Introduction to NeTEx profiles

17th of June 2021

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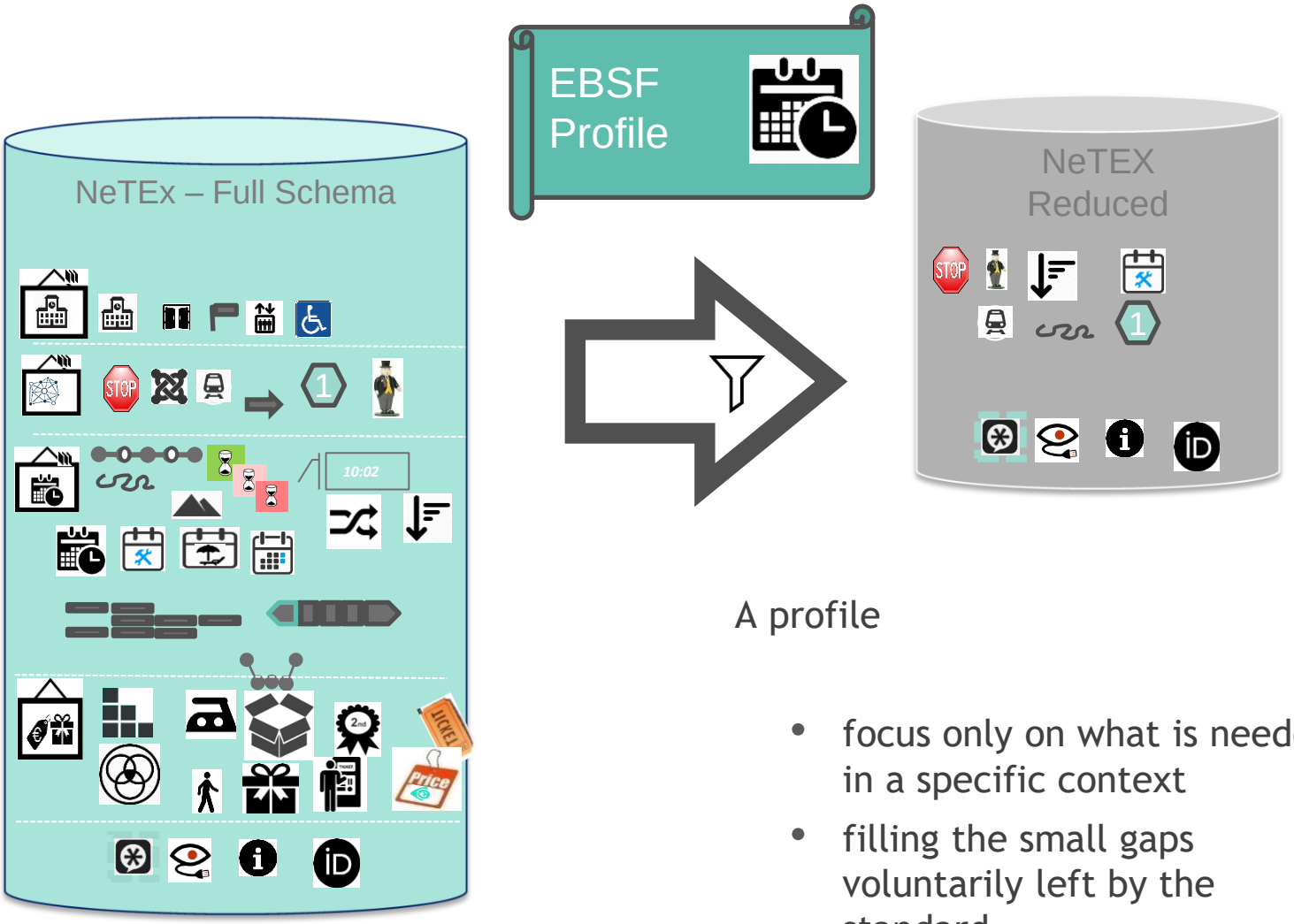
Profiles - reminder

