0</bestWeight>
    </AvOption>
</segments>
<segments segmentNo="2">
    <depDate>Sun 18 Dec 2011</depDate>
    <depCity>BARCELONA, Spain</depCity>
    <arrCity>AMSTERDAM, Netherlands</arrCity>
    <AvOption bookId="OID2" value="70" quotedOn="True">
        <flight id="70">
            <leg>
                <bookId>OID2</bookId>
                <value>70</value>
                <number>1</number>
                <route>2</route>
            </leg>
            <cx>
                <code>AF</code>
                <name>Air France</name>
            </cx>
            <fc>AF 1649</fc>
            <csv>0</csv>
            <operator>
```

```xml
      <code>
      </code>
      <name></name>
   </operator>
   <equip>
      <code>321</code>
      <name><![CDATA[Airbus A321]]></name>
   </equip>
   <dep>
      <date>2011-12-18</date>
      <time>15:55:00</time>
      <checkInTimeMinutes>60</checkInTimeMinutes>
      <city>
         <code>BCN</code>
         <name>Barcelona</name>
      </city>
   </dep>
   <arr>
      <date>2011-12-18</date>
      <time>17:50:00</time>
      <dayOffset></dayOffset>
      <city>
         <code>CDG</code>
         <name>Paris C De Gaulle</name>
      </city>
   </arr>
   <stops>0</stops>
   <clCodes>
      <item>
         <code>N</code>
         <name>Economy</name>
      </item>
   </clCodes>
   <notes></notes>
</flight>
<flight id="70">
   <leg>
      <bookId>OID2</bookId>
      <value>70</value>
      <number>2</number>
      <route>2</route>
   </leg>
   <cx>
      <code>AF</code>
      <name>Air France</name>
   </cx>
   <fc>AF 8242</fc>
   <csv>1</csv>
   <operator>
      <code>KL</code>
      <name>KLM</name>
   </operator>
   <equip>
      <code>73H</code>
      <name><![CDATA[Boeing 737]]></name>
   </equip>
   <dep>
      <date>2011-12-18</date>
      <time>20:15:00</time>
      <checkInTimeMinutes>60</checkInTimeMinutes>
      <city>
         <code>CDG</code>
         <name>Paris C De Gaulle</name>
      </city>
   </dep>
   <arr>
      <date>2011-12-18</date>
      <time>21:30:00</time>
      <dayOffset></dayOffset>
      <city>
         <code>AMS</code>
         <name>Amsterdam</name>
      </city>
   </arr>
   <stops>0</stops>
   <clCodes>
```

```xml
                    <item>
                        <code>N</code>
                        <name>Economy</name>
                    </item>
                </clCodes>
                <notes></notes>
            </flight>
            <bestPrice>135</bestPrice>
            <bestWeight>0</bestWeight>
        </AvOption>
    </segments>
  </fltOpts>
</fareOp>
<fareOp bookId="FLID" value="FL34" NR="2">
  <fare>
    <ident>
        <fdavId>FL34</fdavId>
        <number>16</number>
        <fareId>*MUc3SDA5OkFDQFBBRkFNU0JDTlhYUkROTA==</fareId>
        <source>
            <code>P</code>
            <name>Published</name>
            <database>
                <code>PUB</code>
            </database>
            <dist></dist>
            <adjCode></adjCode>
            <contract>XRDNL</contract>
        </source>
        <pref>No</pref>
        <spec>No</spec>
        <incTour>No</incTour>
        <comment></comment>
        <servLvl>Economy</servLvl>
        <Journey>RT</Journey>
        <advPurc>
            <code></code>
        </advPurc>
        <minStay>
            <desc>Saturday night or check notes</desc>
        </minStay>
        <maxStay>
            <desc>6 months</desc>
        </maxStay>
    </ident>
    <locality>
        <dep>
            <city>
                <code>AMS</code>
                <name>Amsterdam</name>
            </city>
        </dep>
        <arr>
            <city>
                <code>BCN</code>
                <name>Barcelona</name>
            </city>
        </arr>
    </locality>
    <cx>
        <code>KL</code>
        <name>KLM</name>
    </cx>
    <pricing>
        <total>
            <price>EUR 148.45</price>
            <curr>
                <code>EUR</code>
            </curr>
            <amount>148.45</amount>
        </total>
        <breakdown>
            <adult count="1">
                <fare>60.00</fare>
                <taxes>88.45</taxes>
                <fees>0.00</fees>
```

```xml
            <total>148.45</total>
        </adult>
        <child count="0">
            <fare>0.00</fare>
            <taxes>0.00</taxes>
            <fees>0.00</fees>
            <total>0.00</total>
        </child>
        <infant count="0">
            <fare>0.00</fare>
            <taxes>0.00</taxes>
            <fees>0.00</fees>
            <total>0.00</total>
        </infant>
      </breakdown>
    </pricing>
    <notes>
    </notes>
    <policy/>
    <routing></routing>
</fare>
<fltOpts>
    <segments segmentNo="1">
        <depDate>Mon 12 Dec 2011</depDate>
        <depCity>AMSTERDAM, Netherlands</depCity>
        <arrCity>BARCELONA, Spain</arrCity>
        <AvOption bookId="OID1" value="53" quotedOn="True">
            <flight id="53">
                <leg>
                    <bookId>OID1</bookId>
                    <value>53</value>
                    <number>1</number>
                    <route>1</route>
                </leg>
                <cx>
                    <code>KL</code>
                    <name>KLM</name>
                </cx>
                <fc>KL 1673</fc>
                <csv>0</csv>
                <operator>
                    <code>
                    </code>
                    <name></name>
                </operator>
                <equip>
                    <code>73J</code>
                    <name><![CDATA[]]></name>
                </equip>
                <dep>
                    <date>2011-12-12</date>
                    <time>13:00:00</time>
                    <checkInTimeMinutes>60</checkInTimeMinutes>
                    <city>
                        <code>AMS</code>
                        <name>Amsterdam</name>
                    </city>
                </dep>
                <arr>
                    <date>2011-12-12</date>
                    <time>15:05:00</time>
                    <dayOffset></dayOffset>
                    <city>
                        <code>BCN</code>
                        <name>Barcelona</name>
                    </city>
                </arr>
                <stops>0</stops>
                <clCodes>
                    <item>
                        <code>R</code>
                        <name>Economy</name>
                    </item>
                </clCodes>
                <notes></notes>
            </flight>
```

