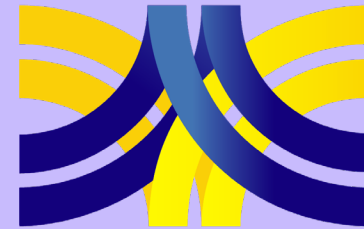# 49th ASECAP DAYS
Decarbonizing Road Infrastructure : Challenges, Perspectives and Actions in Tough Economy

ASECAP DAYS
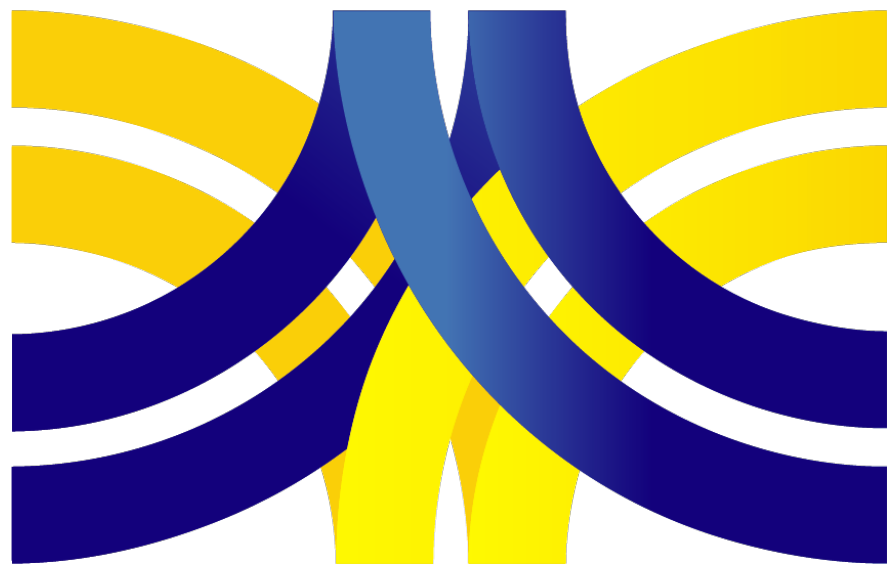BRUSSELS 2022

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Widening the range of tolling parameters to speed up greening of freight transport

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Widening the range of tolling parameters

- Tolling already used as an incentive for greening road freight transport:
  - Euro Emission class modulation
    - Introduced in Eurovignette Directive:
      - As a possibility as soon as 1999 (Time and Euro Class only parameters)
      - As a requirement from 2006 (Eurovignette II) for new contracts from 2010
  - Congestion variation of the infrastructure charge
    - Present since the beginning
    - Promoted to reduce congestion from 2006 and among all 2011 (Eurovignette III)
  - CO_2 emissions
    - Entering with Eurovignette IV in 2022, for new contracts

Widening the range of tolling parameters

- An environment evolving quicker but with large uncertainties
  - Electric vehicles
  - Alternative fuels
  - High Capacity Transport
  - Climate change pressure

- Euro class modulation incentiveness is fading
  - More than 80% trucks running are Euro VI
  - Keeping minimum variation (10%) and revenue balance becomes hard for the concessionnaire

=> Need to adapt quickly
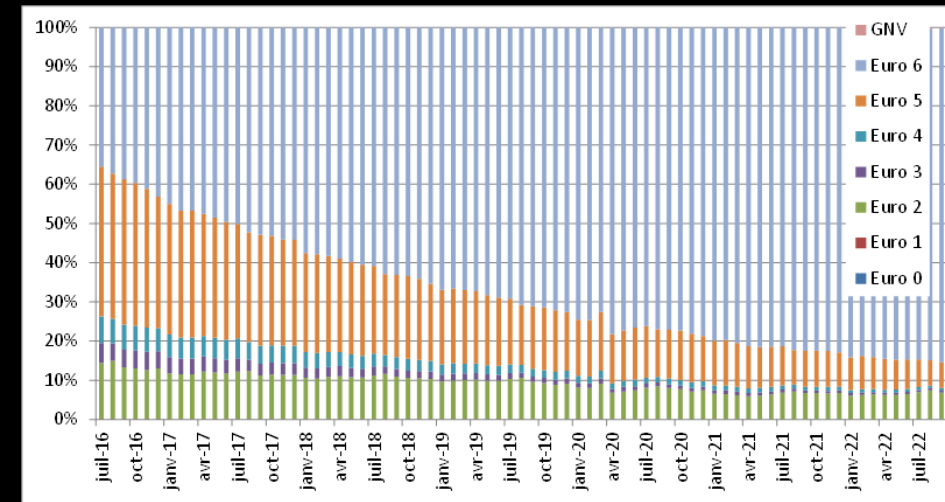
Tolling system evolution on A63: history

