



## **PTIC special meeting 21 May 2020**

### **Attendees**

Ian Barratt, Lancashire County Council

David Batchelor, Ticketer

Nic Cary, Waysphere

Kieran Holmes, Independent

Kelyani Homkar-Desai, Basemap

Teresa Jolley, DEFT153

Tom Lake, Interglossa Ltd

Dave Mountain, Transport API

Cian O'Connor, Data Manager in National Transport Authority, Ireland

Stuart Reynolds, Independent

Tim Rivett, RTIG

Dan Saunders, Basemap

Peter Stoner, ITO World

Rob West, Elydium, open data solutions

### **Introduction from Tim Rivett**

The purpose of this special meeting is to share the latest version of the work Stuart has been doing on the TransXChange profile 2.4 for the Bus Open Data Service.

The next full PTIC meeting will be on 18th June 2020.

We didn't go into the details of the difference between profile and schema in this meeting, as this was explored in the 11th Feb 2020 meeting. See Tim's RTIG slides, and item 5 on the minutes of the 11 Feb 2020 meeting:

[http://ptic.siri.org.uk/system/files/meeting\\_files/papers/20200521%20PTIC%20Schema%20vs%20Profile.pdf](http://ptic.siri.org.uk/system/files/meeting_files/papers/20200521%20PTIC%20Schema%20vs%20Profile.pdf)

## **1. Update from Stuart Reynolds**

The TXC Public Transport Information Profile document:

[http://ptic.siri.org.uk/system/files/meeting\\_files/papers/TransXChange%20UK%20PTI%20Profile%20v1.0.pdf](http://ptic.siri.org.uk/system/files/meeting_files/papers/TransXChange%20UK%20PTI%20Profile%20v1.0.pdf)



Accompanying slide deck:

[http://ptic.siri.org.uk/system/files/meeting\\_files/papers/TXC%20PTI%20Profile%20v1.1%20%28Final%29%20191111.pdf](http://ptic.siri.org.uk/system/files/meeting_files/papers/TXC%20PTI%20Profile%20v1.1%20%28Final%29%20191111.pdf)

The work has grown from a number of early discussions and roundtables, where we gathered what people felt were the issues and what needed to go into Profile. Stuart put together a number of roadmaps along the way, to reflect back what people were learning, asking for and commenting on.

The slidedeck issued before Christmas 2019 brought all this together into a high level summary that was designed to provide people with a starting point for details about the TXC 2.4 Profile that people can use.

The Profile document has been developed into a more formal specification document that we are looking at today.

### **1.1 Changes made since the Christmas 2019 version:**

1. Addressing comments people had made
  - a. adjusting some terminology to make it clearer, and associated rephrasing in some areas to make it really clear what is needed;
2. Two areas added as a little surprise were:
  - **Vehicle Accessibility features** (because on a deeper look Stuart discovered that the 2.5 schema had a lot of details on this, but that the 2.4 schema had more than we had first imagined, and that the 2.5 schema expanded on those in the 2.4 schema). So, Stuart felt it was relevant and useful to include it as a voluntary option in the 2.4 profile (not mandatory, because it didn't form part of the consultation). Under the PSVAR requirements, most, if not all vehicles, should now be accessible. But, it would still be useful to have more information on the details of these on board vehicles, such as number of wheelchair spaces, type of AV equipment, availability of ramps etc). Stuart clarified that 'This is optional and you must', means if you are going to do this then this is what you must do...' Will make this clearer in next version.
  - **Interchanges** - these are not handled well or easily in TXC, and there are lots of issues around them. But, the reality of the world is, we do have a lot of interchanges that we need to convey within data, and that it is plausible to do so. However, some services (the X5 from Oxford to Cambridge is one example) it is registered in four pieces. Because DfT want to keep the link between TXC files and registration, that means for these situations (unless an operator chooses otherwise) we will have multiple TXC files for one service. For these, pan handles, circular services etc, there is no reason not to connect the separate files if you can. At the moment, TNDS provide set of files external to the TXC data, which explains how they each connect together, but this is not very usable to downstream users of the files So, Stuart has added in, as an optional choice, how to use



the Trip- and Service- Interchange aspects of TXC to join these services together. Again, this is not mandatory, but is intended to make the data quality of files better.

3. Changes requested from DfT
  - a more tabular format for some of the content.

## **1.2 TXC 2.4 Profile document structure and purpose**

The target audience for the Profile document is TXC data producers (largely software suppliers such as Omnibus, who create TXC files of bus routes for bus operators). The document is structured into sections, organised according to how you might organise your thoughts, in a practical/operational sense, not in the standards-based order that you will find in the TXC schema guidance or TXC file.

There are a couple of general topics are set up front, to introduce in wider terms (accessibility, versioning, service organisations).

The document also includes examples, and snapshots of the xml code.

Each section is summarised with a red or amber arrow, to identify mandatory and optional requirements. These summaries are intended as an aide-memoire, not a full list of everything in the text of that section.

