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What is a Vehicle of Concern ?

A Contribution to the ASEP Discussion

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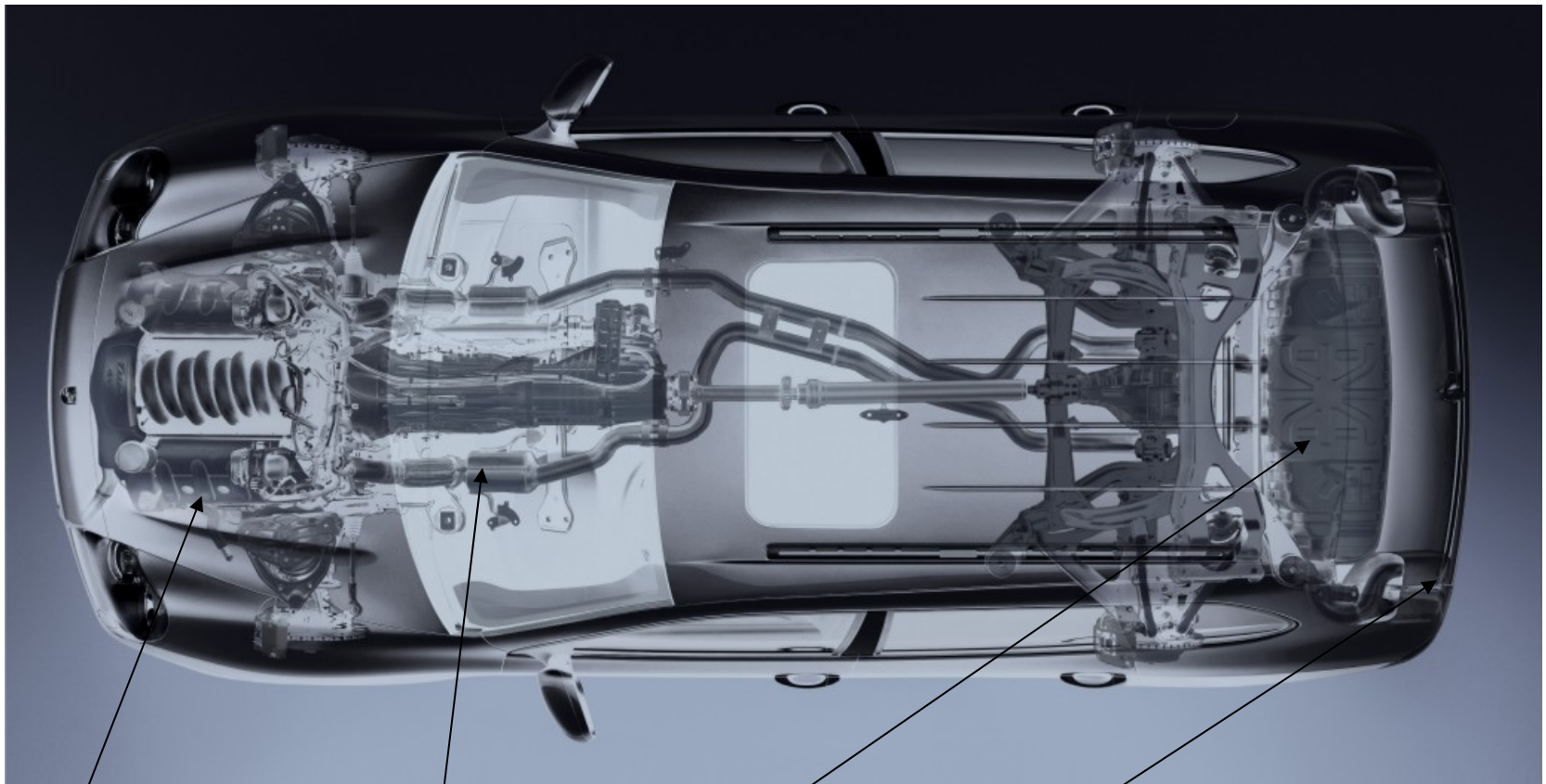
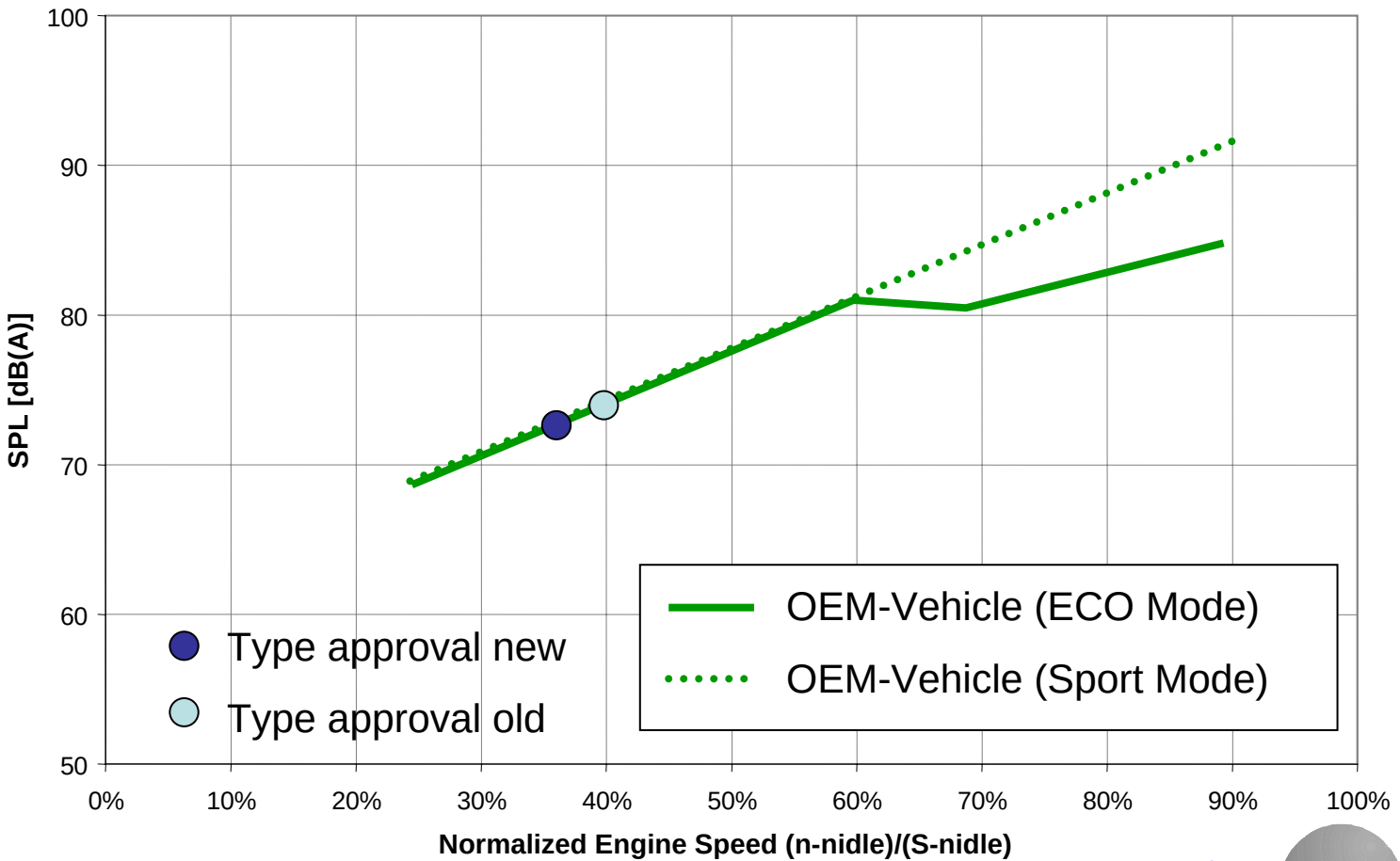
Geneva, February 2007

