



austriatech

Development of the Austrian NeTex Profile

Including Data4Pt Validator Tool

Austrian NeTEx Profile

- Delegated Regulation 2017/1926
- Export Public Transport Data from real life system
 - Time Table
 - Network
 - Transport Lines
 - ...
- Format NeTEx – EPIP conformity
- Development activities start 10.2020

EPIP

NeTEx European Passenger
Information Profile

Delegated Regulation 2017/1926

Provision of EU-wide
multimodal travel
information services

Austria Data System Overview

- 9 federal states – 1 Data collection system – 1 user interface



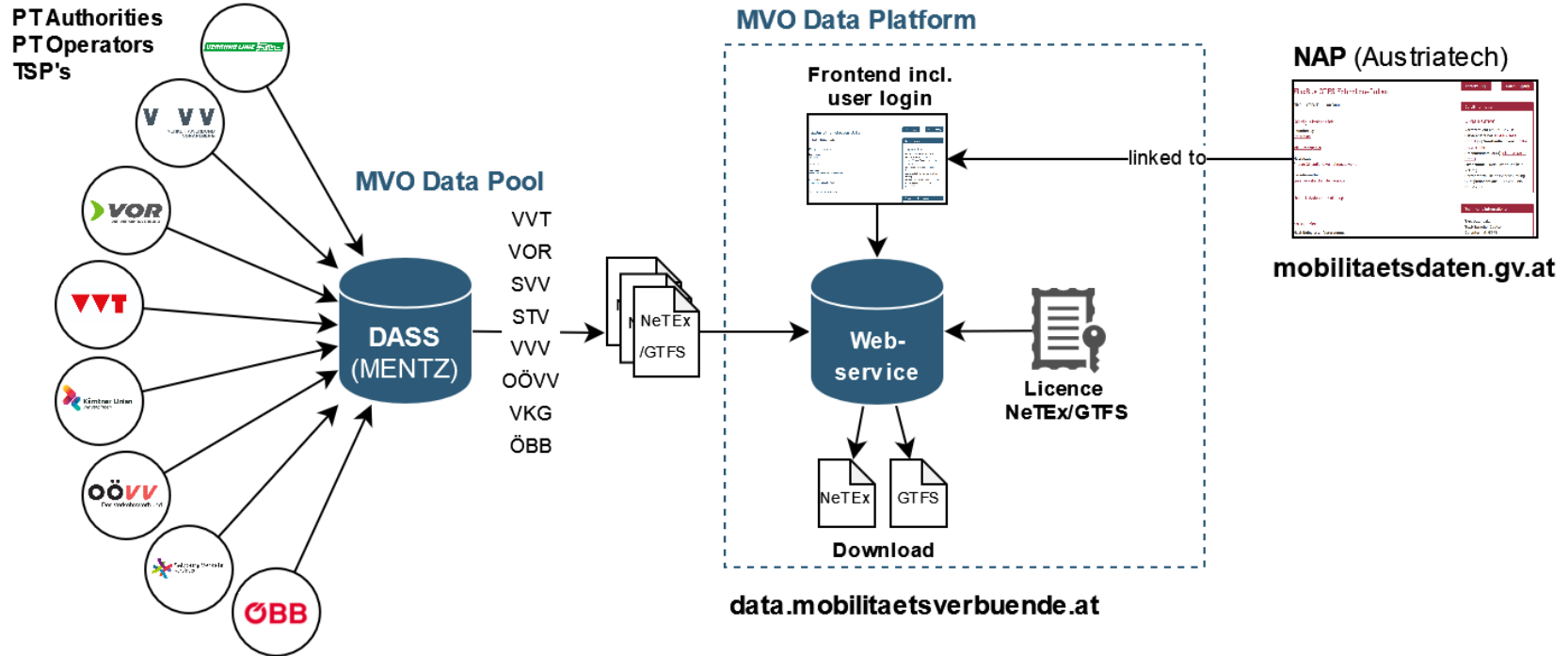
“Mobilitätsverbände Österreich” - MVO

<https://mobilitaetsverbund.e.at/>

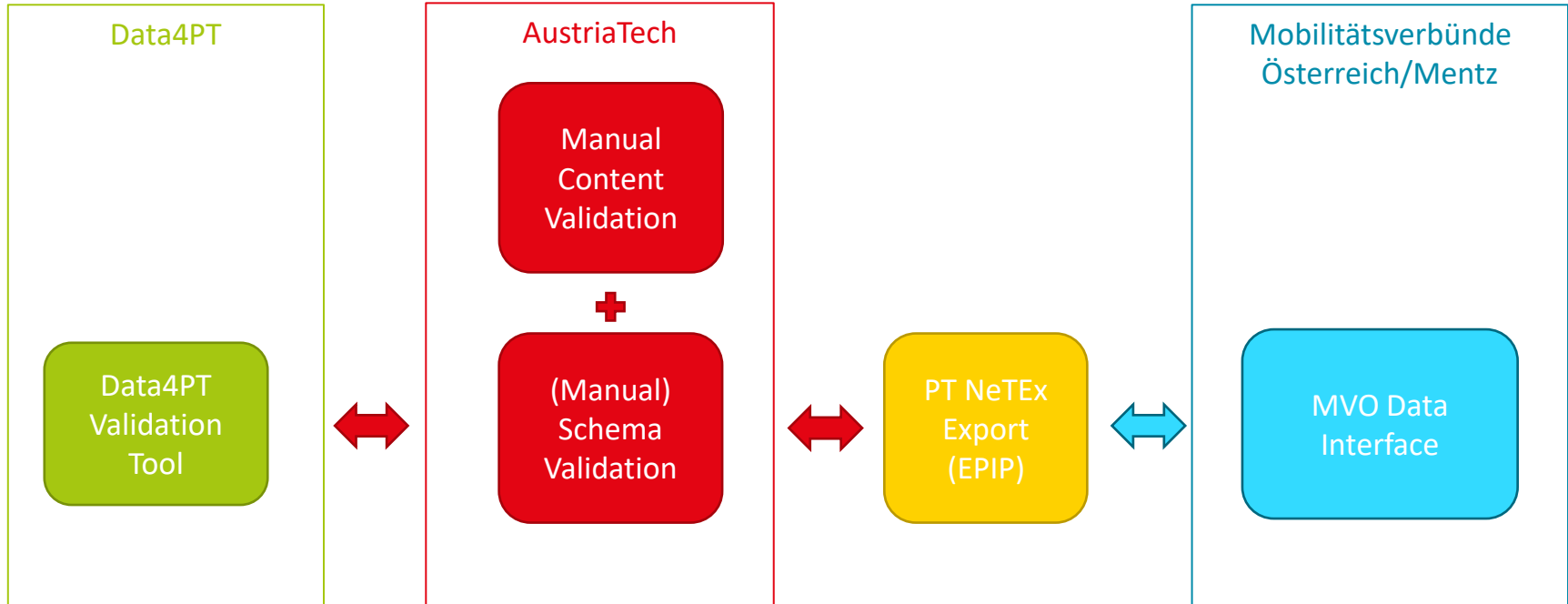
Public Routing System

<https://anachb.vor.at/>

MVO Data System



Stakeholder and Development structure



Profile test procedure

Using Altova XML Spy Schema validation procedure – EPIP NeTeX Schema

```

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    <FrameDefaults>
    </FrameDefaults>
    <Versions>
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            <vehicleJourneys>
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        </Frames>
      </CompositeFrame>

```

Manual
Content
Validation



(Manual)
Schema
Validation

Content test procedure (I)

- Validation of file structure – Header, Body, Code structure
- Validation of standard code tags: e.g. EUEIP
- Validation of “Data parts” e.g. line, type, time schedule,...
- Validation of detailed content
 - Is a bus declared as “bus” as type?
 - Is line owner and operator possible?
 - Are station names existing?
 - ... and many more

