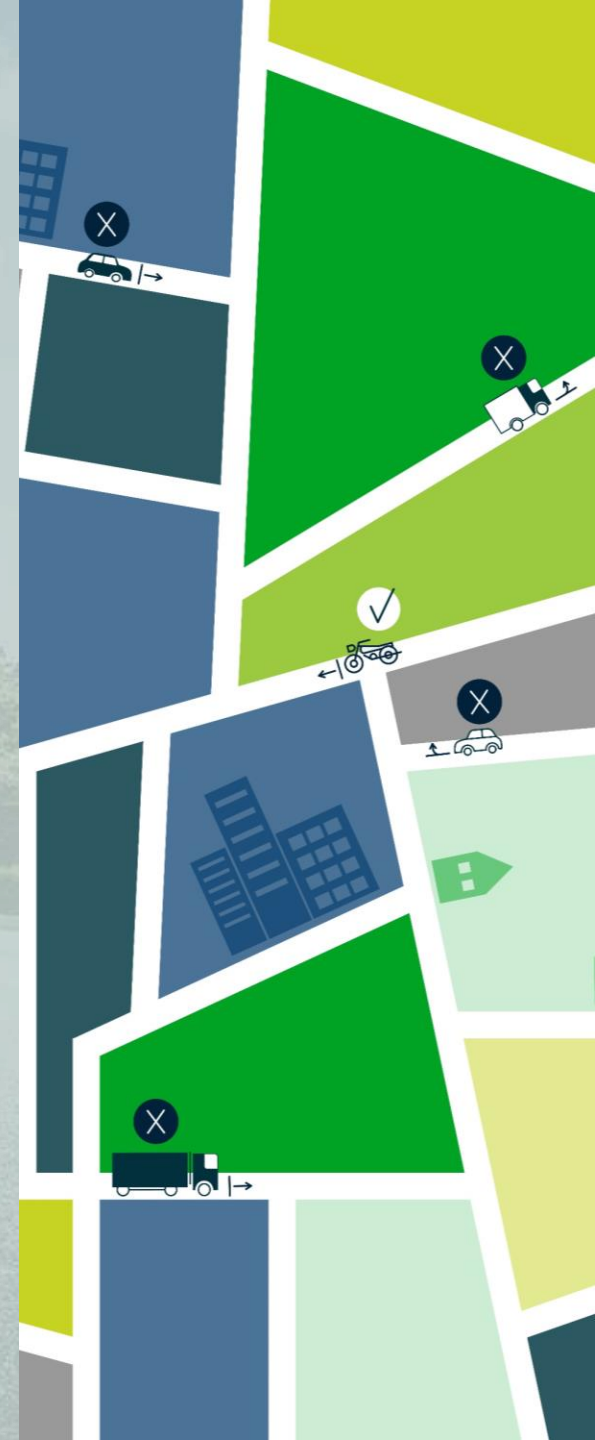


From Traffic Regulation Order to UVAR to DATEX II

Bard de Vries U-Trex

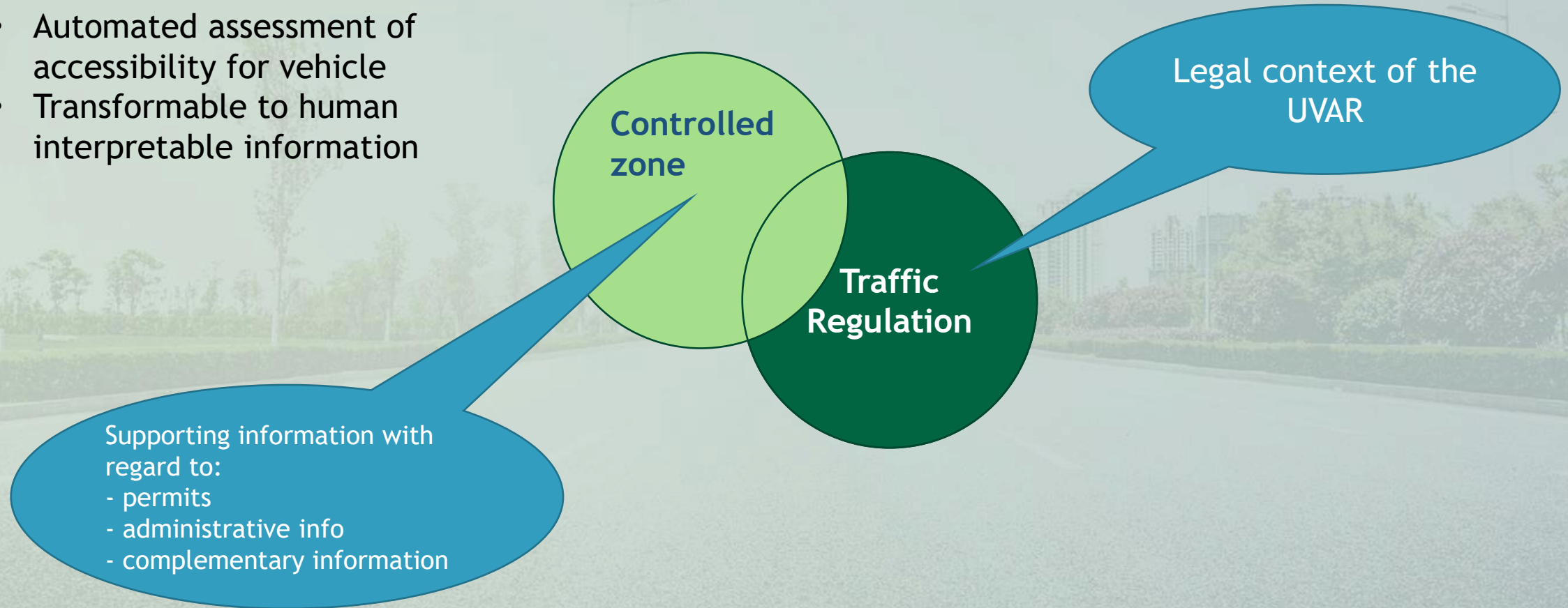


DATEX II work done so far

- Low emission zones of 5 countries as starting point
 - Aachen, Antwerp and Amsterdam basis of detailed requirement engineering for UVAR related datamodels