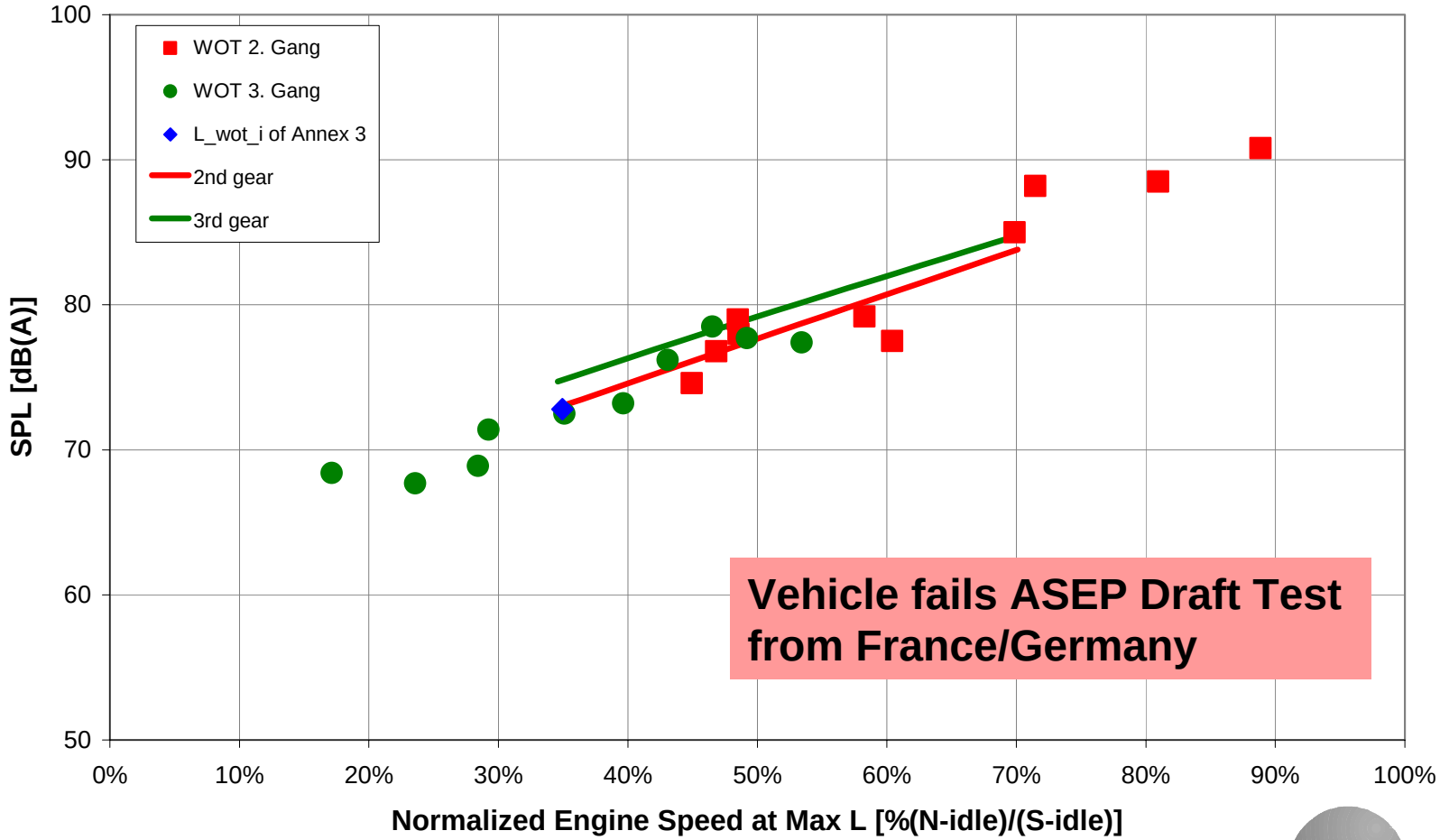
Picture of the Exhaust System of a Porsche Cayenne