```xml
      <bestPrice>32</bestPrice>
      <bestWeight>0</bestWeight>
</AvOption>
<AvOption bookId="OID1" value="54" quotedOn="False">
    <flight id="54">
       <leg>
          <bookId>OID1</bookId>
          <value>54</value>
          <number>1</number>
          <route>1</route>
       </leg>
       <cx>
          <code>KL</code>
          <name>KLM</name>
       </cx>
       <fc>KL 1677</fc>
       <csv>0</csv>
       <operator>
          <code>
          </code>
          <name></name>
       </operator>
       <equip>
          <code>73H</code>
          <name><![CDATA[Boeing 737]]></name>
       </equip>
       <dep>
          <date>2011-12-12</date>
          <time>17:05:00</time>
          <checkInTimeMinutes>60</checkInTimeMinutes>
          <city>
             <code>AMS</code>
             <name>Amsterdam</name>
          </city>
       </dep>
       <arr>
          <date>2011-12-12</date>
          <time>19:20:00</time>
          <dayOffset></dayOffset>
          <city>
             <code>BCN</code>
             <name>Barcelona</name>
          </city>
       </arr>
       <stops>0</stops>
       <clCodes>
          <item>
             <code>R</code>
             <name>Economy</name>
          </item>
       </clCodes>
       <notes></notes>
    </flight>
    <bestPrice>32</bestPrice>
    <bestWeight>0</bestWeight>
</AvOption>
<AvOption bookId="OID1" value="55" quotedOn="False">
    <flight id="55">
       <leg>
          <bookId>OID1</bookId>
          <value>55</value>
          <number>1</number>
          <route>1</route>
       </leg>
       <cx>
          <code>KL</code>
          <name>KLM</name>
       </cx>
       <fc>KL 1681</fc>
       <csv>0</csv>
       <operator>
          <code>
          </code>
          <name></name>
       </operator>
       <equip>
```

```xml
            <code>73H</code>
            <name><![CDATA[Boeing 737]]></name>
         </equip>
         <dep>
            <date>2011-12-12</date>
            <time>20:35:00</time>
            <checkInTimeMinutes>60</checkInTimeMinutes>
            <city>
               <code>AMS</code>
               <name>Amsterdam</name>
            </city>
         </dep>
         <arr>
            <date>2011-12-12</date>
            <time>22:50:00</time>
            <dayOffset></dayOffset>
            <city>
               <code>BCN</code>
               <name>Barcelona</name>
            </city>
         </arr>
         <stops>0</stops>
         <clCodes>
            <item>
               <code>R</code>
               <name>Economy</name>
            </item>
         </clCodes>
         <notes></notes>
      </flight>
      <bestPrice>32</bestPrice>
      <bestWeight>0</bestWeight>
   </AvOption>
</segments>
<segments segmentNo="2">
   <depDate>Sun 18 Dec 2011</depDate>
   <depCity>BARCELONA, Spain</depCity>
   <arrCity>AMSTERDAM, Netherlands</arrCity>
   <AvOption bookId="OID2" value="66" quotedOn="True">
      <flight id="66">
         <leg>
            <bookId>OID2</bookId>
            <value>66</value>
            <number>1</number>
            <route>2</route>
         </leg>
         <cx>
            <code>KL</code>
            <name>KLM</name>
         </cx>
         <fc>KL 1674</fc>
         <csv>0</csv>
         <operator>
            <code>
            </code>
            <name></name>
         </operator>
         <equip>
            <code>73J</code>
            <name><![CDATA[]]></name>
         </equip>
         <dep>
            <date>2011-12-18</date>
            <time>17:10:00</time>
            <checkInTimeMinutes>60</checkInTimeMinutes>
            <city>
               <code>BCN</code>
               <name>Barcelona</name>
            </city>
         </dep>
         <arr>
            <date>2011-12-18</date>
            <time>19:40:00</time>
            <dayOffset></dayOffset>
            <city>
               <code>AMS</code>
```

```xml
                        <name>Amsterdam</name>
                    </city>
                </arr>
                <stops>0</stops>
                <clCodes>
                    <item>
                        <code>E</code>
                        <name>Economy</name>
                    </item>
                </clCodes>
                <notes></notes>
            </flight>
            <bestPrice>32</bestPrice>
            <bestWeight>0</bestWeight>
        </AvOption>
    </segments>
</fltOpts>
</fareOp>
</fOpt>
</sr>
</data>
</TWSResponse>
```

In this response the result is grouped per fare option <fareOp>. Each fare option has a fare structure wich contains a price node in it and each fare option contains a fltOptions list which contains the actual flights grouped per segment. The fare options are automatically sorted by price (cheapest first). Bare in mind that the sample shown above is just a small part of the actual XML being returned.

3.   QUOTING FLIGHTS

To quote a flight one of the flight search actions needs to be done first. Please note that you can't quote using the timetables or the faresonly request. Based on the results you got from your flight search a quote request can be created. For this request you need to get the values from the several OID entries returned in the flightsearch response. These OID entries are stored within the AvOption tags

```
<AvOption bookId="OID1" value="59">
```

For a roundtrip search you will have an x amount of OID entries.

```
<AvOption bookId="OID1" value="59">
<AvOption bookId="OID2" value="65">
<AvOption bookId="OID3" value="105">
```

If returned in the availability response you also have to provide a FLID in the quotation request. This FLID ensures that the system is going to use the right farebasis and can be recognized via the following structure in the availability response:

```
<fareOp bookId="FLID" value="FL34" NR="2">
```

To provide the FLID you have to add the following token into the quotation request.

```
<FLID>FL34</FLID>
```

Based on these values you have to generate the following XML request to obtain a quotation.

```
<TWSRequest>
    <actionCode>QUOTE</actionCode>
    <tripType>single</tripType>
    <tid>IBEXDEV:ENX-1B41TC9NB5-T</tid>
    <numberRoutes>1</numberRoutes>
    <quoteWithNoRules>1</quoteWithNoRules>
    <quoteWithPublishedFare>0</quoteWithPublishedFare>
    <qouteWithFlexibleConditions>0</qouteWithFlexibleConditions>
    <oid1>59</oid1>
    <FLID>FL34</FLID>
</TWSRequest>
```

For a return flight

```
<TWSRequest>
    <actionCode>QUOTE</actionCode>
    <tripType>return</tripType>
    <tid>IBEXDEV:ENX-1B41TC9NB5-T</tid>
    <numberRoutes>2</numberRoutes>
    <quoteWithNoRules>1</quoteWithNoRules>
    <quoteWithPublishedFare>0</quoteWithPublishedFare>
    <qouteWithFlexibleConditions>0</qouteWithFlexibleConditions>
    <oid1>59</oid1>
    <oid2>65</oid2>
    <FLID>FL34</FLID>
</TWSRequest>
```

And for a round-trip

```xml
<TWSRequest>
    <actionCode>QUOTE</actionCode>
    <tripType>multi</tripType>
    <tid>IBEXDEV:ENX-1B41TC9NB5-T</tid>
    <numberRoutes>3</numberRoutes>
    <quoteWithNoRules>1</quoteWithNoRules>
    <quoteWithPublishedFare>0</quoteWithPublishedFare>
    <qouteWithFlexibleConditions>0</qouteWithFlexibleConditions>
    <oid1>59</oid1>
    <oid2>65</oid2>
    <oid3>105</oid3>
</TWSRequest>
```

These requests lead to a response containing the following information:

```xml
<TWSResponse schema="AQT">
  <bookingOptions>
    <quotation>
      <item type="bestbuy" bookid="quoteSelected" value="BEST">
        <quoteResult>1</quoteResult>
        <quoteResultMessage>Quotation obtained which matches original price offered</quoteResultMessage>
        <item type="ticket">
          <description>1 Adult</description>
          <quantity>1</quantity>
          <code>AD</code>
          <currency>EUR</currency>
          <fare>201.00</fare>
          <taxes>138.84</taxes>
          <total>339.84</total>
        </item>
        <totalCostTicketsCurrency>EUR</totalCostTicketsCurrency>
        <totalCostTickets>339.84</totalCostTickets>
        <grandTotalCurrency>EUR</grandTotalCurrency>
        <grandtotal>339.84</grandtotal>
        <rules><![CDATA[]]></rules>
      </item>
      <extraQuotes>
        <QuoteList_Air count="0"></QuoteList_Air>
      </extraQuotes>
    </quotation>
  </bookingOptions>
</TWSResponse>
```

The part of the XML file above contains the quote returned for the selected flights.

3.1. OBTAINING THE FARENOTES FROM A QUOTE

To obtain the farenotes for this quote you need to execute the same quote request but you have to set the <quoteWithNoRules> token to be 0 instead of 1. This will return a XML response containing the following information:

```xml
<quotation>
  <item type="bestbuy" bookid="quoteSelected" value="BEST">
    <quoteResult>1</quoteResult>
    <quoteResultMessage>Quotation obtained which matches original price offered</quoteResultMessage>
    <item type="ticket">
      <description>1 Adult</description>
      <quantity>1</quantity>
      <code>AD</code>
      <currency>EUR</currency>
      <fare>201.00</fare>
      <taxes>138.84</taxes>
      <total>339.84</total>
    </item>
    <totalCostTicketsCurrency>EUR</totalCostTicketsCurrency>
    <totalCostTickets>339.84</totalCostTickets>
    <grandTotalCurrency>EUR</grandTotalCurrency>
    <grandtotal>339.84</grandtotal>
    <rules><![CDATA[
==============================================================
Fare Rules:
AMSLHR Fare basis: NSRNL
==============================================================
6. MINIMUM STAY
UNLESS OTHERWISE SPECIFIED
  TRAVEL FROM LAST STOPOVER MUST COMMENCE NO EARLIER THAN
  1201AM ON THE FIRST SUN AFTER DEPARTURE FROM FARE ORIGIN
  OR - TRAVEL FROM LAST STOPOVER MUST COMMENCE NO EARLIER
    THAN 3 DAYS AFTER DEPARTURE FROM FARE ORIGIN.
7. MAXIMUM STAY
UNLESS OTHERWISE SPECIFIED
  TRAVEL FROM LAST STOPOVER MUST COMMENCE NO LATER THAN 6
  MONTHS AFTER DEPARTURE FROM FARE ORIGIN.
16. PENALTIES
UNLESS OTHERWISE SPECIFIED NOTE - RULE 16EU IN IPRG
APPLIES
    NOTE -
    A CHANGE IS A ROUTING / DATE / FLIGHT MODIFICATION
    WHEN MORE THAN ONE FARE COMPONENT IS BEING CHANGED
    THE HIGHEST PENALTY OF ALL CHANGED FARE COMPONENTS
    WILL APPLY
==============================================================
Dated: 03AUG2011 10:32:59


==============================================================
Fare Rules:
LHRAMS Fare basis: BFFNL
==============================================================
7. MAXIMUM STAY
UNLESS OTHERWISE SPECIFIED
  TRAVEL FROM LAST STOPOVER MUST COMMENCE NO LATER THAN 6
  MONTHS AFTER DEPARTURE FROM FARE ORIGIN.
16. PENALTIES
UNLESS OTHERWISE SPECIFIED NOTE - RULE 16EU IN IPRG
APPLIES
FOR ECONOMY UNRESTRICTED FARES
    NOTE -
    ANYTIME
==============================================================
Dated: 03AUG2011 10:32:59
]]>
    </rules>
  </item>
  <extraQuotes>
    <QuoteList_Air count="0"></QuoteList_Air>
  </extraQuotes>
</quotation>
```

4. UPDATE THE BOOKING BEING MADE

After doing the quote you want to book the selected flights. For this you need to the following:

- Login to the system allowing you to provide booking details
- Add names onto the booking
- Set the quote onto the booking
- Saving the FSN data
- Saving the cost center/project centers selected
- Saving the contact details
- Selecting the proper bookend option
- Saving notes onto the booking
- Saving the payment options
- Saving address information
- End the booking

Each action we will discuss in the next chapters afterwards.

4.1.   LOGGING INTO THE SYSTEM

First of all you need to be logged into the system before you are allowed to apply the updates to the booking. There are a couple of ways to login. All of them are described in the Login documentation.

We strongly advice you to use this document as a reference for this item. Bare in mind you must be logged in before you can make any changes on a booking file.

4.2. ADDING NAMES INTO THE BOOKING

There are two ways of adding names into the booking file namely

- Via direct name input
- Via a traveller profile

The first part of the XML used for adding passengers onto a booking are for both of the requests the same and should contain the following:

Field	Value
actionCode	**FLIGHTSBOOK**
subAction	UPDATE
Trip	The trip type used in the booking (SINGLE, RETURN, MULTI)
Tid	The TID gathered via the login response
TripData	This field is based on the following strucutre <total pax>-<x Adults>-<x Children>-<x Infants>. For example when booking 2 adults, 1 child and 1 infant this would lead to the following value: 4-2-1-1
byPassNoSectors	True / False depending if you are adding passengers BEFORE searching or AFTER searching
bookUpdateNames	Should be set to 1 indicating your'e adding names onto a booking.

For each of the passenger added a paxTypeCode needs to be profided. This field can be one of the following:

- A – Adult
- C – Child
- I – Infant

Based on this information the start of the request looks like the following:

```xml
<TWSRequest>
    <actionCode>FLIGHTSBOOK</actionCode>
    <subAction>UPDATE</subAction>
    <trip>RETURN</trip>
    <tid>IBEXDEV:NLX-1B568ZHVS0-T</tid>
    <TripData>3-1-1-1</TripData>
    <bypassNoSectors>true</bypassNoSectors>
    <bookUpdateNames>1</bookUpdateNames>