- The DATEX II models developed so far
- From UVAR to the DATEX II message for the Amsterdam LEZ
- The Amsterdam limited traffic zones in DATEX II
- What's next

The DATEX II model

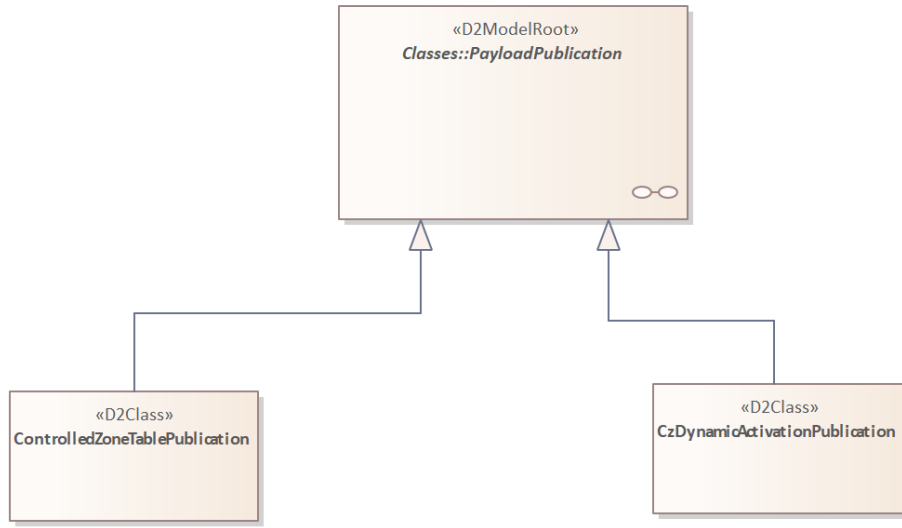
- Automated assessment of accessibility for vehicle
- Transformable to human interpretable information



