# DAIMLER

#### Executive Summary: 33rd International Vienna Motor Symposium 2012

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# "(Auto)Mobility of the Future: Where Does the Journey Lead?"

The car is the epitome of freedom and independence. Hardly another invention has shaped our culture as much as the "horseless carriage", which opened up a new dimension of personal mobility 126 years ago: we are able to drive wherever we want, whenever we want and as often as we want. At the same time, however; this freedom has made us dependent, particularly on fossil oil. And that is the very dependency from which we must free ourselves. Does this mean the car should now be relegated to the "scrap heap"? No. It does mean, however, that personal mobility will pass through dramatic changes in the future. One thing is certain: the only logical alternative to today's car is a better car, one that is truly independent. And so we must reinvent it. Just as we did 126 years ago, Daimler is taking responsibility for this.

For over a century, cars have been operated primarily on the basis of fossil oil. For good reason, as gasoline and diesel have arguments for them: for example, short refuelling times, long ranges, a comprehensive infrastructure and, for a long time, a comparatively low price. Therefore, fossil fuels had a monopoly for a long time. But now we are faced with a technological paradigm shift. It is therefore all the more important to create a vision for the mobility of tomorrow based on the innate strength of the car. To achieve this, Daimler is working on the basis of three premises:

- 1. Personal independence: from a technical standpoint, the car embodies the best and most versatile solution for personal mobility. New technical possibilities and development will increase this degree of freedom further.
- 2. Independence from ending resources: at one time, oil was cheap and was thought to be in surplus. Now oil production is becoming more expensive and increasingly complex, with consequences for the climate. It is high time to spare our resources and pave the way for alternative, emission-free drive systems.
- 3. Independence in time and space: in the future, the freedom to be able to access information at any time will be a critical factor in determining the success of a means of transport. This increases the safety and comfort of driving. Furthermore, the car of the future will not always be owned by its driver, and a successful manufacturer will have to be capable of doing more than just building good cars. Particularly in urban

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areas, car-sharing concepts complement personal mobility, and other services will also play a key role in future.



The Mercedes-Benz F 125! research vehicle with gull-wing doors

#### 125 years of the future – Daimler is designing the luxury saloon of tomorrow

For Daimler and Mercedes-Benz, 2011 was a special year. We used the 125th anniversary of the car above all to devote ourselves to its future, giving highest priority to sustainable mobility with clean and efficient drives as well as to comfort and safety.

We have taken these challenges as premises for our newest research vehicle. Since the beginning, our research vehicles have provided concrete answers to questions concerning the future. They help us to test and hone the interplay of complex systems within the vehicle at a very early stage. With the F 125! we have dared to look yet further into the future. More than two vehicle generations ahead of its time, this development lab on wheels shows what a large premium car might look like in 2025: with fuel-cell drive and complete versatility for everyday use, typical Mercedes safety focus, unparalleled comfort and superb performance figures with an emission-free range of up to 1000 kilometres. The concept demonstrates innovative future technologies, such as:

- a re-engineered F-CELL drive with plug-in technology,
- a next-generation high-voltage lithium-sulphur battery,
- a completely novel hydrogen tank which can be integrated directly into the body structure,

- e4MATIC all-wheel drive with four electric motors positioned near the wheels and individual torque vectoring,
- an innovative operating concept using natural touch, gesture and voice commands,
- more safety with predictive car-to-x communication,
- the "@yourCOMAND" cloud-based infotainment strategy which is based on the "always on" principle,
- intelligent lightweight design using a mixture of high-strength steels, aluminium and carbon.

Some of the technologies on the F 125! are still in the initial stages of research, but are extremely promising nevertheless. That is why we are fully committed to pushing ahead with their development – because failure to chart the right path today will mean an inability to shape the mobility of the future. Already today we provide our customers with the various dimensions of "independence".

