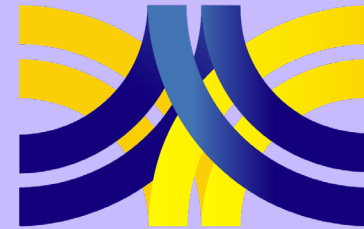


49th ASECAP DAYS

*Decarbonizing Road Infrastructure : Challenges,
Perspectives and Actions in Tough Economy*

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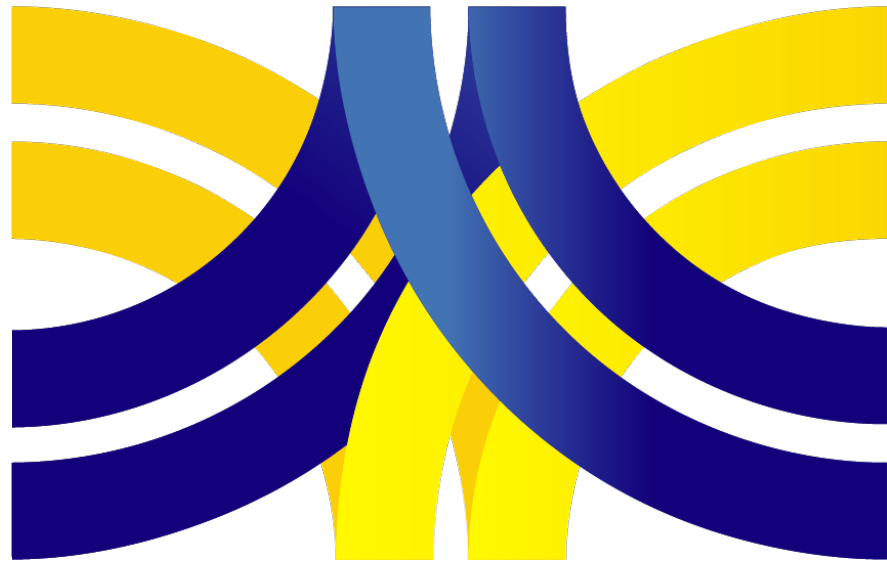


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Hotel Marriott Grand Place, Brussels
24 – 25 November 2022

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Introduction of CO2 charging in European toll domains

