



PTIC 29 September 2023

Video: <https://youtu.be/TwW3eCDe11M>

The papers presented at the meeting are available on the PTIC website:
<https://pti.org.uk/meeting-20230929>

Video timings for the start of each agenda item are provided below.

Actions in red text

Opportunities to engage/test/feedback in green text

Contents

| | |
|--|----|
| PTIC 29 September 2023 | 1 |
| 1. Introduction..... | 2 |
| Attendees: | 2 |
| Apologies..... | 2 |
| 2. Notes of last meeting 9 June 2023..... | 2 |
| 3. Bus Open Data Digital Service (7:00 - 53:00)..... | 3 |
| 3.1. Routes & Timetables (7:00 - 25:05)..... | 3 |
| 3.2. Location Data (25:05 - 39:00) | 6 |
| 3.3. Fares (39:00 - 41:30) | 8 |
| 3.3 Disruptions service from DfT (41:30 - 53:00) | 9 |
| 3.4. Flexible Services (53:00 - 55:25) | 11 |
| 3.5. Building BODS For The Future (55:25 - 56:30) | 11 |
| 4. Traveline (56:30 - 1:02:55) | 11 |
| 5. EU Standards Development (1:02:55 - 1:09:30)..... | 12 |
| 6. Issue Log (1:09:30 - 1:15:40) | 13 |
| 6.1. Issue 101 - Enhanced Partnership registration numbers | 13 |
| 6.2. Issue 102 Flexible Bus Services..... | 14 |
| 7. Next Meeting (1:15:40 - end) | 14 |



1. Introduction

Attendees:

Mike Baxter, Leicester City Council

Justin Bloom, Vix

Amy Brown, Traveline

Nic Cary, DEFT153

Thomas Fairey, Stagecoach

Josh Goodwin, BusTimes.org

Teresa Jolley, DEFT153

Ben Murray, KPMG, BODS

Mike Nolan, Traveline

Steven Penn, KPMG, BODS

Tim Rivett, RTIG

Dan Saunders, Basemap

Nick Truscott, Cornwall Council

Rob West, Elydium

Keith Willis, React Accessibility

Adrian Gruetter, Ember

Apologies

Tricia Wright, Nottinghamshire

Dr. J Harrison, DfT

Graham Browne, WYCA

Peter stoner, Ito World

David Batchelor, Ticketer

Ian Barret, Lancashire County Council

Mark Jones, Transport for Wales

Triumph Okojie, DfT

2. Notes of last meeting 9 June 2023

No actions of any import



3. Bus Open Data Digital Service (7:00 - 53:00)

3.1. Routes & Timetables (7:00 - 25:05)

Update from Ben Murray, with [slide deck](#)

Covering three things:

1. Metrics that we are measuring,
2. Development work we are undertaking,
3. Heads up on plans for rest of 2023

Metrics we are measuring:

- How complete we are
- How up to date the data is

Level of completeness

There are around 8k service codes published in total. This includes both registered and unregistered services. Although unregistered services don't have to be published to BODS, it is useful to have them on there.

Of these:

- 6.6k service codes published to BODS match up with OTC registrations.
- 1.2k service codes need attention

We're using a machine-readable tool to interpret OTC data (lines associated with each registration) visible in the data catalogue. There are various different separators used: such as pipe, comma or spaces, so we're applying rules to match data from OGC API with line information in service codes on BODS.

Measuring how up to date the data is

1. Is data really old? check to see whether or not it has been updated in more than 12 months
2. Have there been any changes on OTC database such as for frequency or routes)? If so, then BODS should have been updated too
3. Are there any validity / operating period end dates in the data? If these are there and in the past, then consider your data requires attention

We are checking: Have you published? Is it updated recently? If you have updated BODS, have you updated OTC too? The vast majority of published services are up to date as far as we can tell.

We're only checking presence of valid / up to date data, not accuracy (i.e., we're not reconciling data in the TransXChange file to what's advertised on the website or in the details of the registration).



We're currently trying to find ways to visualise that information for an operator to help them check the accuracy for themselves, or to enable third parties to check that accuracy too.

Dan Qu: are we saying 8k service codes published in BODs and 6863 registered on OTC, what's missing that isn't in BODs?

Ben: need more tools to help us answer that.