A profile

- focus only on what is needed in a specific context
- filling the small gaps voluntarily left by the standard

Profiles - reminder



A profile

- focus only on what is needed in a specific context
- filling the small gaps voluntarily left by the standard

NeTEx and SIRI profiles

- NeTEx is for planned data
- SIRI is for real time data

SIRI

NeTEx profiles – two examples

- Profile used in EBSF2 project
- Norwegian (Nordic) profile

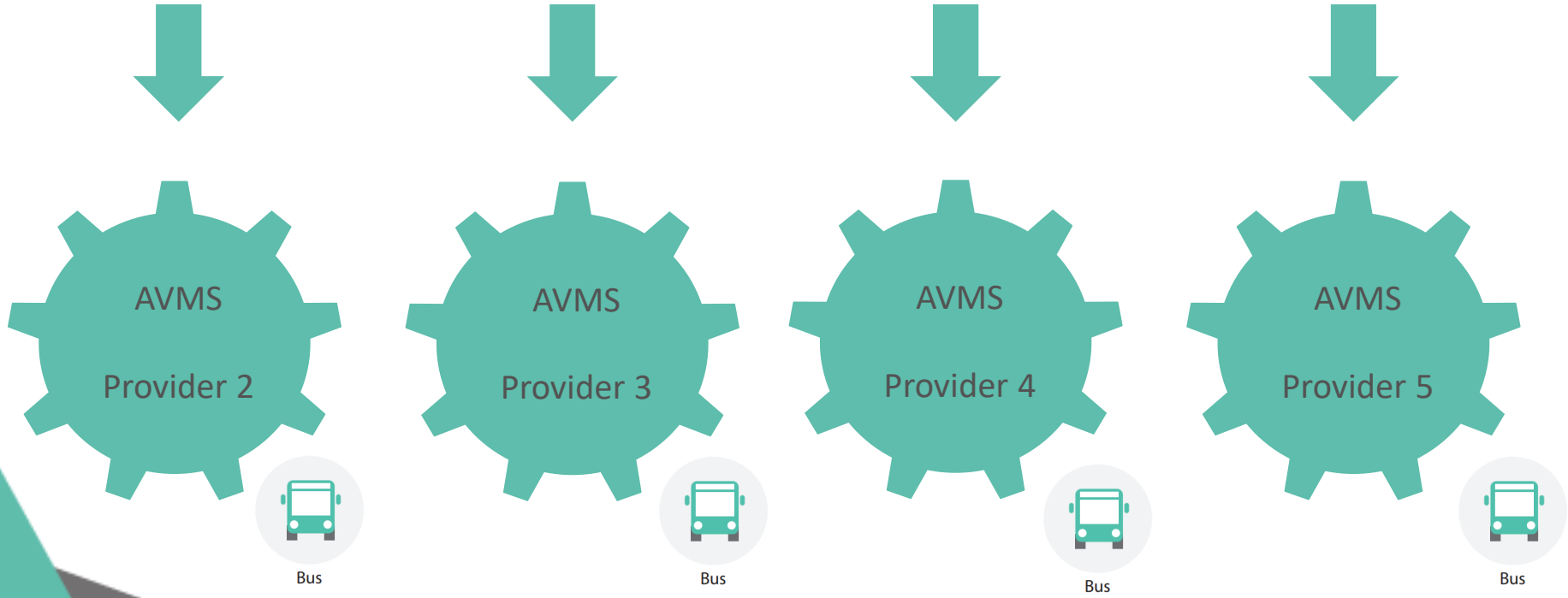
EBSF2 NeTEx Profile

- Field test at Transport for London
- Developed as part of the European Bus System of the Future 2 project in cooperation with partners from different countries.
- Operational data (Blocks and Dead Runs) in addition to Timetables and Calendars

Different AVMS - suppliers needs data

Planned data:

Network
Timetables
Vehicle Schedules



Field test – planned data available at TfL

Bespoke planned data

Planned data:

Network
Timetables
Vehicle Schedules

Exchange using NeTEx…

Bespoke planned data

NeTEx
Network Timetable Exchange

Transmodel

Exchange using NeTEx…

Bespoke planned data

Multi-AVMS coordination

Provider 1

Planned data:

Network
Timetables
Vehicle Schedules

NeTEx
Network Timetable Exchange

Transmodel

AVMS Provider 2

Bus

AVMS Provider 3

Bus

AVMS Provider 4

Bus

AVMS Provider 5

Bus

datapt

EBSF 2 NeTEx Profile

EUROPEAN BUS SYSTEM of the FUTURE 2

Planned data:

Network
Timetables
Vehicle Schedules

		(This element will always be included in EBSF2 profile 2 deliveries.)
• TimeDemandTypeRef	1:1	A reference to the applied TIME DEMAND TYPE for this DEAD RUN A TIME DEMAND TYPE is an indicator of traffic conditions or other factors that may affect vehicle run or wait times. The contained ref-attribute represents a synthetic TIME DEMAND TYPE based on analyzing and enumerating the different timings used for complete JOURNEY PATTERNs. Eg. *TT_118* Note that the TIME DEMAND TYPE enumerations are not synchronized across different JOURNEY PATTERNs.
Calls	1:1	Ordered collection of the CALLs included in this SERVICE JOURNEY.
• Call	2:m	A CALL provides assembled data related to the visit to a POINT IN JOURNEY PATTERN, such as Arrival and Departure times, in an un-ambiguous manner without having to analyze TIME DEMAND TYPEs or combine run and wait times. See details below.

3.5.2.3 Calls (in SERVICE JOURNEY)

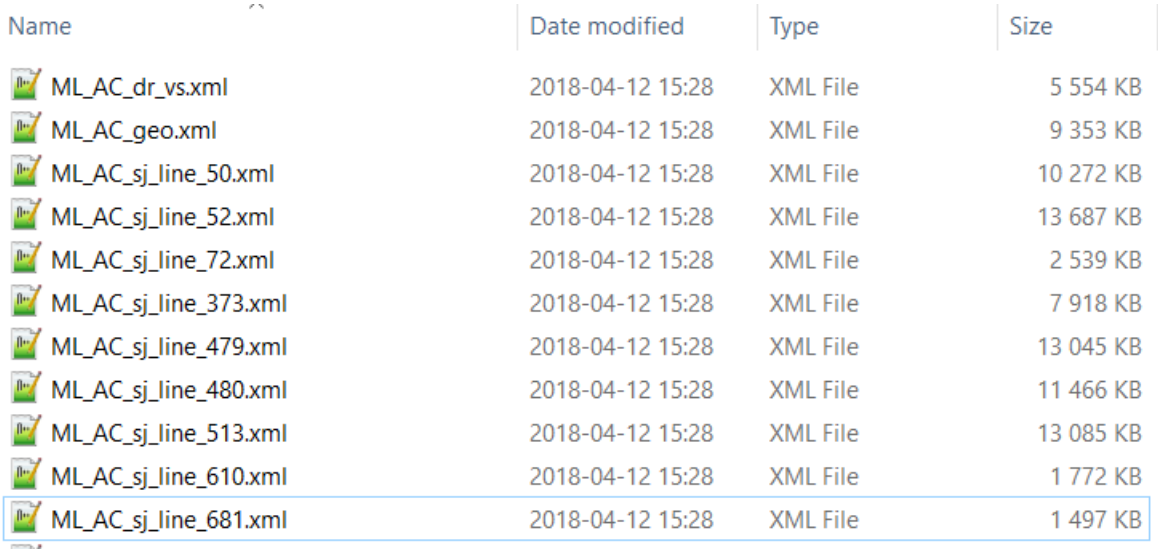
Container for the ordered collection of CALLs included in a SERVICE JOURNEY.