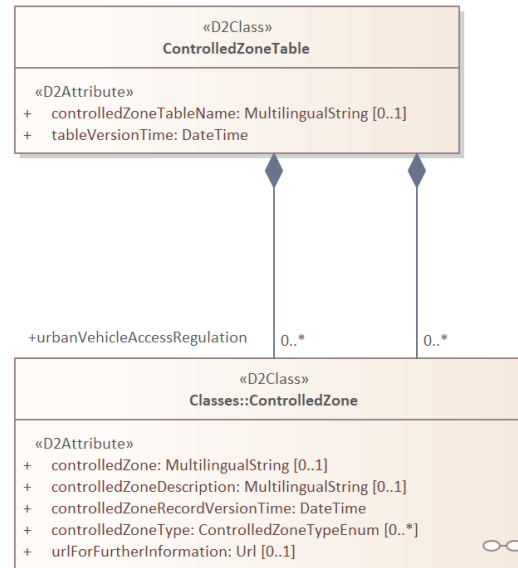
In terms of standardisation

- A first draft of a DATEX II model was created, not modelling from the scratch but building on:
 - CEN EN 16157-1 (i.e. using the DATEX II modelling methodology as requested)
 - CEN EN 16157-2 (using the DATEX II ‘location referencing’ toolbox)
 - CEN EN 16157-7 (using the DATEX II ‘common toolbox’, e.g. for time schedules)
 - CEN prTS 16157-11 (using the draft DATEX II standard for traffic regulations)
- The new modelling layer is also building on previous work, carried out in the scope of the SOCRATES 2.0 CEF project
- The approach is a ControlledZone model, specialising the TrafficRegulation model from prTS 16157-11