- Only Euro emission class modulation from start (2013)

- 2016: Enabling EETS for light vehicles development

- 2017: Choice to work on a fully flexible system design with toll operators (GEA, Tollsys) and experts (CASYS)

  => widening the range of parameters used for toll calculation from Electronic Tolling systems

  => full integration of licence plate number recognition as tolling parameter and not only as a check

  => user friendly interface for toll operators

- Parameters list from ISO 14906, (Electronic fee collection — Application interface definition for DSRC), which specifies the application interface in the context of Electronic Fee Collection (EFC) systems using the dedicated short-range communication (DSRC) and is set as reference into the definition of European electronic fee collection standard for DSRC (CEN 15509).

  ⇒ *A well settled set offering a wide range of parameters, specially concerning engine characteristics.*

- But the toll system must cope with non Electronic Toll Service user:

  ⇒ need for licence plate recognition and characteristics registration on "white lists"

- And use external settings (time, toll gate location…)

Tolling system evolution on A63: parameters

- Settings taken into account for the new A63 tolling system

- source

- implementation

- standards

- corresponding car registration document field

Libellé	Identifier	Implemented	attribute number	in 14906	in 15509	Name	Data	manual registrati	justificatif Natu	ERC field
UNECE category	CATV	Y	17	X	X	VehicleClass	vehicleGroup (bits 2 - 4)	Y	ERC	J
presence of trailer - 1	PRESR1	Y	17	X	X	VehicleClass	trailerPresence (bit 1)	N		
Length	LONG	Y	18	X	X	VehicleDimensions	vehicleLengthOverall	Y	à préciser	
Height	HAUT	Y	18	X	X	VehicleDimensions	vehicleHeigthOverall	Y	à préciser	
Width	LARG	Y	18	X	X	VehicleDimensions	vehicleWidthOverall	Y	à préciser	
1st axle height	HPE	Y	19	X	X	VehicleAxles	vehicleFirstAxleHeight	Y	à préciser	
Axle number	NESS	Y	19	X	X	VehicleAxles	vehicleAxlesNumber.numberOfAxles.tr	Y	ERC	L
Number of axles - trailer - 1	NESR1	Y	19	X	X	VehicleAxles	vehicleAxlesNumber.numberOfAxles.tr	N	(ERC trailer)	L
Total Allowable Loaded Weight	PTAC	Y	20	X	X	VehicleWeightLimits	vehicleMaxLadenWeight	Y	ERC	F.2
Total Allowable Rolling Weight	PTRA	Y	20	X	X	VehicleWeightLimits	vehicleTrainMaximumWeight	Y	ERC	F.3
Empty running weight	PAV	Y	20	X	X	VehicleWeightLimits	vehicleWeightUnladen	Y	ERC	G
Actual weight	PREEL	Y	21	X		VehicleWeightLaden		N		
Euro Emission Class	EUROPOLL	Y	22	X	X	VehicleSpecificsCharacteristics	EnvironmentalCharacteristics.euroValu	Y	ERC	V.9
CO2 emissions class	CO2CL	Y	22	X	X	VehicleSpecificsCharacteristics	EnvironmentalCharacteristics.copValu	Y	ERC	(V.7)
Engine energy	ENERGIE	Y	22	X	X	VehicleSpecificsCharacteristics	EngineCharacteristics	Y	ERC	P.3
