

Travelline TNDs timetable data

Timetable data from

```
ftp://ftp.tnds.basemap.co.uk/EA.zip
```

(registration required). See

```
ftp://ftp.tnds.basemap.co.uk/servicereport.csv
```

for a list of content and what components of the filenames mean. The file

```
ftp://ftp.tnds.basemap.co.uk/log.txt
```

is vaguely amusing.

The data is in TransXChange 2.1 format (current is 2.5):

```
xsi:schemaLocation="http://www.transxchange.org.uk/ http://www.transxchange.org.uk
/schema/2.1/TransXChange_general.xsd"

http://www.transxchange.org.uk/schema/2.1/TransXChange_general.xsd
http://naptan.dft.gov.uk/transxchange/schema/2.1/TransXChange_common.xsd

http://naptan.dft.gov.uk/transxchange/
```

Universal service data in `EA/ea_20-U-_-y08-1.xml`

Likewise CITI7 date in `EA/ea_20-7-A-y08-1.xml`

TransXChangePublisher (currently 2.4_5) looks interesting, but doesn't seem to work on Unix

Observed features of the TNDs data

Each separate file appears to represent a 'line', containing a single Service entity itself containing a single Line entity, but then stands alone containing copies of all other referenced entities. Because files contain a single Service they also contain a single Operator.

In addition, the files impliment a 1:1 relationship between JourneyPatterns and JourneyPatternSections, and Routes and RouteSections.

SequenceNo

SequenceNo is an attribute of the From and To entities in a JourneyPatternTimingLink. It provides a sort key (unique for any given Service and JourneyPattern Direction) for ordering the timing information for the corresponding stop in a matrix timetable.

Direction is part of the uniqueness constraint because many stops are common to inbound and outbound trips (especially those at either end) but need to appear in different places in the timetable.

SequenceNo is not an attribute of a stop. That's because some stops appear more than once in a journey (typically with separate arrival/departure times) such as at the Railway Station on the Universal. However in the entire EA.zip file there are no examples of the same Service/Direction/SerialNo appearing with more than one StopPointRef. Further there are no To or From entities in the entire EA.zip file that don't include a SequenceNo attribute (though it is optional according to schema).

Observed TransXChange structure

[See also TND5_ERD.dia]

- TransXChange[CreationDateTime,ModificationDateTime,Modification,RevisionNumber,FileName,SchemaVersion,RegistrationDocument]
 - StopPoints
 - AnnotatedStopPointRef +
 - **StopPointRef**
 - Common Name
 - Indicator
 - LocalityName
 - LocalityQualifier
 - RouteSections
 - RouteSection[id] +
 - RouteLink[id] +
 - From
 - *StopPointRef*
 - To
 - *StopPointRef*
 - Direction
 - Routes
 - Route[id] +

- PrivateCode
- Description
- *RouteSectionRef*
- JourneyPatternSections
 - JourneyPatternSection[**id**] +
 - JourneyPatternTimingLink[id] +
 - From[SequenceNumber]
 - Activity
 - *StopPointRef*
 - TimingStatus
 - To[SequenceNumber]
 - Activity
 - *StopPointRef*
 - TimingStatus
 - *RouteLinkRef*
 - RunTime
- Operators
 - Operator[**id**] +
 - NationalOperatorCode
 - OperatorCode
 - OperatorShortName
 - OperatorNameOnLicence
 - TradingAs
- Services
 - Service +
 - **ServiceCode**
 - PrivateCode
 - Lines
 - Line[**id**] +
 - LineName
 - OperatingPeriod
 - StartDate
 - EndDate
 - OperatingProfile
 - RegularDayType

- DaysOfWeek
 - *[whatever]* +
 - *RegisteredOperatorRef*
 - StopRequirements
 - *[whatever]* +
 - Mode
 - Description
 - StandardService
 - Origin
 - Destination
 - JourneyPattern[id] +
 - Direction
 - *RouteRef*
 - *JourneyPatternSectionRef*
- VehicleJourneys
 - VehicleJourney +
 - PrivateCode
 - OperatingProfile
 - RegularDayType
 - DaysOfWeek
 - *[whatever]* +
 - SpecialDaysOperation
 - DaysOfNotOperation +
 - DateRange
 - StartDate
 - EndDate
 - BankHolidayOperation
 - DaysOfNonOperation
 - *[whatever]* +
 - VehicleJourneyCode
 - *ServiceRef*
 - *LineRef*
 - *JourneyPatternRef*
 - DepartureTime