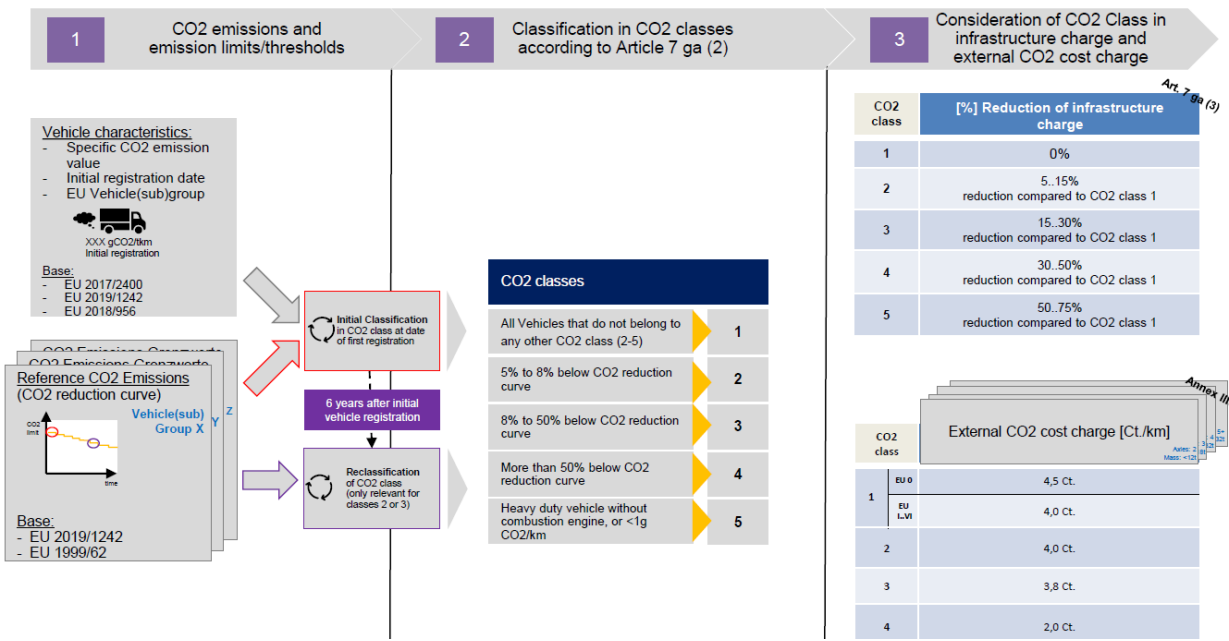
Jérôme Lejeune - *Managing Director*

DKV Mobility



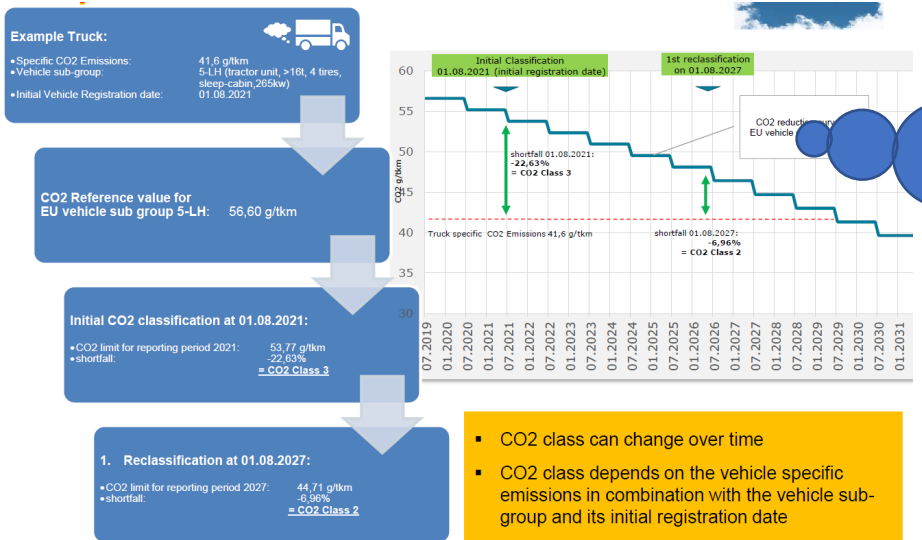
Derivation of the CO2 emission class

Definition of CO2 emission classes -1999/62/EC Article 7ga



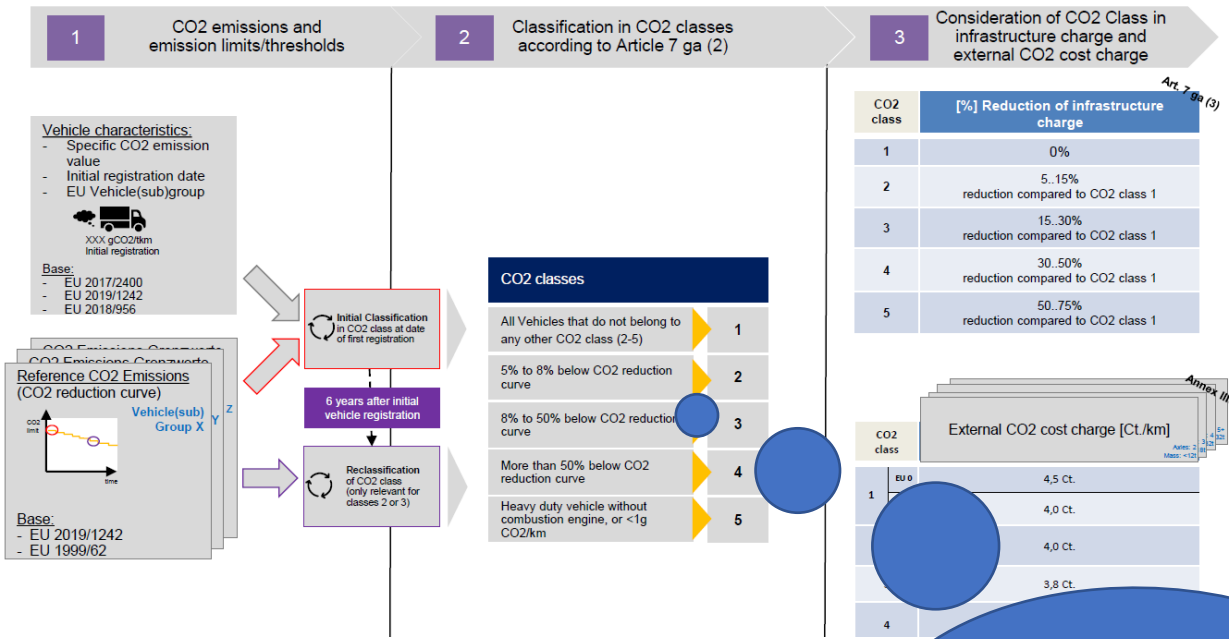
CO2 – Class	Description
1	Vehicles that do not belong to any other CO2 class
2	Vehicles in vehicle subgroup X whose CO2 emissions are more than 5% below the CO2 emission reduction curve applicable to vehicle subgroup X
3	Vehicles in vehicle subgroup X whose CO2 emissions are more than 8% below the CO2 emission reduction curve applicable to vehicle subgroup X
4	low-emission heavy-duty vehicles → Article 2 (30) (EU 1999/62/EC) „low-emission heavy-duty vehicle” means a heavy-duty vehicle as defined in Article 3(12) of Regulation (EU) 2019/1242, or a heavy-duty vehicle not in the scope of Article 2(1) points (a)-(d) of that regulation with CO2 emissions lower than 50% of the reference CO2 emissions of its vehicle group, other than a zero-emission vehicle; “
5	zero-emission vehicles → Article 2 (30) (EU) 1999/62 referring to Article 3 (11) 2019/1242 „means a heavy-duty vehicle without an internal combustion engine, or with an internal combustion engine that emits less than 1 g CO2/kWh as determined in accordance with Regulation (EC) No 595/2009 and its implementing measures, or which emits less than 1 g CO2/km as determined in accordance with Regulation (EC) No 715/2007 of the European Parliament and of the Council (16) and its implementing measures“