Sound Emission of the Vehicle

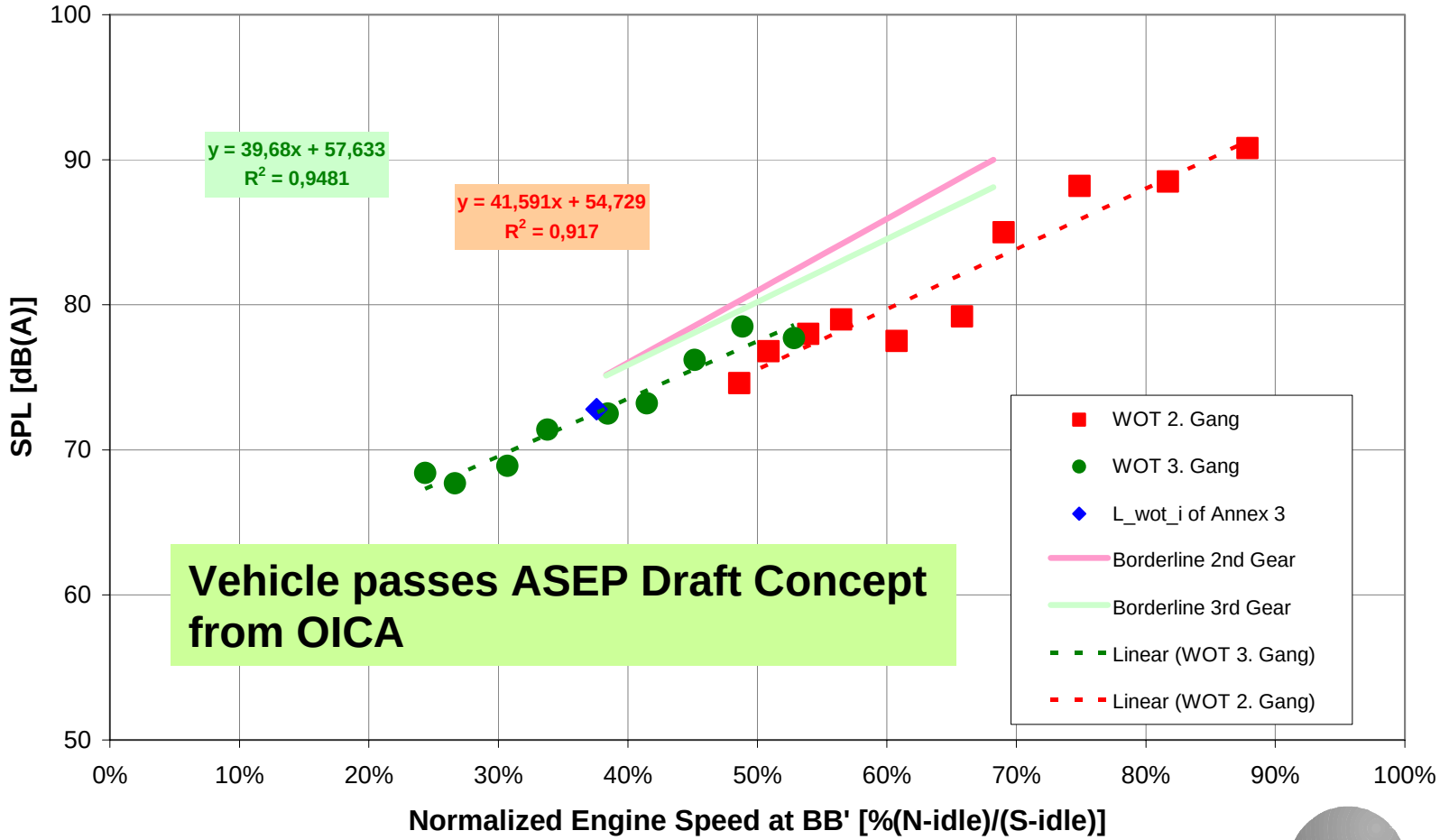


Sound Emission of the Vehicle



Vehicle fails ASEP Draft Test from France/Germany

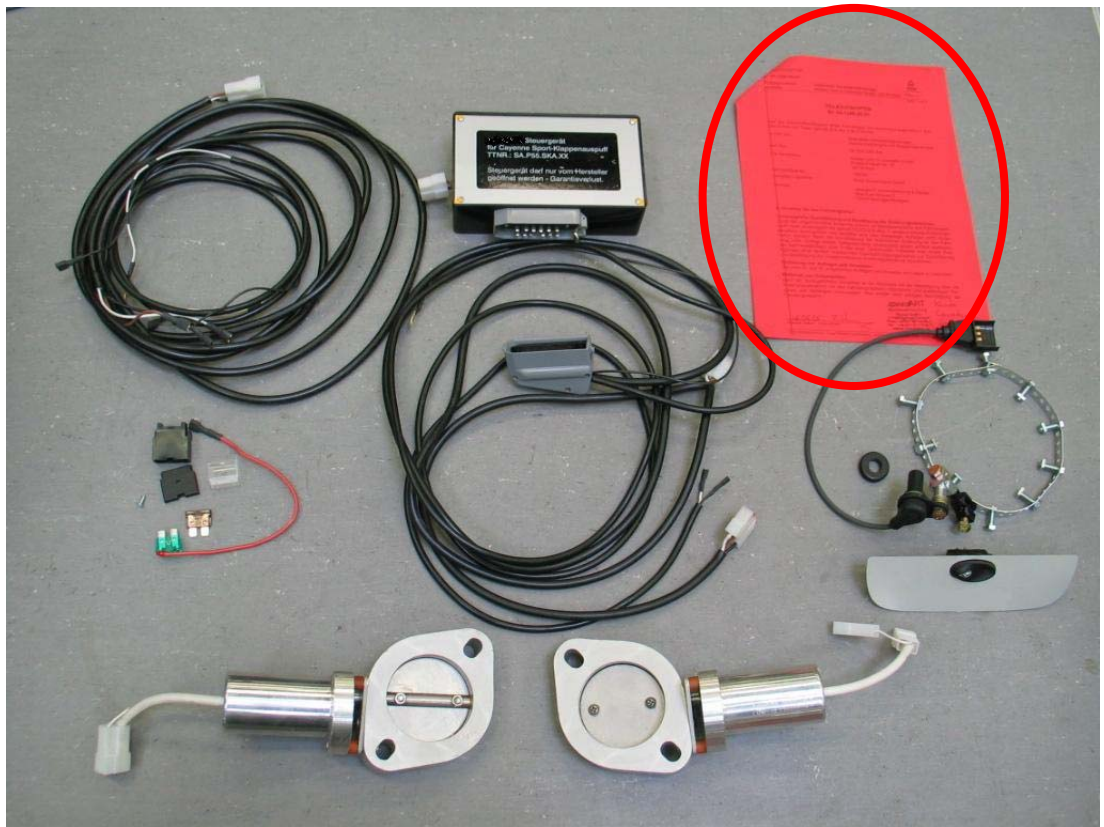
Sound Emission of the Vehicle



Vehicle passes ASEP Draft Concept from OICA

Replacement of the Rear Muffler by an After Market Silencer System

Certificate



Replacement of the Rear Muffler by an After Market Silencer System

