Transmodel implementation
Case studies

Webinar

12 April 2021

Ulf Bjersing, DATA4PT expert

Data4PT has received funding from the European Union's DG for Mobility and Transport under grant agreement No MOVE/B4/SUB/2019-104/CEF/PSA/SI2.821136

Transmodel implementation

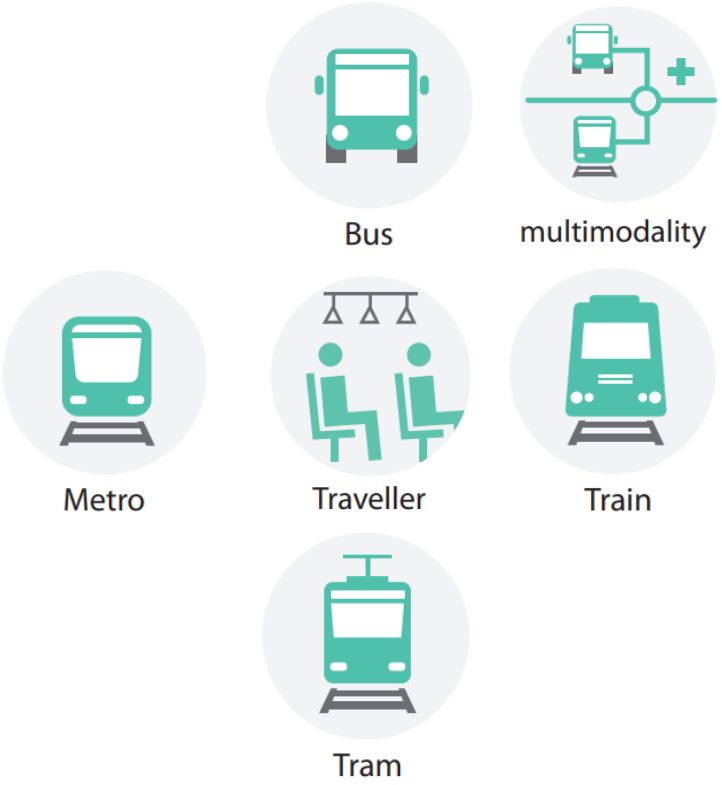
Historic

Bus

Traveller

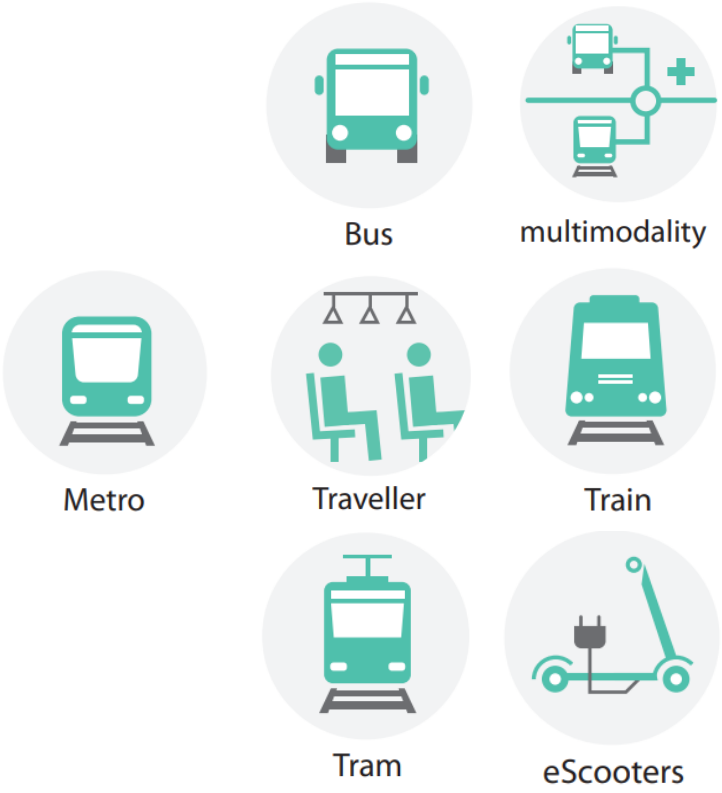
Transmodel implementation

Extended scope over time



Transmodel implementation

Living with change

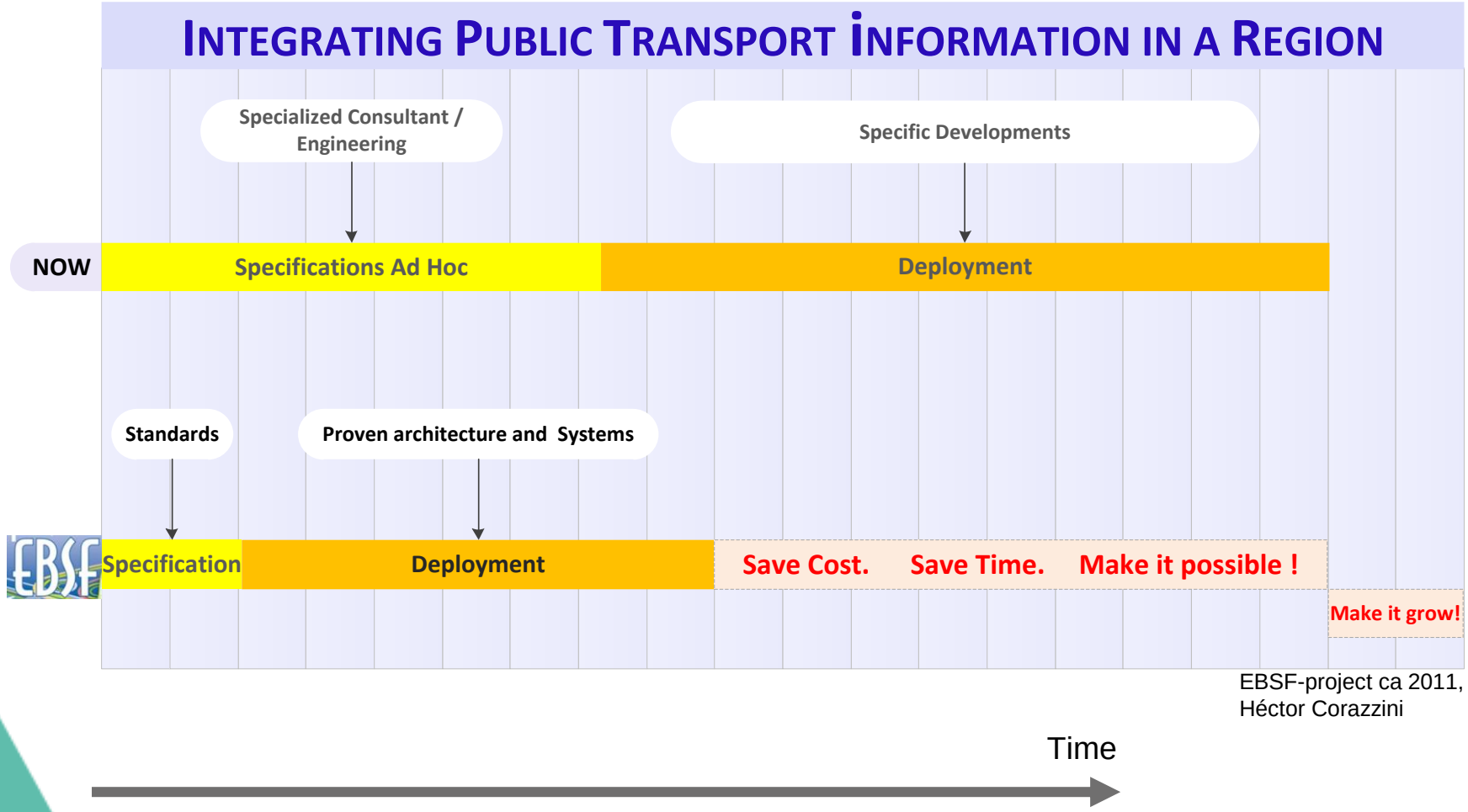


Transmodel implementation

Integration of information – extended expectations

Transmodel implementation

Using standards to avoid ad-hoc extensions



EBSF-project ca 2011,
Héctor Corazzini

Transmodel used in EBSF 2 project

Field test at Transport for London

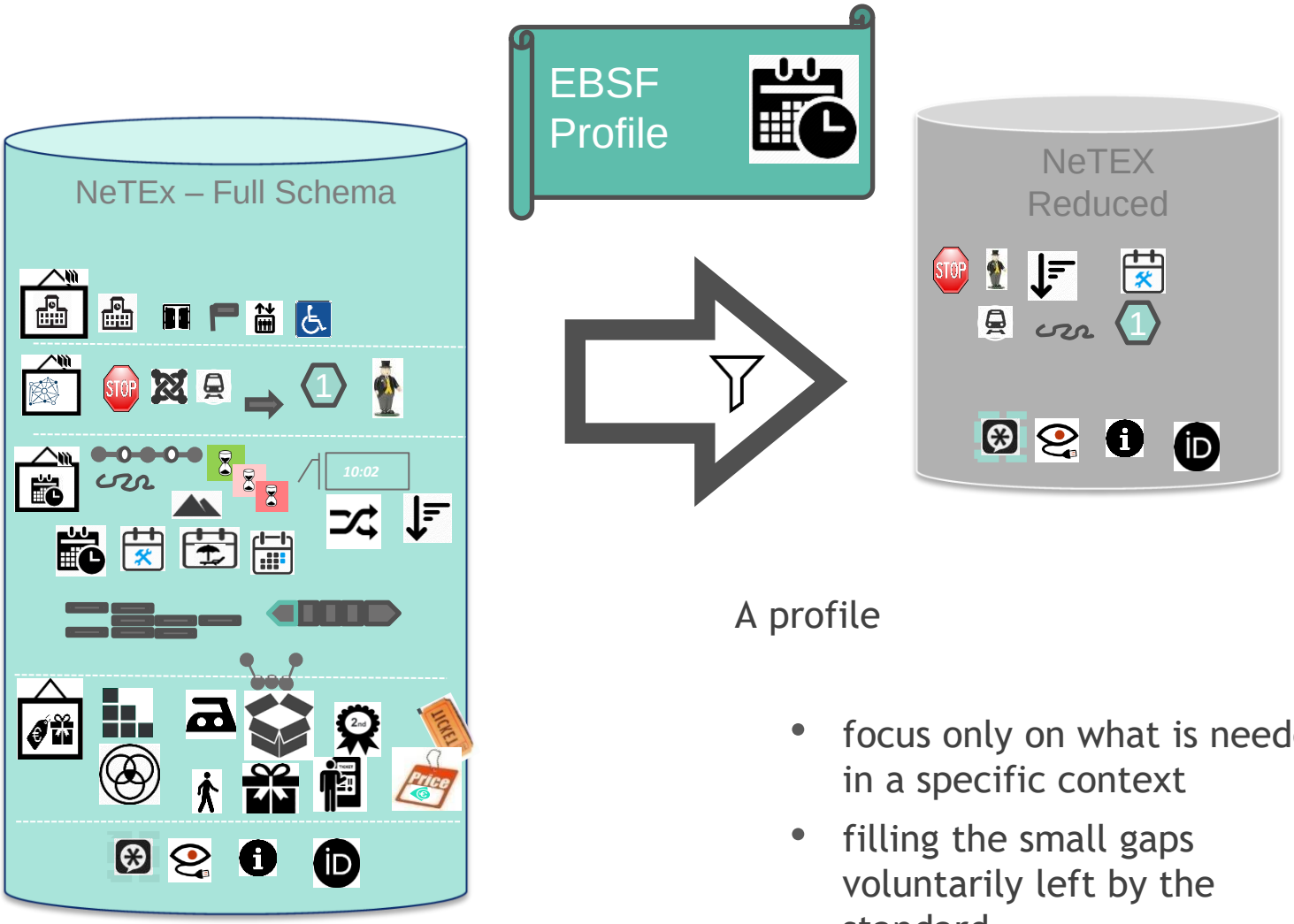
NeTEx and SIRI profiles were developed and tested as part of the European Bus System of the Future 2 project in cooperation with partners from different countries.

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



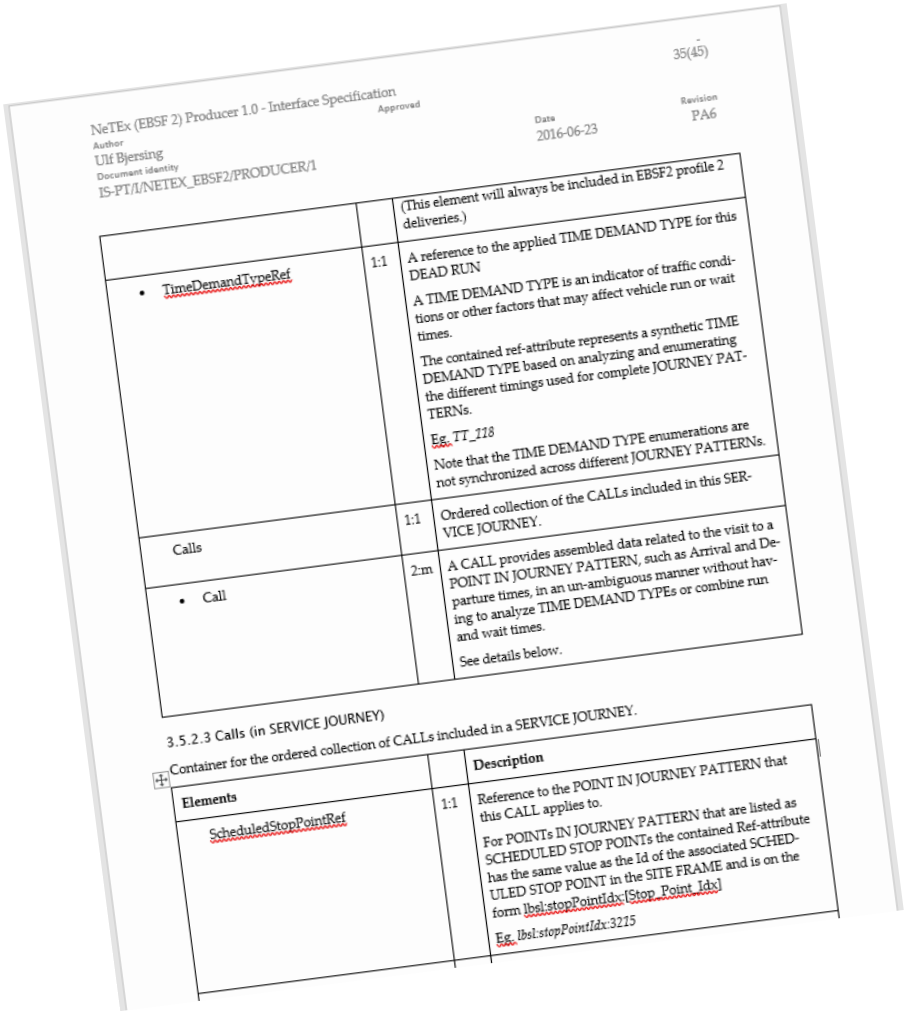
A profile

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

EBSF 2 NeTEx Profile

Planned data:

Network
Timetables
Vehicle Schedules



NeTEx (EBSF 2) Producer 1.0 - Interface Specification — 35(45)

Author: Ulf Bjersing | Approved | Date: 2016-06-23 | Revision: PA6

Document identity: IS-PT/I/NETEX_EBSF2/PRODUCER/1

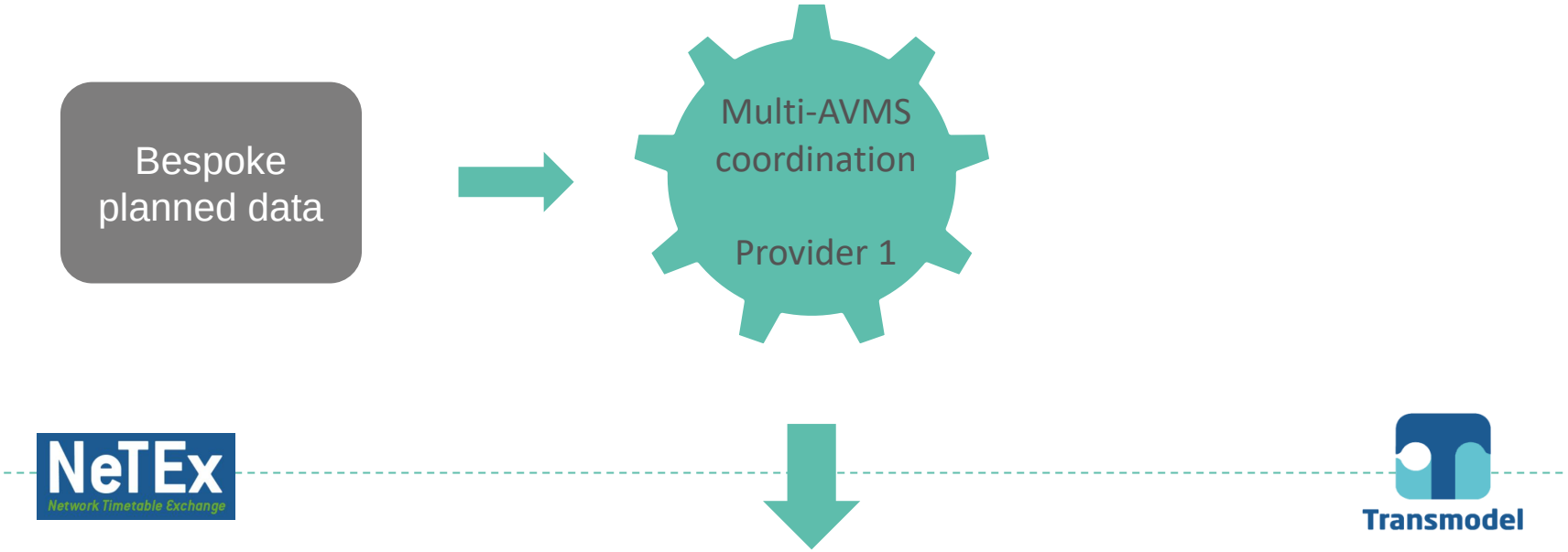
		(This element will always be included in EBSF2 profile 2 deliveries.)
• TimeDemandTypeRef	1:1	A reference to the applied TIME DEMAND TYPE for this DEAD RUN A TIME DEMAND TYPE is an indicator of traffic conditions or other factors that may affect vehicle run or wait times. The contained ref-attribute 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)

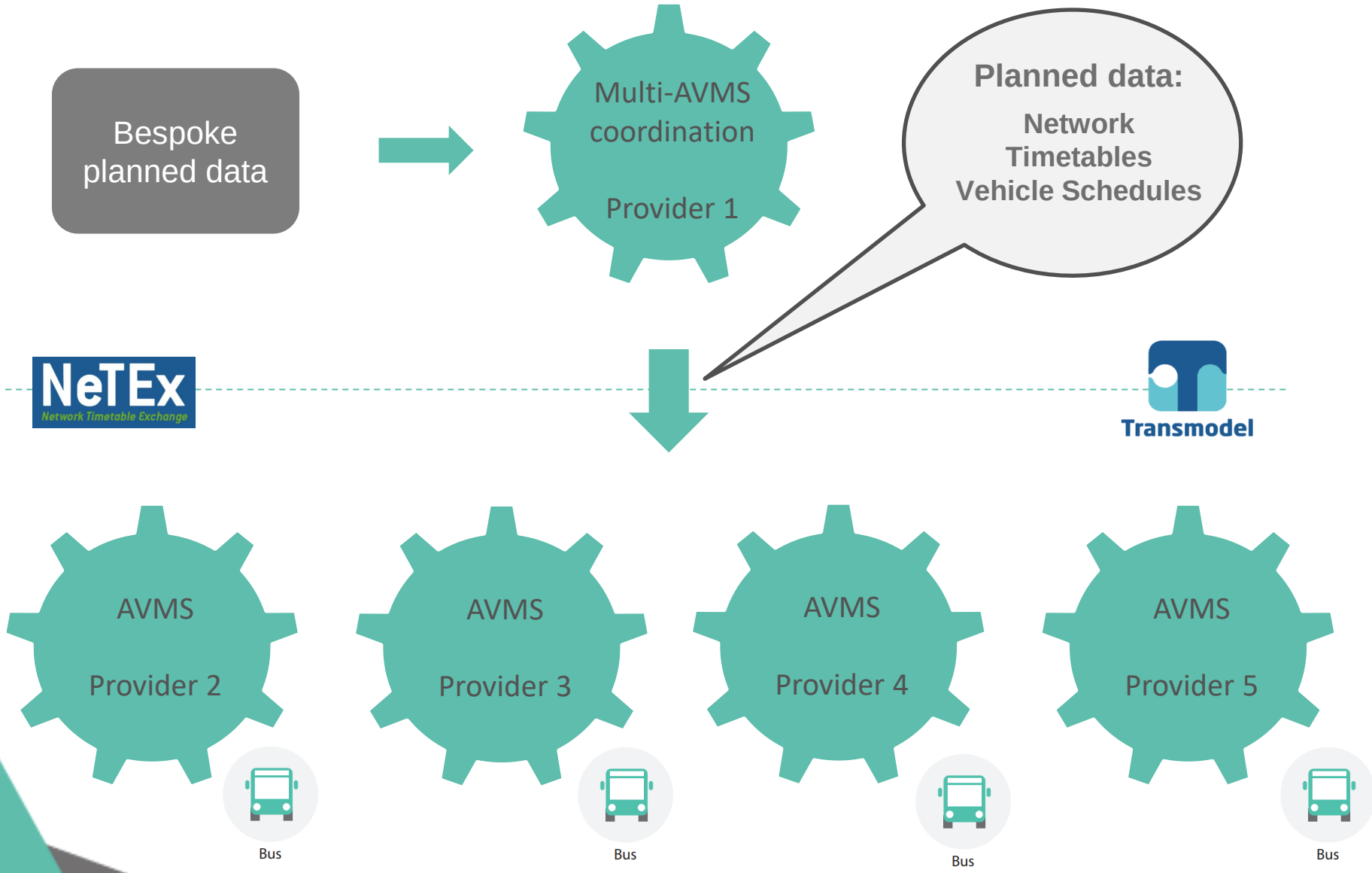
Container for the ordered collection of CALLs included in a SERVICE JOURNEY.

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*

Transmodel used in EBSF 2 project (1)

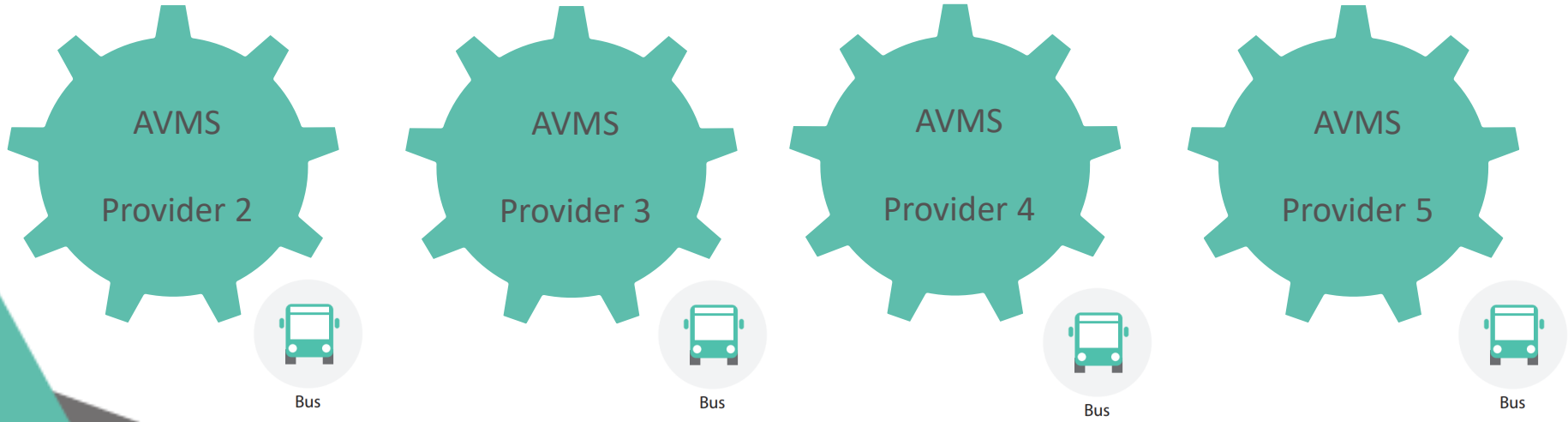


Transmodel used in EBSF 2 project (2)

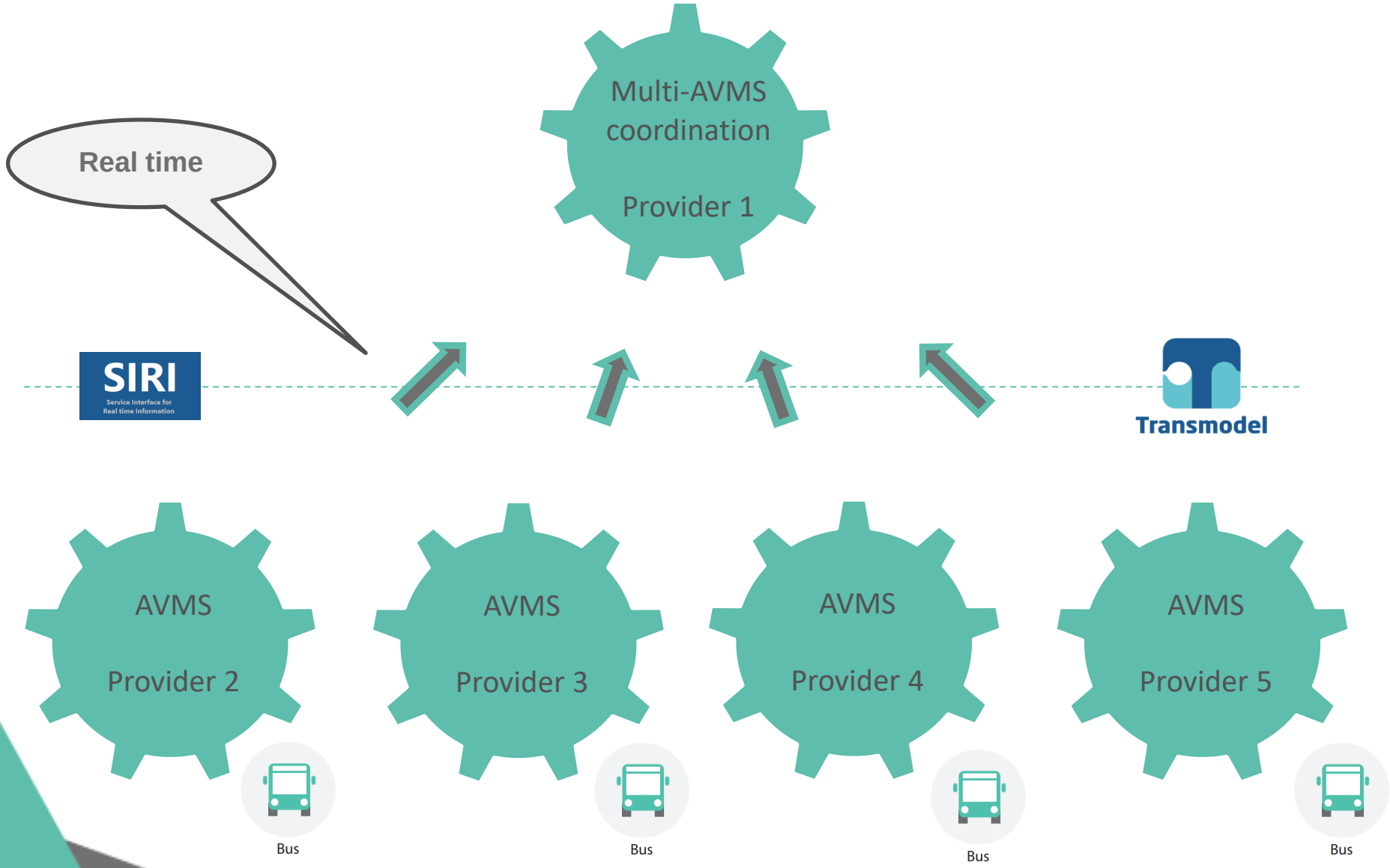


Transmodel used in EBSF 2 project (3)