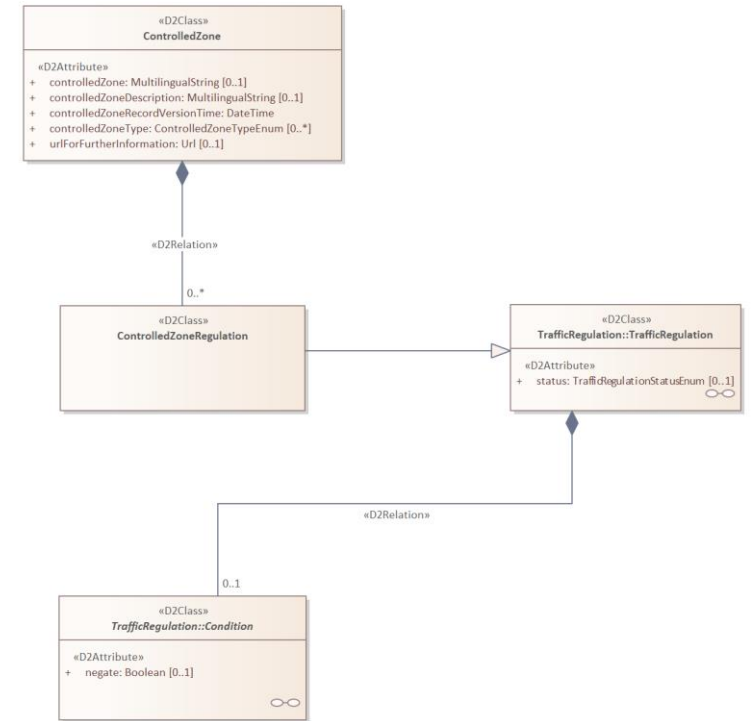
class ControlledZonePublication

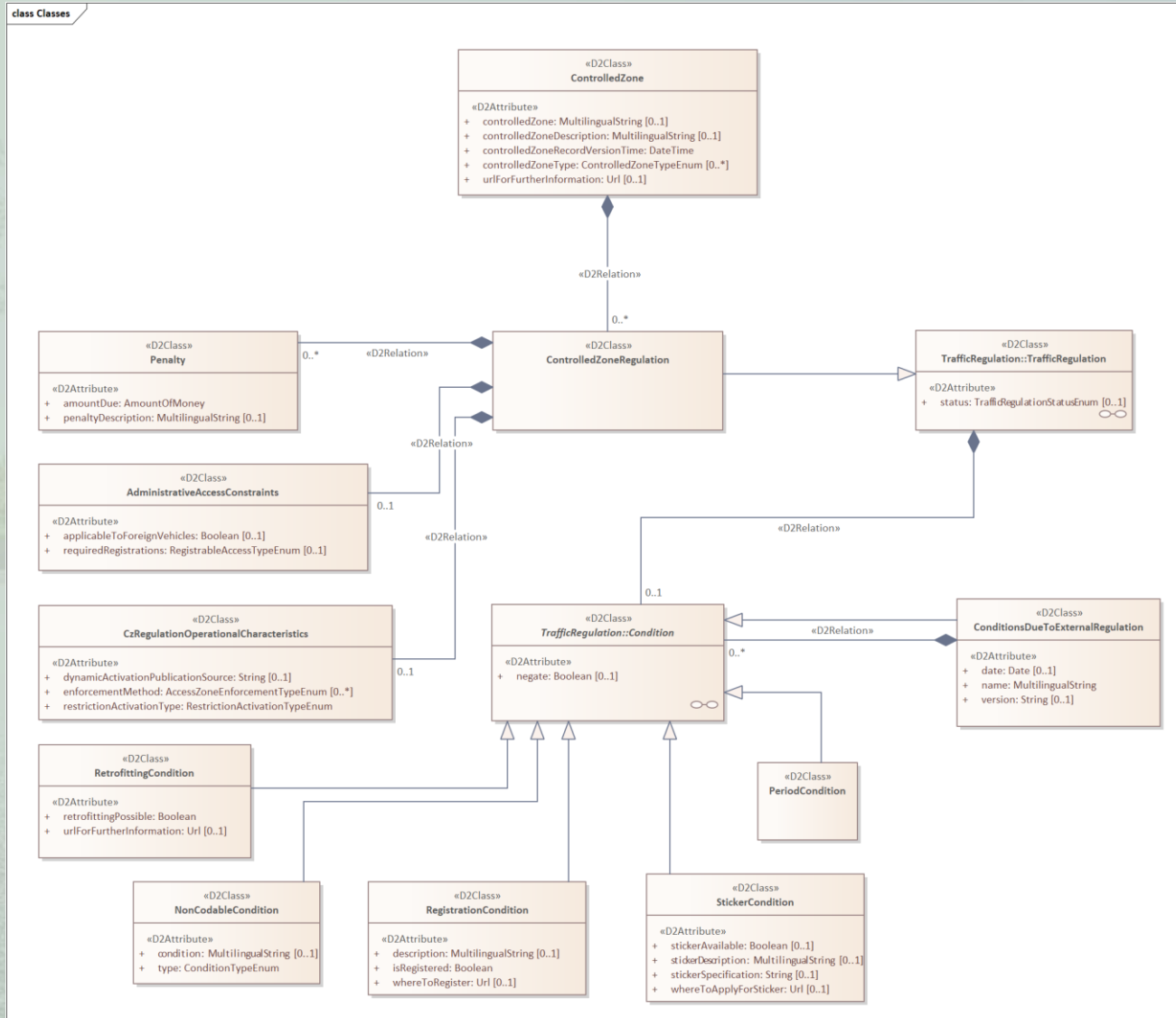


class ControlledZonePublication

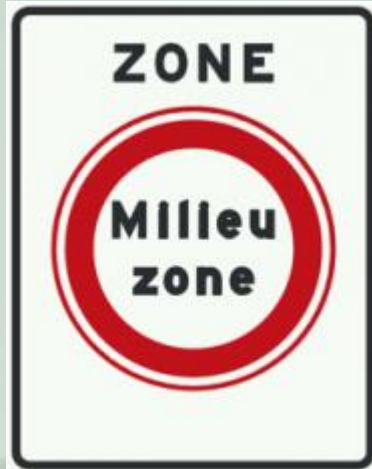


class Classes





Low emission zone Amsterdam



- An environmental zone: No access for any diesel-powered vehicle

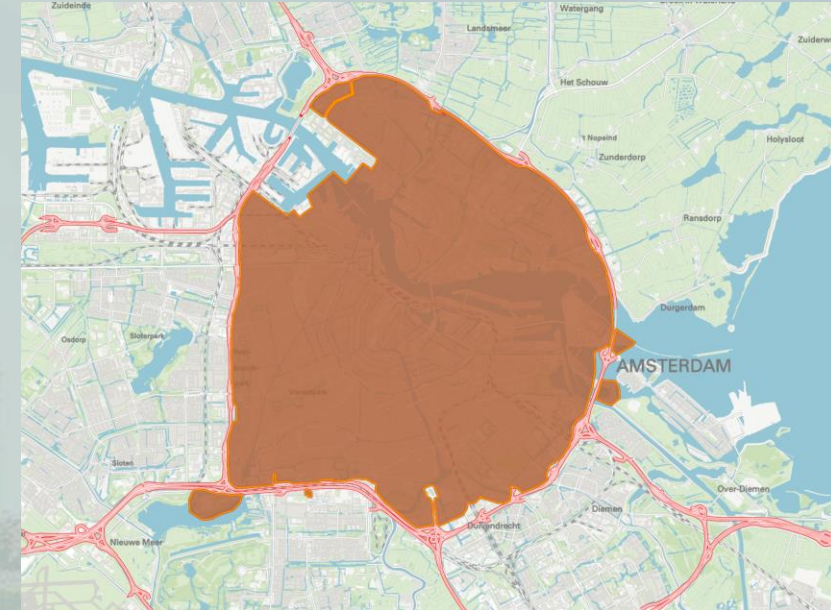
Exempted



- Motor vehicles with at least four wheels designed and constructed for the carriage of passengers.
- Vehicles designed and constructed for the carriage of goods and having a maximum mass not exceeding 3,5 tonnes
- AND emissionclass 4, 5 or 6



- Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 tonnes.
- Vehicles designed and constructed for the carriage of goods and having a maximum mass above 3,5 tonnes
- AND emissionclass 4, 5 or 6



Additional Exemptions

- Vehicle age > 40
- Wheelchair accessible vehicle
- Campervan owned by resident of zone
- Permitted exemptions in Amsterdam:
 - Bought a permitted vehicle to be delivered soon
 - Movers, circus and fair vehicles
 - Taxis with a DFR > 1-1-2009
 - Vehicles adapted for more than > € 500 to enable disabled persons to drive

DATEX II Message

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<> cz:tableVersion	2019-11-19T14:33:00+01:00
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▼ <> cz:controlledZone	
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<> tro:status	madeAndImplemented
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▲ <> tro:condition	
= xsi:type	tro:ConditionSet
<> tro:operator	and
▼ <> tro:condition	(4)

Basic structure

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=	xsi:type	tro:ConditionSet										
<>	tro:operator	and										
▲ <> tro:condition (4)												
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2		tro:LocationCondition			▲	tro:orderedLocation						
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					▼	<>	loc:gmlMultiPolygon					
3		tro:ConditionSet								and		▼ tro:condition (2)
4		tro:ConditionSet						true		or		▼ tro:condition (9)

Milieuzone in DATEX II

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	tro:VehicleCondition	<> tro:vehicleCharacteristics <com:fuelType>diesel																																																

Exemptions (1/9)

