

# ATS Initiates Lab-To-Road Test Facility



As an automotive test systems company, Automotive Test Systems (ATS) has taken very constructive industry-academia partnership by collaborating with Amrita University for developing its Research and Development (R & D) and Technical Centre. This 'lab-to-road' programme helps us build more systems and the customers minimise the testing time. They want us to build more systems and we are on the fast track to get them done, in an exclusive interview, **S Ramanathan**, Managing Director, ATS, told **T Murralli** of *AutoParts Asia*.

The Excerpts:-

**Q: Can you tell us about your main business areas?**

**Ramanathan:** Basically we have four areas of business. The first one is sales and service of test instrumentation where we have collaboration with many companies from Europe and the US. We sell the state-of-the-art technology used by several companies including Mercedes, BMW, Ford and GM, across the world.

The second business area is 'End of Line Testing', where we provide test systems to the OEMs and some component suppliers, who mainly test systems at the end of the assembly line. This is applicable for any car or truck. This system helps components suppliers test primarily the transmissions.

The third one is our Technical Centre where we offer

technical services. Earlier foreign companies like AVL, FEV, Ricardo and Myra were offering testing services to Indian companies. These foreign companies have laboratories in other places where they do testing for their customers. We thought there was a space here where we could offer testing from an Indian Technical Centre. We collaborated with the Amrita Engineering Centre of the Amrita University (the first of its kind in India), in Coimbatore, where students and faculty take part in these projects. It is a win-win situation for us. The tie-up has been in place for about three years now. We are regularly upgrading our R & D centre based on customer feedback.

The fourth one is to manufacture test systems using our knowledge in



designing test equipment. We consider this as part of the 'Make in India' initiative. We design and develop test systems in Chennai where we develop software (for homologation of vehicles), test systems including brake test, acceleration test, fuel consumption test, gearbox testing, calibration of odometer, and speed governor certification. We provide the sensors and data loggers for all this.

**Q: Are you doing this alone or you seek technological support from your partners?**

**Ramanathan :** We develop and manufacture systems on our own and we export our software to different countries like China and Iran.

We have full-fledged teams - R&D in Coimbatore at the university with about 25 engineers including PhD students, and system development in Chennai. The products that we manufacture include roller dynamometers for chassis and gearbox test rigs.

**Q: How long have you been in this business?**

**Ramanathan:** We have been in this business for about 12 years but the manufacturing activities have started recently, about a year ago, in Chennai, India. At the moment our focus is on gearbox test rigs, clutch test rigs, synchro cone test rigs and durability test rigs for powertrain components. This is a core business,

and vehicle dynamics is the other one. We develop software and also provide hardware to do handling and performance trials on road.

**Q: Are there other Indian companies making these products?**

**Ramanathan:** There are other companies that manufacture test rigs in India, we are not the pioneers. Our focus is to enable Indian manufacturers to do up to a certain level while other manufacturers outside India like those in Germany and Japan are doing at a very high level where costs are also very high. Here the cost is low. For example, a high-end gearbox test rig from Germany might cost Rs seven to eight crore while in India it would be around Rs two crore. We are trying to bring this technology to customers at a reasonable price; that is our aim.

**Q: What is the road map for the future?**

**Ramanathan:** In terms of research it is only adding more resources to our portfolio.



**Q: But do you have constraints?**

**Ramanathan:** Yes, there are certain constraints in our R & D programme. The important one is about the market requirements, that are huge and diverse, and how to choose the key issue for our specific focus. However, we have identified two to three areas, to start with, like materials and friction studies. A few leading Japanese and European OEMs are keen to know about new materials. Since the investment on the project is very high, running to crores and our resources are limited, we will probably take it step by step and gradually augment our capabilities. At present we are quite busy as many companies have shown interest in working with us. We have delivered more than 70 projects in the last one year, with about 90 percent to the OEMs, and the quality of work has been well appreciated.

