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**More environmental protection, more road safety: Our areas
of innovation for the car across the globe**

Franz Fehrenbach

Chairman of the Board of Management of the Bosch Group

at the press conference

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Ladies and Gentlemen,

Cars move people in every sense of the word. All over the world, the individual's need for mobility is increasing at lightning pace – especially in Asia and Eastern Europe. And what moves us at Bosch? How to master this trend given finite resources and the need to reduce carbon dioxide and pollutant emissions as well as enhance road safety. Reconciling these needs with mobility – that's what this International Motor Show is about, and that's what Bosch is setting out to achieve. Our program of innovations takes its cue from our company slogan "Invented for life," giving rise to systems that protect the environment and conserve resources all over the world – particularly in the emerging economies. In other words, if we can provide the technology to satisfy the demand for sustainable mobility, then we will win both economically and ecologically.

The benefits of international reach: Positive trend in 2007

But first, allow me to briefly outline where our business currently stands, illustrated by a few facts and figures. The current year is shaping up satisfactorily. Having said that, the high euro rate against the dollar and the yen is putting pressure on our growth. We anticipate sales growth of a strong five percent for the Bosch Group this year, to some 46 billion euros. Adjusting for currency effects adds a further two percentage points to this growth. These figures also include a number of acquisitions, such as the majority takeover of Australian brake manufacturer Pacifica. In all our areas of business, we are growing especially strongly in the emerging countries. This once again validates our fundamental strategy of consistently expanding our business both regionally and sectorally. We still need to put in a good deal of effort, but all in all we should also be able to reach our pre-tax profit target of at least 7 percent in 2007.

We are still having to contend with punishing price and cost pressure in the area of Automotive Technology. But in this business sector, we anticipate growth of around 4 percent in 2007, which will likely put sales at a good 28 billion euros. Adjusting for currency effects, our gain in this area will be approximately 6 percent. Yet the pattern of business development is very different from region to region. For instance, our sales in Europe this year will grow by a good 4 percent, whereas in America they are stagnating on a euro basis but up more than 6 percent in dollars. The most dynamic growth is in our Automotive Technology business sector in the Asia/Pacific region – nominally up by 5.5 percent, and by 11 percent in local currency. In China, local growth stands at an impressive 30 percent, and in India at 25 percent – figures which also clearly reflect the seismic shifts in the global automotive industry. For Bosch, international presence is a great advantage – especially when it comes to the automotive sector. And, without neglecting our business in Germany, we aim to go on strengthening that presence.

Growth is accelerating: A range of drivers

We already anticipate stronger growth in our Automotive Technology business sector beyond the end of 2007. One of the catalysts for this is the ongoing debate on climate protection – especially when it comes to products which significantly reduce fuel consumption. This issue has an impact not only on this year's International Motor Show but indeed also on the R&D projects we are engaged in together with our customers. Savings in car driving – this was something which had so far above all boosted demand for our injection systems. Today, those technical concepts which had until now been more or less overshadowed by the 'big' systems are gaining in importance: thermal and vehicle electrical system management, especially efficient alternators, as well as the start-stop system. All this and more has been developed at Bosch to the stage where, in most cases, it is ready to go into production, meaning that we can put together

technology packages for the next generation of models to fit each specific vehicle. We must, of course, join with our customers in making sure the original costs remain affordable for car drivers. We believe that can be done. At present, no other issue is pushing us as hard but at the same time driving us forward as fast as climate protection.

A total of three growth drivers for Automotive Technology stand out:

- First, the innovations with which we have so far scored highly, particularly in Europe, are now more than ever gaining ground in America and Asia. Take, for instance, the electronic stability program: In 2006, ESP was already standard equipment in 43 percent of all newly registered passenger cars in Europe. In five years, according to the stated aim of the European Commission, that figure will rise to 100 percent. In the U.S., the National Highway Traffic Safety Administration has already mandated fitting ESP as standard from 2012. By 2010, the ESP equipment rate in North America will have doubled to almost 86 percent compared with 2007. Now to the example of clean diesel technology: Every other new car in Europe is diesel-powered – and this figure is set to increase still further. But also beyond Europe's borders, things are looking good for diesel, as the number of our development projects shows: 35 in India, a good 100 in China – as well as nearly 60 in the U.S., and here not just with European but in over two-thirds of cases also with Asian and American manufacturers. So the globalization of diesel is looming large – just as the global application of our innovations is our No. 1 growth driver.
- Second, following a lengthy run-up, there are signs of a surge in global sales also for gasoline direct injection. Our second generation is making its mark on the market. This year, we shall

be supplying an estimated 900,000 systems, rising to in excess of 2 million in 2010.

- Third, thanks to our technical presence worldwide, we can score well in the low price vehicle segment, which is showing above-average growth, especially in emerging countries. Finding suitable solutions for this class of vehicle is an area in which cooperation with our local engineers is enjoying particular success. We are gaining expertise in this area, and this will also be of great benefit to us in the ever more hotly contested western European and North American markets. With our products for low price vehicles, we anticipate generating sales of one billion euros by as early as 2010.

The bottom line in all of this: Over the coming years, we can look forward to a wealth of growth opportunities across all our business fields. We are helped in this endeavor by the increasing proportion of electronics in cars. And above all, with ESP and clean diesel technology, we shall be writing the next chapter in two success stories at once.