# 1. Personal independence

Do you like sportiness? Or perhaps spaciousness is your preference, without foregoing efficiency? Whatever our customers wish for their ideal car: for tailor-made mobility, Daimler offers a complete product portfolio ranging from commercial vehicles such as trucks, buses and vans to sports cars, luxury class saloons and estates, right the way to compact cars and two-seater city cars.

#### 2. Independence from ending resources

We are well-positioned for the future, as it is evident by the four electric vehicle model series from Mercedes-Benz and smart which are already in use by customers: the smart fortwo electric drive, the A-Class E-CELL, the B-Class F-CELL and the Vito E-CELL. With these vehicles, we had achieved a market share of 28 percent in Germany of all electric vehicles that have been registered in 2011. Since mid-2012, the new smart fortwo electric drive can be ordered. It makes opting into electric mobility particularly attractive with a new sales concept. sale&care offers customers an opportunity to buy, lease or finance the vehicle at an attractive price and to rent the battery. The rental costs include regular maintenance and, if necessary, quick battery replacement. smart also has a solution for all those who want to buy the entire vehicle.

In Germany the price for the vehicle with the sale&care model is  $\in$ 18,910 including VAT for the coupé and  $\in$ 22,000 for the cabriolet. Added to this there is the standard battery rental charge of  $\in$ 65 including VAT in all sale&care markets. In view of the low operating costs electric driving is therefore a very attractive form of individual mobility.

The electric smart is the first production car to use lithium-ion batteries from the Daimler subsidiary "Deutsche ACCUmotive". The electric motor comes from the "EM-motive" joint venture with Bosch. The smart fortwo electric drive is developed in Germany and it leaves the assembly line in Hambach, France. From an engineering perspective, the new smart fortwo

electric drive offers even better performance figures and a longer range. With a capacity of 17.6 kWh, the lithium-ion battery provides 145 kilometres of emission-free driving pleasure. In addition to better battery performance, significant improvements in the efficiency of the drive train have resulted in a longer range. When completely discharged, the battery can be fully recharged in the electrical systems of most countries with a charge time of no more than seven hours at a household socket or charging station. With an optional 22-kW on-board charger, it is even possible to fully "refuel" a completely discharged battery in less than an hour at a wall box.



From city car to van: the world's most versatile electric fleet

A well-developed infrastructure will be necessary to significantly increase the number of electric cars on the road – that applies for both electric and hydrogen power vehicles. Here too, Daimler is taking responsibility: working together with Linde, for example, we will construct 20 hydrogen filling stations in Germany until 2014. Daimler is also involved in the Clean Energy Partnership (CEP) and H2-Mobility initiatives. What is important for electric mobility itself is all the more important for building the required infrastructure: it can only be successful if we work together. In various partnerships with other companies, scientists and political institutions, we are moving ahead and setting a good example. We, however, also expect the pivotal impetuses and initiatives for the electric mobility infrastructure to come from the political arena. Policy-makers are the ones who will create an attractive framework for emission-free mobility of the future.

# Efficiency offensive: multi-track strategy for safeguarding mobility over the long term

Electric mobility using battery and fuel cell has enormous potential for the future. To achieve our goals, it is absolutely necessary to develop these technologies to production readiness and bring them to the market as soon as possible. But – as we have always predicted – the electric drive will not gain a firm footing in the market overnight. Instead there will be a relatively long transition period in which the electric motor and the internal combustion engine will be used alongside one another. In the coming decades, therefore, the internal combustion engine in particular will determine the extent to which emissions from road traffic are actually lowered.

Hence for the time being, the biggest lever for lowering fuel consumption and emissions is and will remain more economical gasoline and diesel engines. That is why we are stepping up development concurrently at all levels. Years ago Daimler launched its efficiency offensive and set specific targets for each phase. This resulted in a multi-track strategy:

- Track one: optimised vehicles with high-tech combustion engines
- Track two: hybrid drives with various power ratings
- Track three: electric cars with battery or fuel-cell drive

On this basis it is possible to realise different drive technologies and vehicle concepts which are in line with all specific requirements relative to the area of operation and the driving profile, and which develop optimal efficiency.