Example Classification and reclassification



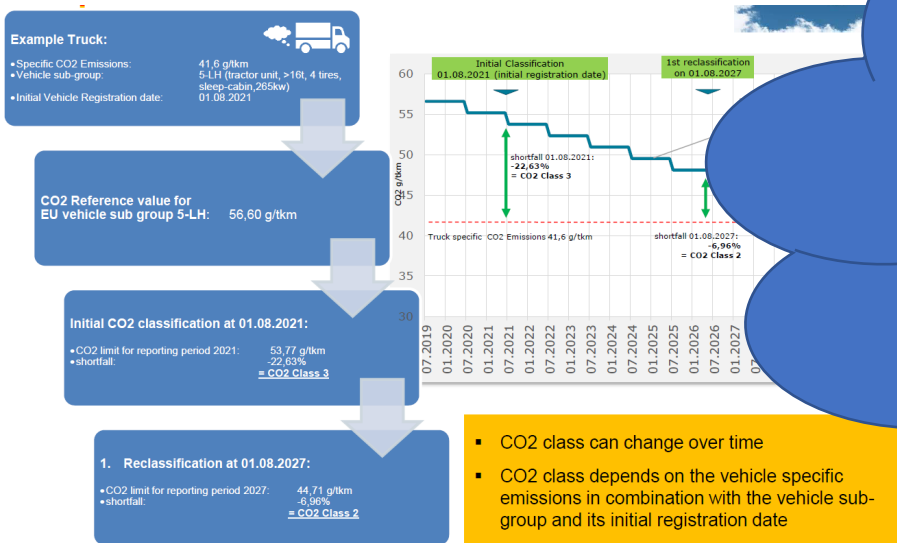
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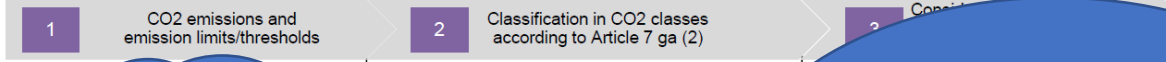
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5	zero-emission vehicles → Article 2 (30) (EU 1999/62/EC) according to Article 3 (11) of Regulation (EU) 2019/1242 „zero-emission heavy-duty vehicle” means a heavy-duty vehicle with a combustion engine that emits less than 0.1 g/km CO2 after implementing measures, or 0.1 g/km CO2 after the end of the European Union

Example Classification and reclassification



Could a bit less complex no?