There is also a much heavier and detailed document that covers the TXC schema. This is for those who really want and need the detail. The Profile document is written in a much more accessible way, meaning if you are getting into TXC for first time, it is a useful primer for doing so, without needing to read and understand the full TXC schema document.

Stuart has tried not to rewrite any of the schema document in this Profile, as didn't feel it's necessary. DfT have asked for a bit more detail from the schema doc to go into the guidance doc, but Stuart is trying to resist this as much as possible.

Q: where is this being referenced from? Will there be a BODS website?

### **Action:**

- identify where this guidance document is going to be hosted

## **1.3 Which schema guidance to use?**

Stuart expects many people are using older versions of the schema guidance for, TXC 2.1. But it has been updated to include comments answering questions people have raised.



For the Bus Open Data programme, we are working with TXC 2.4 schema, which is what Stuart's Public Transport Information profile is based on. But the 2.5.1 schema guidance is currently up to v59 and goes into huge detail.

Experience from those in the meeting was that currently, their focus is on populating what they have from 2.1 into 2.4, to ensure it is consistent. Next job will be to start to look at new stuff (things in 2.4 that were not in 2.1) that they could add in. The update to 2.4 is being undertaken on more of a case-by-case basis, based on priority and demand.

### **Actions:**

Make it easier for people to find and use the TXC guidance documents, by:

- Confirming with DfT when and where the TXC 2.4 Profile guidance document will be published;
- Encouraging DfT to:
  - publish 2.5.1 schema v59, and clarify this is the latest version;
  - remove 2.5 from the front cover of this document, and rebadge it as the single current live guidance for all TXC schema versions;
  - provide links in the BODS data submission pages to the TXC schema guidance, and the TXC 2.4 Profile document;
  - Update (or remove) all other references to TXC guidance to reflect this
- PTIC to provide clarity on and links to the TXC guidance documents, to help everyone understand when and how they should be using them:
  - For those new to the details of TXC, begin with the TXC 2.4 Profile guidance document
  - where you want or need more detail, always use the latest version of the TXC schema guidance (currently 2.5.1). We are asking for this to be renamed (see above), as it is relevant for ALL versions of TXC, and identifies which aspects were introduced in which versions.
  - Stuart to check and tweak the introduction to the TXC2.4 Profile to help bring clarity on this

## **1.4 Discussion**

**The value of BODS is considered to be for app developers, but is the barrier to entry too high for them?**

Concerns were raised that we don't have, and still need, a much simpler point of entry to understanding the data available from BODS, to help ensure app developers/others using it can do so intelligently and usefully.

An example of an area of confusion from a data users' perspective would be the choice data producers make on whether to place vehicle journey information in the vehicle journey field, or



encode it in other (optional) ways. Doing it one way creates huge file sizes and duplicate data records. Doing it another means smaller file size and neater code, but a track and trace exercise for data users to figure out how to piece the data back together again.

The focus from DfT has been to retain a degree of traceability between service registrations and data files uploaded to BODS. This means that depending on how an operator has chosen to register a service (which could be through one, or multiple services), will determine how many separate TXC files will be required for that service (one TXC file per registration)). This has the potential to create multiple keys/IDs which can become messy. Also, DfT hasn't wanted to increase the burden on bus operators to change instances where a service comprises multiple registrations.

Stuart reminded us that the focus of the Public Transport Information 2.4 guidance is to help data producers increase consistency and quality of data entered into BODS. Even with this target audience in mind, the document is still a good primer and introduction to TXC to others.

We recognised that making data open does not necessarily require that it is easy to use. Also that the app developer market appreciates the level of simplicity associated with GTFS; they don't want to learn huge amounts of data details and knowledge.

Part of the role of this PTIC group is to consider data quality matters, standards etc, and how people adapt to these / we influence to adjust the standards. In early data discussions with DfT, GTFS was the favoured format, and it took a lot of effort to make it clear you can't do the complexity required in the UK with GTFS, without developing a whole range of extensions. TXC is UK's chosen standard to help solve this. Also, we are on the route to NeTEx. In that sense, TXC is an intermediary stage on this journey.

Given the complexity of TXC, we should perhaps not be publicising BODS as the resource for open data, but instead direct them to people / organisations (like Transport API, ITO World etc) who will have done the heavy lifting work to maximise accuracy of the data and output to the public?

### **Maintaining the Public Transport Information Profile guidance in the future**

A question was raised about the plans in place for maintaining and updating the guidance into the future. Having the requirement embedded into law helps, but it's still not clear what maintenance plans are in place, particularly as Stuart will be stepping down later this year.

### **Relevance of commercial basis and layover points in the guidance**

Some attendees questioned if the 'CommercialBasis' field (see section 9.2.1 of the guidance) was still used / needed. Local Authority representatives confirmed that yes, they are needed and used, to identify within published timetable information where services are supported by public funding.



