Using NeTEx for Routes and Timetables

1. Overview
A SERVICE FRAME holds all of the information about the service:
- Physical ROUTE and ROUTE LINKs
- JOURNEY PATTERNs
A TIMETABLE FRAME holds all of the information relating to the timetable i.e. the published journeys and times that a passenger can use for travelling.

- **SERVICE JOURNEYS** (equivalent to TXC VehicleJourney) with TIMETABLED PASSING TIMES at each stop where passengers can board or alight.
- Frequent services using JOURNEY FREQUENCY GROUP.
- Interchanges between journeys using SERVICE JOURNEY INTERCHANGE.
- Coupled journeys using JOURNEY PART / JOURNEY PART COUPLE.
Summary: Timetable

- Timetable comprises a number of SERVICE JOURNEY elements
- SERVICE JOURNEYs are:
  - allocated to a LINE
  - operated by an OPERATOR (via the LINE)
  - assigned to a particular VEHICLE TYPE
  - operated on a particular DAY TYPE
- A SERVICE JOURNEY has an ordered set of SCHEDULED STOP POINTs, to which times are added
- In FXCP, SERVICE JOURNEY is mandated to additionally include a set of CALL elements describing the link, the activity, and other related information
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2. Detail and Examples
• Similar to XML Namespace
• Ensures identifiers are unique, even if from different systems and in same document
• Allows applications to access schema / rules for external elements ⇒ assists validation

• Every change to every element in NeTEx can be tracked ⇒ too much for many systems, though
• Full tracking is optional in FXCP
• Frame level versioning is mandatory in FXCP

• In FXCP, codespaces are used for:
  o Locality identifiers for NPTG
  o Stop identifiers for NaPTAN
  o Operator identifiers for NOC
  o Identifiers from operators’ own datasets

• FXCP pre-defines a number of codespaces and prefixes

• Can be used to specify the validity of an object
• FXCP allows a specialised validity, AVAILABILITY CONDITION, which must contains a FROM DATE
• The data producer is responsible for ensuring validities do not conflict
<table>
<thead>
<tr>
<th>Prefix</th>
<th>URL</th>
<th>NPTG / NaPTAN / TXC elements</th>
<th>NeTEx</th>
</tr>
</thead>
<tbody>
<tr>
<td>nptgLocality</td>
<td><a href="http://naptan.org.uk/nptgLocality">http://naptan.org.uk/nptgLocality</a></td>
<td>NptgLocality</td>
<td>StopPlace</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Scheduled Stop Point</td>
</tr>
<tr>
<td>nptgTariffZone</td>
<td><a href="http://naptan.org.uk/plusbus">http://naptan.org.uk/plusbus</a></td>
<td>PlusBusZone</td>
<td>TariffZone / FareZone</td>
</tr>
<tr>
<td>nptgAdminArea</td>
<td><a href="http://naptan.org.uk/nptg">http://naptan.org.uk/nptg</a></td>
<td>AdministrativeArea</td>
<td>ResponsibilitySet +</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(AdministrativeArea)</td>
</tr>
<tr>
<td>nptg</td>
<td><a href="http://naptan.org.uk/nptg">http://naptan.org.uk/nptg</a></td>
<td>NptgLocality,</td>
<td>TopographicPlaceType</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LocalityClassification (values)</td>
<td>(+TypeOfPlace)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NptgLocality,</td>
<td>TypeOfPlace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SourceLocalityType (values)</td>
<td></td>
</tr>
<tr>
<td>naptStop</td>
<td><a href="http://naptan.org.uk/stop_data">http://naptan.org.uk/stop_data</a></td>
<td>StopPoint</td>
<td>StopPlace</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ScheduledStopPoint</td>
</tr>
<tr>
<td></td>
<td></td>
<td>StopArea</td>
<td></td>
</tr>
<tr>
<td>txc</td>
<td><a href="http://transxchange.org.uk/metadata">http://transxchange.org.uk/metadata</a></td>
<td>StopClassification</td>
<td>TypeOfPlace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ServiceClassification</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LicenceClassification</td>
<td>TypeOfService</td>
</tr>
<tr>
<td>noc</td>
<td><a href="http://transxchange.org.uk/noc">http://transxchange.org.uk/noc</a></td>
<td>Operator</td>
<td>Operator</td>
</tr>
<tr>
<td>vosa</td>
<td><a href="http://vosa.gov.uk/vosa">http://vosa.gov.uk/vosa</a></td>
<td>LicenceNumber</td>
<td>ExternalOperatorRef</td>
</tr>
</tbody>
</table>
<codespaces>
  <Codespace id="napt">
    <Xmns>naptStop</Xmns>
    <XmnsUrl>http://www.naptan.org.uk/stops</XmnsUrl>
    <Description>UK National Public Transport ACcess Nodes database and codes</Description>
  </Codespace>
  <Codespace id="nptg">
    <Xmns>nptg</Xmns>
    <XmnsUrl>http://www.nptg.org.uk/nptg</XmnsUrl>
    <Description>UK National Public Transport gazetteer and NPTG codes</Description>
  </Codespace>
  <Codespace id="noc">
    <Xmns>noc</Xmns>
    <XmnsUrl>http://www.transxchange.org.uk/noc</XmnsUrl>
    <Description>UK National Operator Code database codes</Description>
  </Codespace>
  <Codespace id="txc">
    <Xmns>txc</Xmns>
    <XmnsUrl>http://www.transxchange.org.uk/operators</XmnsUrl>
    <Description>UK Transxchange codes</Description>
  </Codespace>
  <Codespace id="mytim">
    <Xmns>mytim</Xmns>
    <XmnsUrl>http://www.mytimetables.co.uk/data</XmnsUrl>
    <Description>Sample TXC data</Description>
  </Codespace>
</codespaces>