# High-efficiency gasoline and diesel engines

On track one, we at Daimler are hard at work on continually lowering fuel consumption of our combustion engines as well as reducing associated  $CO_2$  emissions and all other emissions. In just two model cycles, Daimler reduced the  $CO_2$  consumption of its fleet by over 35 percent to 150 grams per kilometre on average – more than any other premium car manufacturer. We have achieved this without asking our customers to accept "less car". Instead we focus on increasing efficiency through intuitive technologies – across our entire model range.

The fact is: our cars are becoming more and more efficient, frequently with improved performance, and are today the reigning efficiency champions in a number of vehicle classes. The spectrum ranges from the most economical S-Class of all time with a fuel consumption of five litres per 100 kilometres to the world's most powerful and most efficient diesel roadster, the SLK 250 CDI, to an off-road vehicle with the fuel economy of a compact car: the ML 250 BlueTEC 4MATIC can travel 100 kilometres on six litres of diesel.

#### Significant fuel savings in all vehicle classes

Of course, a good deal of our attention is also directed at our volume models. One example of this is the new entry-level gasoline engine in the C-Class, the C 180 BlueEFFICIENCY. Its 1.6-litre turbo engine consumes 5.8 I/100 km – roughly one litre less than its predecessor,

which corresponds to a reduction in  $CO_2$  emissions of 21 g/km. Moreover, the C 180 BlueEFFICIENCY is one of the first gasoline models to belong to energy-efficiency class B. Its 115 kW (156 hp) engine – powerful, yet extremely light compared with the competition – offers plenty of agility right from the off, and the peak torque of 250 Nm is already available at 1250 rpm. In parallel with this highly efficient gasoline engine, we unveiled the new E 220 CDI BlueEFFICIENCY Edition in Geneva. With a fuel economy of 4.5 litres of diesel per 100 km, it ranks among the most efficient cars in its class. And with  $CO_2$  emissions of 119 g/km, it outperforms the previous model by ten grams – that's an improvement of almost eight percent. Then there is the new A-Class, which appeared in September and debuts at 98 g  $CO_2$ /km. That corresponds to a fuel consumption of 3.8 litres of diesel per 100 kilometres. To complete the picture: the new SL requires up to 30 percent less fuel than its predecessor. This is also true for the powerful AMG version which develops up to 415 kW (564 hp).



The new Mercedes-Benz A-Class

The foundation for these improvements is an entire package of measures, beginning with the engines themselves. The key word is "downsizing", combined with high-tech innovations ranging from direct injection to turbocharging. Another innovation in the new A-Class with 1.6-litre gasoline engine is the CAMTRONIC. The timing of the valve lift on the intake side limits the amount of fresh air in the part-load range, thereby lowering consumption. A further appetite suppressant is the cylinder shut-off system, which we have developed for high-performance models. Equipped with this system, the new SLK 55 AMG is sportier and more efficient than ever before.

#### Innovative BlueDIRECT gasoline engines

In the gasoline engines, we employ a modular, efficient engine concept without sacrificing engine capacity or performance range. Thus for example the new, modular V6 and V8 engines with piezo-actuated injectors for direct fuel injection enable varying cylinder numbers, displacements, engine performances and combustion processes, and the option of being combined with all-wheel and hybrid drive systems. Mercedes-Benz has meanwhile equipped nearly its entire range of passenger cars with these new BlueDIRECT power plants. With a standard consumption of 6.8 litres per 100 kilometres, the new V6 in the new SL 350 BlueEFFICIENCY is nearly 30 percent more efficient than its predecessor, but now develops 225 kW (306 hp) from an unchanged engine capacity of 3,499 cubic centimetres and provides 370 newton-metres of torque. With the new V8, the standard consumption dropped by up to 22 percent in the SL 500 BlueEFFICIENCY. At the same time, performance increased by twelve percent to 320 kW (435 hp), and torque grew from 530 to 700 newton-metres – a gain of 32 percent.

