

Revision of ECE R41

ASEP Concept for Motorcycles

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Aim

- **Check the noise emission behaviour of a motorcycle for driving conditions that occur in real world traffic but are not covered by the ISO 362-2 test(s) (not to exceed concept). This should especially include driving conditions on rural roads.**
- **The checks should make sure that the noise emission behaviour of the motorcycle under these conditions does not deviate significantly from what one would expect from the ISO 362-2 results.**

ASEP test area limitations

- Vehicle speeds between 20 km/h ($v_{AA'}$) and 80 km/h ($v_{BB'}$)
- Engine speeds at BB' up to $0.85 \cdot (s - n_{idle}) + n_{idle}$ for $pmr \leq 66$
- up to $3,4105 \cdot pmr - 0,3315 \cdot (s - n_{idle}) + n_{idle}$, for $pmr > 66$

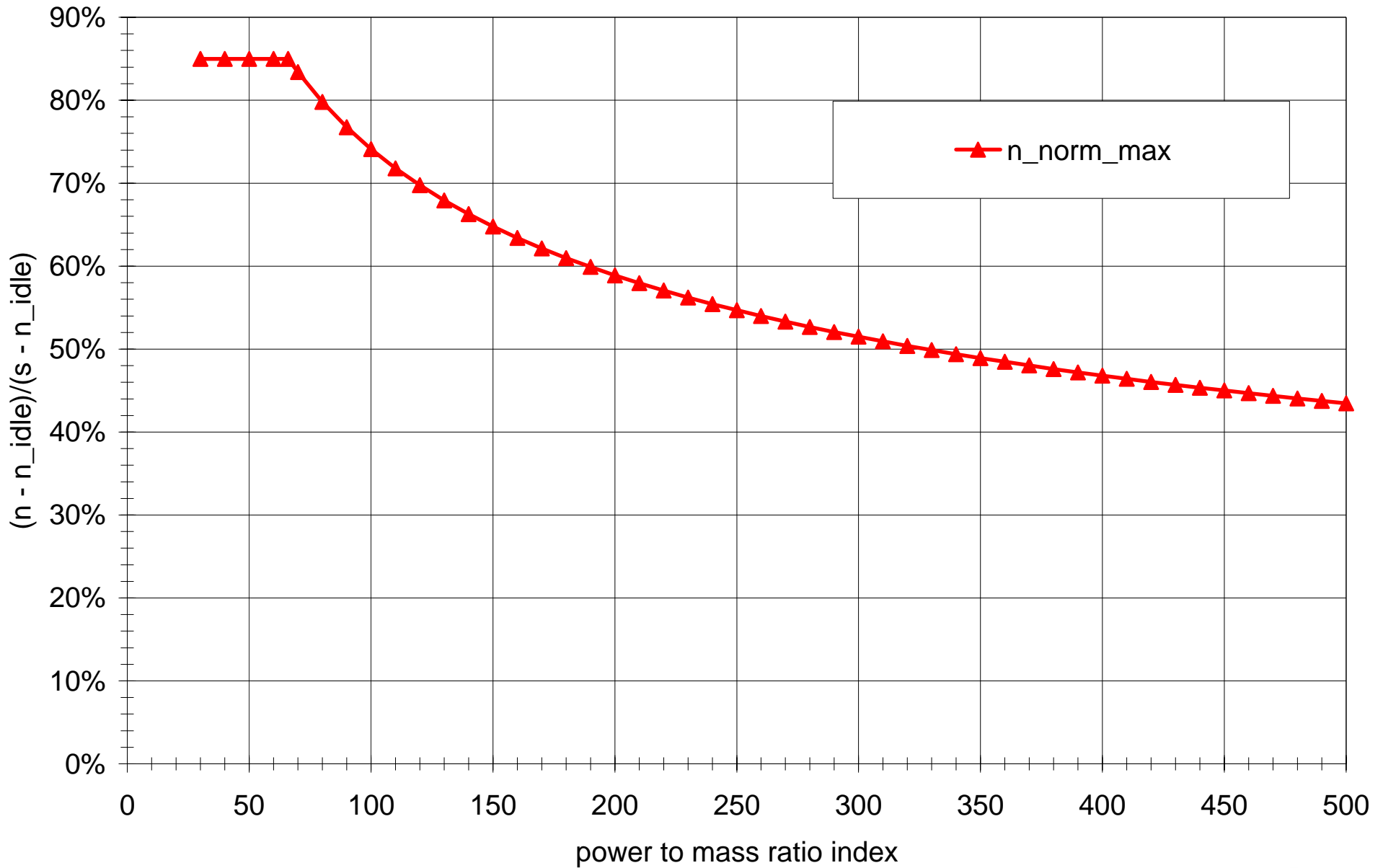
with s – rated engine speed in min-1,

n_{idle} – idling speed in min-1

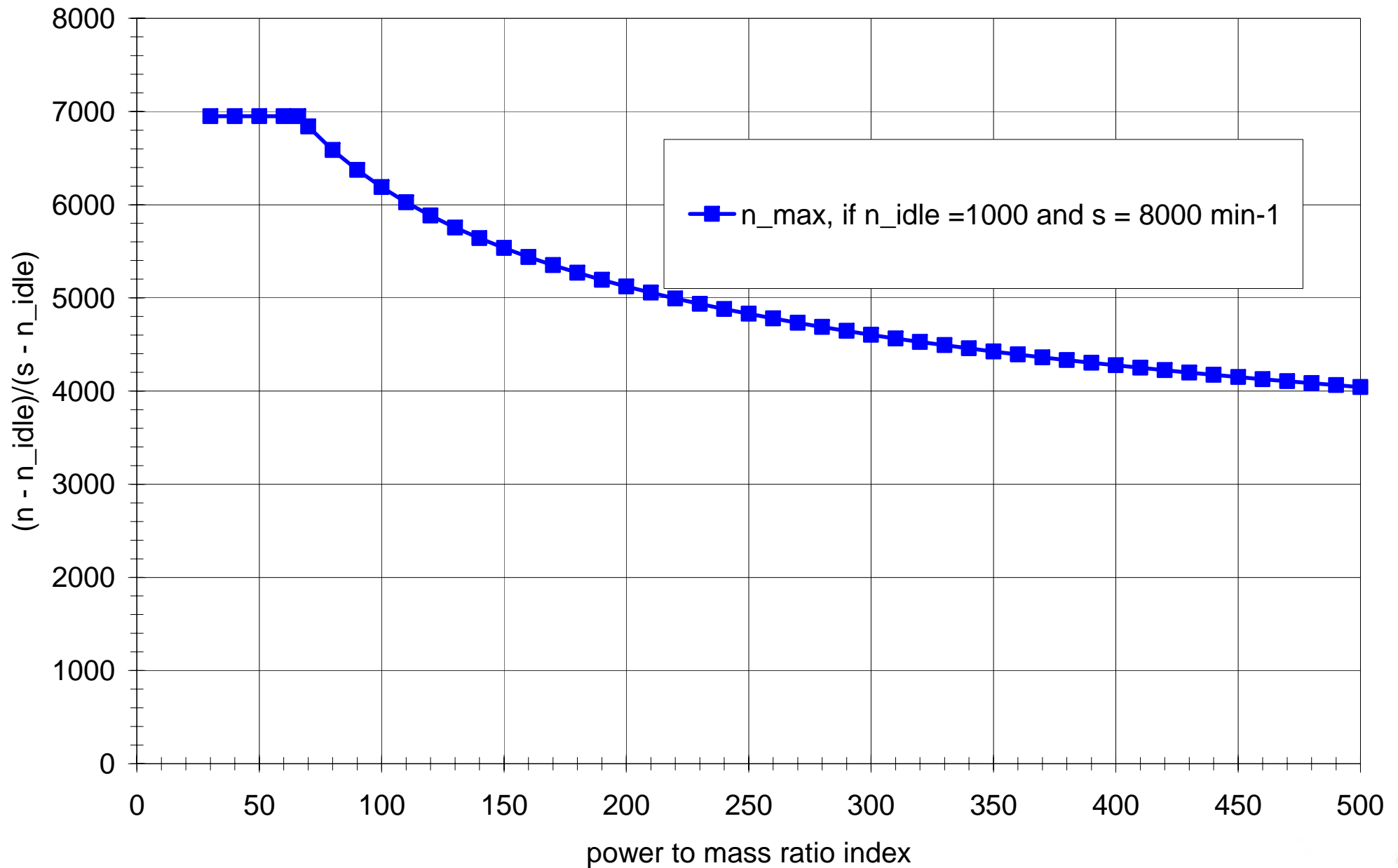
$$pmr = P_n \text{ in kW} / (m_0 \text{ in kg} + 75) \cdot 1000$$

pmr is the power to mass ratio index. This is the rated power of the vehicle (P_n) in kW divided by the kerb mass of the vehicle (m_0) in kg + 75 (to account for the mass of the driver) and multiplied by 1000.