Examples of using Codespaces

<StopPlaceRef version="any" ref="naptStop:260010966"/>
<ScheduledStopPoint version="any" id="naptStop:260010944"/>
• An OPERATOR and an AUTHORITY are special type of ORGANISATION

• Generally interchangeable so where an Authority operates services, AUTHORITY can be used instead of OPERATOR

• FXCP requires Operator to be in a RESOURCE FRAME

• FXCP requires a NOC code to be used for an operator

• FXCP suggests (but doesn’t require) a Responsibility Set to be assigned to organisation to denote that they are the provider of the data

• Specifies the different roles that an organisation can have e.g. data creator, aggregator, etc.

UML Diagrams : Operator
# Mapping TXC Operator Classifications to NeTEx

<table>
<thead>
<tr>
<th>TransXChange LicenceClassification</th>
<th>NeTEx TypeOfOrganisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>standardNational</td>
<td>txc:LicenseClassification@standardNational</td>
</tr>
<tr>
<td>standardInternational</td>
<td>txc:LicenseClassification@standardInternational</td>
</tr>
<tr>
<td>restricted</td>
<td>txc:LicenseClassification@restricted</td>
</tr>
<tr>
<td>specialRestricted</td>
<td>txc:LicenseClassification@specialRestricted</td>
</tr>
<tr>
<td>communityBusPermit</td>
<td>txc:LicenseClassification@communityBusPermit</td>
</tr>
</tbody>
</table>
<Operator created="2003-06-09T14:20:00-05:00" changed="2004-05-09T14:20:00-05:00" modification="revise" version="2" id="noc:SCWW">
  <PublicCode>SCWW</PublicCode>
  <ExternalOperatorRef type="dvsa:LicenceNumber" ref="dvsa:PD0000479"/>
  <Name>Stagecoach</Name>
  <ShortName>Stagecoach</ShortName>
  <LegalName>Midland Red South Ltd</LegalName>
  <TradingName>Stagecoach in Warwickshire</TradingName>
  <ContactDetails>
    <Email>schedules.warwickshire@stagecoachbus.com</Email>
    <Phone>01788 566068</Phone>
  </ContactDetails>
  <typesOfOrganisation>
    <TypeOfOrganisationRef ref="txc:LicenceClassification@StandardNational" modification="revise" version="txc:v2.1"/>
  </typesOfOrganisation>
  <Address id="noc:SCWW" version="2">
    <AddressLine1>Head Office</AddressLine1>
    <Street>Railway Terrace</Street>
    <Town>Rugby</Town>
    <PostCode.CV21 3HS</PostCode>
    <Province>Warks</Province>
  </Address>
  <PrimaryMode>bus</PrimaryMode>
  <CustomerServiceContactDetails>
    <Phone>0871 2002233</Phone>
  </CustomerServiceContactDetails>
</Operator>

For an example of an Operator with a ResponsibilitySet, see profile documentation.
SERVICE CALENDAR holds information about when services run.

