TransXChange PTI Profile v1.1.A

Changes to the profile document v1.1

Date: 09.07.2021

Changes

- **13 potential XML changes to systems**

- **9 Industry feedback generated**
  - Technical challenges
  - Operator compliance challenges
  - e.g. Bank holidays

- **1 XML change not feedback driven**
  - Security risk
  - Only 'breaking' change in v1.1a profile

- **1 XML change bug**
  - DayShift

- **2 XML change integration with Location Data**
  - JourneyCode & BlockNumber

Implementation Notes

- 🔴➔ **summarises key mandatory points from the text.**

- 🟡➔ **summarises key optional points from the text**

- **BODS Implementation specific advice**
- **Validator tests**
- **Presentation Highlight**
  — Profile Change

  — Feedback

  — Change from Draft version due to consultation

Implementation Notes

- **Validator checks compliance**

- **Data quality checks quality and accuracy.**

- **Validator checks all mandated ⇨ profile requirements**

- **Data Quality tests:**

    https://publish.bus-data.dft.gov.uk/guidance/data-quality-definitions/

General Changes

General Changes

- **Typos**
- **Bad links**
- **Consistency of language (profile / schema)**

- **The use of 'Not used' when describing an element or enumeration signifies that the element should not be used when providing TXC-PTI data**
  — Not a validator failure

- **The use of Optional means that the data can be provided, but that any implementation using the TXC-PTI profile will not require the element and consumers cannot rely on its availability.**

Specific Changes & Advice

Department for Transport

Versioning Advice

- **RevisionNumber needs to increase for each version – doesn't have to be by 1 as suggested previously.**

- **Key Optional Point:**

- **Version control where data for a Service is split into multiple TXC files can become complex to manage very quickly both for data provider and consumer. It is recommended that data for each version of a Service provided in a single TXC file to reduce complexity.**

Versioning Advice

- **Guidance on Versioning**
  — New section explaining how versioning works in BODS.
  — Updated following consultation.

- **Validation tests**
  — CreationDateTime being always present and that it remains the same between files submitted with different RevisionNumber.
  — ModificationDateTime being newer than CreationDateTime if RevisionNumber is greater than 0.
  — Modification is a valid value.
  — RevisionNumber for new revisions is larger than the existing published one.

Notes

- **Validator tests:**

- **No dates**
- **Disallowed characters**
  - — Protect against injection attacks
- **Breaking Change**

- **No private notes**
- **The data is being made public**
- **All notes must be Private = False (default)**

Serviced Organisations

- **Mandated in Regulation if school, college or other educational establishment.**

- **Validator tests:**

- **Name > 5 Characters**
  — E.g. "College of West Anglia" or "Staffordshire schools"
  — NOT **SCH**

- **Provisional Dates have to be in future**

- **Requirement to keep WorkingDays up to date.**
  — Will require new data when new term dates published

Operator

- **NOC Code**
  — Additional background to the requirement and examples.

- **Validator tests:**

- **Only one Operator.**

- **No LicencedOperator**

- **NB post document note: LicenceNumber = Licence number of the operator responsible for operating the Service.**

- **NOC should be most granular NOC and one sued to register the Service**
  — i.e. First Essex not First Group

Services

- **BODS implementation is Registration based**
  - Not Line or Route based.
  - Will require some piecing together data by consumers
  - Data supplied to BODS must be structured in the same manner as the registration to which it relates. For example, where a single public-facing service is formed of multiple registrations, then the service must be split into separate files each with the relevant ServiceCode to align with the registered services.
  - Where there are multiple Lines on the same registration these must all be provided to BODS within the same ServiceCode.
  - Additional examples of ServiceCode provided.

- **ServiceCode must remain consistent between data submissions to avoid version management problems.**

Services

- **Validator tests:**
- **Only one Service element.**
- **Structure of ServiceCode**

```
<Service>
        <ServiceCode>PF0000459:134</ServiceCode>
</Service>
```

Operating Dates

- **Remove:**
- **…permitted unless the timetable is a seasonal timetable and the EndDate represents the end of a season no more than 1 year hence**

- **Validator tests:**
- **End date is no more than 4026 days (11 years) after the start date.**

JourneyPattern

- **Validator tests:**
- **At least one JourneyPattern for a StandardService**
- **valid InterchangeActivity enumerations for BODS are *change* and *through* only**

Lines

- **New RED requirement**
- Where information about a Line is split across registrations and is therefore contained in multiple Services the LineName shall be consistent across each Service.

- **LineColour element is optional and shall be included when a line has a preferred colour**

- **A service may consist of one or more related lines**

Lines

- **Validator tests:**

- **Where multiple Line elements are provided then each Line must have at least two StopPoints in common with other lines in the same TransXChange file**

- **requires OutboundDescription to be provided unless InboundDescription is provided and vice versa**

StopPoints

- **Working assumption stops should be in NaPTAN**

- **StopPoint is allowed for a maximum period of 2 months.**
  - Time to agree new stop or alternative arrangement
  - Longer than any known event with temp stop.
  - Long term diversions should have stop in NaPTAN.