Elements		Description
ScheduledStopPointRef	1:1	Reference to the POINT IN JOURNEY PATTERN that this CALL applies to. For POINTs IN JOURNEY PATTERN that are listed as SCHEDULED STOP POINTs the contained Ref-attribute has the same value as the Id of the associated SCHEDULED STOP POINT in the SITE FRAME and is on the form lbsl:stopPointIdx:[Stop_Point_Idx] Eg. *lbsl:stopPointIdx:3215*

EBSF 2 NeTEx Profile

EUROPEAN BUS SYSTEM of the FUTURE 2

- One xml-file per Line with Service Journeys and related info
- One xml-file per operator and depot with operational data such as Blocks and DeadRuns
- Shared file for geo - StopPlaces, Quays etcetera

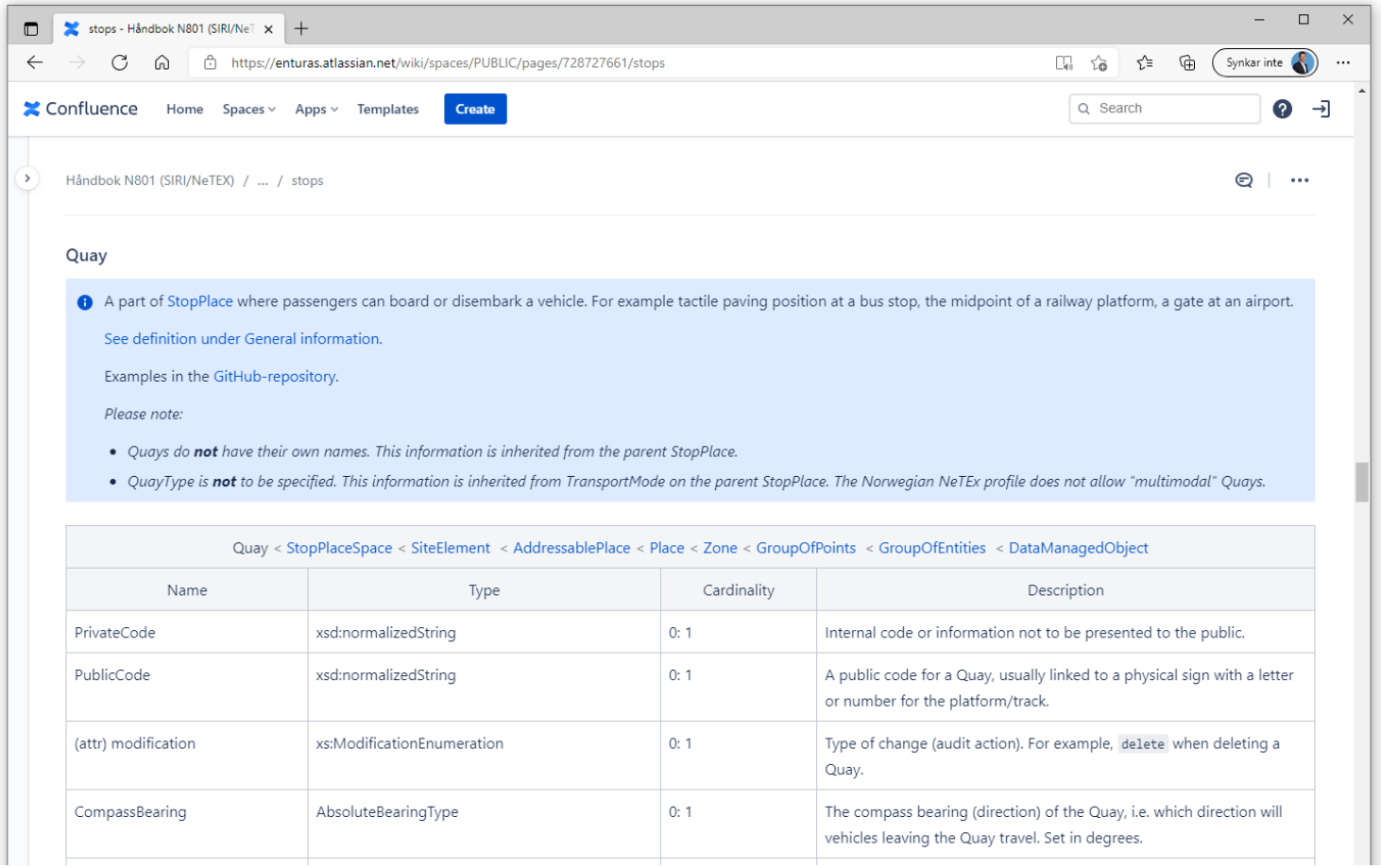


Name	Date modified	Type	Size
ML_AC_dr_vs.xml	2018-04-12 15:28	XML File	5 554 KB