A DAY TYPE ASSIGNMENT relates a DAY TYPE to actual calendar dates.
In FXCP, this is achieved with an OPERATING PERIOD (a range of dates).

TIME BAND allows particular times to be defined within a day type e.g. periods of congestion.

OPERATING DAY allows a non-calendar operating day to be defined e.g. 0400 to 0359 the next day.

DAY TYPE defines the various properties of a given operating day e.g. “Mondays to Fridays”.
Separate from the calendar days when a service actually runs.
Service Calendar and Day Types (XML)

<ServiceCalendarFrame version="txc:v2.1" id="fxc:UK:DFT:ServiceCalendarFrame_UK_PICALENDAR:TXC:txc" responsibilitySetRef="txc:TransXChange_metadata" dataSourceRef="txc:dft">
  <Name>Built in day types for TransXChange</Name>
  <codespaces>
    <CodespaceRef ref="txc_metadata"/>
  </codespaces>
  <dayTypes>
    <DayType version="txc:v2.1" id="txc:RegularDayType@monday-to-friday">
      <Name>Weekdays</Name>
      <properties>
        <PropertyOfDay>
          <DaysOfWeek>Monday Tuesday Wednesday Thursday Friday</DaysOfWeek>
        </PropertyOfDay>
      </properties>
    </DayType>
    <DayType version="txc:v2.1" id="txc:RegularDayType@Christmas_eve">
      <Name>Christmas Eve</Name>
      <properties>
        <PropertyOfDay>
          <DayOfYear>12-24</DayOfYear>
          <CountryRef ref="uk" refPrincipality="iso3166-2:GB-GBN"/>
          <HolidayTypes>EveOfHoliday</HolidayTypes>
        </PropertyOfDay>
      </properties>
    </DayType>
  </dayTypes>
</ServiceCalendarFrame>
UML: Network Topology

- A LINE is a grouping of (physical) ROUTEs known by a similar name or number.
- A LINE is associated with a main VEHICLE MODE and (if applicable) TRANSPORT SUBMODE e.g. bus / schoolBus or bus / railReplacementBus.
- A ROUTE is a sequence of points or links in a given DIRECTION. FXCP uses POINT ON ROUTE.
- A LINE may be grouped to form a related set e.g. 1/1A, Essex supported services, Nottingham Night Bus.
- A LINE has a main OPERATOR or AUTHORITY.
• Mapping of TXC Line element to NeTEx Line is straightforward

• A TXC FlexibleService maps to a NeTEx FlexibleLine

• Some elements can be populated from TXC Service
  o Use TypeOfServiceRef for TXC ServiceClassification
  o Use AllowedLineDirection for TXC service Direction

• Each LINE has to have a unique identifier within the operator’s codespace.

• It is not unusual to have Name or PublicCode as non-unique values – that’s OK so long as the id is unique

```xml
<Line version="1" id="stg:SCWW@86">
  <Name>86</Name>
  <Description>Stagecoach, Rugby, Line 86</Description>
  <PublicCode>86</PublicCode>
  <OperatorRef version="2" ref="noc:SCWW'/>
  <TypeOfServiceRef version="txc:v2.1" ref="txc:ServiceClassification@NormalStopping'/>
  <allowedDirections>
    <AllowedLineDirection version="1" id="stg:SCWW@86@outbound">
      <DirectionRef version="1" ref="stg:SCWW@86@outbound'/>
    </AllowedLineDirection>
    <AllowedLineDirection version="1" id="stg:SCWW@86@inbound">
      <DirectionRef version="1" ref="stg:SCWW@86@inbound'/>
    </AllowedLineDirection>
  </allowedDirections>
</Line>
```
JOURNEY PATTERNS describe how a vehicle works a given ROUTE.