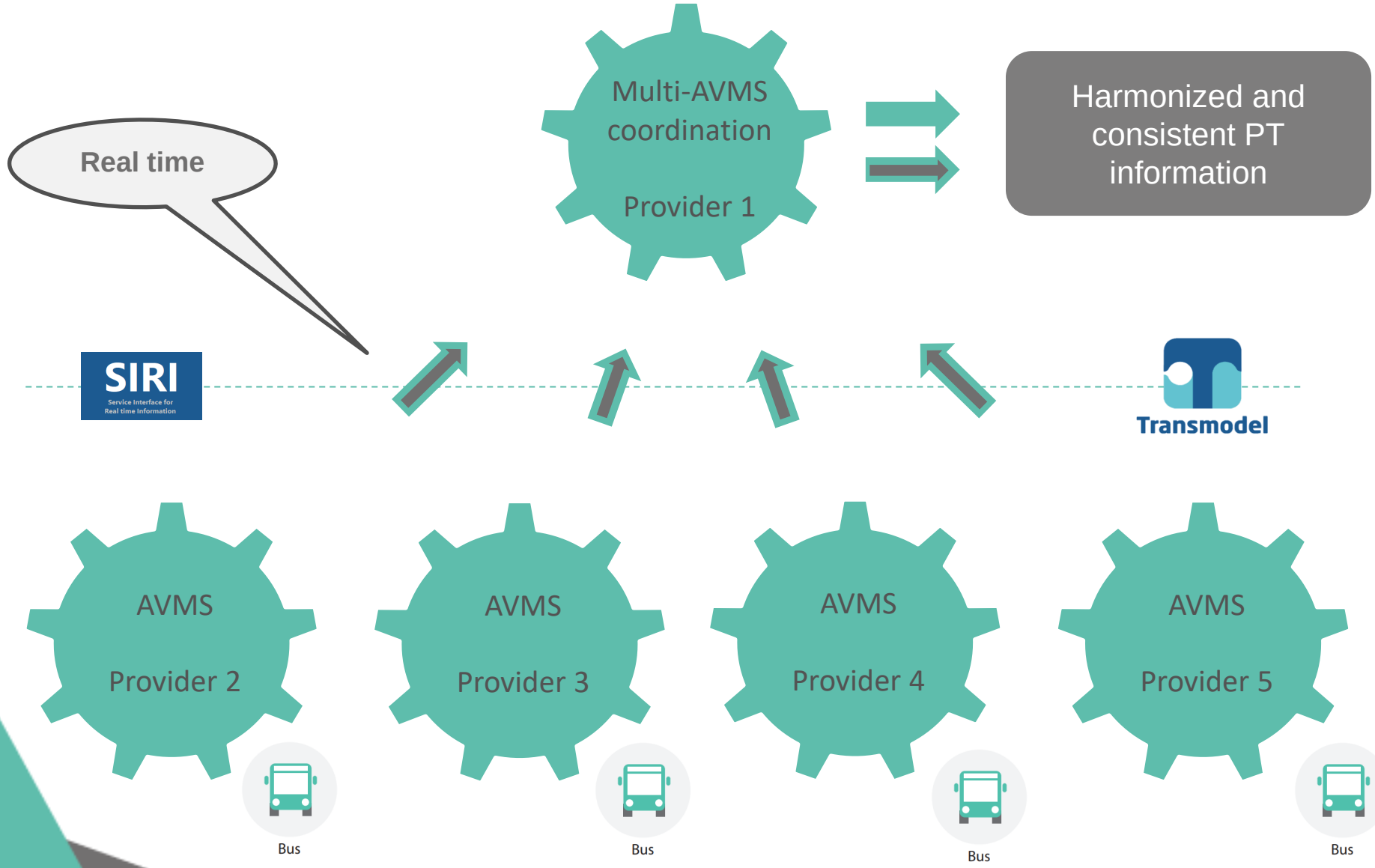
AVMS = Automatic Vehicle Monitoring Service



Transmodel used in EBSF 2 project (4)



Transmodel used in EBSF 2 project (5)



Transmodel implementation – on many levels

- Within an organisation
- Within a region
- Within a country
- Across Europe

Transmodel implementation in Sweden

Separation of concern and integration of data (region)

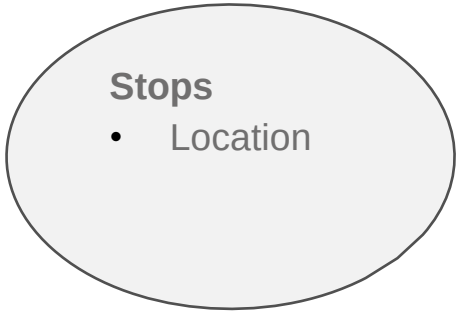
Stops

- Reference
- Name
- Location

Public Transport Authority

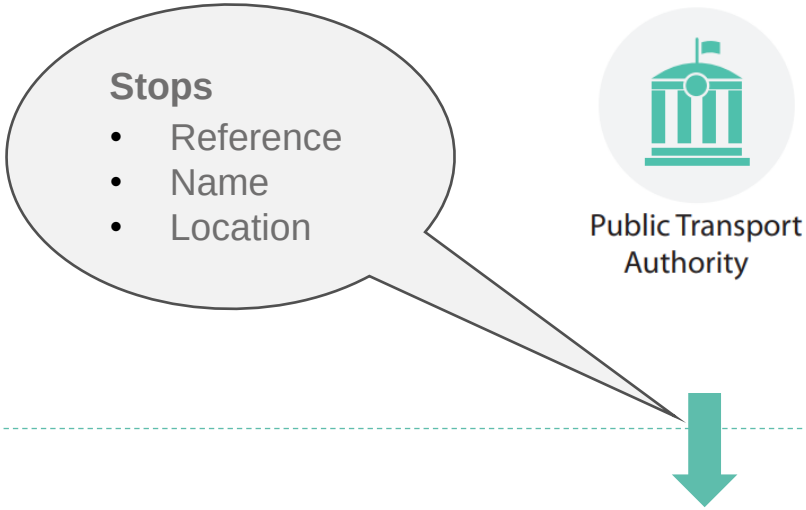
Transmodel implementation in Sweden

Separation of concern and integration of data (region)



Transmodel implementation in Sweden

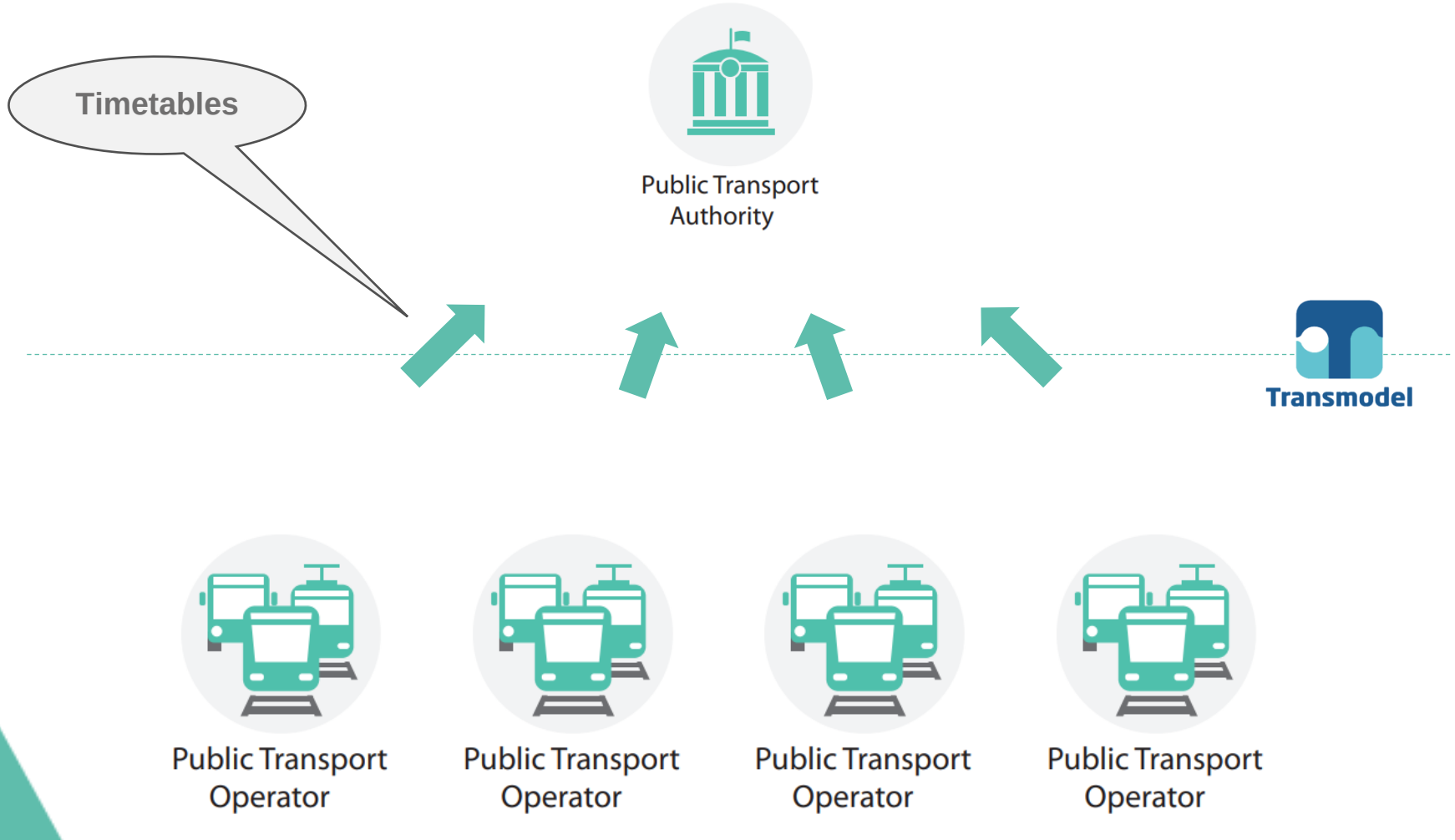
Separation of concern and integration of data (region)



Transmodel

Transmodel implementation in Sweden

Separation of concern and integration of data (region)



Transmodel implementation in Sweden

Separation of concern and integration of data (region)

Coherent static data:
Stops, Timetables,
Interchanges

Public Transport
Authority

Transmodel

Public Transport
Operator

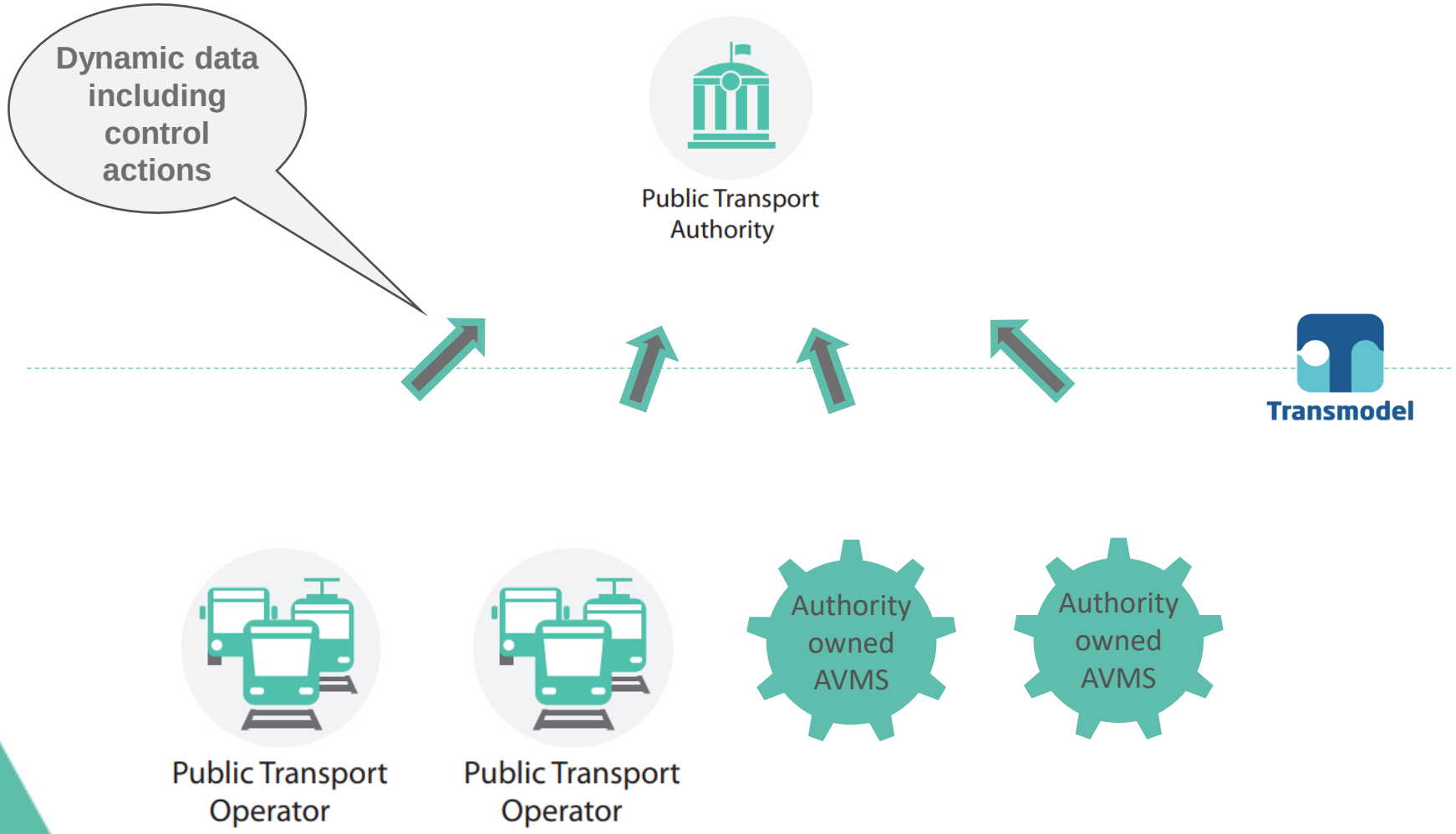
Public Transport
Operator

Authority
owned
AVMS

Authority
owned
AVMS

Transmodel implementation in Sweden

Separation of concern and integration of data (region)