ML_AC_geo.xml	2018-04-12 15:28	XML File	9 353 KB
ML_AC_sj_line_50.xml	2018-04-12 15:28	XML File	10 272 KB
ML_AC_sj_line_52.xml	2018-04-12 15:28	XML File	13 687 KB
ML_AC_sj_line_72.xml	2018-04-12 15:28	XML File	2 539 KB
ML_AC_sj_line_373.xml	2018-04-12 15:28	XML File	7 918 KB
ML_AC_sj_line_479.xml	2018-04-12 15:28	XML File	13 045 KB
ML_AC_sj_line_480.xml	2018-04-12 15:28	XML File	11 466 KB
ML_AC_sj_line_513.xml	2018-04-12 15:28	XML File	13 085 KB
ML_AC_sj_line_610.xml	2018-04-12 15:28	XML File	1 772 KB
ML_AC_sj_line_681.xml	2018-04-12 15:28	XML File	1 497 KB

Norwegian (Nordic) Profile

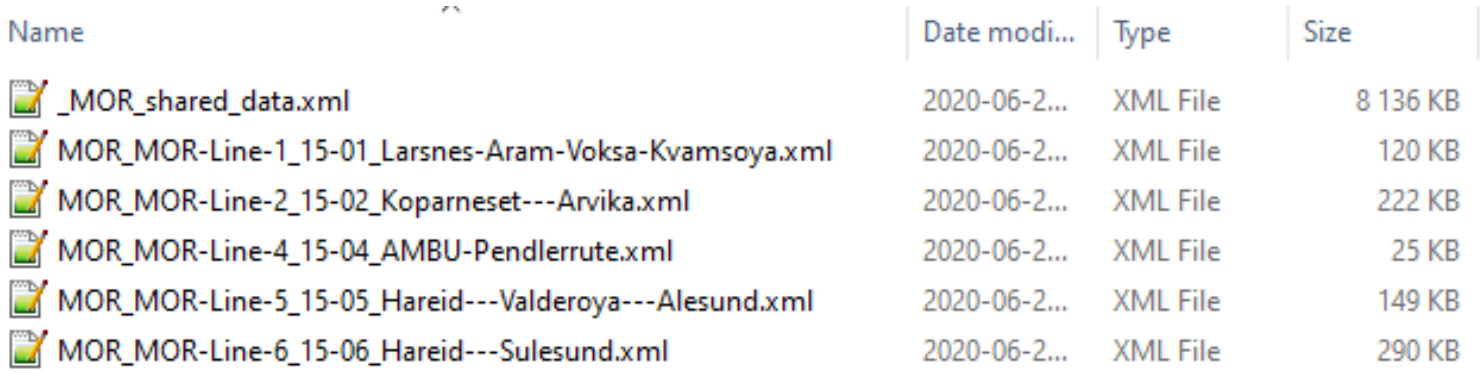
Norwegian (Nordic) Profile

– extensive, easy to understand documentation with relevant examples and descriptions

