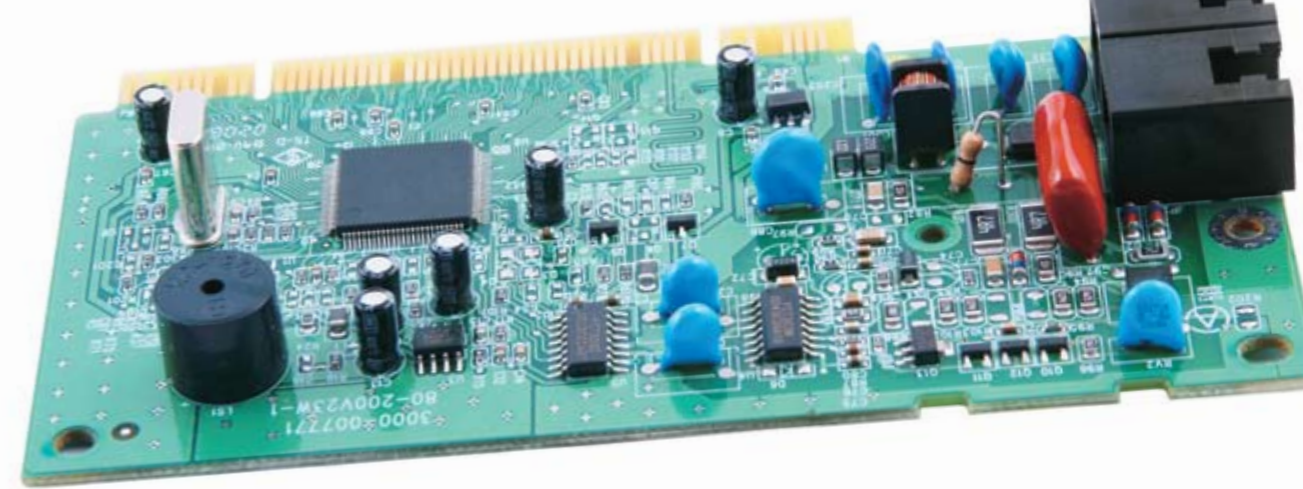
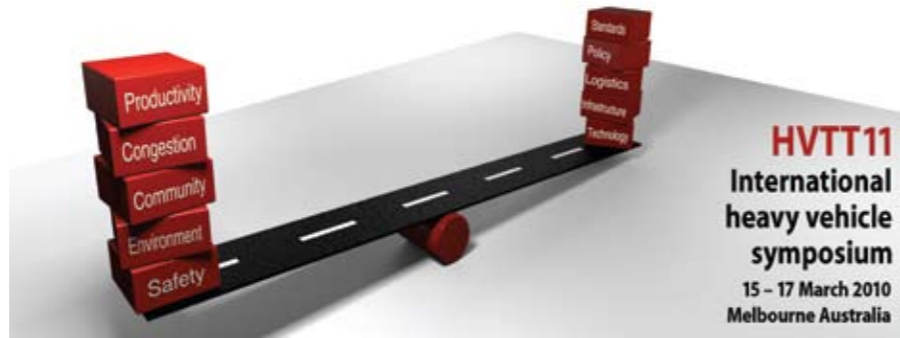


Looking at future needs

When the HVTT Conference convenes in Melbourne next March it will be a chance to see what the future holds in terms of technology, infrastructure and transport regulation.



One of the most important names in bringing the Heavy Vehicle Transport Technology (HVTT) Conference to Melbourne in the

lead up to the Melbourne Truck Show in March 2010 has been Graeme Miller, National Manager Technical Support for Scania here in Australia. The initial

impetus to hold the conference here came from Scania's Anders Lundstrom, who is based in Stockholm. Graeme, as the local representative of the Swedish truck maker, helped pull together the organisation required to stage such an event.

The HVTT Conference will bring together experts at the cutting edge of developing technological solutions for the issues the Road Transport Industry will face in

the future, the boffins from around the world who are trying to work and think outside the square. In the same room will be those who have to legislate to cope with the future needs of a growing economy and harmonise the demands of our industry with the priorities of a wider society.

"I see the benefit of the conference for us, here in Australia, as being a huge opportunity to bring the best transport

brains in the world together in our country," says Graeme. "We can discuss all of the issues that are current, not just here in Australia, but the world. What interests Europe, the USA and Asia is also of interest to us here in Australia." Discussion is likely to centre on the way the issues of our time, in particular infrastructure and the environment, interact and how to get the best results from these interactions in the future. "This is not about letting people know what's going on at the moment, this is about what's in the pipeline and what issues we will face in the future. What does this brains trust believe are the best solutions for transport? Usually, one of the problems we face is the way the regulations lag far behind the technology's abilities; regulators are always dragging the chain."

The conference is expected to discuss and map out the way the world plans for future transport needs. It is likely to change the way people think about their priorities in transport.

"This is not your normal conference where people come along and report about things like a two per cent reduction in carbon dioxide output, things which I regard as normal developments. What we want to do is talk about the big issues, the more strategic thinking about how we transport goods and people around this country in the future," says Graeme. "We may be talking about 'way out there'.