    <paxTypeCode1>A</paxTypeCode1>
```

Now let's start by adding passengers via the direct name input method.

4.2.1. ADDING NAMES VIA THE DIRECT NAME INPUT

This way of providing names is without using a profile. For this way of entering names you need to provide the following information to the API for each passenger. The <x> should be replaced with the number of the passenger. For example when entering three passengers the <x> should be 1, 2 or 3.

Field	Value
paxTypeCode<x>	Passenger type code
	A – Adult
	C – Child
	I – Infant
paxTitle<x>	Passenger title. Can be one of the following
	Mr, Mrs, Miss, Mstr
paxFirstname<x>	The firstname of the passenger without spaces and unicode/special characters
paxSurname<x>	The lastname of the passenger without spaced and unicode/special characters
paxDateOfBirth<x>	The date of birth of a passenger (dd-mm-yyyy)
paxPassportNo<x>	The passportnumber of a passenger
paxPassportIs<x>	The passport issueing country (IATA code)
paxPassportNat<x>	The nationality set onto the passport (IATA code)
paxPassportExp<x>	The expiry date of the passport (dd-mm-yyyy)

For 1 passenger this would lead to the following XML structure

```xml
<paxTypeCode1>A</paxTypeCode1>
<paxTitle1>Mr</paxTitle1>
<paxFirstname1>paas</paxFirstname1>
<paxSurname1>haas</paxSurname1>
<paxDateOfBirth1>24-04-1981</paxDateOfBirth1>
<paxPassportNo1>nj123456789</paxPassportNo1>
<paxPassportIs1>NL</paxPassportIs1>
<paxPassportNat1>NL</paxPassportNat1>
<paxPassportExp1>11-12-2015</paxPassportExp1>
```

Below a sample of entering more names onto the booking file.

```xml
<TWSRequest>
    <actionCode>FLIGHTSBOOK</actionCode>
    <subAction>UPDATE</subAction>
    <trip>RETURN</trip>
    <tid>IBEXDEV:NLX-1B568ZHVS0-T</tid>
    <TripData>3-1-1-1</TripData>
    <bypassNoSectors>true</bypassNoSectors>
    <bookUpdateNames>1</bookUpdateNames>

    <paxTypeCode1>A</paxTypeCode1>
    <paxTitle1>Mr</paxTitle1>
    <paxFirstname1>paas</paxFirstname1>
    <paxSurname1>haas</paxSurname1>
    <paxDateOfBirth1>24-04-1981</paxDateOfBirth1>
    <paxPassportNo1>nj123456789</paxPassportNo1>
    <paxPassportIs1>NL</paxPassportIs1>
    <paxPassportNat1>NL</paxPassportNat1>
    <paxPassportExp1>11-12-2015</paxPassportExp1>

    <paxTypeCode2>C</paxTypeCode2>
    <paxTitle2>Mrs</paxTitle2>
    <paxFirstname2>baas</paxFirstname2>
    <paxSurname2>haas</paxSurname2>
    <paxDateOfBirth2>26-02-2001</paxDateOfBirth2>
    <paxPassportNo2>nk54644444444</paxPassportNo2>
    <paxPassportIs2>NL</paxPassportIs2>
    <paxPassportNat2>NL</paxPassportNat2>
    <paxPassportExp2>11-12-2015</paxPassportExp2>

    <paxTypeCode3>I</paxTypeCode3>
    <paxTitle3>Miss</paxTitle3>
    <paxFirstname3>caas</paxFirstname3>
    <paxSurname3>haas</paxSurname3>
    <paxDateOfBirth3>10-05-2010</paxDateOfBirth3>
    <paxPassportNo3>nb12321321321</paxPassportNo3>
    <paxPassportIs3>NL</paxPassportIs3>
    <paxPassportNat3>NL</paxPassportNat3>
    <paxPassportExp3>11-12-2015</paxPassportExp3>
</TWSRequest>
```

This returns a response containing the following passenger structure.

```xml
<passengers>
    <passenger id="1">
        <pty>A</pty>
        <paxKind>A</paxKind>
        <paxType>M</paxType>
        <profileId></profileId>
        <title>Mr</title>
        <firstname>Paas</firstname>
        <surname>Haas</surname>
        <dateofbirth>24/04/1981</dateofbirth>
        <mealRequest></mealRequest>
        <additionalParameters>
        </additionalParameters>
        <bluebizCardNumber></bluebizCardNumber>
        <passports>
            <passport id="1">
                <issueCountry>NL</issueCountry>
                <number>nj123456789</number>
                <expiryDate>11-12-2015</expiryDate>
                <nationality>NL</nationality>
            </passport>
        </passports>
    </passenger>
    <passenger id="2">
        <pty>C</pty>
        <paxKind>C</paxKind>
        <paxType>F</paxType>
        <profileId></profileId>
        <title>Mrs</title>
        <firstname>Baas</firstname>
        <surname>Haas</surname>
        <dateofbirth>26/02/2001</dateofbirth>
        <mealRequest></mealRequest>
        <additionalParameters>
        </additionalParameters>
        <bluebizCardNumber></bluebizCardNumber>
        <passports>
            <passport id="1">
                <issueCountry>NL</issueCountry>
                <number>nk54644444444</number>
                <expiryDate>11-12-2015</expiryDate>
                <nationality>NL</nationality>
            </passport>
        </passports>
    </passenger>
    <passenger id="3">
        <pty>I</pty>
        <paxKind>I</paxKind>
        <paxType>F</paxType>
        <profileId></profileId>
        <title>Miss</title>
        <firstname>Caas</firstname>
        <surname>Haas</surname>
        <dateofbirth>10/05/2010</dateofbirth>
        <mealRequest></mealRequest>
        <additionalParameters>
        </additionalParameters>
        <bluebizCardNumber></bluebizCardNumber>
        <passports>
            <passport id="1">
                <issueCountry>NL</issueCountry>
                <number>nb12321321321</number>
                <expiryDate>11-12-2015</expiryDate>
                <nationality>NL</nationality>
            </passport>
        </passports>
    </passenger>
</passengers>
```

4.2.2. ADDING NAMES USING A TRAVELER PROFILE

Another way of adding names onto a booking is by using a traveler profile instead. This way of adding travelers means we are storing the information regarding the traveler in our system.

To obtain a list of profiles available within the signon you used the following request can be executed:

```xml
<TWSRequest>
  <actionCode>REPORTNOENGINENA</actionCode>
  <pid>ibexTWSProfiles!xmlProfilelist_new</pid>
  <tid>IBEXDEV:ENX-1B4GN545H0-T</tid>
  <SecureDataField>B0hCPlBGfCp6fkIdbjcHIQcSRQkXBBYZGwFgOnxQCA8Edw1kYww=</SecureDataField>
  <isTraveller>1</isTraveller>
  <searchDirection>N</searchDirection>
  <TOP>10</TOP>
</TWSRequest>
```

The TID and the secureDatafield values are provided from within your login response. This request will return a list containing the first 10 profiles you have available.