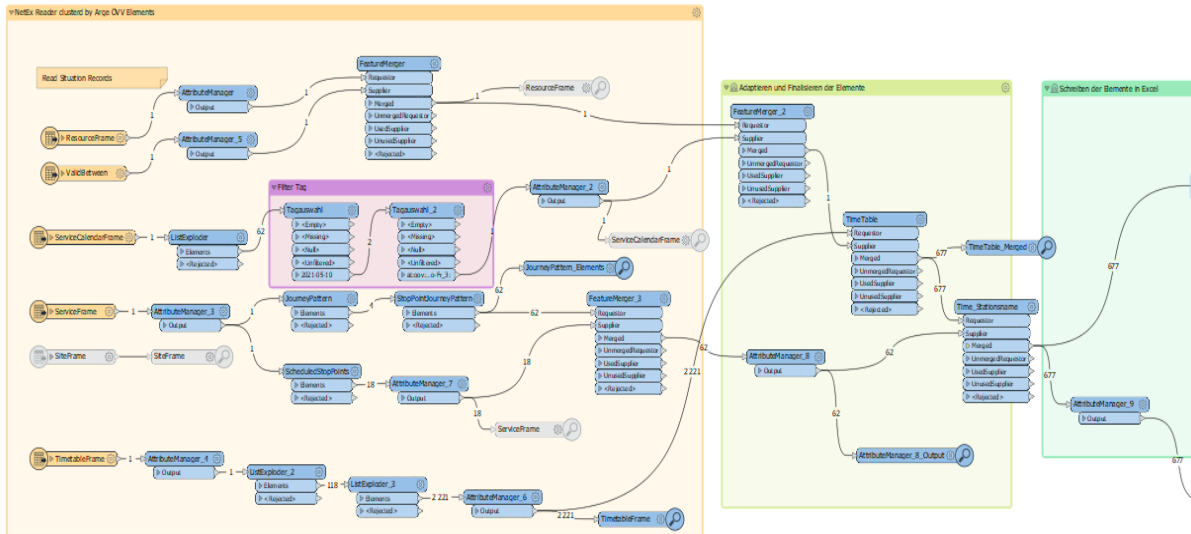
Manual
Content
Validation



(Manual)
Schema
Validation

Content test procedure (II)

Creating FME Script to extract data from NeTEx export file



Manual
Content
Validation



(Manual)
Schema
Validation

Content test procedure (III)

Validation against real life data

| A | B | C | D | E | F | G | H |
|-----|--------------------------------------|-------------|---------------|------------|------|----------------------------|-------------|
| lin | SName | ArrivalTime | DepartureTime | Date | orga | organisations.Operator.Nam | operatione |
| 1 | 3b Steyr Bahnhof (Busbahnhof/Stadtbu | | 06:30:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 2 | 3b Steyr Pachergergasse | 06:31:00 | 06:31:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 3 | 3b Steyr Arbeiterberg | 06:33:00 | 06:33:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 4 | 3b Steyr Schillerstraße | 06:34:00 | 06:34:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 5 | 3b Steyr Galileistraße | 06:35:00 | 06:35:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 6 | 3b Steyr Otto-Glöckel-Str | 06:36:00 | 06:36:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 7 | 3b Steyr Karl-Marx-Str | 06:37:00 | 06:37:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 8 | 3b Steyr Kammermayrstra | 06:38:00 | 06:38:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 9 | 3b Steyr Arbeiterberg | 06:39:00 | 06:39:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 10 | 3b Steyr Pachergergasse | 06:41:00 | 06:41:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 11 | 3b Steyr Bahnhof (Busbah | 06:43:00 | 06:30:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 12 | 3b Steyr Bahnhof (Busbahnhof/Stadtbu | | 06:45:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 13 | 3b Steyr Pachergergasse | 06:46:00 | 06:46:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 14 | 3b Steyr Arbeiterberg | 06:48:00 | 06:48:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 15 | 3b Steyr Schillerstraße | 06:49:00 | 06:49:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 16 | 3b Steyr Galileistraße | 06:50:00 | 06:50:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 17 | 3b Steyr Otto-Glöckel-Str | 06:51:00 | 06:51:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 18 | 3b Steyr Karl-Marx-Str | 06:52:00 | 06:52:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 19 | 3b Steyr Kammermayrstra | 06:53:00 | 06:53:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 20 | 3b Steyr Arbeiterberg | 06:54:00 | 06:54:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 21 | 3b Steyr Pachergergasse | 06:56:00 | 06:56:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 22 | 3b Steyr Bahnhof (Busbah | 06:58:00 | 06:45:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 23 | 3b Steyr Bahnhof (Busbahnhof/Stadtbu | | 07:00:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 24 | 3b Steyr Pachergergasse | 07:01:00 | 07:01:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 25 | 3b Steyr Arbeiterberg | 07:03:00 | 07:03:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 26 | 3b Steyr Schillerstraße | 07:04:00 | 07:04:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 27 | 3b Steyr Galileistraße | 07:05:00 | 07:05:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 28 | 3b Steyr Otto-Glöckel-Str | 07:06:00 | 07:06:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 29 | 3b Steyr Karl-Marx-Str | 07:07:00 | 07:07:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 30 | 3b Steyr Kammermayrstra | 07:08:00 | 07:08:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 31 | 3b Steyr Arbeiterberg | 07:09:00 | 07:09:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 32 | 3b Steyr Pachergergasse | 07:11:00 | 07:11:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 33 | 3b Steyr Bahnhof (Busbah | 07:13:00 | 07:00:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 34 | 3b Steyr Bahnhof (Busbahnhof/Stadtbu | | 07:15:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 35 | 3b Steyr Pachergergasse | 07:16:00 | 07:16:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 36 | 3b Steyr Arbeiterberg | 07:18:00 | 07:18:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |
| 37 | 3b Steyr Arbeiterberg | 07:18:00 | 07:18:00 | 2021-05-10 | oov | Stadtbetriebe Steyr GmbH | Stadt Steyr |