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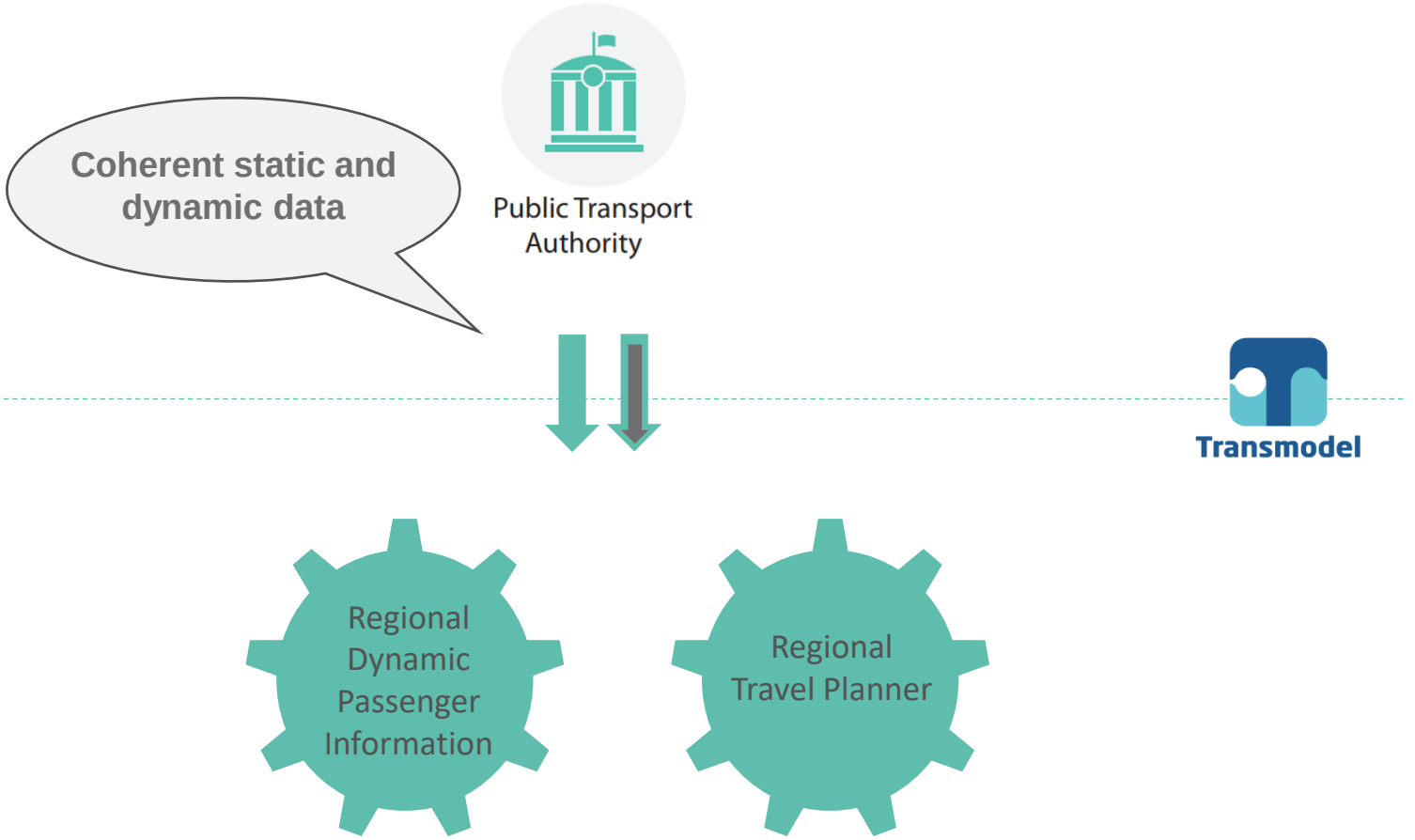
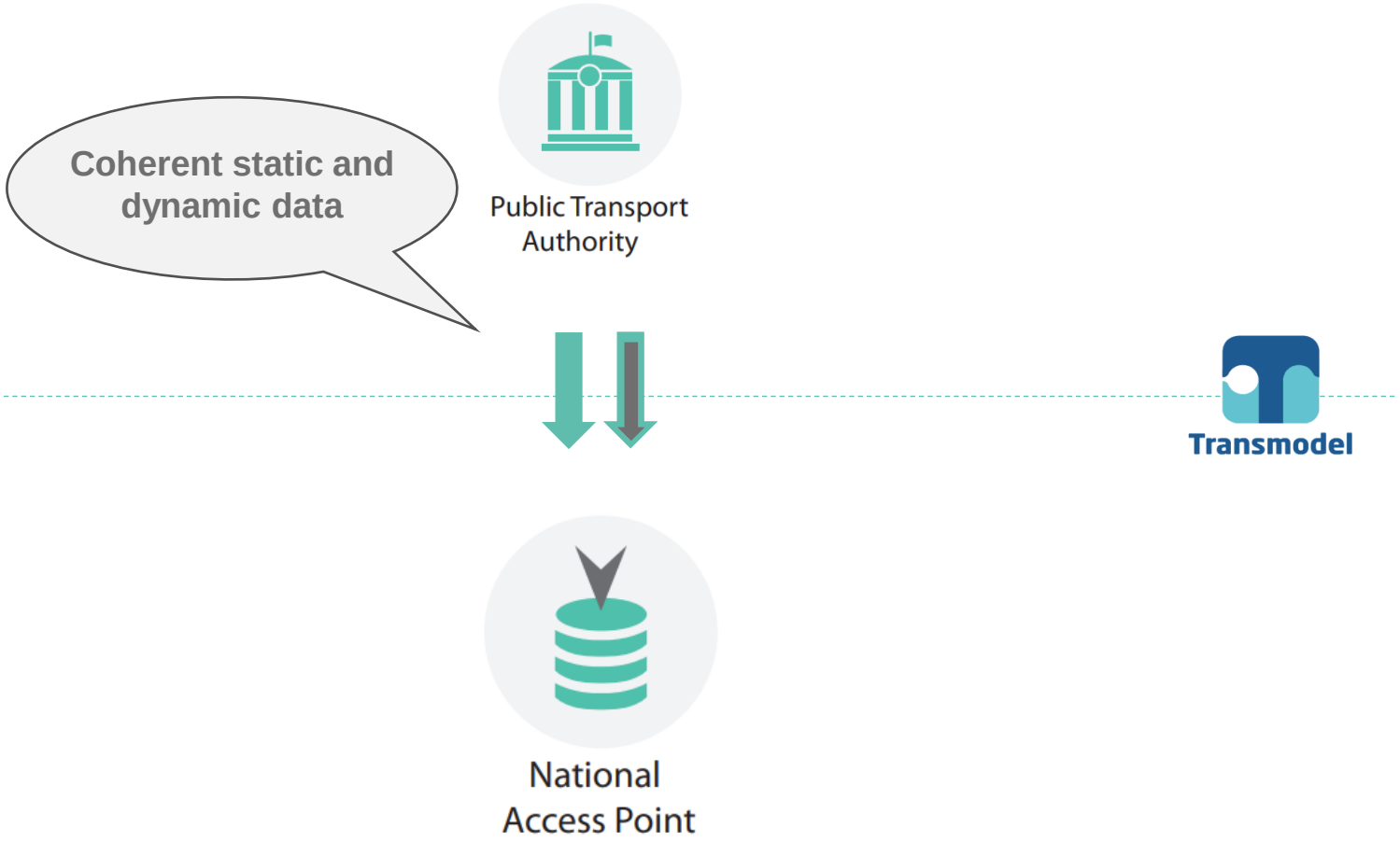
Separation of concern and integration of data (region)



Transmodel implementation in Sweden

Separation of concern and integration of data



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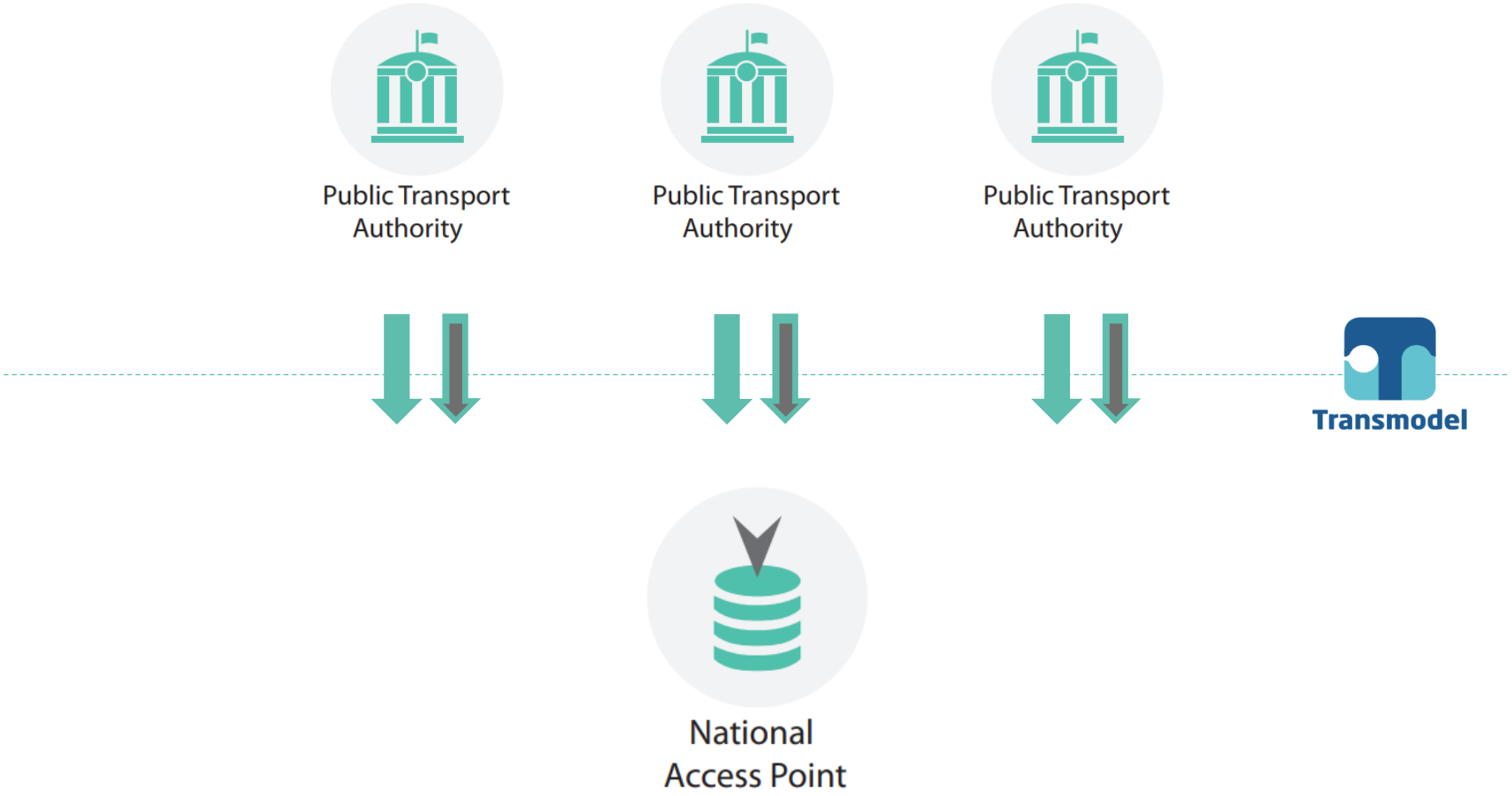
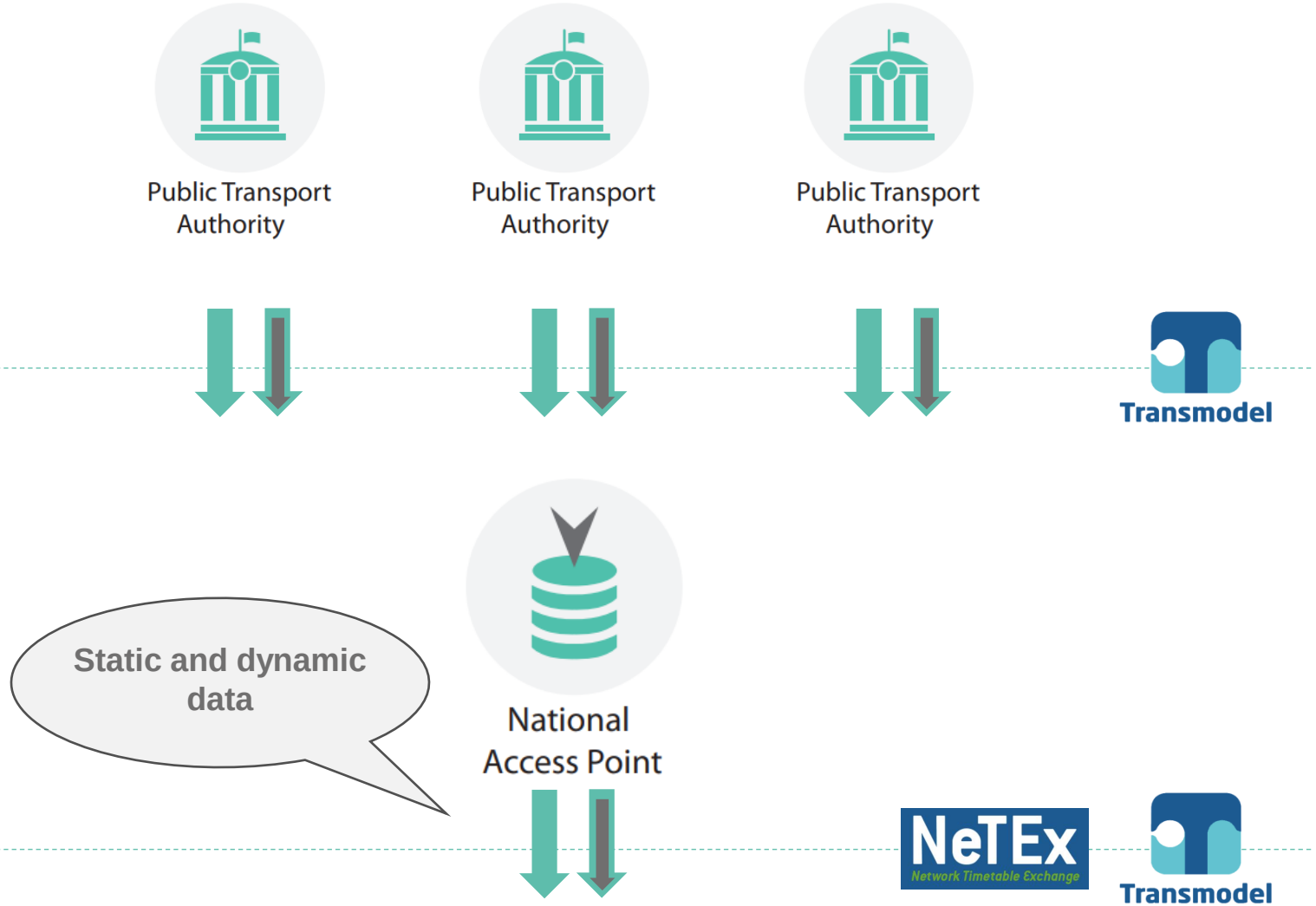
Separation of concern and integration of data