```xml
<TWSResponse schema="QREPNOACCOUNT">
  <data>
    <searchResults>
      <tid>IBEXDEV:ENX-1B4GN545H0-T</tid>
      <SecureDataField>B0hCPlBGfCp6fkIdbjcHIQcSRQkXBBYZGwFgOnxQCA8Edw1kYww=</SecureDataField>
      <SET template="ibexTWSProfiles" report="xmlProfilelist_new">
        <row secureItemId="JF9fLlxYUAcjCWBwYxEaBBg=">
          <profileName>ANITA</profileName>
          <displayName>MR ANITAS PAULISSE</displayName>
          <title>Mr</title>
          <firstName>AnitaS</firstName>
          <lastName>Paulisse</lastName>
          <isBooker>false</isBooker>
          <isTraveller>TRUE</isTraveller>
          <isSupervisor>0</isSupervisor>
          <lastUpdated>20110718 12:51:50</lastUpdated>
          <travelPolicyNameId></travelPolicyNameId>
          <profileId>203631</profileId>
          <paxKind>C</paxKind>
          <paxType>M</paxType>
          <paxOkToBook>True</paxOkToBook>
        </row>
        <row secureItemId="JF9fLlxYUAcjCWBzbBQaEGl0">
          <profileName>BALTUS</profileName>
          <displayName>MRS JOS BABECC BALTUSSC</displayName>
          <title>Mrs</title>
          <firstName>jos babecc</firstName>
          <lastName>baltussc</lastName>
          <isBooker>false</isBooker>
          <isTraveller>TRUE</isTraveller>
          <isSupervisor>0</isSupervisor>
          <lastUpdated>20110803 06:36:20</lastUpdated>
          <travelPolicyNameId></travelPolicyNameId>
          <profileId>204329</profileId>
          <paxKind>C</paxKind>
          <paxType>F</paxType>
          <paxOkToBook>True</paxOkToBook>
        </row>
        <rowCount>10</rowCount>
        <scrolling>
          <totalRows>27</totalRows>
          <searchStartProfileIdent>ANITA</searchStartProfileIdent>
          <searchEndProfileIdent> BALTUS</searchEndProfileIdent>
          <prevScrollSecureItemId>MkRCO0FkRyEhXS5UZDwrK05rZw4XBgoMGWUSZHxHYTwmQiddQT08eBhn
Z2grJC85OEh0KUFVCGx1Fm5lYghzZwtmZw== </prevScrollSecureItemId>
```

```xml
            <nextScrollSecureItemId>OkhIPGVGWiguWCd4ST0gMQd0DwUWFgcHdgF5O2FGVDgiWC5UX2VsdBh6
NiU1NS4sEExEKQgWB2xrYA1hEHp/dRg=</nextScrollSecureItemId>
            <atPrevEnd>false</atPrevEnd>
            <atNextEnd>false</atNextEnd>
         </scrolling>
         <row
secureItemId="OkhIPGVGWiguWCd4ST0gMQd0DwUWFgcHdgF5O2FGVDgiWC5UX2VsdBh6NiU1NS4sEExEKQgW
B2xrYA1hEHp/dRg=">
            <firstProfileIdent>ANITA</firstProfileIdent>
            <nextProfileIdent>JANSEN</nextProfileIdent>
            <atPrevEnd>false</atPrevEnd>
            <atNextEnd>false</atNextEnd>
            <totalRows>27</totalRows>
         </row>
      </SET>
   </searchResults>
  </data>
</TWSResponse>
```

To obtain the next or previous page of profiles you need to re-execute the first command but you have to change the following values in the request based on the direction.

```xml
   <prevScrollSecureItemId>MkRCO0FkRyEhXS5UZDwrK05rZw4XBgoMGWUSZHxHYTwmQiddQT08eBhnZ2grJC85
OEh0KUFVCGx1Fm5lYghzZwtmZw==</prevScrollSecureItemId>
   <nextScrollSecureItemId>OkhIPGVGWiguWCd4ST0gMQd0Fg0VCgwMdgF5O2FGVDgiWC5UX2VsdBh6NiU1NS4sE
ExEKQgWB2xrYA1hEHp/dRg=</nextScrollSecureItemId>
   <searchDirection>N</searchDirection>
```

Where the searchDirection can be one of the following:
- N for next
- P for previous.

Now we know how to obtain a list of profiles we are now going to use a profile and save it onto the booking.

To add a traveler onto a booking using the traveler profile can be done via the following XML request:

```xml
<TWSRequest>
   <actionCode>FLIGHTSBOOK</actionCode>
   <subAction>UPDATE</subAction>
   <trip>RETURN</trip>
   <tid>IBEXDEV:ENX-1B4GN545H0-T</tid>
   <TripData>1-1-0-0</TripData>
   <bypassNoSectors>true</bypassNoSectors>
   <bookUpdateNames>1</bookUpdateNames>
   <paxProfileId1>CINDYBAK</paxProfileId1>
</TWSRequest>
```

Notice that instead of providing all passenger details we now only provide the paxProfileId1 containing the profileid of the traveler you want to book.

This will lead to a response containing the following structure:

```xml
<passengers>
  <passenger id="1">
    <pty>A</pty>
    <paxKind>A</paxKind>
    <paxType>F</paxType>
    <profileId>CINDYBAK</profileId>
    <title>Mrs</title>
    <firstname>Cindy</firstname>
    <surname>Bakhuizen</surname>
    <dateofbirth>29/07/1982</dateofbirth>
    <mealRequest></mealRequest>
    <additionalParameters>
    </additionalParameters>
    <bluebizCardNumber></bluebizCardNumber>
    <passports>
      <passport id="1">
        <issueCountry>NL</issueCountry>
        <number>NNN7777</number>
        <expiryDate>15-08-2013</expiryDate>
        <nationality>NL</nationality>
      </passport>
    </passports>
  </passenger>
</passengers>
```

If wrong profile information is being provided the following response is being returned. This response includes a list of what is wrong on the profiles.

```xml
<TWSResponse schema="ERR_152">
  <head>
    <tid>IBEXDEV:ENX-1B594Z2TQ6-Y</tid>
    <result>152</result>
    <error>twNeedLogin</error>
    <errorMessage><![CDATA[It isn't possible to end the booking due to missing information.]]></errorMessage>
    <errorList>
      <paxError>
        <code>PNAME1</code>
        <details>
          <detail><![CDATA[Passenger name not valid]]></detail>
        </details>
      </paxError>
    </errorList>
    <TWSRequest>
      <actionCode>FLIGHTSBOOK</actionCode>
      <subAction>UPDATE</subAction>
      <trip>RETURN</trip>
      <tid>IBEXDEV:ENX-1B594Z2TQ6-Y</tid>
      <TripData>1-1-0-0</TripData>
      <bypassNoSectors>true</bypassNoSectors>
      <bookUpdateNames>1</bookUpdateNames>
      <departMonth1></departMonth1>
      <departDay1></departDay1>
      <paxProfileId1>CINDYAK</paxProfileId1>
    </TWSRequest>
  </head>
</TWSResponse>
```

4.3. SETTING THE QUOTE ONTO THE BOOKING

To save the actual quote onto the booking file the following request needs to be executed.