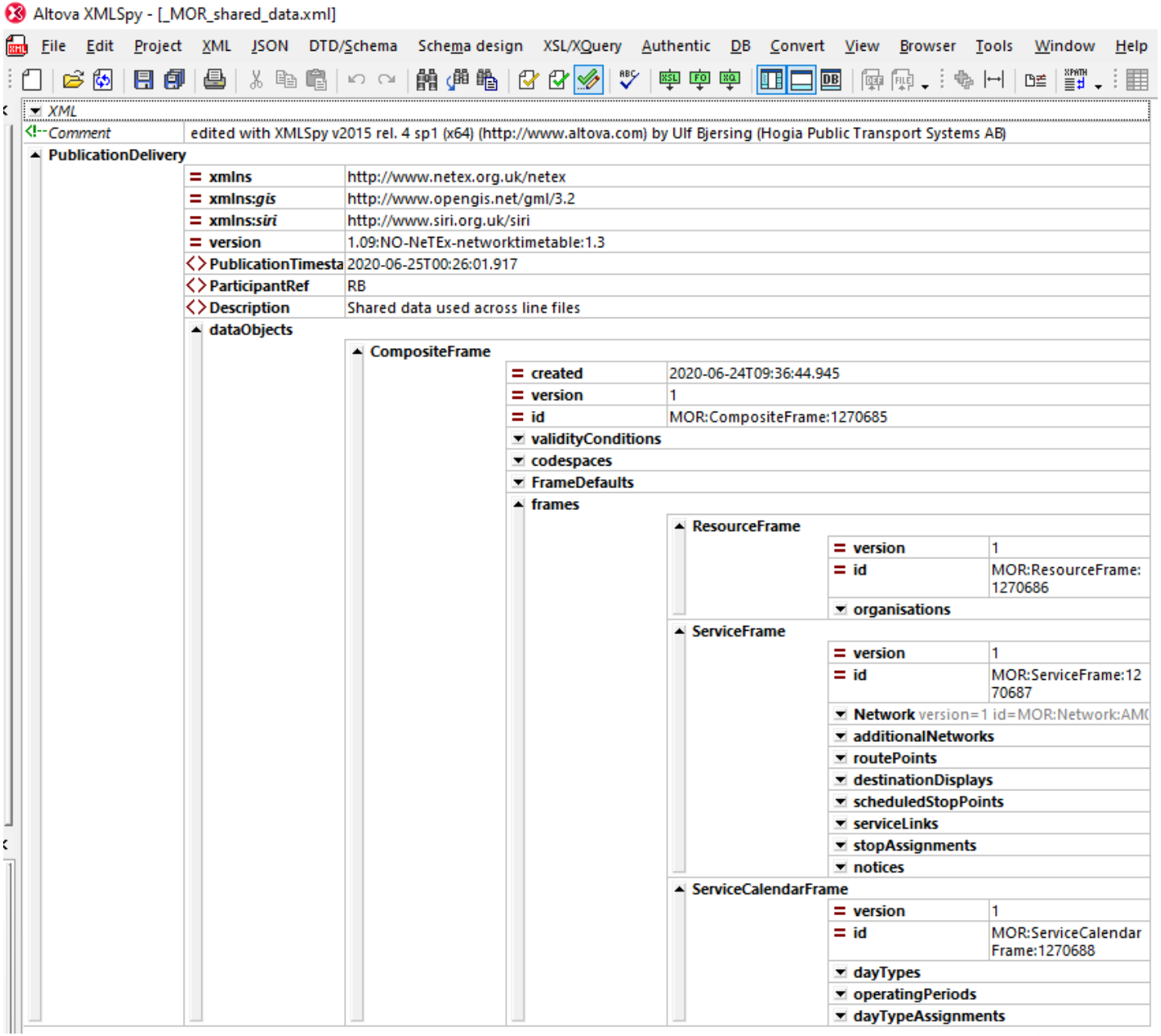


NeTEx in Norway – multiple file concept

- One xml-file per Line (referring to external data in regional xml-file)
- One xml-file with shared data for a region (referring to external data in national file(s)
- National xml-file(s) for Stop Places, Quays etcetera