It is also useful for accessibility planning and some attendees recalled its use in the Accession accessibility tools in earlier versions, to help figure out ‘how many people live within x miles of a bus stop with an hourly service?’

Dan Saunders confirmed that Basemap developed their Tracc service that provides these resources to plan services.

Some attendees questioned if the ‘LayoverPoint’ field (see section 9.2.1 of the guidance) was still used / needed. It is helpful for real time systems.

**Actions:**

- It was requested that the guidance is changed to reflect these uses and remove the ‘shall not use’ statement

**Will BODS mean that changes to Traveline data services and TNDS?**

Tim Rivett shared he felt that BODS will end up taking over a lot of things that Traveline and the TNDS does/provides now, for data analysis and transport planning. but Traveline provides other reporting that won’t be covered through BODS, and across all public services (including ferry and tram), not just bus.

Tim added there are lots of uses for the TNDS dataset, and is not sure there has been a mapping exercise, or analysis, of these.

There is a risk with the introduction of BODS, that local /regional authorities stop sending data to Traveline, and Traveline regions start to reduce their effort. There is already happening in Reading, where Reading buses are submitting data to BODS and Reading Borough Council have chosen not to participate in the Traveline data management process so Traveline is having to liaise with Reading Buses to get the data back into TNDS.

**Managing latest TXC files and updates from operators**

Operators typically update their TXC files and reissue the latest version on a regular basis, sometimes weekly.

From a data management perspective, this can create a number of challenges, including:

- where it is not clearly marked what has been changed since the previous version.
- with the latest files going into the ‘current’ folder in BODS, there is no historical record of previous versions. This means it is not possible to view changes over time.



However, it was agreed that any decisions about frequency of update of TXC files is a matter of policy which is outside the scope of this guidance document.

## 2. Vehicle Location data updates

### 2.1 AVL latest

Tim Rivett shared the latest progress on AVL part of BODS, as follows:

- this is not as far advanced as the routes and timetables TXC, but will still be mandated from Jan 2021
- KPMG are doing the Discovery work for this
- SIRI-VM will be used / required for the AVL for BODS
- frequency of position reporting will be between every 10-30 seconds
- one of the key things to come out of the Discovery is the recognition of the need to have strong and robust links between AVL (SIRI-VM) and TXC. Without this, people won't be able to produce predictions using BODS. This is being explored in several ways:
  - a mapping exercise of fields in both the AVL and TXC data, to find ones where matches can be made
  - the vehicle journey reference is going to be mandated in the TXC
  - engaging with ETM providers Ticketer and Vix to understand how to bring consistency in format of SIRI-VM datafeeds across multiple clients (operators). Still need to engage suppliers who include AVL feeds to other types of on-board equipment like engine management units.

Feedback was that it's good to see the work happening to improve the matching of data between AVL and TXC. At the moment, it's mostly only possible through algorithms to try and make best guess matches to connect both and make predictions. This is challenging because, for example, the AVL might express operator code as garage code.

Without running board data, cross-journey matching will not be possible, which means that the first few stops on the start of a new journey will not get predictions.

There is also no consistency in use of either regional or national operator codes, so it would be good to get some consistency in which referencing systems (e.g., regional or national operator codes) should be used. This is being looked in to and ETM operators are being asked to explore what is possible.

Some wondered what had happened to the plans for the Bureau Service, as this seems to have stalled?

Others wondered how suppliers were being kept in the loop and supported to align their products and services with the data requirements of BODS? We understand DfT provided information to



them about what will be required, but its not clear if or how any follow up support is being provided.

### **Impact of Covid-19 on BODS programme of works**

The priority at the moment is to be able to share the loading / number of people on a bus, and predicted capacity.

- RTIG put a paper out on how to manage this with current data.
- DfT exploring options for counting, with need for bus drivers to manually record count of passengers on and off seen as the most practical solution in the immediate term.
- DfT looking at a bespoke addition to the data fields to record when vehicle was last cleaned.

### **Change request for fuel type to be included**

Before Covid-19 started, there was discussion about fuel and fuel types, and information available in NeTEx but not SIRI. A change request has been logged to include fuel type in the data file.

#### **Actions:**

- **Tim to find out when next BODS Implementation Group meeting is, where PTIC can understand the plans for providing support to Operators and local authorities to get to grips with both the TXC and AVL requirements;**

## **3. AOB**

Stuart Reynolds confirmed that after spending quite a lot of time on this work, and with Traveline regions, given the current Covid and open data situation, he is making a career change from September to become a secondary school teacher in Physics.

Nic thanked him immensely, and asked how his work will be taken forward.

Stuart doesn't know, but is confident there are enough skilled and knowledgeable people to take it forward. He also felt DfT might be interested in bringing some expertise back in-house.

## **4. Date of Next Meeting**

18th June 2020, most likely virtually, but if we are able to, then we have a room booked at CPT in London.