In fact, we're hoping that this will be very different to the run-of-the-mill conference normally held here in Australia. I think that the big issues are going to be around infrastructure, that's my gut feel.

"There has to be a different way of providing transport solutions to how we do it today. Otherwise, we are not going

to be able to provide goods and services how we want to in the future. We have to think differently; it is not about building another lane on a highway, it's got to be something more than that."

In this fast changing environment the vehicle manufacturers have to remain intimately involved in these sorts of discussions because they need to know what sort of product has to be manufactured to satisfy the needs of society. Also, from the point of view of the authorities, there is no point in building infrastructure unsuitable to current transport technology.

It is all interrelated and the conference will give Australia a chance to look closely at the best solutions for different situations from around the world.

Peak interest

A looming concern is the kinds of technology and fuels that will be used to power vehicles performing the transport task in the future. The issues include peak oil, global warming, urban pollution and urban congestion.

"Our short-term approach at Scania, by which I mean about 10 years, is we believe that diesel will continue to be the predominant source of power for on-road transport, but beyond those 10 years we are looking at all sorts of different solutions," Graeme says.

One solution studied by Scania and other engine makers in their labs is the low-emission and highly efficient Homogenous Charge Compression Ignition (HCCI) engine technology. The aim of the technology is to get all fuel in the combustion chamber to ignite simultaneously, but it is proving hard to pin down, as the engine requires very fine tolerances

to properly controls ignition. "Talking about HCCI, is it continuing to be developed? Absolutely. Is it a viable solution? The noise issue will probably be the biggest issue we have to overcome with this engine," says Graeme.

"We are also looking at different ways to provide the power. We have a series hybrid drive system and we can use any type of engine to drive the generator, a gas engine, an ethanol engine, a diesel engine or a petrol engine, whatever you want."

The difference between this technology and the hybrids we are seeing on the roads today is in the way the power comes from the electric motor. Essentially, an engine runs at a steady rpm generating electricity for an electric motor to provide motive power. The system does not need batteries, instead Scania is using super capacitors for their short-term charge storage. Constant engine speed and constant power draw from the diesel engine gives the engine the best performance in terms of fuel economy. It is tuned for one particular rpm level getting the best possible performance out of the engine at the chosen engine speed.

"We are currently trialling the system on buses in Stockholm. We already have customers who would love this sort of system and I would expect to see it here on the road in Australia within five years. We talked to bus customers about this, because this is where the technology will come in first. Most bus buyers are city or state governments and they have a need to be seen as green and clean."

There is also a cost advantage because the fuel economy is far superior and any economy in a diesel translates directly to a reduction in carbon dioxide production. Other pollutants are reduced, as well.

"There is absolutely no doubt, the days of oil as the primary source of fuel are numbered," Graeme says. "Exactly how long that is, no-one seems to know. How many times have we been told we've reached peak oil? Eventually though, we will need to use alternative fuels and my gut feel on that, is there is no single thing, at the moment, which is going to replace oil. If you are looking for one solution, forget it! It's going to be horses for courses.

"Some new technologies will lend themselves better to certain applications, so many of the technologies in the future will be application-specific. We will no longer be able to get away with, basically, different sizes of the same thing."

Infrastructure will need to be developed to support these new technologies. Across the globe, city bus companies are currently running quite a few buses powered by compressed natural gas (CNG), but there has been no extension of these vehicles to outer suburbs or out of the city, as there are very few refuelling facilities for CNG.

"Infrastructure issues and access to new fuels is the sort of thing that will be debated at the HVTT Conference. If we have a different solution for an inner-city transport application, how do we deal with the implications of that? What other requirements are there? Are we looking at public or private networks for refuelling?"

Need to know basis

The uncertainty surrounding the future direction of each technology is placing a great strain on the research and development budgets of vehicle makers. They need to be prepared for the many different technologies they may have to use and the costs for creating these future vehicles are escalating.

A large part of Graeme's job is talking to the regulators, which is where Scania can get an indication of the direction of future policy. To reciprocate, he is also involved in informing the regulators about the direction technology is taking, helping the law makers formulate future legislation. "When dealing with bureaucrats here in



"You often feel like you're banging your head against a brick wall, but, from time to time, you do get things across the line and that is satisfying."

Australia I find they are quite consultative. Whether they fully understand, is not so certain. Some of the people tasked with doing things are not fully comprehending what we are talking about. We sometimes have to explain what we think is basic knowledge," he says.

"I have a very good example of that. When 26 metre B-Double use was being discussed we had to try and explain to a politician the technical advantages of dynamic stability and things like that.

Talking about the differences between a 25 metre and a 26 metre B-Double, we really had to get down to the level of explaining to them how they could explain it to their voters.

"If you don't keep chipping away at it, you will never get anywhere. Some of these things have an enormously long gestation period. You often feel like you're banging your head against a brick wall, but, from time to time, you do get things across the line and that is satisfying."