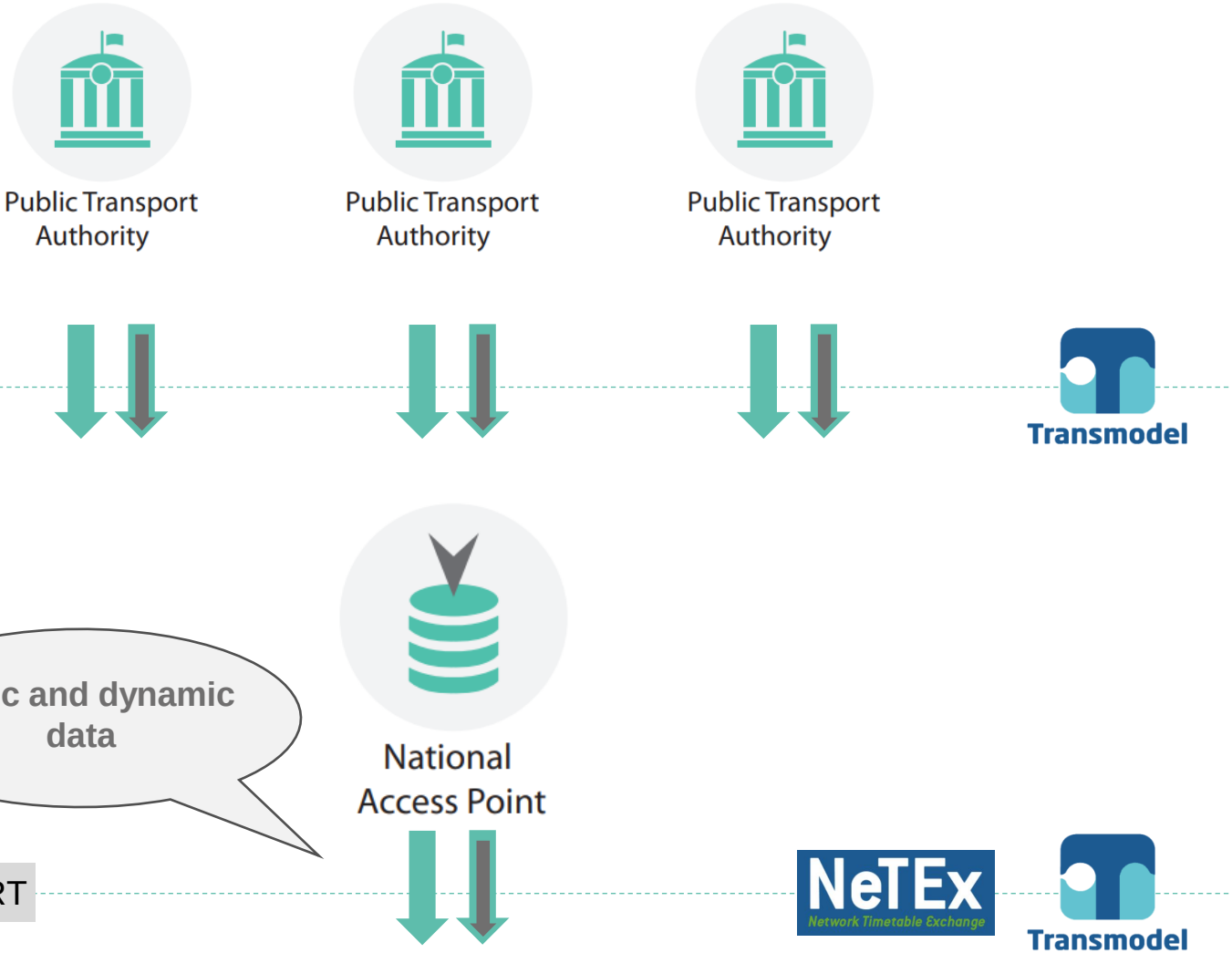
Transmodel implementation in Sweden

Separation of concern and integration of data



Transmodel implementation in Sweden

Separation of concern and integration of data



Transmodel implementation - European level

Supporting the provision of Union-wide multimodal travel information services

ITS Directive
Delegated Regulation
EU 2017/1926

Transmodel implementation - European level

Supporting the provision of Union-wide multimodal travel information services

ITS Directive
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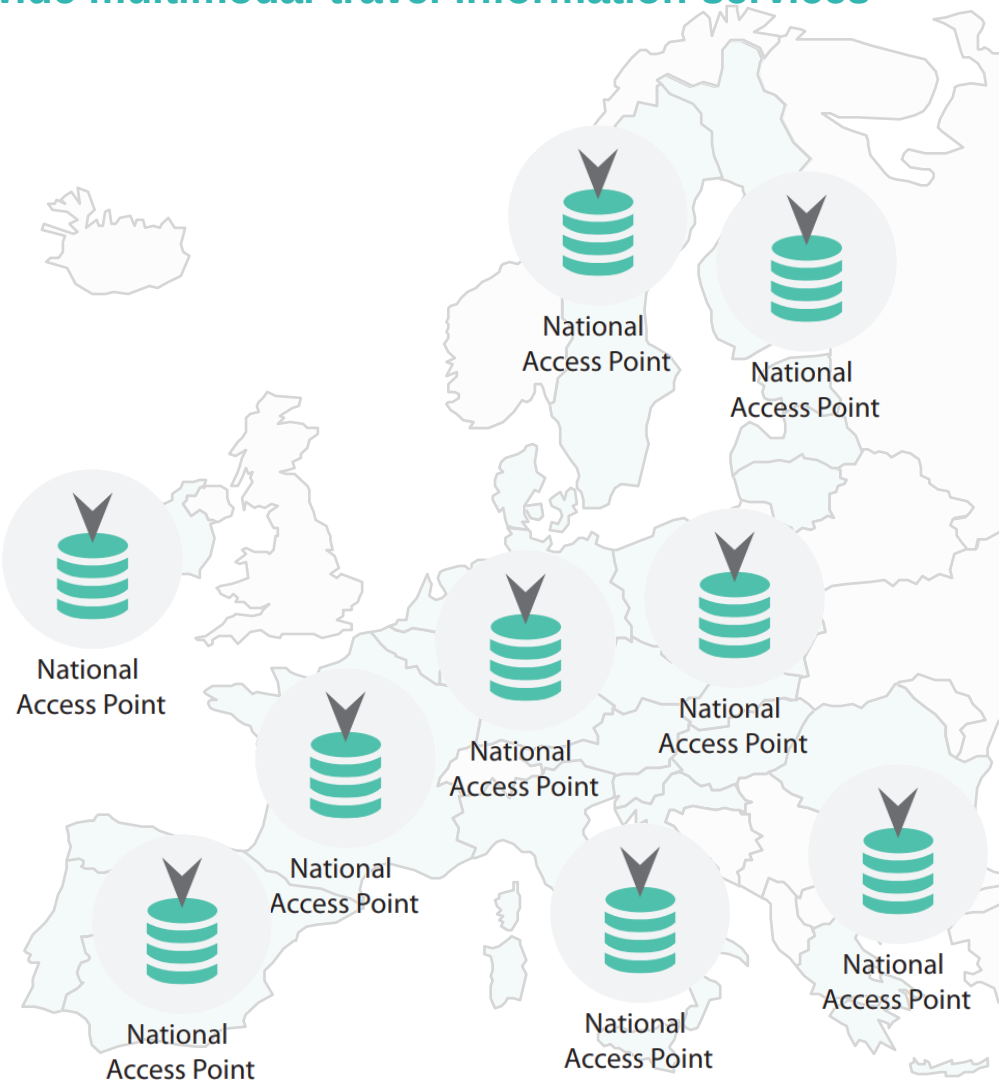


Transmodel implementation - European level

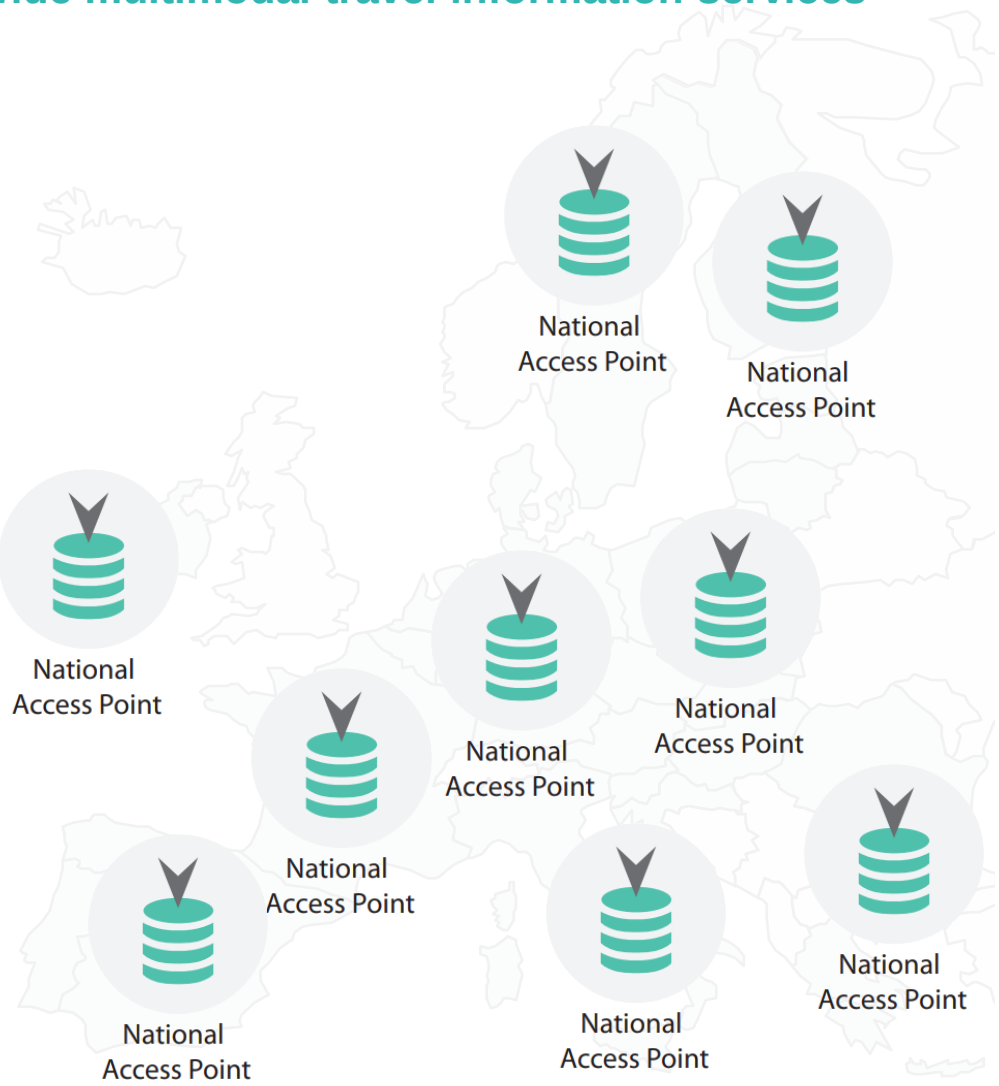
Supporting the provision of Union-wide multimodal travel information services

ITS Directive
Delegated Regulation
EU 2017/1926

static scheduled data in the national access point should use
NeTEx CEN/TS 16614
based on the underlying conceptual data reference model
Transmodel EN 12896

NeTEx
Network Timetable Exchange

Transmodel



Transmodel implementation - European level

Supporting the provision of Union-wide multimodal travel information services

ITS Directive
Delegated Regulation
EU 2017/1926

Dynamic data in the national access point should use
SIRI CEN/TS 15531

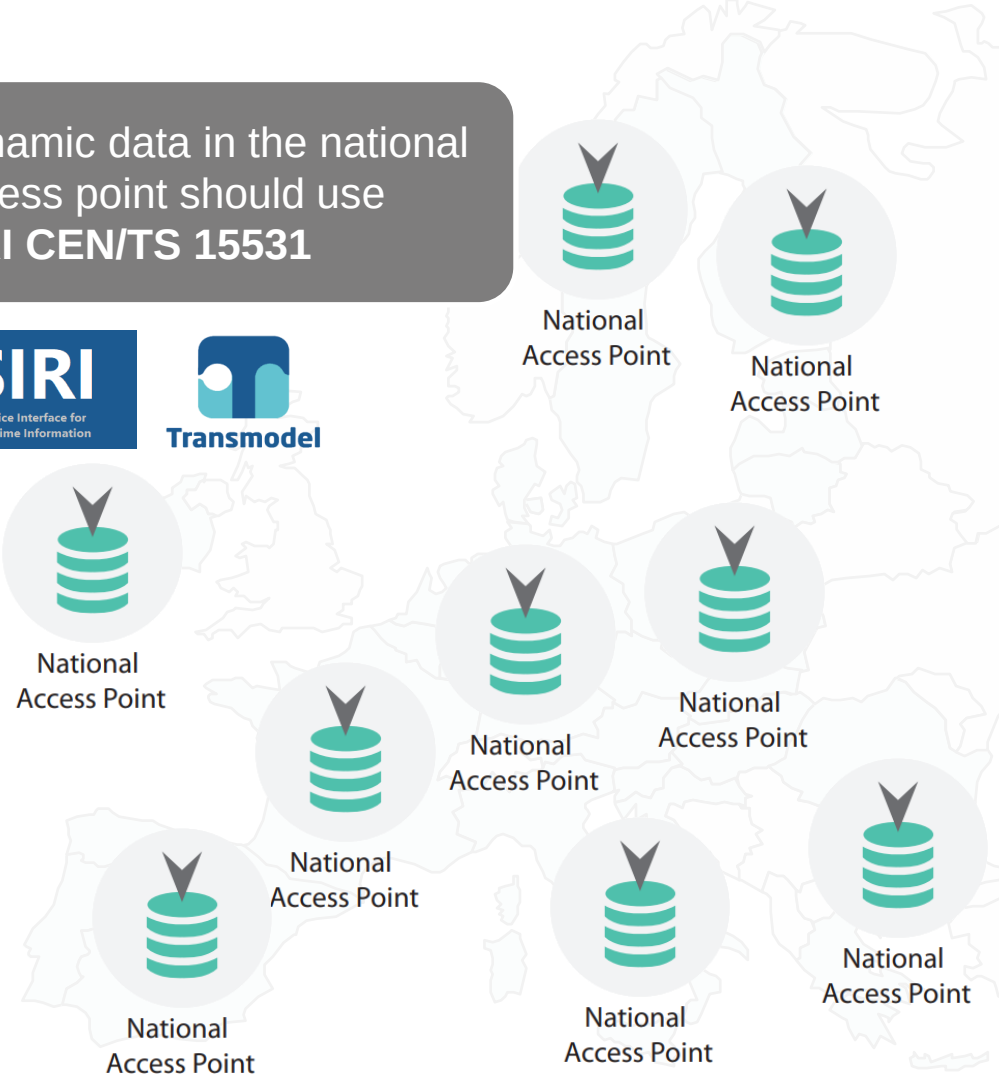
static scheduled data in the national access point should use
NeTEx CEN/TS 16614
based on the underlying conceptual data reference model
Transmodel EN 12896