V. Prüfgrundlagen und Prüfergebnisse

Allgemeine Grundlage der durchgeführten Prüfungen ist die RREG 70/157/EWG i.d.F. 99/101/EG.

Die unter Punkt II beschriebene Änderung wurde dabei unter folgenden Gesichtspunkten geprüft:

- Geräuschmessung:

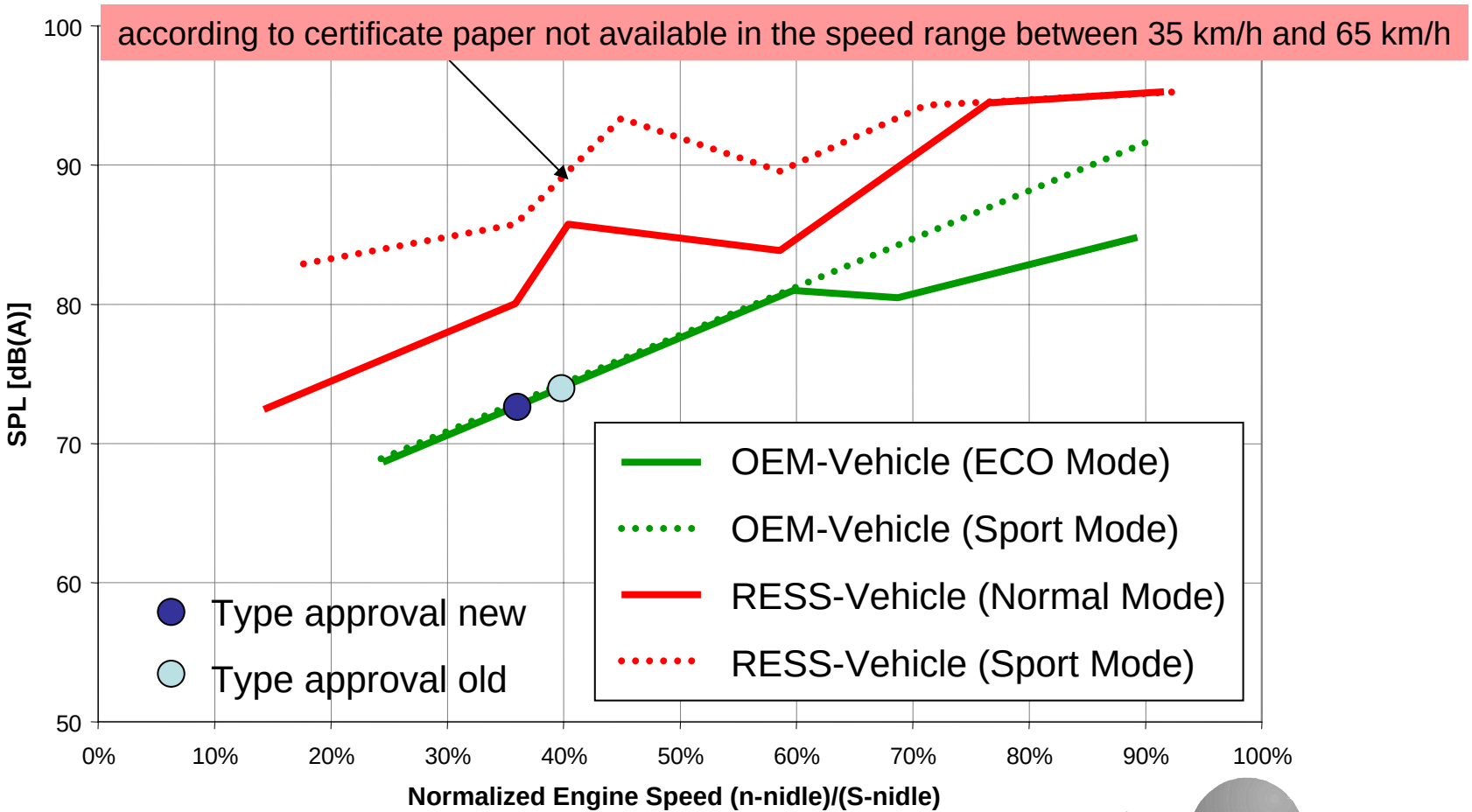
Die Geräuschmessungen erfolgten nach RREG 70/157/EWG i.d.F. 99/101/EG mit einem Schallpegelmesser Typ 2236 von der Fa. Brüel & Kjaer.