A SERVICE PATTERN is a view of a JOURNEY PATTERN from the passenger point of view.

A SERVICE JOURNEY PATTERN is an ordered list of SCHEDULED STOP POINTS where passengers board/alight.

In FXCP, do not use TIMING POINT, only SCHEDULED STOP POINT.

Connections between stops can be defined.

A SERVICE JOURNEY is a passenger view of the SERVICE PATTERN a vehicle operates (trip) with PASSING TIMES allocated to each stopping point.
Scheduled Stop Points (XML)

- Only basic information needs to be present
- The stop code can be assumed to imply the existence of a STOP PLACE ASSIGNMENT to a STOP PLACE with the same code

```xml
<ScheduledStopPoint version="1" id="naptStop:4200F009301">
  <Name>Oakdale Road</Name>
  <NameSuffix>Opp</NameSuffix>
  <StopType>onstreetBus</StopType>
  <TopographicPlaceView>
    <Name>Binley Woods</Name>
  </TopographicPlaceView>
</ScheduledStopPoint>
```
Service Journey Patterns (XML)

- There is a direct equivalence between TXC JourneyPattern and NeTEx ServiceJourneyPattern.
- There isn’t an equivalent to TXC JourneyPatternSection.
  - Instead, populate the NeTEx ServiceJourneyPattern with the entire list of ScheduledStopPoint instances.
- Additionally, reference an onward ServiceLink corresponding to the TXC JourneyPatternTimingLink.

```xml
<ServiceJourneyPattern version="1" id="sta:SCWW@894416@">
  <Name>Rugby - Coventry</Name>
  <DirectionType>outbound</DirectionType>
  <TypeOfJourneyPatternRef version="txc:v2.1" ref="txc:Type_of_JourneyPattern@JourneyPattern"/>
  <pointsInSequence>
    <StopPointInJourneyPattern version="1" id="sta:SCWW@894416@1" order="1">
      <ScheduledStopPointRef version="1" ref="naptStop:43000001304"/>
      <OnwardServiceLinkRef version="1" ref="sta89441:JourneyPatternTimingLink@4"/>
    </StopPointInJourneyPattern>
    <StopPointInJourneyPattern version="1" id="sta:SCWW@894416@2" order="2">
      <ScheduledStopPointRef version="1" ref="naptStop:43000007102"/>
      <OnwardServiceLinkRef version="1" ref="sta89441:JourneyPatternTimingLink@5"/>
    </StopPointInJourneyPattern>
  </pointsInSequence>
</ServiceJourneyPattern>
```

etc etc
SERVICE JOURNEY is a passenger VEHICLE JOURNEY.

FXCP does not use DEAD RUNs.

Journeys can be specified as frequent services using a TEMPLATE VEHICLE JOURNEY / JOURNEY FREQUENCY GROUP.

Use DepartureDay Offset for trips that run in the early hours of the next calendar day.

Timetabled times at stops where passengers can board or alight are TIMETABLED PASSING TIMES.
A vehicle type may be assigned to a specific SERVICE JOURNEY.

The facilities available to the passenger may be denoted by the use of a SERVICE FACILITY SET.

Connections between different SERVICE JOURNEYs (e.g. terminal loops, circular services, change of line name on same vehicle) are possible using a SERVICE JOURNEY INTERCHANGE or JOURNEY PART / JOURNEY PART COUPLE [not shown].
A CALL is a representation of the details of a SERVICE JOURNEY that is more efficient to process
- Stores e.g. RUN TIMEs, WAIT TIMEs in context