- Exemption for diesels with euro4, 5 and 6 engines

tro:ConditionSet	and	▲ tro:condition (2) <table border="1"> <thead> <tr> <th></th> <th>= xsi:type</th> <th><> tro:vehicleCharacteristics</th> <th><> tro:operator</th> <th><> tro:condition</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>tro:VehicleCondition</td> <td> ▲ tro:vehicleCharacteristics <table border="1"> <tr> <td><> com:fuelType</td> <td>diesel</td> </tr> </table> </td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>tro:ConditionSet</td> <td></td> <td>or</td> <td> ▲ tro:condition (3) <table border="1"> <thead> <tr> <th></th> <th>= xsi:type</th> <th><> tro:vehicleCharacteristics</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>tro:VehicleCondition</td> <td> ▲ tro:vehicleCharacteristics <table border="1"> <tr> <td><> com:emissions</td> <td><> com:emissionC</td> <td>euro4</td> </tr> </table> </td> </tr> <tr> <td>2</td> <td>tro:VehicleCondition</td> <td> ▲ tro:vehicleCharacteristics <table border="1"> <tr> <td><> com:emissions</td> <td><> com:emissionC</td> <td>euro5</td> </tr> </table> </td> </tr> <tr> <td>3</td> <td>tro:VehicleCondition</td> <td> ▲ tro:vehicleCharacteristics <table border="1"> <tr> <td><> com:emissions</td> <td><> com:emissionC</td> <td>euro6</td> </tr> </table> </td> </tr> </tbody> </table> </td> </tr> </tbody> </table>					= xsi:type	<> tro:vehicleCharacteristics	<> tro:operator	<> tro:condition	1	tro:VehicleCondition	▲ tro:vehicleCharacteristics <table border="1"> <tr> <td><> com:fuelType</td> <td>diesel</td> </tr> </table>	<> com:fuelType	diesel			2	tro:ConditionSet		or	▲ tro:condition (3) <table border="1"> <thead> <tr> <th></th> <th>= xsi:type</th> <th><> tro:vehicleCharacteristics</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>tro:VehicleCondition</td> <td> ▲ tro:vehicleCharacteristics <table border="1"> <tr> <td><> com:emissions</td> <td><> com:emissionC</td> <td>euro4</td> </tr> </table> </td> </tr> <tr> <td>2</td> <td>tro:VehicleCondition</td> <td> ▲ tro:vehicleCharacteristics <table border="1"> <tr> <td><> com:emissions</td> <td><> com:emissionC</td> <td>euro5</td> </tr> </table> </td> </tr> <tr> <td>3</td> <td>tro:VehicleCondition</td> <td> ▲ tro:vehicleCharacteristics <table border="1"> <tr> <td><> com:emissions</td> <td><> com:emissionC</td> <td>euro6</td> </tr> </table> </td> </tr> </tbody> </table>		= xsi:type	<> tro:vehicleCharacteristics	1	tro:VehicleCondition	▲ tro:vehicleCharacteristics <table border="1"> <tr> <td><> com:emissions</td> <td><> com:emissionC</td> <td>euro4</td> </tr> </table>	<> com:emissions	<> com:emissionC	euro4	2	tro:VehicleCondition	▲ tro:vehicleCharacteristics <table border="1"> <tr> <td><> com:emissions</td> <td><> com:emissionC</td> <td>euro5</td> </tr> </table>	<> com:emissions	<> com:emissionC	euro5	3	tro:VehicleCondition	▲ tro:vehicleCharacteristics <table border="1"> <tr> <td><> com:emissions</td> <td><> com:emissionC</td> <td>euro6</td> </tr> </table>	<> com:emissions	<> com:emissionC	euro6
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Exemptions (2&3/9)