- **Validator tests:**

- **This is validated by ensuring the RouteLink referencing the StopPoint is not used by one or more VehicleJourney for more than 2 months by checking start and dates of the OperatingProfile for the VehicleJourney**

Routes and Tracks

- **RouteSections are logically structured to facilitate re-use within Routes**

- **Explanation for why Tracks are important – mapping and real time**

- **Validator tests:**

- **Checks the RouteLink elements to ensure that no two RouteLinks are identical**

- **ReversingManoeuvres is not provided**

- **Direction is not provided (as this stops re-use)**

- **Track data must include 2 or more Location elements**

JourneyPattern

- **at least one JourneyPattern for each direction, that a service operates, of a non-flexible service**
- **(if one direction then only one journey pattern)**
- **Accept timeInfoPoint in JourneyPatternStopUsage**

- **Validator tests:**
- **if a JourneyPatternSection has non-zero times then the vehicle journey should not include link times.**
- **Check either DestinationDisplay or DynamicDestinationDisplay is provided.**
- **JourneyPatternTimingLink must not have a Direction.**
- **two JourneyPatternTiminglinks, A and B that follow on from each other. The details about the 'To' stop from link A shall be the same as for the 'From' stop in link B**
- **In JourneyPatternTimingLink checks the "From SequenceNumber" and "To SequeneceNumber" are populated.**

Activity

- **Originally every stop needed explicit Activity to be set.**
- **Very large files**
- **Now**
  - Shall always be included if the behaviour is not the default pickUpAndSetDown.
  - Permitted values are pickup, setDown, pickUpAndSetDown and pass.
- **If every stops activity is supplied this is acceptable**
  - i.e. no code change needed to achieve compliance

- **Data Quality Test:**
- **identifies where the first stop is designated as set down only and the last stop is designated to be pick up only.**

Vehicle Journey

- **Day Shift**
  - Clarified "When DepartureDayShift is used only a shift of one day (1) is allowed."
  - +1 not allowed because integer field.
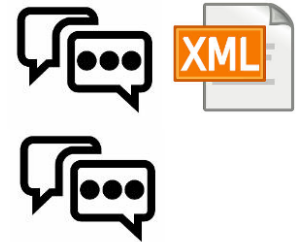
- **ValidatorTest:**
- **If a VehicleJourneyRef is provided within a 'VehicleJourney', then 'OperatingProfile' is not allowed**
- **If VehicleJourneyTimingLink is provided in VehicleJourney,then the number of links provided should be same as number of JourneyPatternTimingLinks**
- **Check either DestinationDisplay or DynamicDestinationDisplay is provided.**

Operating Profile

- **XML example corrections:**
  - — <Monday> to <Monday/> etc
  - — The use of a space before the ending / in an enumerated value is allowed within TXC-PTI. For example, either <Monday/> or <Monday /> is valid. It is highly recommended that within a file there is consistency of presentation.

- **Correction in 9.3.4 XML sample:**
  - — BankHolidayOperation to SpecialDaysOperation

- **ValidatorTest:**
- **Check that no grouping enumerations are provided**
- **if SpecialDaysOperation is used but no other day type (RegularDayType, PeriodicDayType or ServicedOrganisationDayType) raise an error**

Bank Holidays

- **ChristmasEve and NewYearsEve not strictly bank holidays but TXC thinks they are.**

- **Coding of Scottish bank holidays is not mandatory.**
  - Reduce complexity and number of data submissions

- **Recommended to code the additional days if route visits Scotland:**
    - Jan2ndScotland
    - Jan2ndScotlandHoliday
    - StAndrewsDay
    - StAndrewsDayHoliday
    - AugustBankHolidayScotland
  - Where an operator with a service that runs entirely within Scotland wishes to submit data to BODS then all the English bank holidays will need to be fully populated for the service to pass the validation tests

Bank Holidays

- **If every BankHoliday is supplied this is acceptable**
  - i.e. no code change needed to achieve compliance

- **Movable days e.g. BoxingDay, NewYearsDay will trigger need to update data annually to ensure DaysOfOperation are correct.**

- **Full XML samples for Bank Holidays**

Real Time Information

- **Change**
  - shall use the same references for the same elements that are used in SIRI-VM feeds
  - To
  - shall use the same references for the equivalent elements that are used in SIRI-VM feeds

- **Add TicketMachine JourneyCode as listed field**
- **Add**
  - JourneyCode and Block shall be provided as soon as they are available from operational management systems.
  - JourneyCode must be unique within the Line.

Real Time Information

- **Examples of JourneyCode & BlockNumbner**
  - Explanation of why journey code and block are important

- **JourneyCode is required**
- **Needs to match VehicleJourneyRef in SIRI VM feed.**
- **BlockNumber is required**
- **Needs to match BlockRef in SIRI VM feed.**

- **Key to providing quality information to customers.**
  - Makes it much easier to provide cross journey predictions in real time systems

- **Data Quality Test:**
- **Block is provided if service valid in next week.**

Registration Based

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Questions