Got all of the registrations on OTC database, but several of these are out of scope of BODs for 2 reasons:

- **might not be English services** (if purely in Wales or Scotland, then out of scope for BODs). If cross-border, then they are in-scope for BODs but:
 - there isn't an indicator that we've implemented yet onto BODs that measures whether they are a cross-border service, and whether that service is purely in Wales or Scotland.
 - Looking to get that information by using data about the local authorities that are associated with the registration. If registration is only with a Welsh Local Authority, then Welsh and not in scope for BODs. But if registered as a combination of both Wales/England or Scotland/England, then consider these in-scope for BODs. Same with London - if registered with TfL and a local authority - will be cross-border and in-scope for BODs.
 - will bring this information in automatically - but have done this manually so far
- **2nd - assessed and determined as out of scope by DVSA.**
 - conversations with DVSA and OTC and talking with local authorities - to determine which services are out of scope of BODs. Determination of how that has been made in some cases.

Considering these two ways of marking data as out of scope, we have a count of 90% services registered with OTC are published on BODs.

Not sure yet how many of the 90% are in need of attention yet.

Action for Ben Murray to respond to Dan Saunders, with exact numbers of service codes registered with OTC, and in scope.

Separate count for Fares, and AVL, which are all available, and can bring to the next meeting.

Tim: action for Ben to share the data with Tim and Teresa in the next week or so, so we can circulate.



Discussion / questions

Cross-border

Rob West: re: cross-border services, and circulated local authorities, personally found this to be unreliable. If someone publishes without the right local authority reference, it can be deemed out of scope incorrectly. We found that NaPTAN codes give you a much better / accurate way of figuring this out, are not that complicated to implement, and make it more difficult to find a loophole.

Ben: Thanks, but this is a bit back-to-front though. The problem is, we need to know before the data is published whether it is in scope or not. But we can only detect from the stops once its been published. We're aiming to bring up a list of 'what does complete look like?' And that list is based on what's on the OTC database. There are some data quality problems that I'm working with stakeholders, including local authorities maintaining the registrations to help address.

We're providing local authorities with a list of services we can see are associated with them, and how complete the data is, for them to check and compare against their records.

You are right, there is capacity for loopholes where the registration is not updated correctly, and doesn't have the English local authority listed even when it does cross the border.

In terms of details of the stops that are used, if that data was published to BODS, we could take this and see what areas they are in, but if they are not published to BODS then we can't see that information.

Rob: I cross-referenced with a different source, such as TNDS, but appreciate this might not be appropriate always, and might not be something you can do easily.

Ben: Checking with other sources to see what other data is already out there, and assessing whether that should be on BODS is something we've looked at. It's not currently something we're looking at in short term, but has been on my radar of one way measuring what complete looks like.

Registrations are seen as source of truth, but there are issues with the quality of that. Therefore would be helpful to feedback to OTC to suggest updates and corrections to help correct that loop.

Registrations from Local Authorities who have assumed Traffic Commissioner responsibilities

Nic: you've checked if service codes are registered with OTC. Does this include local authorities who have assumed Traffic Commissioner responsibilities?



Ben: working with TfGM, TfWM, WECA and Hertfordshire County Council to try and get the registrations that are managed there into BODs. Not been achieved yet, and we're looking at ways to do that.

Nic: that sounds like quite a large gap?

Ben: It is. Biggest is TfWM with around 1,000 registrations. Looking at an interim and long-term solution (connecting to API). Interim solution - manually import the data, extract from each entity, and import into BODS, until we have API that BODS can talk to.

Nic: out of your 403 active feeds, will this affect your AVL assessment, or just timetables?

Ben: purely timetables.

3.2. Location Data (25:05 - 39:00)

Ben: 403 feeds, which mostly translates to around 400 operators publishing AVL for their fleets. 50 new feeds this year.

Think we are around 3/4 complete. Anticipate approximately additional 100 operators to publish their data.

How we are measuring completeness:

- currently, for timetables, we look at what licenses they are associated with. If a license has no organisation associated with it, then we will get that set up and get them invited
- there are around 100 operators who have not a published AVL feed yet
- we are not reviewing content of feeds yet, to see if they contain information for all published journeys. We're hoping to do this in a manual way - look at journeys and lines and services that are present and published, and then review AVL data to see at least some of the AVL data for each of the lines and services. Currently, all we are doing is checking if AVL is published, not the content, and the current assumption is if a feed there, it applies to all services from that operator.