SIRI
Service Interface for Real time Information

Transmodel

NeTEx
Network Timetable Exchange

Transmodel



datapt

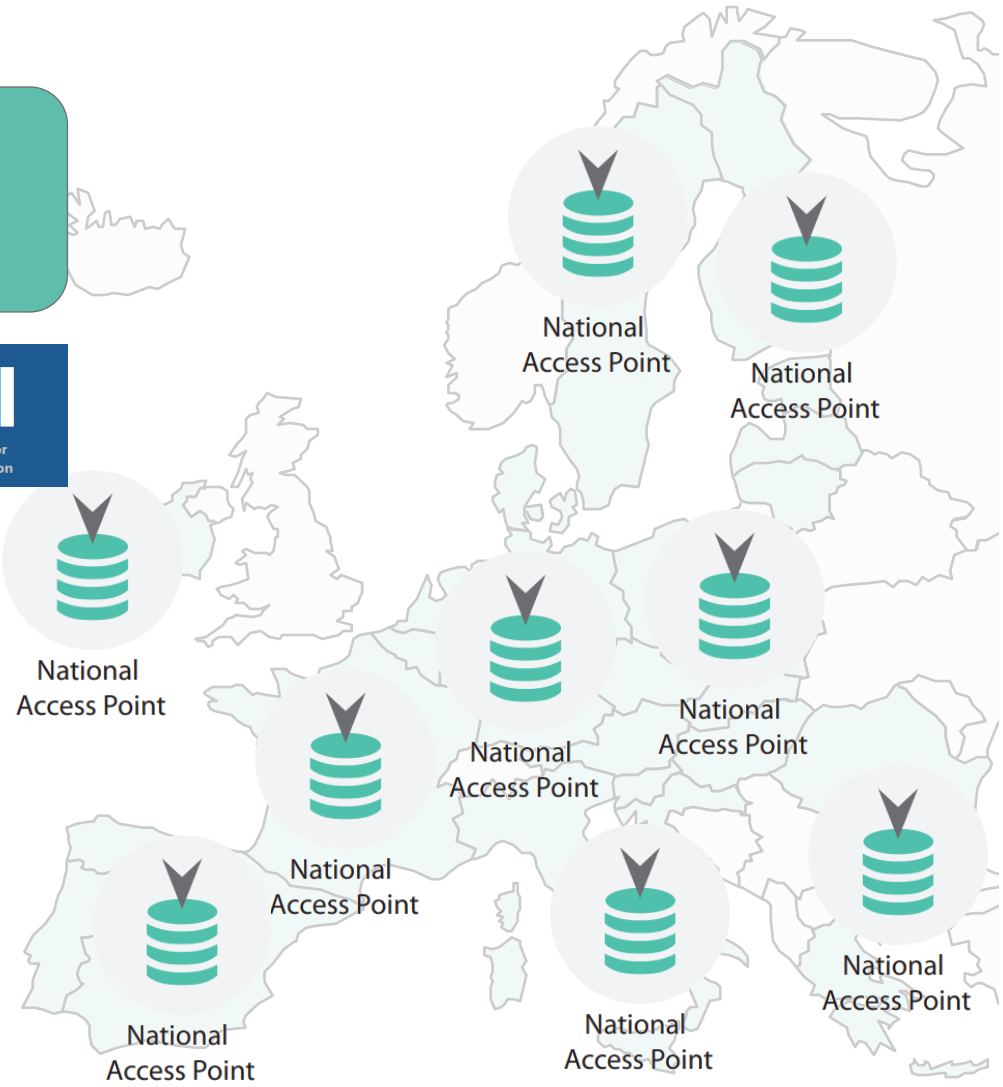
Transmodel implementation - European level

ITS Directive
Delegated Regulation
EU 2017/1926

NeTEx
Network Timetable Exchange

Transmodel

SIRI
Service Interface for
Real time Information



Transmodel implementation - European level
Common minimum profile at NAP level

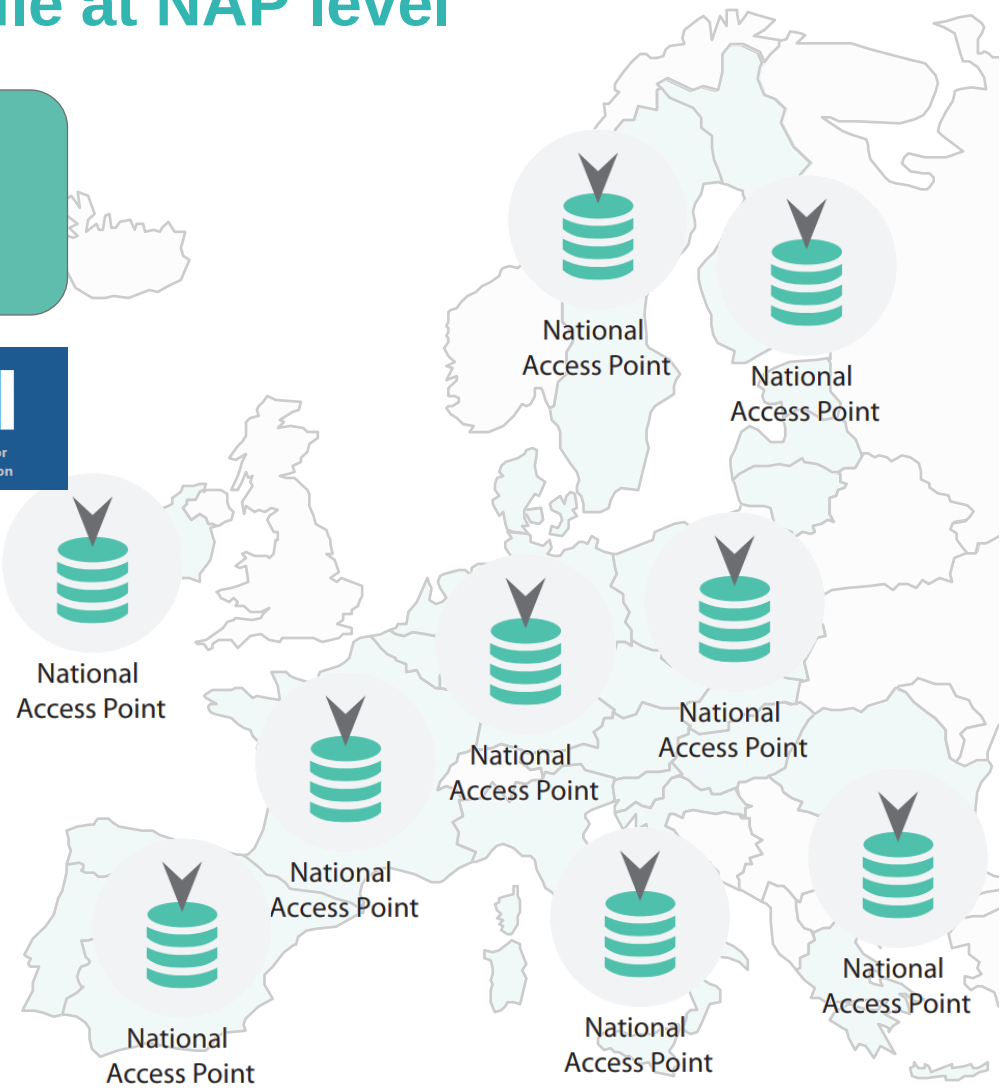
ITS Directive
Delegated Regulation
EU 2017/1926

NeTEx
Network Timetable Exchange

Transmodel

SIRI
Service Interface for
Real time Information

European Passenger Information Profile

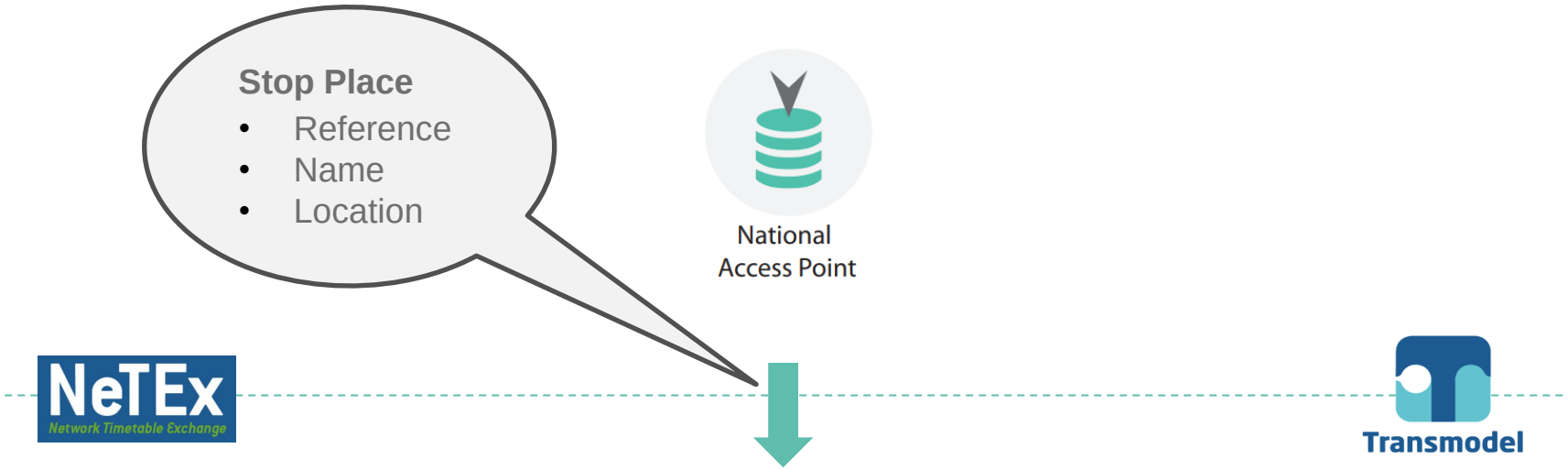


European Passenger Information Profile
-Common minimum profile at NAP level

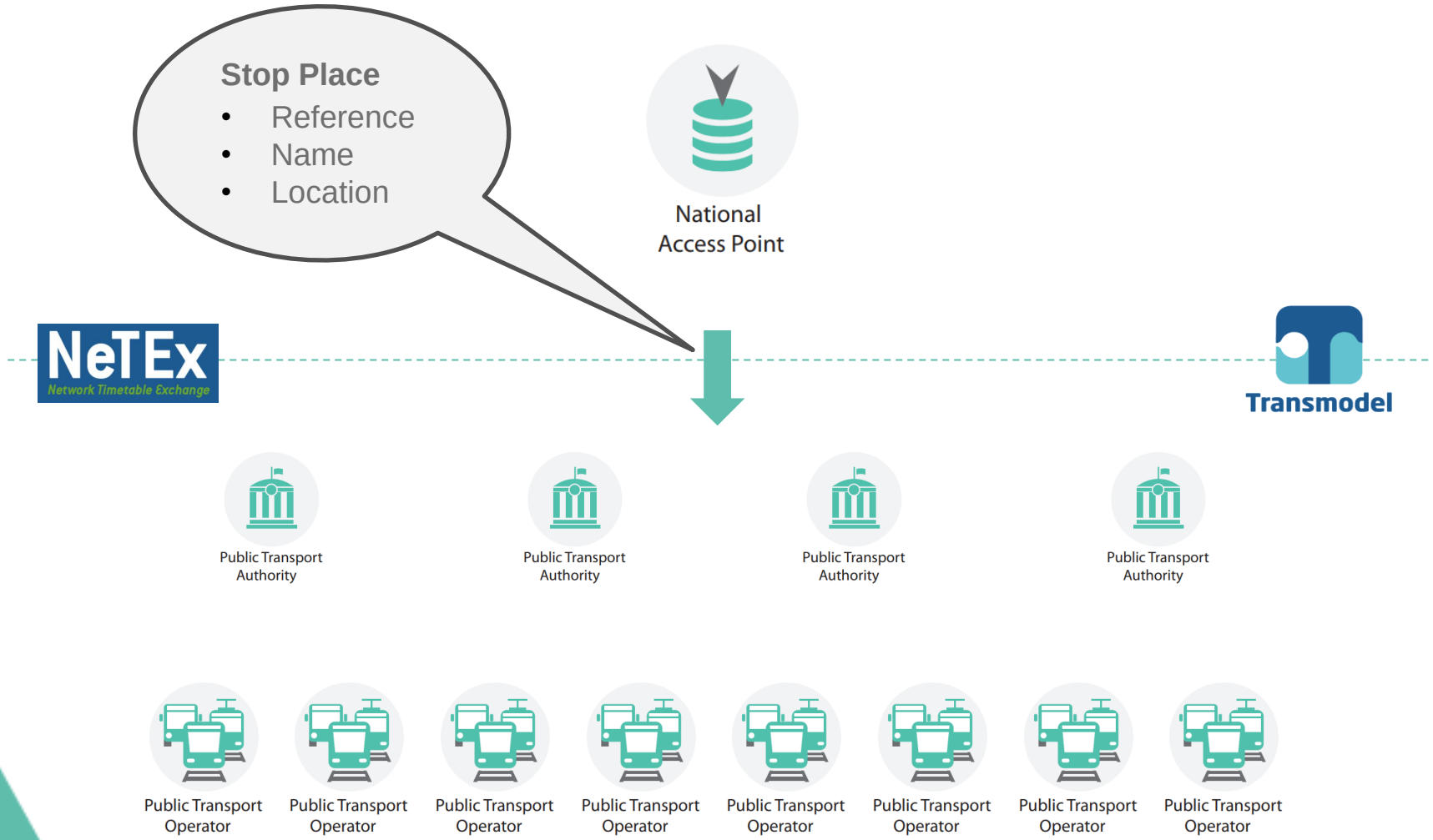
European Passenger Information Profile

Transmodel implementation in Norway

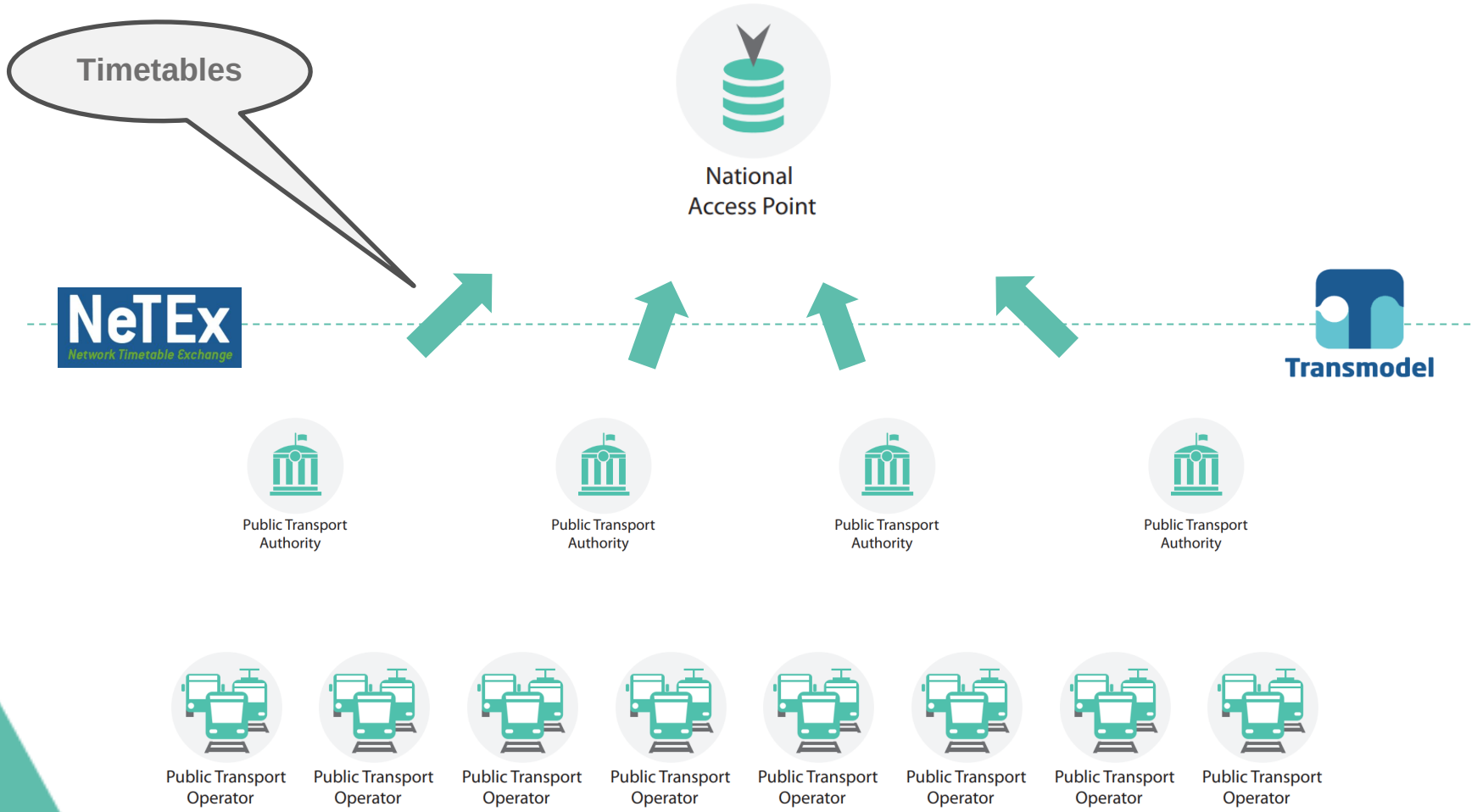
Transmodel implementation in Norway (1)