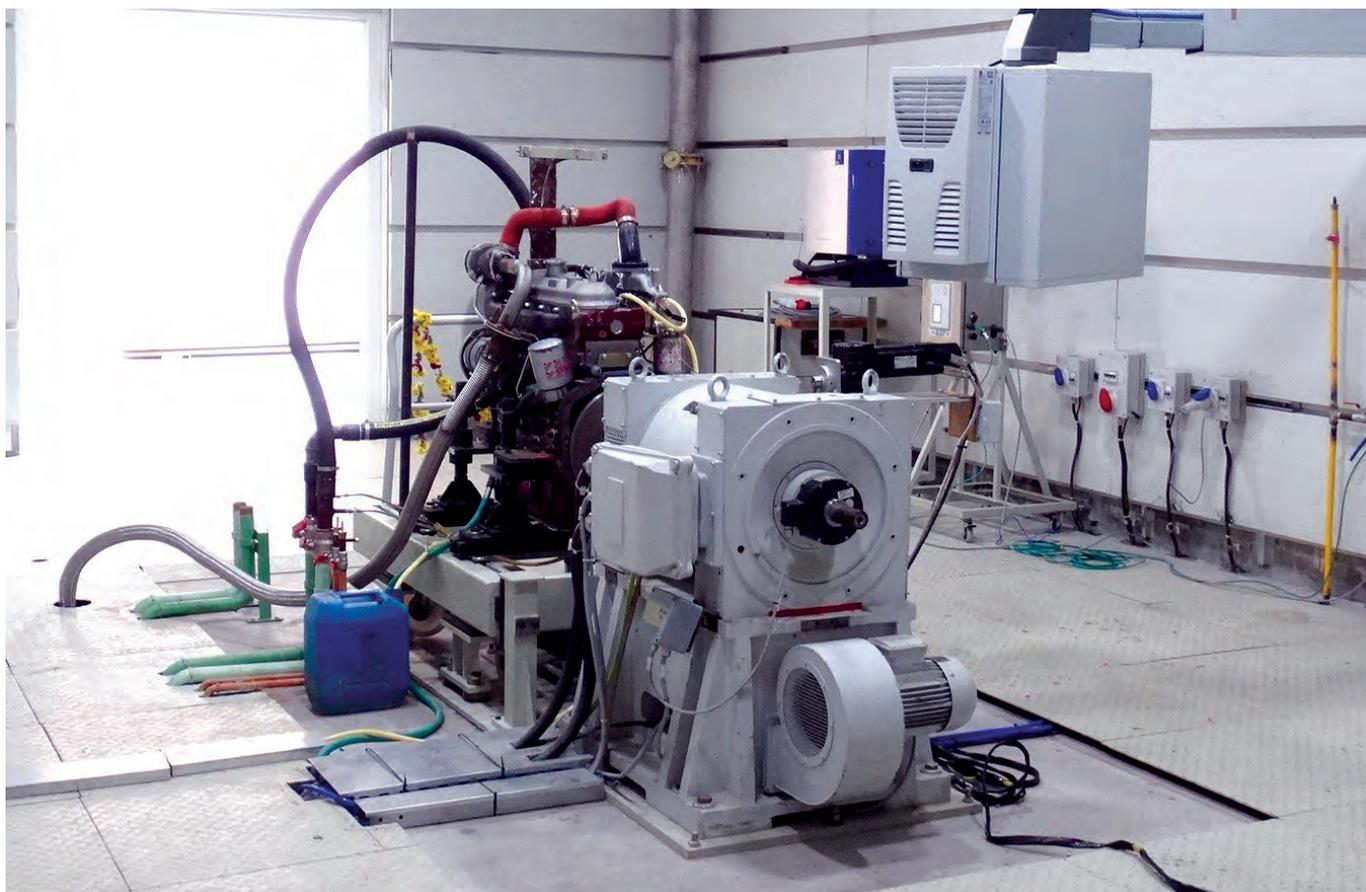
**Q: What is the most sold category of product?**

**Ramanathan:** In the last one year, vehicle performance tests, durability tests on road, power train followed by tests for noise & vibration were among the most sold category of products. We have just established big facilities in these areas; these will pick up and overtake vehicle dynamics in the coming years. Powertrain testing requires huge facilities and demands higher investments. Besides, the manpower requirements are also very high and these things take time to establish. Now our lab has been validated by many companies in India so we expect to get good business from the industry in the coming years.

The Indian industry has been consistently growing and the OEMs are launching many models. They have so many models and variants to be launched in India and their vehicles have to be validated here locally. They would need large test facilities here. They cannot send components or vehicles abroad all the time for testing at their own facilities.

**Q: How do serve your customers, who had been getting services from overseas companies?**

**Ramanathan:** We have professionals from the industry itself who had worked with Daimler, Renault-Nissan, Mahindra, JK Tyres, Horiba and AVL for 10 to 15 years. We have recruited them to be part of the technical



centre. They ensure that a very high standard of quality is maintained which increases customer confidence in us. The best companies in Europe and Japan test with us. So far we haven't had any negative feedback. They are coming back to us for work which means we are doing a good job; we have created that trust. Our goal is not about maximising profit in this centre.

In many forums I have witnessed deliberations on the industry-academia partnership. I think we have taken the initiative on these lines.

**Q: What are the other key drivers in India for you to make new products?**

**Ramanathan:** We are very small, when compared to the other big centres. When we look at the many imported products that we sell through our other divisions of business, we obviously think of making at least some of them here and selling globally.

**Q: When you make a product manufactured by your global associates, won't there be a clash of interests?**

**Ramanathan:** Yes, there will be but so far we have managed it quite well. We

are transparent and we tell them what we are doing and we keep it open. We have the same team for sales, as we have not grown that much as yet to have a dedicated team for selling. Of course, the research has a separate team where only knowledgeable people can go and talk to customers, have technical discussions with them.