Both engine versions are equipped with a standard ECO start/stop function. The 7G-TRONIC PLUS automatic transmission, optimised for fuel efficiency and comfort, also contributes to this exemplary low fuel consumption. The frugality of the BlueDIRECT engine does not subdue the roadster's temperament. On the contrary: the SL 350 BlueEFFICIENCY sprints from nought to 100 km/h in 5.9 seconds, making it three-tenths of a second faster than its predecessor. The SL 500 BlueEFFICIENCY completes the sprint in just 4.6 seconds – eight-tenths less than the previous SL 500 BlueEFFICIENCY.

#### Direct injection and turbocharging - in four-cylinder gasoline engines, too

Direct injection with fast-switching piezo injectors for multiple injection, fully variable valve timing for the intake and exhaust, a regulated oil pump, on-demand water pump, a high compression ratio (10.3:1) despite turbocharging and a fast and convenient start-stop system – these are the key features of the new M 270 four-cylinder which are used in the new B-Class and, this year too, in the new A-Class. Closely related to the BlueDIRECT V engines in terms of the combustion system, the new all-aluminium four-cylinder units are setting new standards worldwide for performance and fuel efficiency in real-world driving conditions. Thus the new four-cylinder engine in the B-Class provides its peak torque at 1250 rpm, maintaining it up to 4000 rpm. In the B 180 BlueEFFICIENCY with a re-engineered dual-clutch transmission, fuel consumption has dropped from 7.3 to 5.9 I/100 km in comparison with the outgoing model. That corresponds to a decrease of 19 percent.

In parallel with the engines, we are optimising their peripheral equipment, including on-demand water pumps and electric power steering. This and many other BlueEFFICIENCY measures boost the consumption benefits of the new engines. We have tapped further savings potential in the gearboxes. This can be seen in our optimised seven-speed automatic 7G-TRONIC PLUS, which achieves fuel savings of up to seven percent depending on the model. In the new A-Class, we take the next step with the dual-clutch automatic 7G-DCT.

A further measure is the ECO start/stop function, which comes as standard on many Mercedes models – an important step towards "drive train electrification".

### Cutting-edge transmissions: larger gear ratio for greater efficiency

The new 7G-DCT offers an extraordinarily large gear-ratio spread of up to 7.99. This means that an extremely small gear ratio is available when pulling away, on a mountain with a high payload, for example, but at constant vehicle speed, the engine speed can be decreased considerably. The efficiency of the transmission is nine percent better than in the automatic CVT previously used in the B-Class and achieves the efficiency of a manual transmission for the first time. The 7G-DCT is only 367 millimetres long and weighs a mere 86 kilograms, making this Mercedes system significantly more compact and lighter than all transmissions currently on the market.

For the first time in a transmission of this type, two oil pumps – one mechanical and one electric – supply oil to the transmission. The electric pump maintains the oil pressure when the engine is shut off via the start/stop function. Thus the transmission is immediately ready when the engine starts up again, and the vehicle can drive off with no lag. A major factor in the overall efficiency of the B-Class is the close interlinking of control systems for the transmission and the engines. A continuous exchange of data between control units ensures that our engines always work at the optimum operating point. The new six-speed manual transmission was developed together with the 7G-DCT.

This three-shaft transmission is also extremely compact and lightweight. A large spread here likewise lends itself to an rpm-lowering driving style, while also providing sufficient traction when pulling away in a fully laden B-Class towing a trailer and with a total combined weight of up to 3.4 tonnes. The uppermost output shaft with gears three and four and reverse gear does not run in the oil bath. This reduces the drag torque and thus makes for smoother shifting, particularly at low temperatures.