Transmodel implementation in Norway (1)

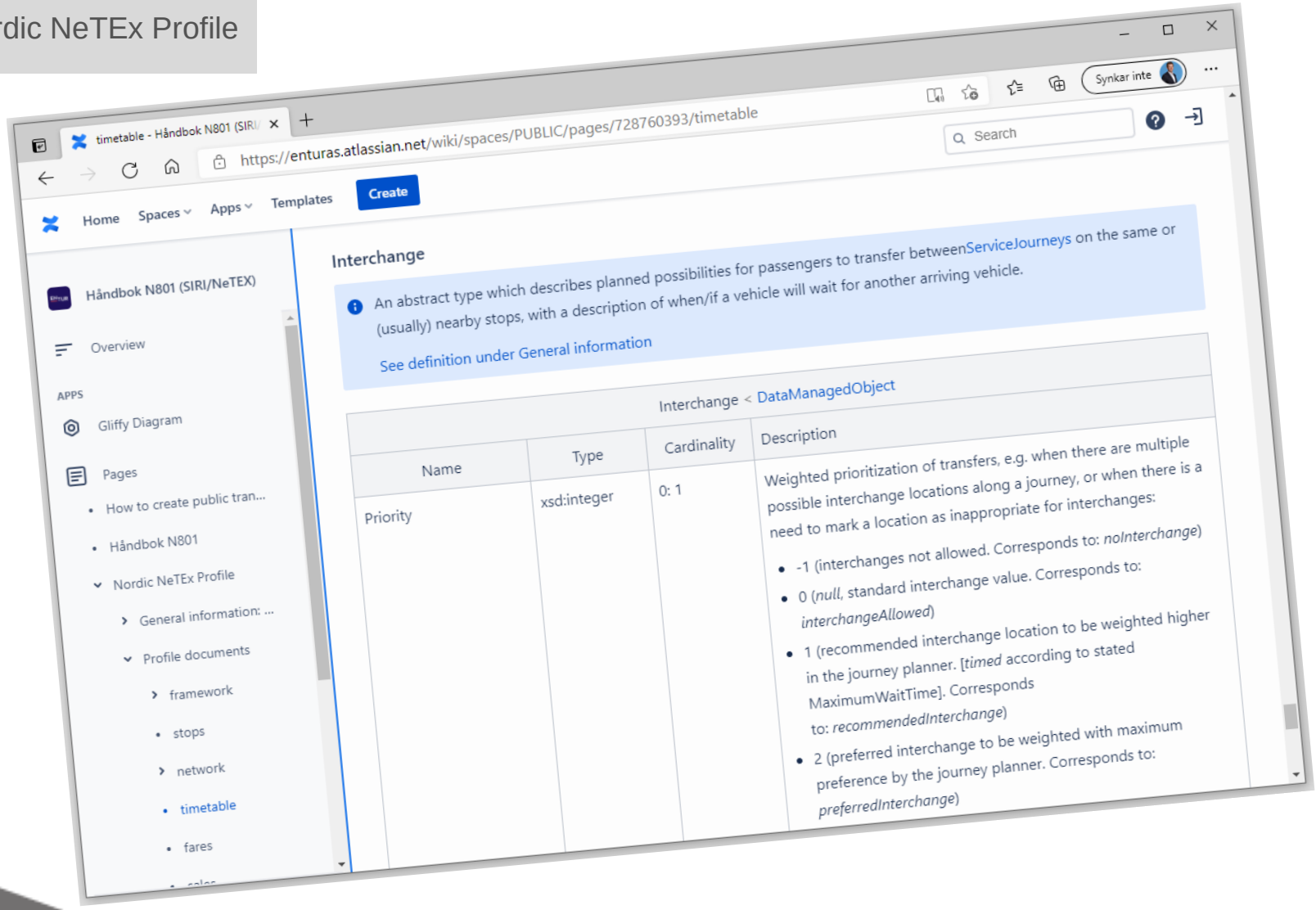


Transmodel implementation in Norway (2)

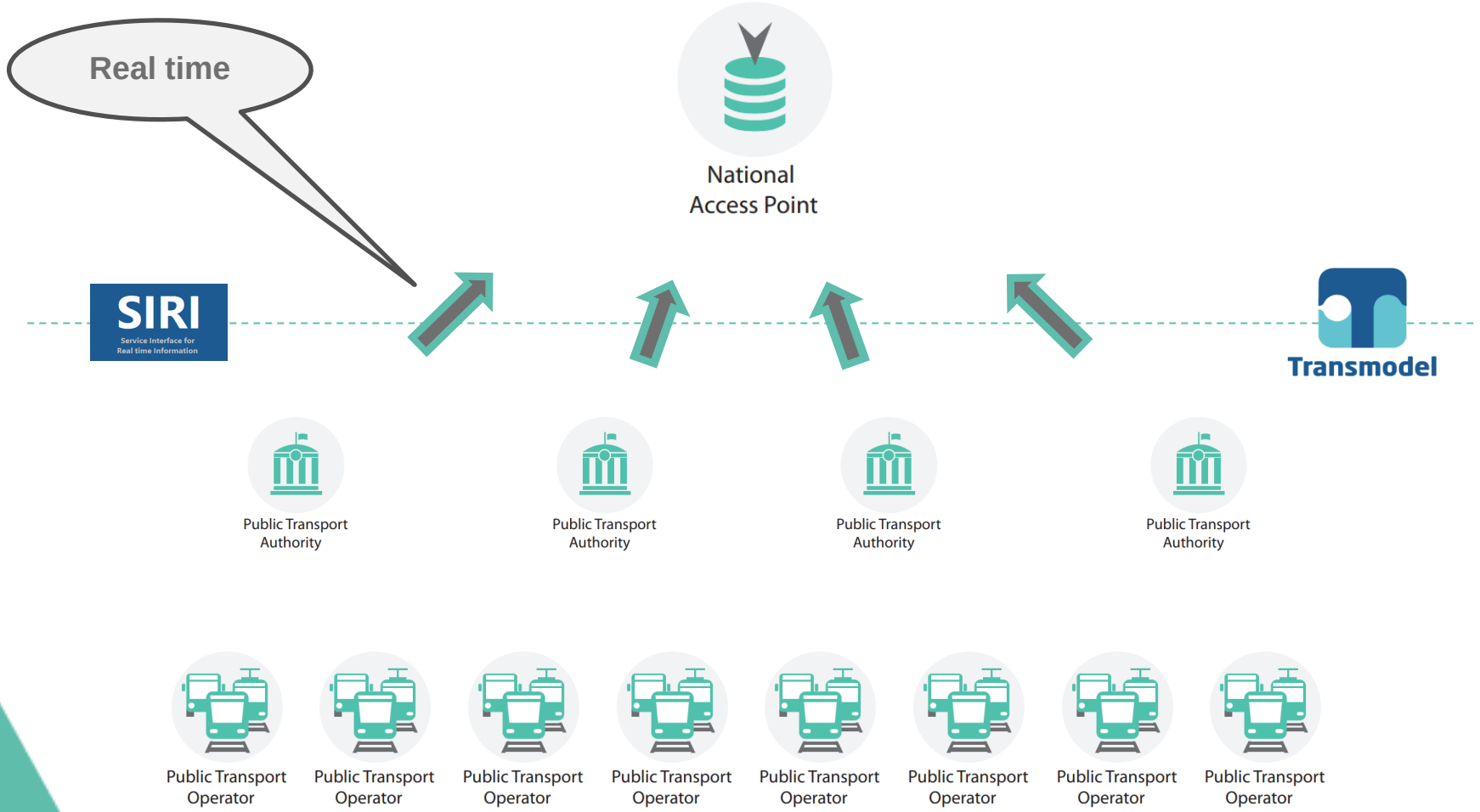


Nordic NeTEx Profile

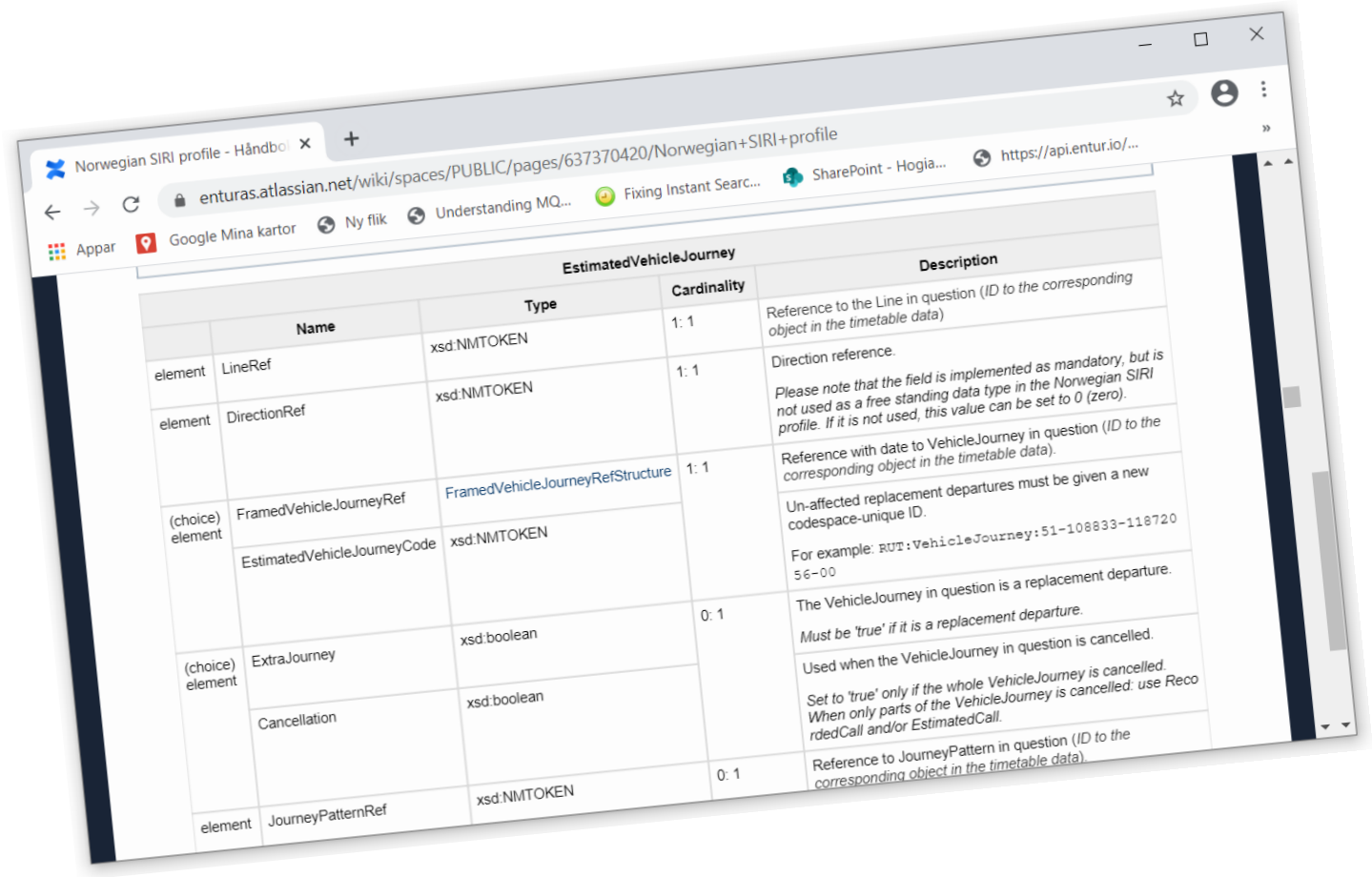
Nordic NeTEx Profile



Transmodel implementation in Norway (3)

