



Department
for Transport

TransXChange PTI Profile v1.1a



Changes to the profile document v1.1

Date: 16.06.2021

Changes

- **8 potential XML changes to systems**
- **7 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
- **Lots of advice on BODS Validator**
- **Workshops on Validator**

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



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 (some still exist)
- 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

Versioning Advice

• 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.

Revision Number	Start Date	End Date	February 2021	March 2021	April 2021	May 2021
0	01-Feb-21	(empty)				
1	01-Mar-21	(empty)				
2	01-Jun-21	(empty)				
			Revision 0 is valid	Revision 1 is valid as it has a later StartDate than Revision 0	Revision 2 is valid as it has a later StartDate than Revision 1	

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Revision Number	Start Date	End Date	February 2021	March 2021	April 2021	May 2021
0	01-Feb-21	(empty)				
1	01-Apr-21	30-Mar-21				
2	01-Jun-21	(empty)				
			Revision 0 is valid	Revision 1 is valid as it has a later StartDate than Revision 0	Revision 0 is invalid as Revision 1 superceded it. Revision 1 EndDate is passed so no longer valid.	Revision 2 is valid as no other data is available.
No valid Revision is available so no data provided to data consumers from BODS.						

Service	Line	Revision Number	CreationDateTime	ModificationDateTime	Modification	Comment
4		0	2021-01-28T18:53:49	Blank	New	New registration
	4a	0	2021-01-28T18:53:49	Blank	New	Initial timetable
	4b	0	2021-01-28T18:53:49	Blank	New	Initial timetable
	4c	0	2021-01-28T18:53:49	Blank	New	Initial timetable
4		1	2021-01-28T18:53:49	2021-04-03T08:23:45	Revise	Revision Number increased because new file created to supply 4a revised timetable
	4a	1	2021-01-28T18:53:49	2021-04-03T08:23:45	Revise	Revised timetable
	4b	0	2021-01-28T18:53:49	Blank	New	No change
	4c	0	2021-01-28T18:53:49	Blank	New	No change
4		2	2021-01-28T18:53:49	2021-05-15T13:04:32	Revise	Revision Number increased because new file created to supply 4b revised timetable
	4a	1	2021-01-28T18:53:49	2021-04-03T08:23:45	Revise	No change
	4b	1	2021-01-28T18:53:49	2021-05-15T13:04:32	Revise	Revised timetable
	4c	0	2021-01-28T18:53:49	Blank	New	No change
4		3	2021-01-28T18:53:49	2021-06-04T08:32:56	Revise	Revision Number increased because new file created to supply 4b revised timetable
	4a	1	2021-01-28T18:53:49	2021-04-03T08:23:45	Revise	No change
	4b	2	2021-01-28T18:53:49	2021-06-04T08:32:56	Revise	Revised timetable
	4c	0	2021-01-28T18:53:49	Blank	New	No change

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

- **Validator tests:**
- **Only one Operator.**
- **No LicencedOperator**

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



Services

- **Data for BODS is Registration based**
 - Not Line or Route based.
 - Will require some piecing together data by consumers
- **ServiceCode must remain consistent between data submissions to avoid version management problems.**
- **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

- **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
- **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**
- **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)
- **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 SequenceNumber" 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

- **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

- **ValidatorTest:**
- **Check that no grouping enumerations are provided**
- **if SpecialDaysOperation is used but no other day type (RegularDayType, PeriodicDayType or ServicedOrganisationDayType) raise an error**
- **When DepartureDayShift is used only +1 is allowed**

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
- **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.**



Real Time Information

- **Block 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.**



Timescales

- **Comments until:** **24 June**
- **Publish final v1.1A** **2 July**



Questions