Manual
Content
Validation



(Manual)
Schema
Validation

Validation Tool configuration

Schema

1. Begin by selecting which schema to validate against

- NeTeX - The full NeTeX schema ([more info](#))
- NeTeX Light - NeTeX schema without constraint ([more info](#))
- EPIP - NeTeX European Passenger Information Profile ([more info](#))

Schema

EPIP (v1.1.1) ▼

Rules

2. In addition to the schema validation, we have also included a couple of optional rules that validate the consistency of the documents (work in progress)

- *Every line is referenced* - Make sure every Line `<Line />` is referenced from another element.
- *Every scheduled stop point has a name* - Make sure every `<ScheduledStopPoint />` has a `<Name />` or `<ShortName />`.
- *Every stop place has a correct stop place type* - Make sure every `<StopPlace />` has a `<stopPlaceType />` and that it is of correct type.
- *Every stop place has a name* - Make sure every `<StopPlace />` has a name.
- *Every stop place is referenced* - Make sure every `<StopPlace />` is referenced from another element.
- *Every stop point have an arrival and departure time* - Make sure every `<ScheduledStopPointRef />` have an `<ArrivalTime />` and `<DepartureTime />`.
- *Frame defaults have a locale and timezone* - Validates the correctness of `<DefaultLocale />` and `<TimeZone />` inside `<FrameDefaults />`.
- *Locations are referencing the same point* - Make sure every `<Location />` in `<StopPlace />` and `<ScheduledStopPoint />` for the same `<StopAssignment />` are pointing to the same coordinates.
- *Passing times have increasing times* - Make sure passing times have increasing times and day offsets.
- *Stop place quay distance is reasonable* - Check the distance between a `<StopPlace />` and its `<Quay />`'s.

Rules

Every line is referenced, Every scheduled stop has a name, Every stop place has a stop place type, Every stop place has a name, Every stop place is referenced, Every sto... ▼

Data4PT
Validation
Tool

DATA VALIDATION TOOL
VERIFY YOUR NETEX DATA

Results overview

- Data Export is EPIP conform
 - Manual test positive
 - Data4PT Validator Tool result positive
- Data Export contains more information than the standard EPIP Profile
- NeTEx Export public available at NAP Austria
- External Feedback of good usability
- New Data exports are in development
 - E.g. On demand services

NAP Austria

<https://mobilitydata.gv.at>

“Mobilitätsverbände Österreich”

<https://mobilitaetsverbund.e.at/>

Public Routing system

<https://anachb.vor.at/>

Data4PT

<https://data4pt-project.eu/>

Thank you for your attention!!

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