We are doing in active way - how well the data matches. Sample check AVL messages that we are receiving and ask:

- can we see a TT for that?
- Does the TT have the right data in it?
- Is there is a clear match with no duplication?

We don't use revenue codes in our matching algorithm

We do use national operator codes, line names and journey code



75% or above good matching through this.

Reasonable amount of operators where every AVL message we are receiving - using NOC and Line name - we can see exactly what journey that bus is on, including the origin and destination.

Release highlights

- **AVL matching report**
 - updating matching reports to make them simpler; reorganising report structure. The audience is mostly suppliers like Ticketer, Trapeze, Omni etc.
 - making it easier for operators to achieve 100% for AVL matching score
 - We don't have service codes in AVL message. Sometimes we can't see if that journey is for line 1 in town A or Line 1 in town B if NOC is the same. Service code required to see which of these Line ones it is.
 - no operators can supply this data, and we don't want to mark them down for that. So we don't include this in the assessment
- **Disruptions integration**
 - New data created is now available through BODS
- **Timetable Data Catalogue**
 - If you can see a registration that's not published, you can see what organisation should have published that data.
 - Also, we have the details of the lines that belong to each registration in question.
- **Application monitoring**
 - Bad performance on BODS earlier in year. A few blips since. Have really improved monitoring and visibility of infrastructure behind BODS, to see when and why there are availability issues. Have had a long period of low latency and high performance recently. Can now deal with blips/downtime this when it gets worse.
- **OTC synchronised**
 - Improved the way we connect with the OTC - if we detect a change to a registration / service on the OTC, we can map this more effectively to the data that has been published on BODS.

Upcoming features

- **Personally identifiable information:** Noticed there are some Windows usernames are included in headers of TXC files. So we are blocking and removing these as we encounter them
- **Flexible services validation rules:** in October 2023, we are implementing these and following that, implementing visibility of flexible services. Not expecting much to be published with this type of data, but the ability will be there
- **Line-level completeness:** in December, using the detail we have now about which lines belong to which registration, and start reporting on whether we can see all the data for those lines, across all the different data types we've got.



Discussion / questions

Nick Truscott: Have just downloaded the Cornwall Council Detailed Service Code Export report, and am slightly concerned with what I'm seeing in it. How do we interpret that, and engage with operators to discuss how to address this?

Ben: Use report, and work with operators to achieve 0% services requiring attention. Should be able to use the detailed export, look at services listed, and see the operators associated with service codes, and see if published or not, and if they need attention or not.

Two main reasons requiring attention:

- unpublished
- not updated recently (e.g., out of date)

Nick: some appear to be split registrations, where the Timetable uploaded to BODS is for whole route, and the bit that is marked as stale is the split registration part. Also one operator listed is no longer operating.

Ben: split registration - we can update to mark these as out of scope. And work with OTC to get old ones removed.

Ben Murray: Action to follow up with Nick Truscott to help update Cornwall report.

Tim R: Split registration - it is an issue industry-wide. I've been thinking about options for how BODS could handle it - advice coming out in due course on that, hopefully to resolve / make these issues easier to handle. Widespread, and something operators raise on a regular basis.

3.3. Fares (39:00 - 41:30)

Update from Stephen Penn

No real big changes in terms of BODS. Small change to rectify an error in the validation process, that was marking various files as invalid when they weren't.

Ticketer pushed out their updates, so that bus operators can export valid NeTEx. Should now start to see that more and more of the fares data is being marked as compliant as operators update and refresh their datasets.

Some Ticketer operators are still being marked as non-compliant, but that's because they have fare zones without stops in, which I believe is due to issues locally - where things aren't in NaPTAN that should be, or there's a disagreement between operators and local authority about



what constitutes a stop. Need a fare zone to have stops in it - otherwise its useless from journey planning and pricing perspective.

Vix are yet to release their updates, so Stagecoach data will still be non-compliant.

Next steps:

- **update to the Validator to handles carnet fares**, which it currently will mark as non-compliant. Advisory note soon on how BODS expects to see this handled.
- **getting more data published** from operators through supplier services,.

3.3 Disruptions service from DfT (41:30 - 53:00)

Update from Stephen Penn

New DfT-owned Disruptions Service went live in August, and is now integrated with BODS. You can download SX from the Disruptions service in the same way as you would Timetable and AVL data etc. Currently only available via API or direct URL download.