```
<TWSRequest>
    <actionCode>FLIGHTSBOOK</actionCode>
    <subaction>UPDATE</subaction>
    <bookUpdateQuotation>1</bookUpdateQuotation>
    <quoteSelected>BEST</quoteSelected>
    <RulesAdvised>1</RulesAdvised>
</TWSRequest>
```

This will store the selected quote onto the booking and a response containing the booking, as it is at that moment, is being returned. This will include the quotation stored including the actual farenotes presented. This information is being presented in the <booking> structure and will hold all information we currently know about your booking.

4.4. SAVING THE FSN DATA

FSN-Information is only used by KLM. Providing this information to the airline allows them to contact the passenger in case of delay or cancellation.

To provide this information the following request needs to be executed.

```xml
<TWSRequest>
  <actionCode>FLIGHTSBOOK</actionCode>
  <subaction>UPDATE</subaction>
  <tid>IBEXDEV:ENX-1B599N9NB5-T</tid>
  <bookUpdateOSI>True</bookUpdateOSI>
  <bookUpdateOSIHomeNumber>0123456789</bookUpdateOSIHomeNumber>
  <bookUpdateOSIWorkNumber>9876543210</bookUpdateOSIWorkNumber>
  <bookUpdateOSIMobileNumber>0612345678</bookUpdateOSIMobileNumber>
</TWSRequest>
```

This will return a result set containing the following information

```xml
<FSNData>
  <emailAddress>p.puk@atp.nl</emailAddress>
  <homeFoneNumber>0123456789</homeFoneNumber>
  <businessFoneNumber>9876543210</businessFoneNumber>
  <mobileFoneNumber>0612345678</mobileFoneNumber>
</FSNData>
```

4.5. SAVING THE CONTACT DETAILS

The contact details provided are the main contact details of the booker and should at least contain the name, phone number and e-mail address of the booker. Next to this information we can also store the user reference number and purchase order number.

To provide this information you need to execute the following request

```xml
<TWSRequest>
    <actionCode>FLIGHTSBOOK</actionCode>
    <subaction>UPDATE</subaction>
    <tid>IBEXDEV:ENX-1B599N9NB5-T</tid>
    <bookUpdateContacts>true</bookUpdateContacts>
    <userContactName>P Puk</userContactName>
    <userContactPhone>01234567890</userContactPhone>
    <userContactEmail>p.puk@atp.nl</userContactEmail>
    <bookUserReference>reference</bookUserReference>
    <bookPurchaseOrder>pon123456</bookPurchaseOrder>
</TWSRequest>
```

This returns a response containing the following information in the current booking file.

```xml
<contactdetails>
    <bookBookerName>P Puk</bookBookerName>
    <bookPhone>01234567890</bookPhone>
    <bookEmail>p.puk@atp.nl</bookEmail>
    <bookUserReference>reference</bookUserReference>
    <bookPurchaseOrder>pon123456</bookPurchaseOrder>
</contactdetails>
```

4.6.   SAVING THE COST CENTER AND REASONS FOR TRAVEL

First you need to get a list of cost centers and user reference fields available. To do this you need to execute the following requests.

For the cost centers

```xml
<TWSRequest>
   <pid>ibexTWS!xmlGetCostCentreList</pid>
   <actionCode>REPORTWITHACCOUNT</actionCode>
   <tid>IBEXDEV:ENX-1B599N9NB5-T</tid>
</TWSRequest>
```

This will return a response containing the cost centers

```xml
<TWSResponse schema="QREP">
   <searchResults>
      <SET template="ibexTWS" report="xmlGetCostCentreList">
         <costCentreList>
            <row>
               <costCentre><![CDATA[123]]></costCentre>
               <description><![CDATA[MARKETING]]></description>
            </row>
            <row>
               <costCentre><![CDATA[434]]></costCentre>
               <description><![CDATA[SALES MANAGEMENT]]></description>
            </row>
            <row>
               <costCentre><![CDATA[675]]></costCentre>
               <description><![CDATA[INKOOP]]></description>
            </row>
            <row>
               <costCentre><![CDATA[678]]></costCentre>
               <description><![CDATA[ACCOUNT MANAGEMENT]]></description>
            </row>
         </costCentreList>
      </SET>
   </searchResults>
</TWSResponse>
```

For the reasons for travel you need to do the following request

```xml
<TWSRequest>
   <pid>ibexCOPR!xmlReasonsForTravel_List</pid>
   <actionCode>REPORTNOENGINENA</actionCode>
   <SecureDataField>B0hHNCtLB10Ef0IdbjcHIQcSRQkXBBYZGwFlMAddc3h6dg1kYww=</SecureDataField>
   <tid>IBEXDEV:ENX-1B599N9NB5-T</tid>
</TWSRequest>
```

This will return the following response

```xml
<TWSResponse schema="QREPNOACCOUNT">
   <data>
      <searchResults>
         <tid>IBEXDEV:ENX-1B599N9NB5-T</tid>
         <SecureDataField>B0hHNCtLB10Ef0IdbjcHIQcSRQkXBBYZGwFlMAddc3h6dg1kYww=</SecureDataField>

         <SET template="ibexCOPR" report="xmlReasonsForTravel_List">
            <row secureItemId="O0FRASFdKwQbYmAdbjQnIFQiDCA9KzZ0dh4McXcb">
               <code>W</code>
               <description>ZAKELIJK</description>
            </row>
            <row secureItemId="O0FRASFdKwQbbWAdbjQnIFQiDCA9KzZ0dh4McXcb">
               <code>X</code>
               <description>PRIVE</description>
            </row>
            <row secureItemId="O0FRASFdKwQbbGAdbjQnIFQiDCA9KzZ0dh4McXcb">
               <code>Y</code>
               <description>PLEASE ENTER REASON BELOW</description>
            </row>
            <row secureItemId="O0FRASFdKwQbb2AdbjQnIFQiDCA9KzZ0dh4McXcb">
               <code>Z</code>
               <description></description>
            </row>

            <rowCount>4</rowCount>
            <scrolling>
               <atNextEnd>true</atNextEnd>
            </scrolling>
         </SET>
      </searchResults>
   </data>
</TWSResponse>
```

After gathering this information you can add these onto your booking file using the following structure.