**Q: One issue that everyone talks about on-road vehicle development is that design from concept to part takes a lot of time and it is difficult to manage testing. Do you have a solution for this?**

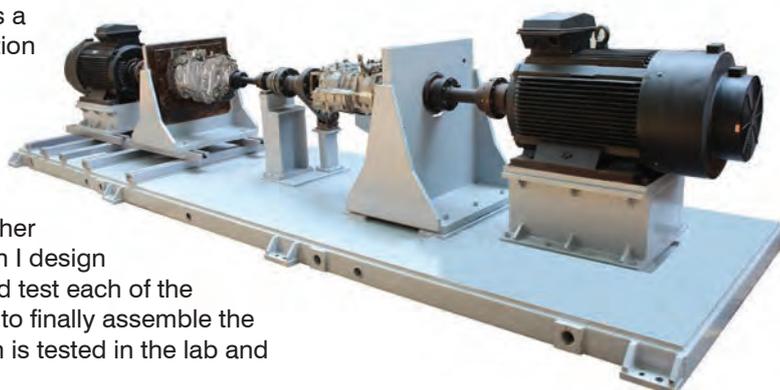
**Ramanathan:** Yes, it is basically about simulation. When a vehicle is being designed, when it is just a concept, if you get to know how it will perform when it is actually produced you can save time. It needs a lot of correlation between the Computer Aided

Engineering (CAE) and other factors. When I design a product and test each of the components to finally assemble the vehicle which is tested in the lab and

goes out for actual road test, there has to be correlation between each of the stages, the entire V-cycle up to safety including driver assisted systems. This is the solution we offer right now, end-to-end.

From IPG, a German company, we offer a tool called Car Maker, or Truck Maker, depending on the type of vehicle to be tested. The system helps to perform different tests at the model or software level, software-in-the-loop or model-in-the-loop simulation, as if you are doing it in an actual car or truck on the road. This means you have a virtual car on a virtual road but procedures are the same; the test catalogue has to be the same across categories.

This involves components also, which





are the major part. The idea is to provide information exchange among companies. We have encrypted the data so that we can freely exchange models among Tier-1 and Tier-2 and the OEMs without actually divulging details. They can just take the vehicle model and put in the details of their component before carrying out tests.

These tests can also be based on customer requirements using simulation at different levels. Costs are minimal as you just require a PC to do the tests; no external infrastructure is needed. The correlation has to be really high so that when it goes into the actual test track it should perform similarly.

**Q: There are still people who want to do only actual testing, even in areas where real testing can be minimised.**

**Ramanathan:** That's perhaps because they are still not aware of the technology. It depends on their comfort level. With today's technology you are bringing in more models at a faster rate, with each model having hundreds of variants. You have to

do testing for each of those variants; if you don't find out problems beforehand you will have to go back to the CAE and the entire process has to be repeated.

The model development would then take a much longer time. The idea behind simulation is to bring the



model closer to the final product at the beginning itself. It enables refinement at the design stage to make the models better. The infrastructure and machines required for testing is prohibitively expensive, and it may run in to crores of rupees.

Many tests are required with so many models in line. It is impossible to do physical testing on all of them.

That's why most OEMs are interested in this now; the best companies in the world have already established end-to-end. In Europe it's on and people have also started thinking about it here in a big way; we will catch up very soon.

**Q: What about emission testing, especially with the government skipping Bharat Stage (BS) V and directly going to BS VI?**



**Ramanathan:** We have to establish facilities for that now, not all are up to BS VI. We have some special systems that can be used for development work; our customers are asking for some infrastructure to be put in for BS VI.

We are in discussions with them and will be ordering some systems later this year. We will have to upgrade our facilities for that.

**Q: From the research point of view how is the work going?**

**Ramanathan:** It's going on very well. Customers are interested in us for taking up 'lab to road'; they want to minimise the testing time. They want us to build systems that would help them. It's a big challenge but we are on the fast track to get it done.

**Q: Would you be setting up similar labs elsewhere in India?**

**Ramanathan:** That's a very expensive proposition, not affordable right now. However, our on-road testing departments are mobile.

We have teams in Pune, Delhi and Chennai to take care of things like road load and duty cycle measurement, city and highway fuel consumption measurement etc.

We have teams all over India to take care of this. To create infrastructure for big laboratories like powertrain labs and NVH labs that are fixed in one location will be unaffordable for us.

We have a testing centre in Coimbatore with manufacturing in Chennai. We have offices in Bangalore, Chennai and Delhi.

**Q: Do you have plans to upgrade the test facility in Coimbatore?**

**Ramanathan:** We are regularly upgrading it, based on customer feedback. This goes on in every laboratory. The upgradation is totally dependent on what our customer demands.

**Q: What are the tests that you are not doing now but will be doing soon?**

**Ramanathan:** Presently, we are able to do quite some vehicle- on-road related tests. We are doing quite a bit of NVH work – this lab still needs a little bit of upgradation, we need some equipment here. On the emissions side for Euro-6 we need to upgrade. These are areas we are looking at for the next 12 months. 