



# RDE boundary conditions

- *JRC views on the complementary elements-*
- *May 27, 2015 – RDE Data Evaluation group*

European Commission - Joint Research Centre (JRC)  
IET - Institute for Energy and Transport

## Elements in Annex IIIa, section which ACEA asked to complement:

- Altitude (section 5.2):
- Driving dynamics (section 5.3):
- Trip requirements: Average urban speed (Section) and stop percentage (Section 6)

## Main points:

- Agreement on appropriate indicators
- Agreement on ranges, demonstrating that they do not “narrow down” the RDE boundary conditions and only represent the vast majority of the EU driving situations
- Keeping the practicality (\*) of the RDE procedure to an acceptable level
- *(\*) The ability to find a test route which meets the ex-ante requirements (road profile?) and has the highest probability to fulfill all the ex-post verifications (dynamics, average speeds, etc...)*

- **ACEA recommendations:**

Dynamic BC	Possible sources of missing robustness, validity, plausibility	Threshold type	Indicator selection	U	R	M
Road incline	Insufficiently covered, only partly covered by normalisation tools	Validity	Cumulative positive altitude gain [m/100km]	1000m/100km		
			Start/end of trip	At the same altitude $\pm 100m$		

## JRC views

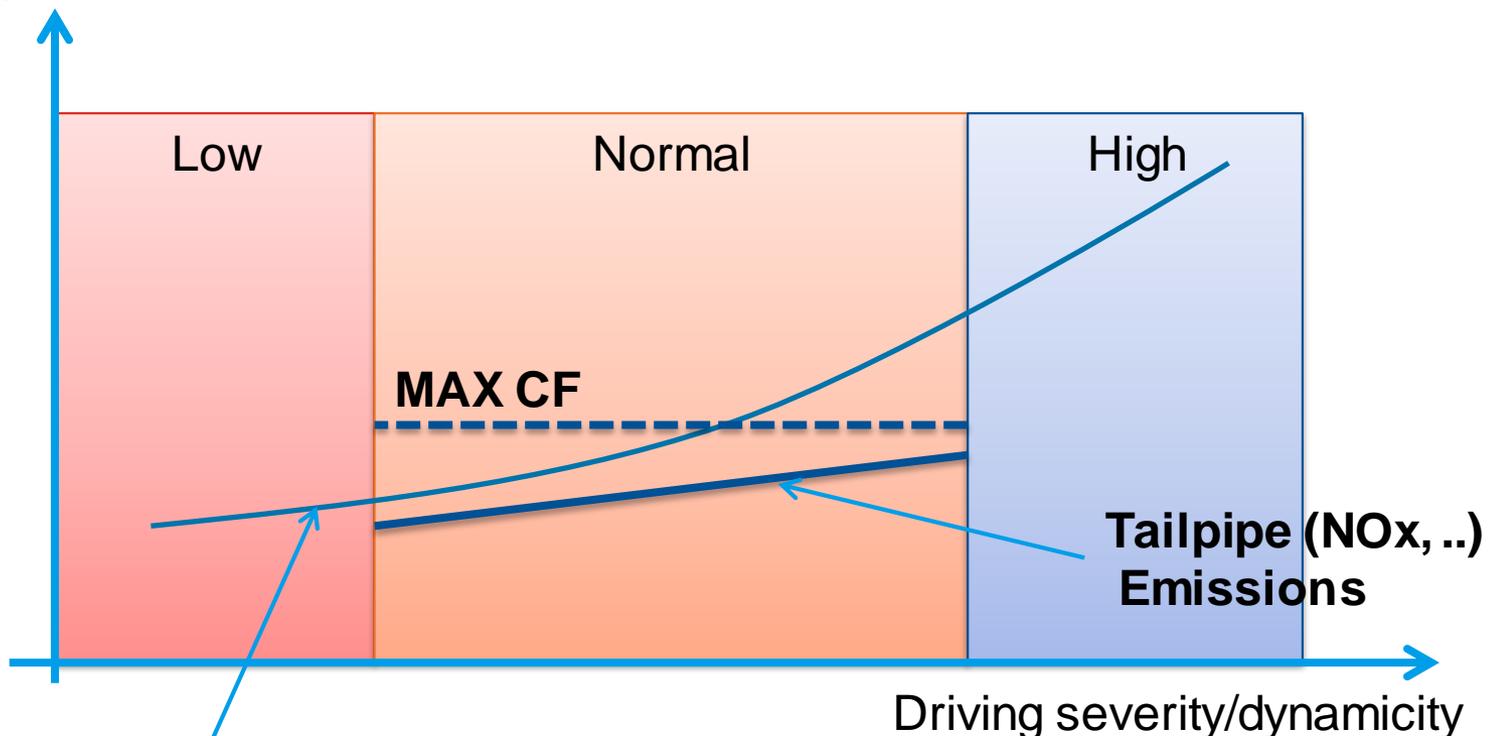
- 1. Road profile (i.e. altitude changes over a distance) is currently not part of the trip requirements
- 2. Adding road profile requirements will improve “practicality” (i.e. voiding tests ex post through the data evaluation methods)
- 3. Proposed indicators and ranges (1000m/100 km) still needs to be checked (stakeholders comments, ACEA tool available)

- ACEA recommendations:**

Dynamic BC	Possible sources of missing robustness, validity, plausibility	Threshold type	Indicator selection	U	R	M
Driving style	Loophole – driving too gentle	Lower limit	rpa ( $m/s^2$ )	Table 1.1		
	Mis-use – driving too harsh	Upper limit	95 <sup>th</sup> percentile of ( $v \times a_{pos}$ ) [ $m^2/s^3$ ] $a_{pos} > 0,1$ [ $m/s^2$ ]	Table 1.2		

# Dynamic conditions

Emissions



Engine-Out (NOx,..) Emissions

Severity assessment = Mainstream (\*) & Complementary  
(\* Evaluation methods (App 5 and 6))

## JRC views

- 1. Evidence was provided by ACEA that methods were potentially insufficient to detect excess of dynamics and that complementary elements were needed (See JRC presentation from February 26, 2015)
- 2. Agreement on the selection of indicators
- 3. Awaiting for final agreement on the proposed ranges
- 4. Final benchmark of the methods and the additional indicators highly desirable: if not possible due to time pressure, this shall be conducted during the reporting and monitoring exercise.
- 5. Methods to check the dynamics shall remain unchanged to benchmark the full set of requirements
- 6. Most complex topic to communicate to non-informed stakeholders (ranges, potential redundancy of requirements, effect on practicality...)

## JRC views

- Ranges for (Urban average speed) and (Urban (or trip) stop percentage): if too narrow, high risk for the practicality
- Maximum stop duration: objective is to avoid a “second cold start”
- Proposal for the maximum stop duration: to adopt a value (120, 180s, more?) and a short data exclusion period if the stop duration exceeds the threshold value
- Benchmark of the practicality is required

## JRC views

- Definition of indicators (driving dynamics)
- Validation / Invalidation strategies (trip, window...?)
- Reporting requirements