We will in future enable browsing via local authorities to see active disruptions in that area (because some operators saying they don't have full visibility of disruptions in their area, which are impacting their services).

We've onboarded all local authorities who were using the Ito DMT service that covered the north of England, so all data will now come from/through the DfT Disruptions Service API.

Cornwall have been first non-northern local authority to join the service. Also looking at a few other local / regional authorities to join in the next few months.

Discussion / questions

Cornwall experience of using Disruptions Service

Nick Truscott: We are transitioning our disruption information into the system, and have a number of disruptions live in the system. Notice they are getting picked up on Bustimes.org. For us this is another step in the journey towards a single source of truth for information.

I'm adding descriptions and linking to the One Network description of why the closure is occurring in first place, so the customer can see the cause of their disruption. Important for us as we have a lot of big highways, gas and water schemes going on. Really positive step forward for us.



Hoping to integrate it into our council website to save double-creation of the data, and then into our Transport for Cornwall app.

Thomas: interested to look at Cornwall data. Do we have a PTI approach - like SIRI-VM profile, that indicate which fields are needed?

Steven: we used the same profile that was agreed between RTIG and TfN for the Ito Disruptions service. One small change - local authority is the creator of the data - to give greater identifiability. In the Ito World feed, there was no machine-readable way to identify which local authority the information came from.

[Link to RTIG guidance on Disruptions](#)

Stephen: contact me for help if you like - encourage people to ask questions / follow up

Citymapper and Moovit have moved over too, quite a bit of use in some areas, but would like to see it used more.

How to add Disruptions Information

Mike Baxter: SIRI-SX - example for Cornwall - how has this got onto there? Is that because Nick is registered on BODS and has access?

Steve: data is entered through the Disruptions Service - supporting service to BODS, part of wider BODS ecosystem

Very similar to Fares service.

Nick has defined various things, set them up etc. API on BODS is querying stored data from the Disruptions Service.

Disruption data does not affect / change timetables

Keith: the link that was sent through - does it just say the disruption, or does it change / update the timetable data?

Steven: timetable data is unchanged, SX data won't change the timetable data.

Is anyone updating Real Time based on Disruptions?

Nick T: in Cornwall - we use it as static data - not dynamically amending data on websites published data or prediction engine. But next iteration of Prediction engine - ask that it will be capable of dynamically responding to SX feed.



Steve: TfGM - considering how to use it. Doesn't go down to journey level, or cancellation at the moment. Wan to look at this next, but not an immediate future item.

3.4. Flexible Services (53:00 - 55:25)

Update from Tim.

Consultation open at time of last PTIC meeting about Flexible Bus Services, and how to present data. Ben has identified in roadmap that he will be presenting in coming few months to support that work in BODS.

https://www.pti.org.uk/flexible_bus_services_BODS

Enhancement to TXC profile has been published on PTI website, and there are recordings of webinars on this available. Hopefully this is enough for people to understand what it is trying to achieve. Some sample TXC files will be available soon to give references guides for people creating or consuming it.

There has also been an update to the TXC schema. The changed files are available on the PTI website https://www.pti.org.uk/system/files/files/TransXChange_schema_2.4.a.zip but we're not been able to update the official exchange server yet. So for now, you will need to download the schema files and validate locally if you are using the enhanced activity numerations. **See Issues Log below for details on this change.**

Get in touch with Tim to explore / ask questions / chat about this

3.5. Building BODS For The Future (55:25 - 56:30)

Update from Tim

On 28 September 2023, there was an 'ignition event' looking at issues with BODS and exploring possible next steps for the future.

[Write-up for that event has been circulated with the papers to all attendees.](#)

4. Traveline (56:30 - 1:02:55)

Update from Mike Nolan.

TNDS infrastructure: Currently working with Basemap to rehost TNDS on more modern infrastructure - happening on Mon 2nd Oct. Shouldn't disrupt down/up-loads.



Data quality exercise: Also working with Rob at Elydium on a data quality project, exploring how we are interpreting and assessing differences between us and BODS.

Journey Planning engine: Have extended contract for Journey Planning engine provider, for a further 5 year agreement. This puts us in a position to flag Plusbus fares on appropriate journeys.