FXCP can use CALLs as well as TIMETABLED PASSING TIMES (recommended)
- One CALL for each end of a TXC VehicleJourneyTimingLink
  - Incoming end ⇒ Call.Arrival
  - Outgoing end ⇒ Call.Departure
- Use ServiceLink as the OnwardTimingLink
  - Can add RunTime to the OnwardTimingLink (matches TXC)
- Can add WaitTime to Departure
Service Journey with Passing Times (XML)

```xml
<ServiceJourney version="1" id="sta:SCWW@894416">
  <DepartureTime>07:32:00</DepartureTime>
  <dayTypes>
    <DayTypeRef version="any" ref="hde:DT_02-Monday+Sunday_NotHoliday"/>
  </dayTypes>
  <ServiceJourneyPatternRef ref="sta:SCWW@894416@1"/>
  <BlockRef versionRef="EXTERNAL" ref="121"/>
  <LineRef version="1" ref="sta:Line@2"/>
  <DirectionType>outbound</DirectionType>
  <groupsOfServices>
    <GroupOfServicesRef version="1" ref="sta:Service@R86@out@monday-to-friday"/>
  </groupsOfServices>
  <passingTimes>
    <TimetabledPassingTime version="any" id="sta:SCWW@894416_01">
      <StopPointInJourneyPatternRef version="any" ref="sta:SCWW@894416@1" order="1"/>
      <DepartureTime>07:32:00Z</DepartureTime>
    </TimetabledPassingTime>
    <TimetabledPassingTime version="any" id="sta:SCWW@894416_02">
      <StopPointInJourneyPatternRef version="any" ref="sta:SCWW@894416@1" order="2"/>
      <DepartureTime>07:40:00.0Z</DepartureTime>
    </TimetabledPassingTime>
    <!-- etc etc -->
  </passingTimes>
</ServiceJourney>
```
Service Journey with added Calls

...<calls>
  <Call id="sta:SCWW@894416" version="1" order="1">
    <ScheduledStopPointRef version="1" ref="naptStop:43000001304"/>
    <OnwardTimingLinkView>
      <TimingLinkRef version="1" ref="sta89441:JourneyPatternTimingLink@4"/>
      <RunTime>PT8M0S</RunTime>
    </OnwardTimingLinkView>
    <TimingPointStatus>timingPoint</TimingPointStatus>
    <Arrival>
      <ForAlighting>false</ForAlighting>
    </Arrival>
    <Departure>
      <Time>07:32:00Z</Time>
    </Departure>
  </Call>
  <Call id="sta:SCWW@894416" version="1" order="2">
    <ScheduledStopPointRef version="1" ref="naptStop:43000007102"/>
    <OnwardTimingLinkView>
      <TimingLinkRef version="1" ref="sta89441:JourneyPatternTimingLink@5"/>
      <RunTime>PT1M7S</RunTime>
    </OnwardTimingLinkView>
    <TimingPointStatus>timingPoint</TimingPointStatus>
    <Departure>
      <Time>07:40:00Z</Time>
      <WaitTime>PT2M</WaitTime>
    </Departure>
  </Call>
</calls>
</ServiceJourney>
Using NeTEx for Routes and Timetables

3. Key Equivalencies
### Key Equivalencies between NeTEx and TransXChange

#### 1. NeTEx “Resource” Frames

<table>
<thead>
<tr>
<th>TransXChange</th>
<th>NeTEx Frame</th>
<th>NeTEx</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>TransXChange</td>
<td>CompositeFrame</td>
<td>ServiceFrame, TimetableFrame</td>
<td></td>
</tr>
<tr>
<td>NptgLocality</td>
<td>SiteFrame</td>
<td>TopographicPlace</td>
<td></td>
</tr>
<tr>
<td>ServicedOrganisation</td>
<td>ResourceFrame</td>
<td>ServicedOrganisation</td>
<td></td>
</tr>
<tr>
<td>Operator</td>
<td>ResourceFrame</td>
<td>Operator</td>
<td></td>
</tr>
<tr>
<td>VehicleType</td>
<td>ResourceFrame</td>
<td>VehicleType</td>
<td></td>
</tr>
<tr>
<td>OperationalProfile / RegularDayType, PeriodicDayType, BankHolidayOperation</td>
<td>ServiceCalendarFrame</td>
<td>DayType + PropertiesOfDay</td>
<td>Predefined day type s p rovided as FXC Pmetadata</td>
</tr>
<tr>
<td>ServiceCalendar</td>
<td>ServiceCalendarFrame</td>
<td>ServiceCalendar</td>
<td></td>
</tr>
</tbody>
</table>
### Key Equivalencies between NeTEx and TransXChange