Road traffic of the future: Five areas of innovation

The only reason our innovations hold their own worldwide is because they deliver the solutions people are looking for – meeting the demands placed on the automotive industry in all the major regions of the world. Fewer accidents, fewer pollutants, lower consumption and hence reduced CO₂ emissions – all over the world, our task is one of meeting a range of stricter limits. And given that these goals geared to achieving sustainable mobility are becoming increasingly ambitious but must at the same time remain affordable, also for low price vehicles, technology continues to advance. Looking ahead to the road traffic of the future, we are focusing on five main areas of innovation:

- First, combustion engines themselves will become cleaner and leaner, across all available drive systems – and as vehicle fleets

are renewed, this will bring with it the broadest and fastest reduction in CO₂ emissions.

- Second, a prime objective is to prepare gasoline and diesel engines for an increased admixture of bio-fuels.
- Third, if electrically powered cars are to become a practical proposition, we need to significantly boost the power density of batteries.
- Fourth, vehicle safety does not stop at ESP. Virtually accident-free driving is possible – but only in conjunction with new types of driver-assistance systems.
- Fifth, we are exploring new options in the field of automotive communications – all the way to exchanging data between vehicles about the length of traffic jams or stretches of black ice.

For each of these five areas of innovation, the key competency lies in electronics. So it's not without reason that the Bosch Group employs some 9,000 engineers in the areas of software and sensor technology. No fewer than 3,000 software experts work for our subsidiary Robert Bosch India. Together with this team, there will be a good 30,000 of our total workforce of 270,000 associates involved in research and development activities worldwide by the end of this year. In this field, the Bosch Group's investment in the future remains high – around 3.5 billion euros on R&D this year.

And the result? Highly promising innovations both for environmental protection and accident prevention – two avenues of development in particular which shape our exhibition booth here at the International Motor Show. But what specifically are we masterminding? I should now like to give you an insight into a number of focal areas.

Network of guardian angels: The advent of interlinked systems

First of all, we are making progress toward the goal of accident-free driving: progress which goes beyond our pioneering achievement, ESP. The new functions we are developing are based on a network of

systems – a concept we call CAPS, Combined Active and Passive Safety Systems. We have devised a range of electronic guardian angels – and now they are all working in concert. Our goal is to ‘sensitize’ the vehicle.

- To give you a concrete example, the ESP/airbag linkup is a source of new benefit. The Early Pole Crash Detection system, for instance, will be ready for production in late 2008. Here, ESP signals reduce the airbag reaction time by precious milliseconds. Yet this marriage is no one-way street. Following a rear-end collision, airbag signals can control ESP in such a way that a secondary collision is either prevented altogether or its force reduced. This system, known as “Secondary Collision Mitigation,” will be ready for production by 2009.
- By around the same time, we shall be bringing our automatic emergency braking system to market – we have received a contract to launch production of this system by 2009. It marks another step in the expansion of our predictive safety systems. If they were fitted in every car in Germany, these systems would be capable of preventing some 400,000 road accidents a year.
- Video sensor technology is similarly opening up new avenues. Following the successful launch of our night-vision system, there will be driver assistance systems ready for production by 2009 which can recognize lanes, traffic signs, and safety hazards. They are capable of warning drivers, or guiding them gently back into the right lane or correct speed.

The clean way to drive and save: Versatile drive systems

At the same time, Bosch is making intensive efforts on the road to efficient, pollution-free motoring. Nearly half of our R&D outlay in the Automotive Technology sector is devoted to products that protect the environment and conserve resources. Here, too, I should like to

outline a few points which underscore our great versatility when it comes to drive systems:

- Our developments in the common-rail field continue – for instance, with the CP4 injection pump and the injectors to match, which are gradually being designed for 2000 bar and over. This will allow many diesel-powered vehicles to meet future nitrous oxide limits in Europe without further exhaust-gas treatment.
- With the help of our urea-metering system Denoxtronic, diesel systems will also comply with the U.S. passenger car exhaust emission standard US07 Bin5 from 2008 on. This is precisely what our projects with manufacturers from all over the world are aimed at achieving. And all those involved are well aware that more diesel means lower consumption, which in turn means less carbon dioxide.
- Parallel to this, we are exploiting the fuel-economy potential of gasoline direct injection. Our second system generation cuts consumption by up to 15 % compared with manifold injection. And it can be combined with a range of technical concepts – such as turbocharging, which allows smaller engines to be built. This downsizing has already found its way into several applications – and further projects are in the pipeline.
- For all our optimization efforts on the combustion engine, we are also combining it with the electric motor – an area in which our research and development expertise goes back more than three decades. We now have orders not just for the gasoline hybrid but also for the diesel hybrid version.
- Finally, we are modifying the combustion engine to allow it to run on alternative fuels. Following our success with Flex-Fuel engine management in Brazil, we are making our injection systems compatible with the ethanol standard in the United States. The start of production is scheduled for 2009. We shall also adapt our injection systems to Sunfuel, a plant-based synthetic fuel. This will

allow an automotive drive that uses both renewable energies as well as existing infrastructure and technology – in other words, a solution that can be rapidly deployed.

The long-term perspective vs. action here and now

In all that we do, we are working toward long-term goals – we have set our sights on road traffic that has to become less dependent on fossil fuels. But no matter how intensively we research into the hydrogen or battery-powered car, it is equally necessary to act now to further increase the efficiency of the combustion engine. Pursuing the first goal over the long term and not letting up from the second in the short term – this must be our mission. Right here, right now, there is still a great deal of potential for us to tap on the road to sustainable mobility – many small steps can be just as important here as great strides. Whatever we do to help car driving comply with demands related to the environment, resources, and safety, the effort required of the entire automotive industry will be substantial. Yet if we succeed in controlling costs, the drive to achieve more eco-friendly cars will also open up considerable economic opportunities – above all for a company that can draw on both innovative strength and a broad international reach. Both are true of Bosch – and continuing to expand both is our stated aim.