- CO2 class can change over time
- CO2 class depends on the vehicle specific emissions in combination with the vehicle sub-group and its initial registration date



Vehicle d
- Spec
value
- Initial
- EU Veh
- EU Veh
- XXX gCO2/km
Initial registration
Base:
- EU 2017/2400
- EU 2019/1242
- EU 2018/956

CO2 Emission
Reference CO2 E
(CO2 reduction cu

The transport industry wants less CO2 emissions, but if you want to motivate all stakeholders, especially transport companies, make it simple! Simple to understand and easy to implement!

Initial CO2 E
+CO2 limit for reporting period 2021: 5,22 g/km
+shortfall: -22,4 g/km
= CO2 Class 1

1. Reclassification at 01.08.2027:
+CO2 limit for reporting period 2027: 44,71 g/km
+shortfall: -0,96%
= CO2 Class 2

CO2 emissions in combination with the vehicle sub-group and its initial registration date

Our challenges as Toll Service Provider



Legal basis:

- European Directives 1999/62/EC + 1999/37/EC are amended by Directive 2022_362.
- Directive 2022_362 comes into force on 24.03.2022, transposition by EU member states into national law within 2 years.
- The transition of the Directive into national German law has been started -> **Start of CO2-based tolling in the German toll domain** is planned for the **01.12.2023***
- Modification of the EN 15509 expected

Vehicle Registration

- EETS Providers **need to register the CO2 emission class of their customers vehicles**
- The CO2 emission class has to be **personalized on the OBU** as it is a toll relevant parameter.
- The attribute **VehicleSpecificCharacteristics.futureCharacteristics** will be used to encode and transmit the CO2 class

Different challenges and requirements depending on the Toll Domain and on the OBU technology. High impact to customer registration and OBU personalization process.

= **Maximum effort from TSP perspective (+ re-classification on 1st July 2027)**

For DSRC Mono-Technology OBU:

1. **complete exchange** of distributed OBU circulating throughout Europe is not an acceptable solution
-> **do not support EU green deal**
1. Add this attribute in another Data Exchange like in rebate registration files or whitelist file

For Multi-Technology OBU:

1. a new software version update is required in order to integrate the CO2-class in the OBU
2. In worst case new SW/FW certifications in Toll Domains required

Our challenges as Toll Service Provider



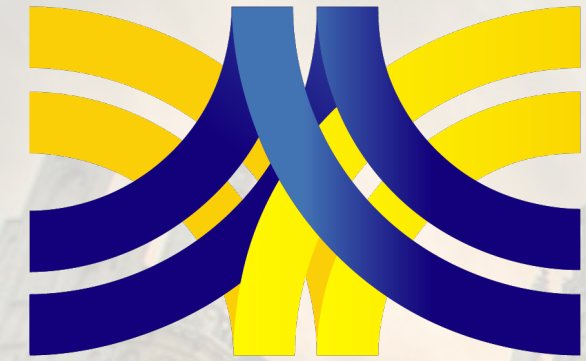
... Regarding calculation of the CO2 emission class:

- Creation of a central European Database with an online query or creation of a CO2 class calculation tool by each Service Provider? In case of tool creation by each Service Provider: Which **European Institution** does the accreditation for the CO2 class calculation tool?
- In the future the value “**specific CO2 emission value**” should be stated in V.7 and the “**initial classification of the CO2 class**” in V.10 of the vehicle registration certificate. Vehicle Manufacturer (OEMs) **must be involved** in the discussion as they also have to calculate the CO2 emission class.

... Regarding responsibility & commitment:

- Which possibility will have a customer/EETS providers to **verify the calculated CO2 emission class**?
- Who will take over **the responsibility for a „toll overcharging“** of a specific truck resulting from a wrong calculation of CO2 emission class? (Toll Charger? Toll operators in charge of Enforcement? Customer / Toll Service Provider? certified company?)
- The possibility to retroactively pay back customers in case of wrong calculation is mandatory to secure acceptance
- Case of private concessionaires which can be exempted because of their specific contract with the state.
- Position of Toll Charger without an EETS Toll Domain Statement unclear for our customers

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THANK YOU FOR YOUR ATTENTION

Jérôme Lejeune
Managing Director

DKV EURO SERVICE GmbH + Co. KG
Balcke-Dürr-Allee 3
40882 Ratingen
Germany

jerome.lejeune@dkv-mobility.com
+49 (0) 2102 5518 991