ASEP test area limitations



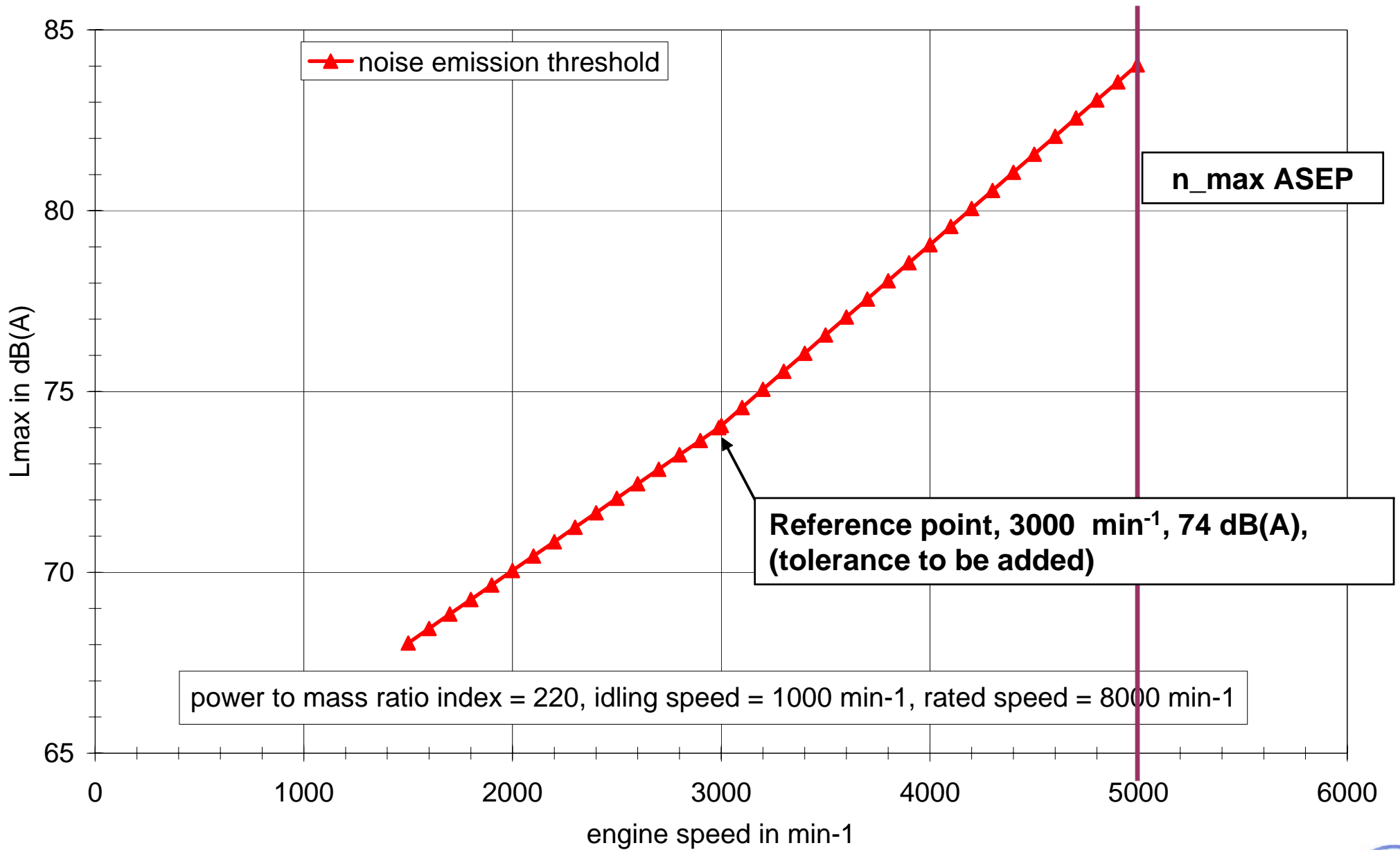
ASEP test area limitations



Reference Point

- The reference point is L_{wot_i} , the wot test result from ISO 362-2 in gear i and n_{PP_i} , the corresponding engine speed at PP'.
- For engine speeds within the test area but other than n_{PP_i} a slope has to be defined in order to take into account that the noise emission increases with engine speed.
- The slope might be different for engine speeds below and above n_{PP_i} .
- In addition to that it may be necessary to consider an additional tolerance value of x dB.

Example for an ASEP limit curve



Tests to be done

- The data of the ECE R41 test campaign in 2006 do not allow the definition of a complete ASEP test. Additional data has to be collected in order to
 - define the appropriate ASEP limit curve (slope; tolerance),
 - identify the appropriate PMR threshold value below which it may be not necessary to apply ASEP tests.
- A test protocol was developed by the R41 task force that defines 3 different driving conditions (vehicle and engine speeds and gear selection) to be used for test campaigns.

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Thank You