- Exemption for Vehicles older than 40 years
- Exemption for Vehicles that are wheelchair accessible

tro:VehicleCondition			<ul style="list-style-type: none"> ▲ tro:vehicleCharacteristics <ul style="list-style-type: none"> ▲ <> com:_vehicleCharacteristicsExtension <ul style="list-style-type: none"> ▲ <> com:vehicleCharacteristicsExtended <ul style="list-style-type: none"> ▲ <> ext:ageCharacteristic <table border="1" data-bbox="1880 868 2548 968"> <tr> <td><> ext:comparison</td> <td>greaterThan</td> </tr> <tr> <td><> ext:vehicleAge</td> <td>40</td> </tr> </table> 	<> ext:comparison	greaterThan	<> ext:vehicleAge	40
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<> ext:euSpecialPt	wheelChairAccessibleVehicle						

Exemptions (4/9)

➤ Exemption for campervan owned by permanent resident of zone

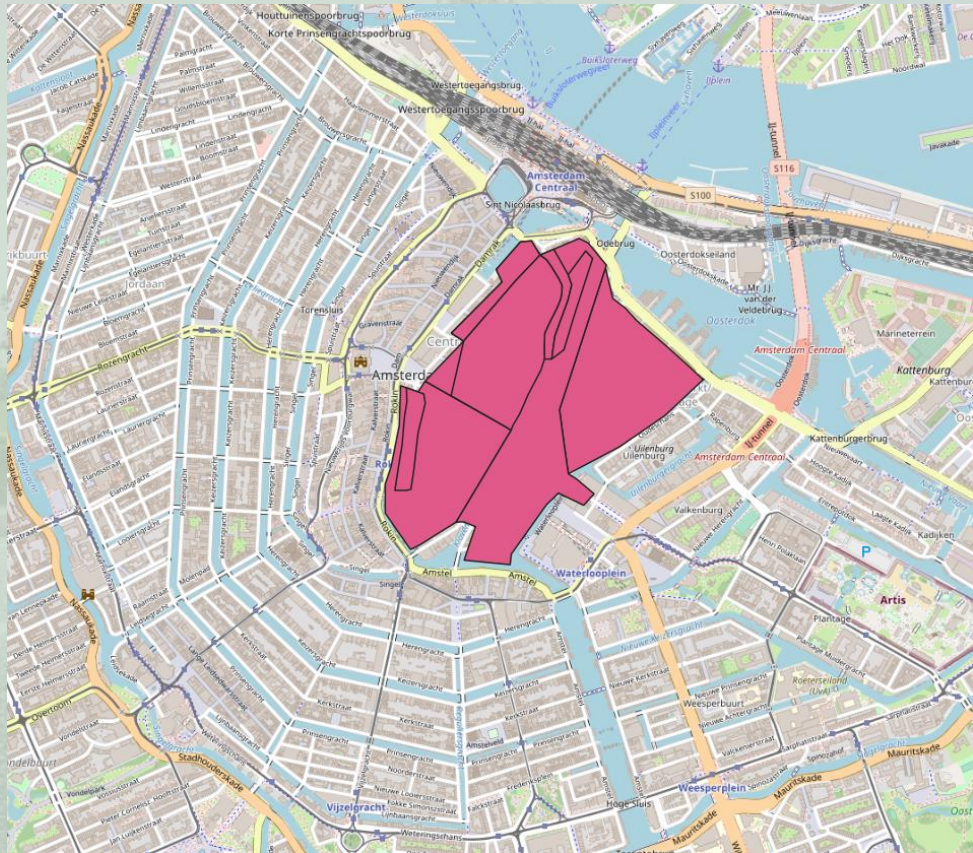
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Exemption (6/9)

➤ Exemption based on Permit (with non codable exemption)

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Limited traffic zones



- 7 (partly overlapping in time and geography) zones with access restrictions
- Thursday - Sunday between 22:00 and 06:00: only accessible by permit holders
- Closed for all traffic, except for loading and unloading between 7:00 and 10:00
- Access only for registered vehicles of residents between 20:00 and 07:00 (from 07:00 - 20:00 no additional restrictions)

Loading and unloading

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What's next

- Going through validation by:
 - Cities
 - Service Providers
- Processing feedback is ongoing and stable version will be issued according to plan
 - Non TRO-based UVARs
 - Local requirement with sufficient commonalities

➤ Questions?