Ergebnis: Die ermittelten Stand- und Fahrgeräuschwerte entsprechen im Rahmen der Messtoleranz denen des Serienfahrzeuges. Die Abgasklappen bleiben während der Stand- und Fahrgeräuschmessungen geschlossen.

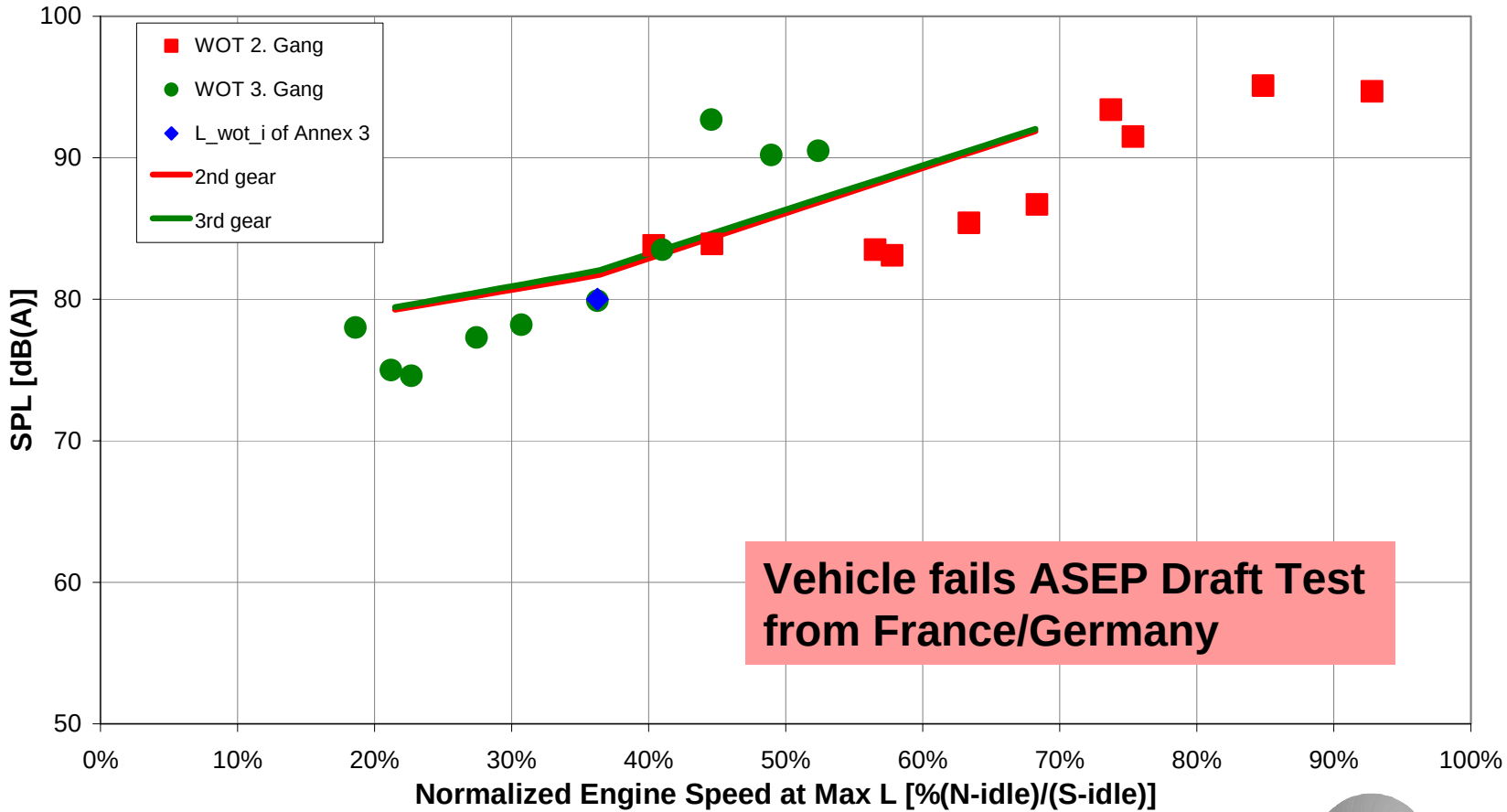
Question:

- This exhaust system is a dual mode exhaust system.
- Hoe is the sound behaviour over all ?
- How is the sound behaviour under ASEP condition?
- Will the silencer system create an example for a vehicle of concern?

Sound Emission of the Vehicle

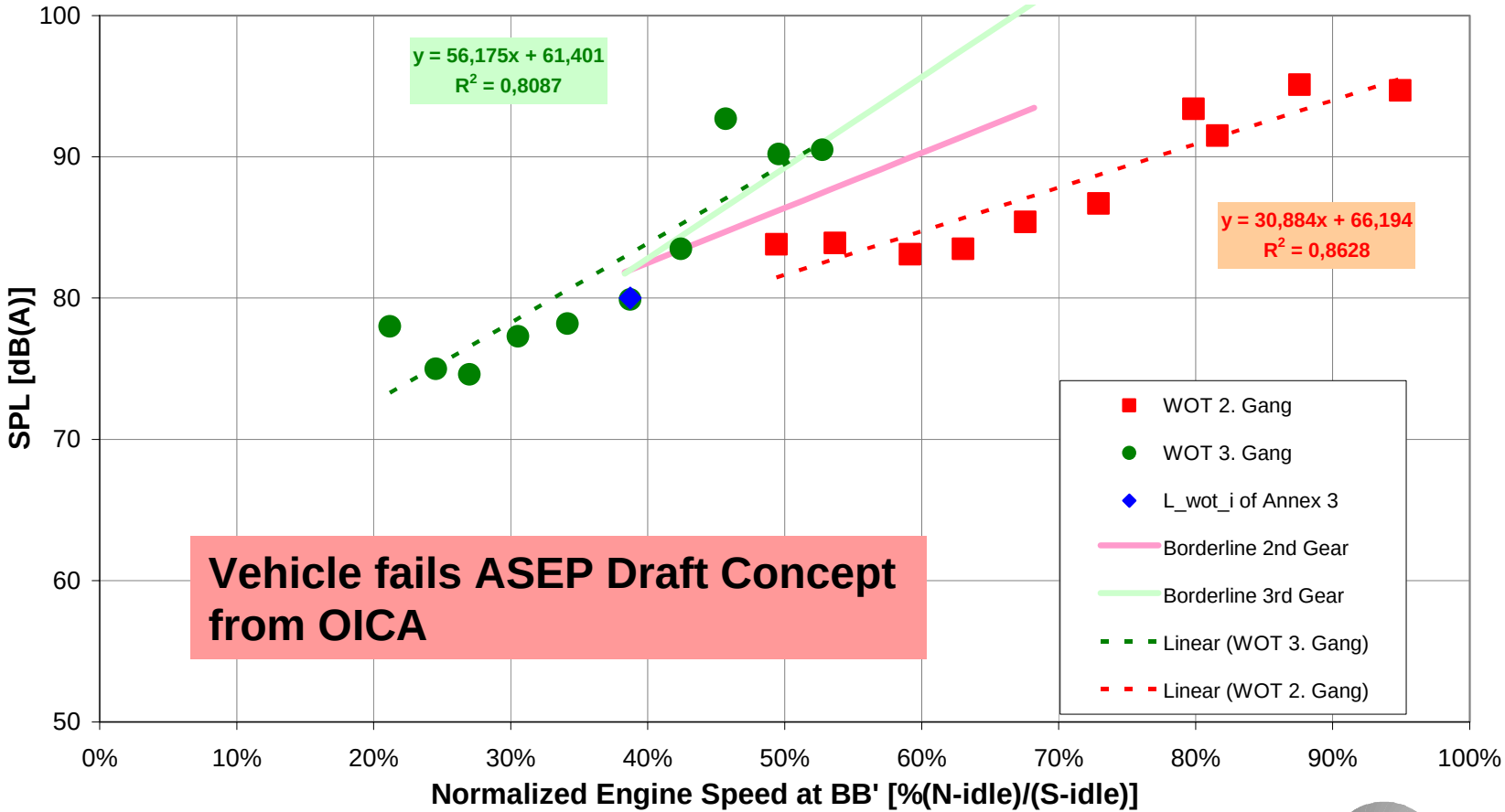


Sound Emission of the Vehicle



Vehicle fails ASEP Draft Test from France/Germany

Sound Emission of the Vehicle



Conclusions

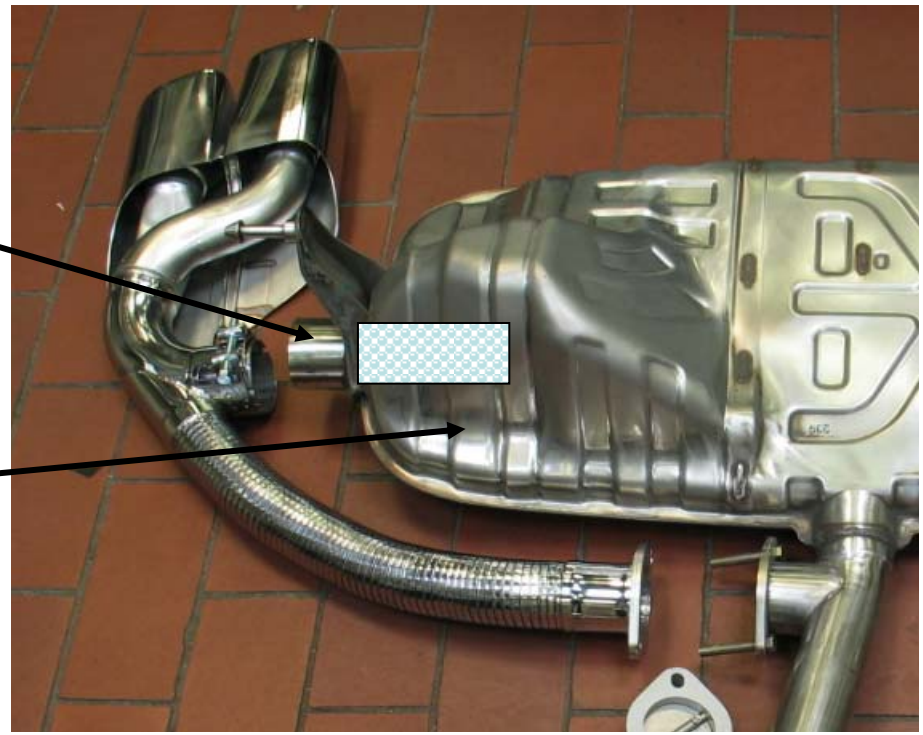
- **The tested silencer system can be legally bought and has a certificate. From an outside view, one cannot see the difference between the original silencer system and the after market system.**
- **The sound emission of the vehicle under the new type approval test condition is 8 dB higher compared to the original vehicle in the mode described in the certificate.**
- **The application of ASEP is not useful, since the system does already fail the type approval test. However, if ASEP would be tested anyway, it would not pass the French/German Draft Test and would not pass the test outlined by OICA, while the OE version would only pass the OICA test.**
- **ASEP can detect irregular devices, however a potential test and its boundary conditions have to be considered carefully to be not too aggressive.**

Remains one Question ...

- **Why is the replacement silencer in the “bypass closed condition” not identical to the OE version, when the same silencer is used ???**

In the OE version two chambers (left and right side)are used via perforated tubes.

But the after market silencer has no perforated tubes. Those chambers are not used.



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