Allowable weight axle 1	PAE1	N	37	X		AxleWeightLimits	maxLadenweightOnAxle1	Y	ERC	N.1
Allowable weight axle 2	PAE2	N	37	X		AxleWeightLimits	maxLadenweightOnAxle2	Y	ERC	N.2
Allowable weight axle 3	PAE3	N	37	X		AxleWeightLimits	maxLadenweightOnAxle3	Y	ERC	N.3
Allowable weight axle 4	PAE4	N	37	X		AxleWeightLimits	maxLadenweightOnAxle4	Y	ERC	N.4
Allowable weight axle 5	PAE5	N	37	X		AxleWeightLimits	maxLadenweightOnAxle5	Y	ERC	N.5
Seat number	NBS	N	38	X		PassengerCapacity	numberOfSeats	Y	ERC	S.1
Number of standing places	NBPD	N	38	X		PassengerCapacity	numberOfStandingPlaces	Y	ERC	S.2
cylinder capacity	CM3	N	39	X		Engine	engineCapacity	Y	ERC	P.1
Power Rating KW	KW	N	39	X		Engine	enginePower	Y	ERC	P.2
Noise level at stop	DBST	N	40	X		SoundLevel	soundstationary	Y	ERC	U.1
Noise level running	DBDR	N	40	X		SoundLevel	sounddriveby	Y	ERC	U.3
CO-HC-Nox emissions unit	UNITE	Y	41	X		ExhaustEmissionValues	unitType	Y		
CO Emissions	CO	Y	41	X		ExhaustEmissionValues	emissionCO	Y	ERC	V.2
HC Emissions	HC	Y	41	X		ExhaustEmissionValues	emissionHC	Y	ERC	V.3
Nox Emissions	NOX	Y	41	X		ExhaustEmissionValues	emissionNOX	Y	ERC	V.4
HC+Nox Emissions	HCNOX	Y	41	X		ExhaustEmissionValues	emissionHCNOX	Y	ERC	V.4
Particle emissions unit	UNITP	Y	42	X		DieselEmissionValues	particulate.unitType	Y		
Particle emissions	PART	Y	42	X		DieselEmissionValues	particulate.value	Y	ERC	V.5
Absorption of emissions	ABSP	Y	42	X		DieselEmissionValues	absorptionCoeff	Y	ERC	V.6
CO2 Emissions	CO2	Y	43	X		CO2EmissionValue		Y	ERC	V.7
Total distance driven	DIST	N	44	X		VehicleTotalDistance		N		
presence of trailer - 2	PRESR2	N	46	X		TrailerCharacteristics	trailerDetails.trailerType	N		
Number of axles - trailer - 2	NESR2	N	46	X		TrailerCharacteristics	trailerDetails.trailerAxles	N	(ERC trailer)	L
Total Allowable Loaded Weight trailer	PTACR	N	46	X		TrailerCharacteristics	trailerMaxLadenWeight	N	(ERC trailer)	F.2
Empty running trailer weight	PAVR	N	46	X		TrailerCharacteristics	trailerWeightUnladen	N	(ERC trailer)	G
Maximum Rolling Weight	PMRC	N	55	X		VehicleCurrentMaxTrainWeight		N		
Electronic Fee Collection - Context M	EFCCM	Y		0 / VST	X	X	EFC-CM	(toutes)	N		
CIP contract code	NPROD	N	98	(X)		D-PRO	NPROD	N		
Vignette Crit'Air	CRITAIR	Y						Y	Facture Crit'A	N° vignette
First time in circulation	DPMEC	Y						Y	ERC	B
Administrative power	CVFISC	Y						Y	ERC	P.6

Tolling system evolution on A63: Interface

User friendly interface to ease toll scheme definition

- Early tests 2020-2021

- Operationnal since 2021

- 2022: First extension for engine characteristics (Natural Gas incentive)

- 2023: Time based tariff modulation (congestion variation of the infrastructure charge) for trucks as an experiment to reduce congestion on the Bordeaux ring
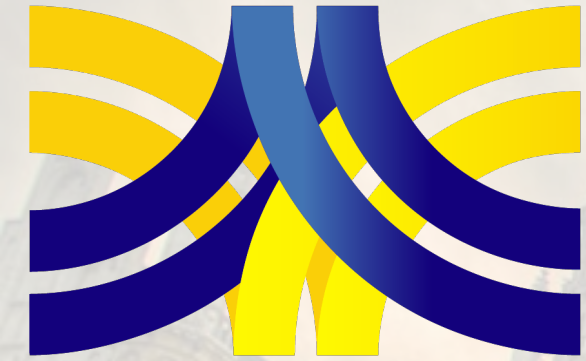
- CO_2…

THANK YOU FOR YOUR ATTENTION

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