Name	Date modi...	Type	Size
_MOR_shared_data.xml	2020-06-2...	XML File	8 136 KB
MOR_MOR-Line-1_15-01_Larsnes-Aram-Voksa-Kvamsoya.xml	2020-06-2...	XML File	120 KB
MOR_MOR-Line-2_15-02_Koparneset---Arvika.xml	2020-06-2...	XML File	222 KB
MOR_MOR-Line-4_15-04_AMBU-Pendlerrute.xml	2020-06-2...	XML File	25 KB
MOR_MOR-Line-5_15-05_Hareid---Valderoya---Alesund.xml	2020-06-2...	XML File	149 KB
MOR_MOR-Line-6_15-06_Hareid---Sulesund.xml	2020-06-2...	XML File	290 KB


Altova XMLSpy - [_MOR_shared_data.xml]
File Edit Project XML JSON DTD/Schema Schema design XSL/XQuery Authentic DB Convert View Browser Tools Window Help
XML
Comment edited with XMLSpy v2015 rel. 4 sp1 (x64) (http://www.altova.com) by Ulf Bjersing (Hogia Public Transport Systems AB)
PublicationDelivery
xmlns http://www.netex.org.uk/netex
xmlns:gis http://www.opengis.net/gml/3.2
xmlns:siri http://www.siri.org.uk/siri
version 1.09:NO-NeTEx-networktimetable:1.3
PublicationTimesta 2020-06-25T00:26:01.917
ParticipantRef RB
Description Shared data used across line files
dataObjects
CompositeFrame
created 2020-06-24T09:36:44.945
version 1
id MOR:CompositeFrame:1270685
validityConditions
codespaces
FrameDefaults
frames
ResourceFrame
version 1
id MOR:ResourceFrame:1270686
organisations
ServiceFrame
version 1
id MOR:ServiceFrame:1270687
Network version=1 id=MOR:Network:AM
additionalNetworks
routePoints
destinationDisplays
scheduledStopPoints
serviceLinks
stopAssignments
notices
ServiceCalendarFrame
version 1
id MOR:ServiceCalendarFrame:1270688
dayTypes
operatingPeriods
dayTypeAssignments

Many different profiles

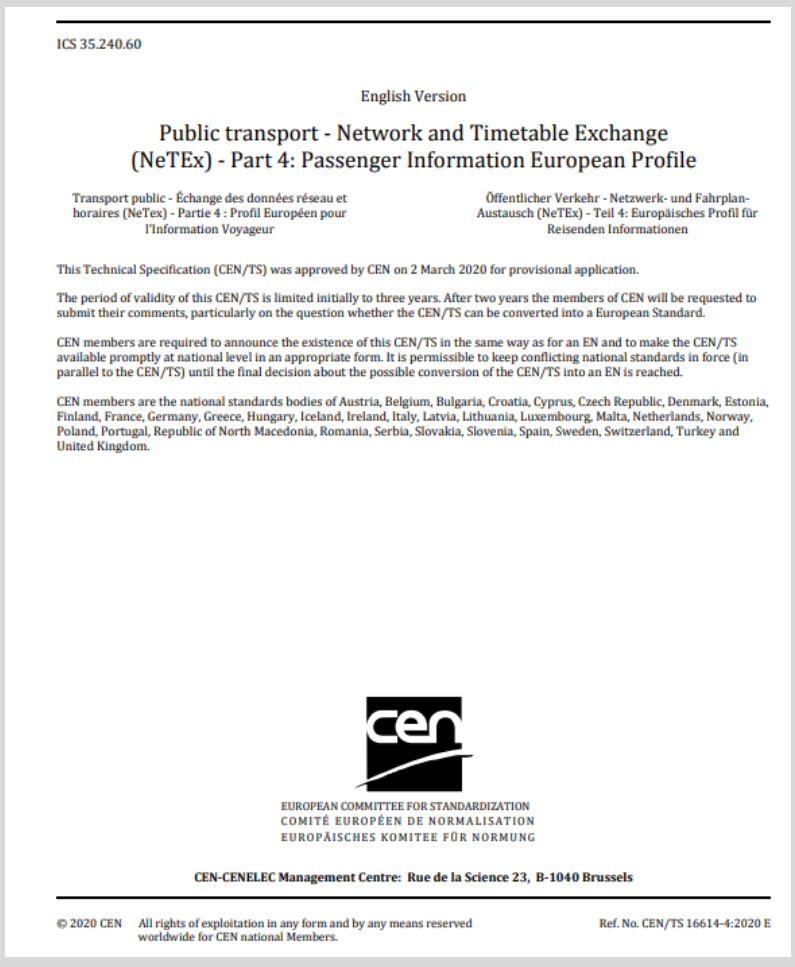
- Some are easy to produce
- Some are compact
- Then there are also different redundant constructions that can be used…