#### 2. NeTEx Service Frame

<table>
<thead>
<tr>
<th>TransXChange</th>
<th>NeTEx Frame</th>
<th>NeTEx</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>StopPoint</td>
<td>ServiceFrame</td>
<td>ScheduledStopPoint + StopAssignment + StopPlace</td>
<td></td>
</tr>
<tr>
<td>StopArea</td>
<td>ServiceFrame</td>
<td>StopArea</td>
<td></td>
</tr>
<tr>
<td>RouteSection</td>
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<td>(GeneralSection)</td>
<td>optional</td>
</tr>
<tr>
<td>Route</td>
<td>ServiceFrame</td>
<td>Route</td>
<td></td>
</tr>
<tr>
<td>JourneyPatternSection</td>
<td>ServiceFrame</td>
<td>(GeneralSection)</td>
<td>optional</td>
</tr>
<tr>
<td>JourneyPattern</td>
<td>ServiceFrame</td>
<td>ServiceJourneyPattern</td>
<td></td>
</tr>
<tr>
<td>JourneyPatternSection</td>
<td>ServiceFrame</td>
<td>(GeneralSection)</td>
<td></td>
</tr>
<tr>
<td>JourneyPatternTimingLink</td>
<td>ServiceFrame</td>
<td>StopPointInPattern + TimingLink + TimingPattern +</td>
<td></td>
</tr>
<tr>
<td>Line</td>
<td>ServiceFrame</td>
<td>Line</td>
<td></td>
</tr>
<tr>
<td>OperationalProfile</td>
<td>ServiceFrame</td>
<td>DutyCrew, Block</td>
<td></td>
</tr>
<tr>
<td>Direction</td>
<td>ServiceFrame</td>
<td>Direction</td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>ServiceFrame</td>
<td>VehicleMode</td>
<td></td>
</tr>
<tr>
<td>ServiceAvailability</td>
<td>ServiceFrame</td>
<td>TimeDemandType</td>
<td></td>
</tr>
<tr>
<td>VehicleJourneyTimingLink</td>
<td>ServiceFrame</td>
<td>StopPointInPattern (+Onward ServiceLink + Run Time + Wait Time) + TimetabledPassingTime</td>
<td>Passing times must be computed</td>
</tr>
</tbody>
</table>
### Key Equivalencies between NeTEx and TransXChange

#### 3. NeTEx Timetable Frame

<table>
<thead>
<tr>
<th>TransXChange</th>
<th>NeTEx Frame</th>
<th>NeTEx</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service</td>
<td>TimetableFrame</td>
<td>Line + GroupOfServices</td>
<td>(JourneyGroupings)</td>
</tr>
<tr>
<td>StandardService</td>
<td>TimetableFrame</td>
<td>(Line + GroupOfServices)</td>
<td></td>
</tr>
<tr>
<td>FlexibleService</td>
<td>TimetableFrame</td>
<td>FlexibleServiceProperties</td>
<td></td>
</tr>
<tr>
<td>InboundJourneyGrouping</td>
<td>TimetableFrame</td>
<td>GroupOfServices + Direction</td>
<td>Fixed Day type 7 Direction</td>
</tr>
<tr>
<td>OutboundJourneyGrouping</td>
<td>TimetableFrame</td>
<td>GroupOfServices + Direction</td>
<td>Fixed Day type 7 Direction</td>
</tr>
<tr>
<td>CustomJourneyGrouping</td>
<td>TimetableFrame</td>
<td>GroupOfServices + Direction</td>
<td></td>
</tr>
<tr>
<td>ServiceClassification</td>
<td>TimetableFrame</td>
<td>TipoOfService</td>
<td>FXCP Value set</td>
</tr>
<tr>
<td>VehicleJourney</td>
<td>TimetableFrame</td>
<td>ServiceJourney,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TemplateServiceJourney</td>
<td></td>
</tr>
<tr>
<td>JourneyPatternInterchange</td>
<td>TimetableFrame</td>
<td>ServiceJourneyInterchange</td>
<td></td>
</tr>
</tbody>
</table>
THANK YOU

Any questions?

Please contact Julie Williams
julie.williams@traveinfo