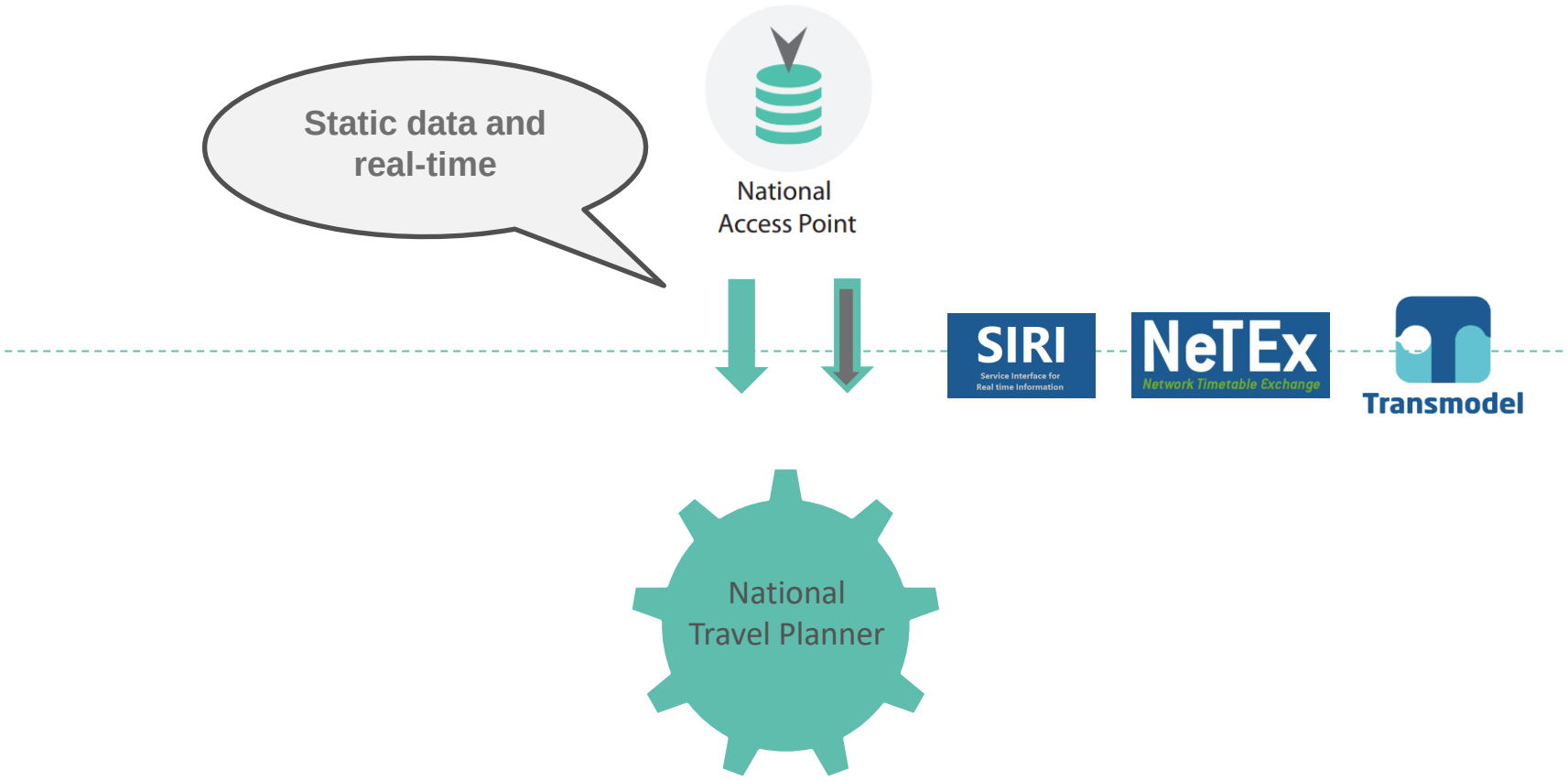


Norwegian SIRI Profile

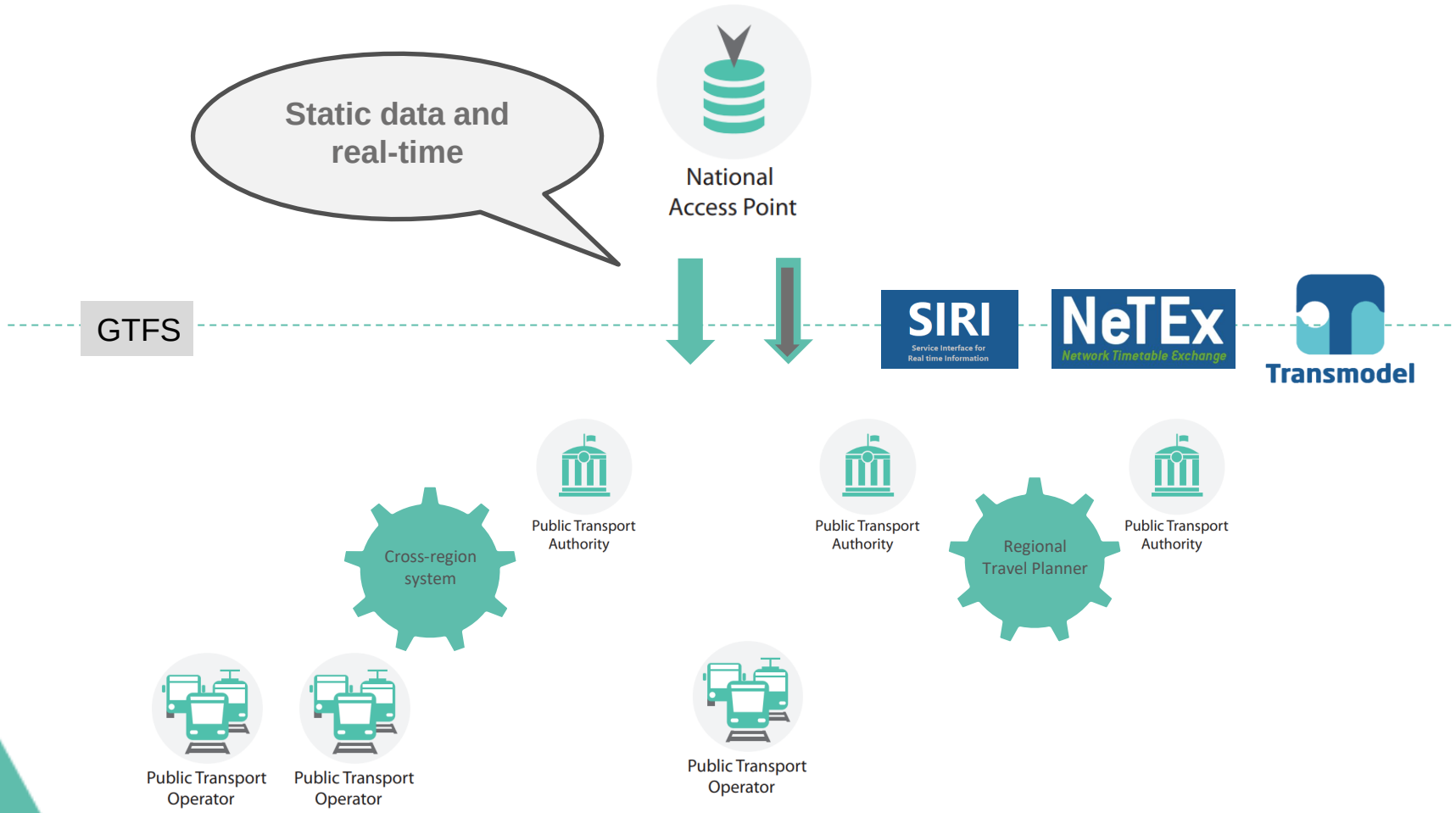


EstimatedVehicleJourney				
	Name	Type	Cardinality	Description
element	LineRef	xsd:NMTOKEN	1: 1	Reference to the Line in question (*ID to the corresponding object in the timetable data*)
element	DirectionRef	xsd:NMTOKEN	1: 1	Direction reference. *Please note that the field is implemented as mandatory, but is not used as a free standing data type in the Norwegian SIRI profile. If it is not used, this value can be set to 0 (zero).*
(choice) element	FramedVehicleJourneyRef	FramedVehicleJourneyRefStructure	1: 1	Reference with date to VehicleJourney in question (*ID to the corresponding object in the timetable data*).
	EstimatedVehicleJourneyCode	xsd:NMTOKEN		Un-affected replacement departures must be given a new codespace-unique ID. For example: `RUT:VehicleJourney:51-108833-118720 56-00`
(choice) element	ExtraJourney	xsd:boolean	0: 1	The VehicleJourney in question is a replacement departure. *Must be 'true' if it is a replacement departure.*
	Cancellation	xsd:boolean		Used when the VehicleJourney in question is cancelled. *Set to 'true' only if the whole VehicleJourney is cancelled. When only parts of the VehicleJourney is cancelled: use Recorded Call and/or EstimatedCall.*
element	JourneyPatternRef	xsd:NMTOKEN	0: 1	Reference to JourneyPattern in question (*ID to the corresponding object in the timetable data*)

Transmodel implementation in Norway (4)

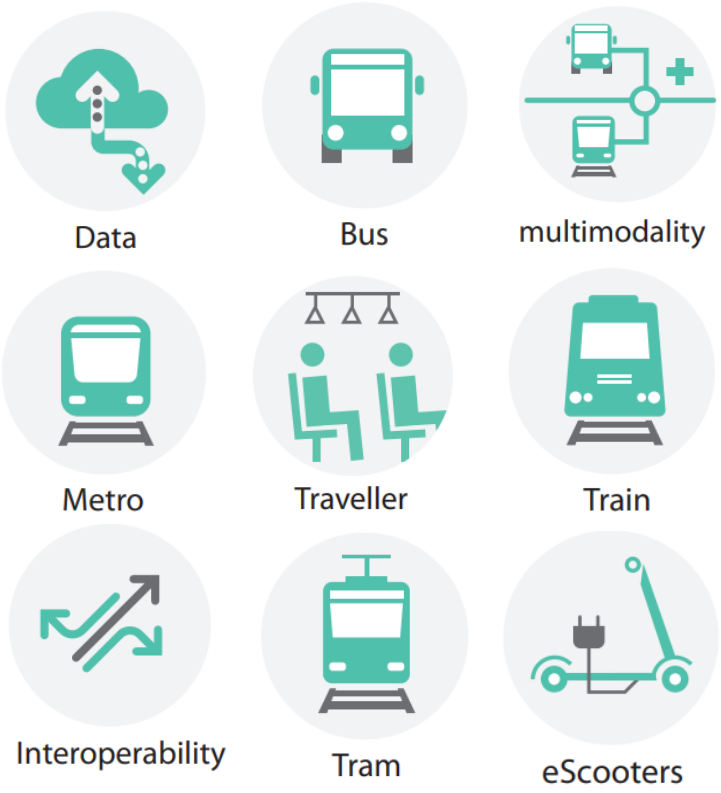


Transmodel implementation in Norway (5)

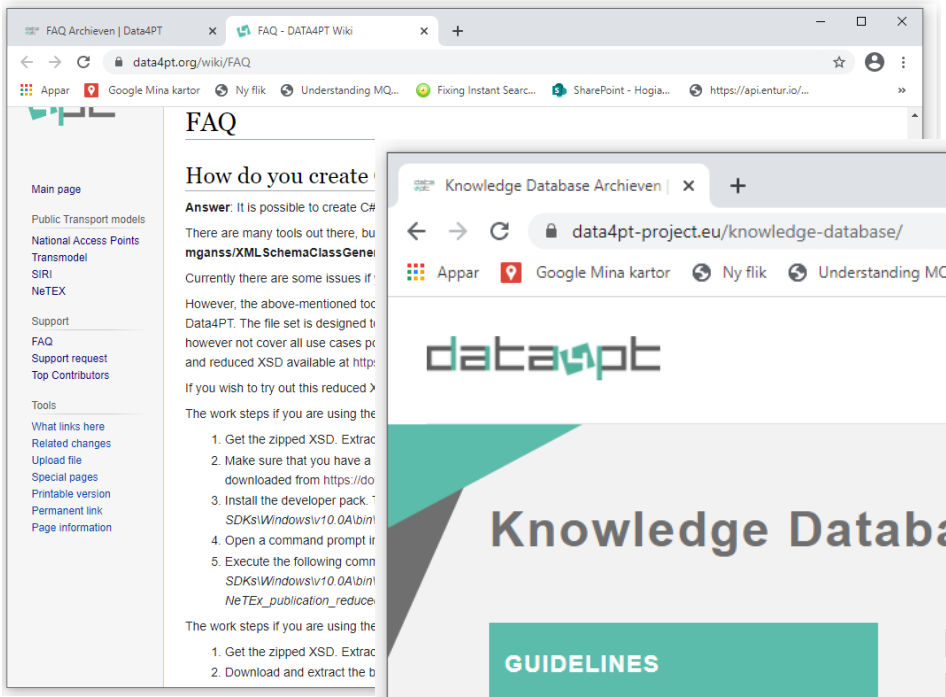


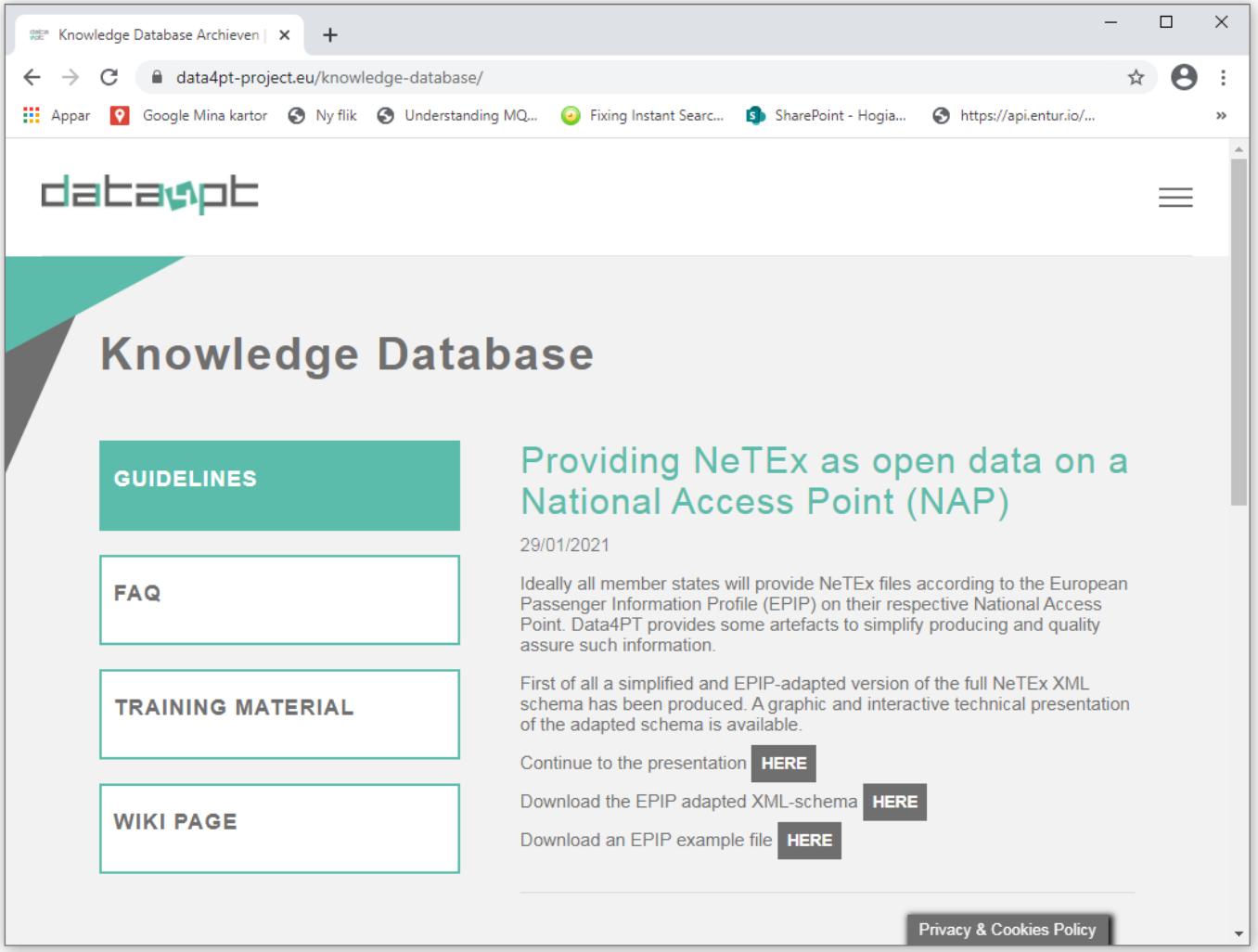
Transmodel

A basis for future-proof public transport information



Data4PT website and WIKI...





Thank you for your attention!

www.data4pt-project.eu/

@Data4PT

Data4PT has received funding from the European Union's DG for Mobility and Transport under grant agreement No MOVE/B4/SUB/2019-104/CEF/PSA/SI2.821136