Comparing NeTEx profiles…

- EBSF2-project Profile
  - Call-based
  - Expanded = Denormalized
  - Includes also (redundant) normalised information in parallel
  - Consistent with SIRI –profile for EBSF2
- German Profile
  - Link-RunTime/Stop-WaitTime - based
  - Compact – high degree of normalization
  - Timeband-dependant
- Norwegian/Nordic Profile
  - PassingTime based
  - Expanded but at the same time partly dependant on normalised information
- European Passenger Information Profile (EPIP)
  - PassingTime based
  - Expanded but at the same time partly dependant on normalised information
  - Reduced

NeTEx part 4: Passenger Information European Profile
CEN/TS 16614-4

= EPIP



ICS 35.240.60

English Version

Public transport - Network and Timetable Exchange (NeTEx) - Part 4: Passenger Information European Profile

Transport public - Échange des données réseau et horaires (NeTex) - Partie 4 : Profil Européen pour l'Information Voyageur

Öffentlicher Verkehr - Netzwerk- und Fahrplan-Austausch (NeTEx) - Teil 4: Europäisches Profil für Reisenden Informationen

This Technical Specification (CEN/TS) was approved by CEN on 2 March 2020 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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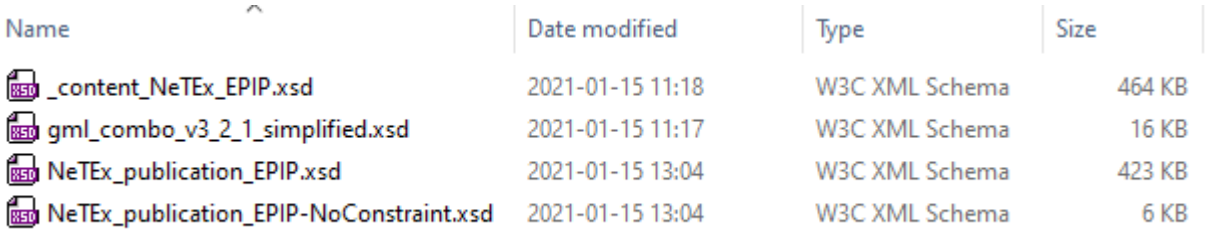
Ref. No. CEN/TS 16614-4:2020 E

Additional Data4PT contribution:
EPIP XSD that is adapted to the TS

- Elements and attributes removed and set as mandatory according to CEN/TS 16614-4:2020



Name	Date modified	Type	Size
_content_NeTEx_EPIP.xsd	2021-01-15 11:18	W3C XML Schema	464 KB
gml_combo_v3_2_1_simplified.xsd	2021-01-15 11:17	W3C XML Schema	16 KB
NeTEx_publication_EPIP.xsd	2021-01-15 13:04	W3C XML Schema	423 KB
NeTEx_publication_EPIP-NoConstraint.xsd	2021-01-15 13:04	W3C XML Schema	6 KB

- EPIP represented using 4 XSD-files
- Full NeTEx consists of 379 XSD-files

Some ideas...

- Use stable unique identifiers – that are shared between SIRI and NeTEx profiles
  - Look to EPIP or Norwegian profile for inspiration.
  - Suggestion: Consider using EPIP identifier convention

- Consider if several different profiles are relevant in parallel for different purposes

NeTEx
Network Timetable Exchange

SIRI

Thank you for your attention!

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