Plusbus e-ticketing: continuing work on e-ticketing with Ticketer - validation with e-tickets through retailers who are in position to start retailing once the final bit of work on scanning development is complete.

Interim solution for Plusbus website to sharpen up look and feel ready for e-ticket launch. This will be ahead of bigger development in 2024 where we look at where we go next in terms of Plusbus and the wider Traveline sites too

Fares and map-cutting tool: for the 280 Plusbus schemes, it is currently a manual process to update fares. This tool will enable scheme co-ordinators to input their own fares, create own zones using a map cutting tool that will download NaPTAN - and make data available through Rail Data Marketplace. This will provide major efficiencies for us in how we process and manage data. Also in terms of the data we can make available, and hopefully as a stepping stone that we can use to define multi-operator tickets and draw DRT zones.

Discussion / questions

Tim: Plusbus data - once available, will those zones and tickets be available through BODS as well the Rail Data Marketplace?

Mike: no reason why not. Not considered BODS. Plusbus falls outside scope of BODS I think. Will have data though, so no reason why not.

Tim: talking to journey planner supplier the other day, who asked the question. They might consume it from Rail Data Marketplace given they have rail ticketing prices anyway.

Ben Murray: offer of support. Interesting you are looking at data quality on BODS. If we can help, very welcome to chat. Very pleased to support in any way I can.

5. EU Standards Development (1:02:55 - 1:09:30)

Update from Tim

Things moving slowly, so not much to update.



Historical reporting data format standard - the project to develop this technically is about to start. Procurement for team to do that work is now in place, and first meeting for that is in a couple of weeks.

Held a workshop in August with a few PTIC members looking at UK use cases that we'll use to validate that work. In 12-18 months time, will be able to start to use something in final draft form.

We have a couple of projects lined up to do the early checking and practical application.

On-vehicle standardisation stuff - rumbles on. Potentially might have a big impact for EVs and automated vehicle work that is going on. But will take a little while to work through.

Heads up - if you want the formal documentation on things like SIRI and NeTEx you have to go via BSI and pay for them. We've been fortunate for many years to have the digital artifacts in standardisation readily available via GitHub etc.

SEN body that BSI works under is getting twitchy about those digital artifacts and how widely they are used, and used for free, so they are in the process of developing a way of storing and managing them.

Partly because each individual standard has a different way of developing and managing change control process for the digital files. In Public Transport - we have a way of doing it refined over any years, and Transmodel family done in same way. But roads people with similar things do it in quite a different way. They are looking for a standardised approach.

In long term - might need to pay for access to some of this. Quite Political given it is at EU level. Worried about what this means for implementation of EU regulations and directives. Way to go, but one to watch from UK sidelines.

6. Issue Log (1:09:30 - 1:15:40)

6.1. Issue 101 - Enhanced Partnership registration numbers

Update from Tim: EP registration numbers (see above under routes and timetables)

As part of the Bus Services Act 2017, authorities can take control of registration process. Now there are multiple registration management organisations, a process has been defined based on ATCO codes. There is an issue with TransXChange, in that textually it states that a registration



number is 4 characters. But for Enhanced Partnership registrations, that is not true; it can be 8 characters. So we're changing the textual description in the TransXChange schema. It shouldn't affect anyone unless you have coded up rules based on the documentation rather than just the pure schema. It is unbounded in the schema, but textually it has a limit, which at least one supplier had paid heed to.

TJ: is it just/only 4 or 8 characters?

Tim: OTC will continue to use 4. BODS says it can be up to 8.

6.2. Issue 102 Flexible Bus Services

Tim: In flexible bus services work, we identified that quite a lot of services go off for a small diversion on request. Rather than requiring a full implementation of a flexible data structure, instead, better to make a tweak to the activity at stops.

In line with other standards like GTFS and Transmodel / NeTEx.

We have added 3 stop activities in to cover this. Quite important for a surprising number of bus routes that do this.

Rob: if this is a schema change, is that a new revision of TXC 2.4. or since already an existing 2.5, is it ported into both? Do we have a fork in TXC versions

Tim: This triggers a release of 2.4.1, and 2.5.1. The two will match.

7. Next Meeting (1:15:40 - end)

Next meeting is Thursday 7 December 2023

Thursdays or Fridays? Some people can join on Fridays, but overall more problematical, so suggest we go back to Thursdays.

AOB - none.

Rail Data Marketplace to join us next time for an update on their work.