```xml
<TWSRequest>
   <actionCode>FLIGHTSBOOK</actionCode>
   <subaction>UPDATE</subaction>
   <tid>IBEXDEV:ENX-1B599N9NB5-T</tid>
   <bookUpdateCostCentres>true</bookUpdateCostCentres>
   <bookReasonForTravel>W - ZAKELIJK</bookReasonForTravel>
   <costCentre1>123</costCentre1>
</TWSRequest>
```

This will return a response containing the following values in the contact details

```xml
<contactdetails>
   <bookCostCentre1>MARKETING</bookCostCentre1>
   <bookReasonForTravel>W - ZAKELIJK</bookReasonForTravel>
</contactdetails>
```

4.7. SAVING NOTES ONTO THE BOOKING FILE

To save a note onto the booking file (for example a user wants to leave a note regarding the seat preference) we allow the user to enter a notepad line.

Below a sample of how to add a notepad line using our XML API

```xml
<TWSRequest>
  <actionCode>FLIGHTSBOOK</actionCode>
  <subaction>UPDATE</subaction>
  <tid>IBEXDEV:ENX-1B59V401U7-T</tid>
  <bookUpdateNotes>1</bookUpdateNotes>
  <NOTES>please because of my long legs i want to have a seat next to the exit</NOTES>
</TWSRequest>
```

Within the response you can find the notepad line within the booking structure

```xml
<booking>
  <bookNotes>PLEASE BECAUSE OF MY LONG LEGSI WANT TO HAVE A SEAT NEXT TO THE
EXIT</bookNotes>
</booking>
```

4.8. SAVING ADDRESS INFORMATION ONTO THE BOOKING FILE

Now we are going to save the address information into the booking file. We have the ability to store the delivery address and billing address onto the booking file. To save this address information you have to provide the following entry.

```
<TWSRequest>
  <actionCode>FLIGHTSBOOK</actionCode>
  <subaction>UPDATE</subaction>
  <tid>IBEXDEV:ENX-1B59V401U7-T</tid>
  <bookUpdateDeliveryAddress>1</bookUpdateDeliveryAddress>
  <deliveryAddressName>ATP SUPER</deliveryAddressName>
  <deliveryAddressStreet>BEECHAVENUE 101</deliveryAddressStreet>
  <deliveryAddressCity>SCHIPHOL-RIJK</deliveryAddressCity>
  <deliveryAddressCounty>NOORD HOLLAND 1119 RB</deliveryAddressCounty>
  <deliveryAddressPostcode></deliveryAddressPostcode>
  <deliveryAddressCountry>NL</deliveryAddressCountry>
  <deliveryAddressPhone></deliveryAddressPhone>
  <bookUpdateBillingAddress>1</bookUpdateBillingAddress>
  <billingAddressCountry>NL</billingAddressCountry>
  <billingAddressName>ATP SUPER</billingAddressName>
  <billingAddressStreet>BEECHAVENUE 101</billingAddressStreet>
  <billingAddressCity>SCHIPHOL-RIJK</billingAddressCity>
  <billingAddressCounty>NOORD HOLLAND 1119 RB</billingAddressCounty>
  <billingAddressPostcode></billingAddressPostcode>
  <billingAddressCountry>NL</billingAddressCountry>
  <billingAddressPhone></billingAddressPhone>
</TWSRequest>
```

This will lead to a response containing the following information

```
<addressdetails>
  <homeaddress>
    <HALName><![CDATA[]]></HALName>
    <HALStreet><![CDATA[]]></HALStreet>
    <HALCity><![CDATA[]]></HALCity>
    <HALCounty><![CDATA[]]></HALCounty>
    <HALPC><![CDATA[]]></HALPC>
    <HALCtry><![CDATA[]]></HALCtry>
  </homeaddress>
  <billingaddress>
    <BALName><![CDATA[ATP SUPER]]></BALName>
    <BALStreet><![CDATA[BEECHAVENUE 101]]></BALStreet>
    <BALCity><![CDATA[SCHIPHOL-RIJK]]></BALCity>
    <BALCounty><![CDATA[NOORD HOLLAND 1119 RB]]></BALCounty>
    <BALPC><![CDATA[]]></BALPC>
    <BALCtry><![CDATA[NL]]></BALCtry>
  </billingaddress>
  <deliveryaddress>
    <DALName><![CDATA[ATP SUPER]]></DALName>
    <DALStreet><![CDATA[BEECHAVENUE 101]]></DALStreet>
    <DALCity><![CDATA[SCHIPHOL-RIJK]]></DALCity>
    <DALCounty><![CDATA[NOORD HOLLAND 1119 RB]]></DALCounty>
    <DALPC><![CDATA[]]></DALPC>
    <DALCtry><![CDATA[NL]]></DALCtry>
  </deliveryaddress>
</addressdetails>
```

4.9.   SAVING THE PAYMENT DETAILS ONTO THE BOOKING

Within the bookingfile presented after doing one of the actions described above you can find a list of payment options valid for this booking. They are listed in the <paymentOptions> token found under the <bookingOptions> token.

```xml
<bookingOptions>
  <paymentOptions>
    <item bookId="paymentOptionId" value="0">
      <paymentOptionId>0</paymentOptionId>
      <description>to account</description>
    </item>
    <item bookId="paymentOptionId" value="1">
      <paymentOptionId>1</paymentOptionId>
      <paymentCardType>CC</paymentCardType>
      <payOptionCode>VI</payOptionCode>

      <payOptionName>Visa</payOptionName>
      <paymentCardNumber>xxxxxxxxxxxx1111</paymentCardNumber>
      <paymentCardExpiryDate>0915</paymentCardExpiryDate>
      <payOptionCardHolder>PIETJE PUK</payOptionCardHolder>
      <description>TEST CREDIT CARD</description>
    </item>
    <item bookId="paymentOptionId" value="2">
      <paymentOptionId>2</paymentOptionId>
      <paymentCardType>CC</paymentCardType>
      <payOptionCode></payOptionCode>

      <payOptionName></payOptionName>
      <paymentCardNumber></paymentCardNumber>
      <paymentCardExpiryDate></paymentCardExpiryDate>
      <payOptionCardHolder></payOptionCardHolder>
      <description></description>
    </item>
  </paymentOptions>
</bookingOptions>
```

In this case the following payment options are possible:
- To Account
- A pre-defined creditcard
- A blank creditcard (name and card number input required)

4.9.1. DOING A TO-ACCOUNT PAYMENT

Doing a to-account payment means that the payment will be done on account and that you will recieve a bill afterwards. Doing such a payment can only be done when provided as a payment option and can be done by doing the following request:

```
<TWSRequest>
    <actionCode> FLIGHTSBOOK </actionCode>
    <subaction>UPDATE</subaction>
    <tid> IBEXDEV:ENX-1B59V401U7-T </tid>
    <bookUpdatePaymentSelect>1</bookUpdatePaymentSelect>
    <paymentOptionId>0</paymentOptionId>
    <paymentCardSecurityCode></paymentCardSecurityCode>
</TWSRequest>
```

This will mark the booking as a to-account based payment booking.

4.9.2. DOING A PRE-DEFINED CREDITCARD PAYMENT

At customer level there can be pre-defined creditcards defined. If you select a pre-defined creditcard you need to provide the CVC security number.

Doing a pre-defined creditcard payment can be done by executing the following XML request:

```xml
<TWSRequest>
   <actionCode> FLIGHTSBOOK </actionCode>
   <subaction>UPDATE</subaction>
   <tid> IBEXDEV:ENX-1B59V401U7-T </tid>
   <bookUpdatePaymentSelect>1</bookUpdatePaymentSelect>
   <paymentOptionId>1</paymentOptionId>
   <paymentCardSecurityCode>123</paymentCardSecurityCode>
</TWSRequest>
```

For this card payment the securitycode "123" is the CVC number.

Within the response under the booking node you will notice that the selected creditcard is being returned together with the provided CVC number.

