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Part 2 of a 3 part series:

Selective Catalytic Reduction is currently a hot topic as manufacturers look for cost-effective ways to reduce emissions in order to meet increasingly stringent environmental regulations. Rick Breunesse of *TASS International* discussed the topic with *Automotive IQ* in an in-depth three part interview. In part two, Rick discusses the impact of future legislation regarding vehicle emissions.

Automotive IQ

Is PEMS (Portable Emissions Measurement Systems) also a regulation that will be further developed? Would that complicate matters for an OEM as my understanding is that the regulation would require cars to be tested in real driving conditions rather than under laboratory conditions?

R.B.: We see that both in the light vehicles and also in heavy-duty industry. The government wants the OEMs to design the systems in such a way that they perform live just as well as they do on the test cycles. So what happens next is that the government wants to check those vehicles when they are in production and when they're on the road. This will be done with so-called Portable Emissions Measurement Systems, PEMS. Those systems will be attached to the vehicle and the vehicle will be driven around in various conditions. The emissions that come out of the tailpipe will have to be in a certain range where they comply with the legislation.

Automotive IQ

Is that going to be true for just one test vehicle or is that something that'll be part of an annual or bi-annual emissions process?

R.B.: This will be a random continuous process. The legislator can just take a vehicle off the road and test it. So, it's a big concern for many manufacturers because, not only will they have to comply with what's required of them from the emissions certification process, but also what's going to happen after the several years or 70,000 miles or what's going to happen if the maintenance of that vehicle is not done correctly. So those are the things that have to be taken into account when the vehicle is developed.

Automotive IQ

Is there any way you are attempting to deal with and overcome this particular issue that you can share with us?

R.B.: Yes, my company is also working with the industry on making those systems more robust. We also have PEMS systems and we are doing some measurements on that. Moreover we use this to develop better and adaptive control strategies which can deal with the aging effects of the vehicles or ambient effects. So, if you like I can provide you with some more information on that topic.

Automotive IQ

I would appreciate that very much. I had read that it was TNO among others who were working pretty hard on this with legislatures and regulators.

R.B.: Very valid question as we get questioned on this often. TNO/TASS is a very large organization. One part of the organization is also working on new legislation, also with government departments. There's also another part that is working with the industry and that can sometimes be seen as tricky because we "look into the manufacturers' kitchens". But those departments are strictly separated from each other and strictly confidential. Being close to what legislators are discussing has big advantages what to expect in the near future.

Automotive IQ

That's very helpful and perhaps a topic for a future interview. Have you heard of the Worldwide Harmonized Light Vehicles Test Procedure, WLTP and do you see this actually developing further?

R.B.: Yes. Although personally I am more involved in the heavy-duty industry, I'm familiar with that. We see the same trend in the Heavy Duty industry as well. One of the reasons why they want to move in that direction is that passenger cars nowadays are sold all over the planet. More countries are also adapting the latest emissions standards and the emissions standards are more harmonized as well around the globe. This also makes it easier for vehicle manufacturers to engineer and calibrate their engines for these particular legislations. So, for instance, now in the United States they have to comply with completely different test cycles and emissions regulations than they do in Europe which makes it way more expensive for those cars which are sold in both countries or both regions and so they have to do the work twice, more or less. So this is definitely something that will be developed further.

This is Part 2 of a 3 Part Interview with Rick Breunese.