```xml
<paymentdetails>
   <cctype>VI</cctype>
   <ccName>Visa</ccName>
   <ccnumb>xxxxxxxxxxxx1111</ccnumb>

   <expdate>0915</expdate>
   <securenumber>123</securenumber>
   <issuenumber></issuenumber>
   <issuedate></issuedate>
   <issuebank></issuebank>
   <contactdetails>
      <name>ATP SUPER</name>
      <address1>BEECHAVENUE 101 SCHIPHOL-RIJK</address1>
      <address2></address2>
      <pcode></pcode>
      <phone></phone>
      <email></email>
      <dateofbirth></dateofbirth>

      <ipaddress></ipaddress>
   </contactdetails>
</paymentdetails>
```

4.9.3. DOING A BLANK-CREDITCARD PAYMENT

Now we are going to save the payment details onto the booking file. In this case we are going to save a creditcard onto the booking. For this the payment type needs to be set to CC which means credit card.

For the card type you can provide one of the following:

- VI – Visa card
- AX – American express
- CA – Mastercard
- DC – Diners card
- TP – Universal Air Travel Plan

To do this you need to execute the following request.

```xml
<TWSRequest>
    <actionCode> FLIGHTSBOOK </actionCode>
    <subaction>UPDATE</subaction>
    <tid> IBEXDEV:ENX-1B59V401U7-T </tid>
    <bookUpdatePaymentOptionCard>1</bookUpdatePaymentOptionCard>
    <paymentType>CC</paymentType>
    <paymentCardType>VI</paymentCardType>
    <paymentCardNumber>4444333322221111</paymentCardNumber>
    <paymentCardExpiryDateMonth>01</paymentCardExpiryDateMonth>
    <paymentCardExpiryDateYear>17</paymentCardExpiryDateYear>
    <paymentCardSecurityCode>123</paymentCardSecurityCode>
    <paymentCardHoldersAddress1>atp testing</paymentCardHoldersAddress1>
    <paymentCardHoldersAddress2>somestreet 1</paymentCardHoldersAddress2>
    <paymentCardHoldersPostcode>1234AB</paymentCardHoldersPostcode>
</TWSRequest>
```

This will lead to a response containing the following value

```xml
<paymentdetails>
    <cctype>VI</cctype>
    <ccName>Visa</ccName>
    <ccnumb>xxxxxxxxxxxx1111</ccnumb>
    <expdate>0117</expdate>
    <securenumber>123</securenumber>
    <issuenumber></issuenumber>
    <issuedate></issuedate>
    <issuebank></issuebank>
    <contactdetails>
        <name>ATP SUPER</name>
        <address1>BEECHAVENUE 101 SCHIPHOL-RIJK</address1>
        <address2></address2>
        <pcode></pcode>
        <phone></phone>
        <email></email>
        <dateofbirth></dateofbirth>
        <ipaddress></ipaddress>
    </contactdetails>
</paymentdetails>
```

4.10. SELECTING A BOOKEND OPTION

Before ending the booking we need to select a bookend option. Bookend options are used to control the end of a booking file for example "Assisted" or "unassisted" bookings.

Within each response after the quote the bookend options available for that booking is being presented.

```
<bookingOptions>
  <bookendOptions>
    <item bookId="bookendOptionId" value="T1">
      <bookendOptionId>T1</bookendOptionId>
      <bookendSortId>A</bookendSortId>
      <bookendDisplayCode>STO</bookendDisplayCode>
      <bookendDescription>testboekingen</bookendDescription>
      <bookendLongDescription></bookendLongDescription>
      <bookendCurrency>EUR</bookendCurrency>
      <bookendCost> 0.00</bookendCost>
      <bookendExpiryDate></bookendExpiryDate>
    </item>
  </bookendOptions>
</bookingOptions>
```

To apply a bookendoption onto the booking being made the following request needs to be executed

```
<TWSRequest>
  <actionCode>FLIGHTSBOOK</actionCode>
  <subaction>UPDATE</subaction>
  <tid>IBEXDEV:ENX-1B599N9NB5-T</tid>
  <bookUpdateBookendSelect>1</bookUpdateBookendSelect>
  <bookEndOptionId>T1</bookEndOptionId>
</TWSRequest>
```

This will lead to a response containing the following information in the booking structure.

```
<booking>
  <bookendItem>
    <bookendOptionId>T1</bookendOptionId>
    <bookendSortId>A</bookendSortId>
    <bookendDisplayCode>STO</bookendDisplayCode>
    <bookendDescription>testboekingen</bookendDescription>
    <bookendLongDescription></bookendLongDescription>
    <bookendCurrency>EUR</bookendCurrency>
    <bookendCost> 0.00</bookendCost>
    <bookendExpiryDate></bookendExpiryDate>
  </bookendItem>
</booking>
```

After setting the bookend option we are able to end the booking.

4.11. ENDING THE BOOKING

Now we are going to end the booking. By ending the booking the booking will be made into the reservation system.

To do this you need to send the following XML request to our API.

```xml
<TWSRequest>
   <actionCode>FLIGHTSBOOK</actionCode>
   <subaction>PURCHASE</subaction>
   <tid>IBEXACC:ENX-1B5AAMQOJ7-W</tid>
   <bookUpdateSuperPnrId>false</bookUpdateSuperPnrId>
   <superPnrId></superPnrId>
</TWSRequest>
```

After the booking has been ended a response is being sent back containing the following information.

```xml
<TWSResponse schema="BS5">
   <data>
      <bookingresult>
         <status>brCompletedOk</status>
         <reference>S1DGCQ-1G/AG6JB</reference>
         <superPnrId></superPnrId>
         <securePNR></securePNR>
         <userReference>S1DGCQ-1G</userReference>
         <dnrReference></dnrReference>
         <email>p.puk@atp.nl</email>
         <phone>0123456789</phone>
      </bookingresult>
   </data>
</TWSResponse>
```