#### Hybrid offensive: intelligent, efficient, versatile - thanks to a modular system design

Our hybridisation strategy is based on a modular and highly scalable hybrid system which offers a great deal of flexibility in terms of performance and area of application. This offers excellent synergy potential which can be utilised across the entire product portfolio while at the same time meeting specific customer and product requirements. With this in mind, we developed our modular hybrid system in which efficient, high-torque combustion engines play a central role.

This strategy also allows us to modify vehicles to meet market-specific requirements – for markets outside Europe; Daimler is offering the E 400 HYBRID. It will make its debut in the U.S. in 2012 and will also be sold at a later time in China and Japan. The V6 gasoline engine in the E 400 HYBRID develops 225 kW (306 hp) and 370 Nm, with an added 20 kW and 250 Nm from the electric motor. The consumption figures according to the U.S. CAFE standards are as

follows: 24 mpg city, 31 mpg highway, 27 mpg combined. In Europe by contrast, Daimler is offering the E 300 BlueTEC HYBRID.

# E 300 BlueTEC HYBRID: the world's most efficient luxury-class car

This year Mercedes-Benz has opened up a new chapter in the core segment of their brand, and once again setting the standard for business vehicles in the luxury class. Available as both a saloon and an estate, the E 300 BlueTEC HYBRID boasts impressive new records in efficiency: the saloon's NEDC consumption is just 4.2 litres of diesel per 100 kilometres, or 109 grams of  $CO_2$  emissions per kilometre. In terms of fuel economy, the ultra-comfortable premium saloon with its superb engine line-up outperforms not only direct competitors, but also smaller, significantly less powerful vehicles. The most efficient luxury-class model in the world at the same time embodies the next step in improved efficiency typical of Mercedes cars: lower fuel consumption combined with further improvements in ride comfort and driving pleasure. Thus the system enables the complete range of full-hybrid functionality: an extremely fast and quiet start/stop function, powerful boosting, energy recuperation, as well as brief periods of pure electric mobility and so-called sailing up to 160 km/h.



The E 300 BlueTEC HYBRID – available as estate and saloon

#### Flexible "sailing" with the hybrid drive for even more efficient driving pleasure

Our hybrid models are designed with an extremely flexible sailing mode: we have deliberately chosen not to follow the usual "either-or principle", which allows only "free coasting" with minimal recuperation or "decelerated gliding" for recuperation with increased braking torque. Instead, we leave the choice down to the driver. Option one is the "standard" sailing mode: the engine shuts off as soon as the accelerator pedal is released. The vehicle coasts like a

conventional car while the electric motor acts as a generator, producing electricity which is then returned to the high-voltage battery.

With option two, the electric motor's recuperation performance is reduced to a minimum. The vehicle now coasts more freely, with accordingly less deceleration. This mode is well-suited for long hill descents, for example, or when predictively approaching traffic lights and intersections. With this enhanced sailing mode, we are offering a typical Mercedes solution in the E-Class hybrids: more efficiency combined with greater comfort and driving pleasure – not least thanks to a more favourable power-to-weight ratio when compared with other hybrids. All hybrid components together weigh just under 100 kilograms.

#### No limitations in comfort or space

Our new hybrid models involve no limitations whatsoever in terms of space in the interior or in the luggage compartment. Our hybrid system is so compact that the entire system including the battery fits into the existing installation space. This makes Mercedes-Benz the only premium manufacturer able to offer the aforementioned estate car with hybrid drive – the load master among hybrids. The modular hybrid system is also extremely versatile. It can be combined with diesel and gasoline engines and used in other model series. A right-hand-drive variant is also available alongside the left-hand-drive version.

The new hybrid models from Mercedes-Benz are part of the company's intelligent downsizing strategy. Downsizing means making the performance figures of conventional models significantly more efficient than before – without compromising drivability or comfort. Company engineers accomplish this by paying particular attention not to standard consumption, but rather to ideal consumption figures in everyday driving. This "real life efficiency" joins the familiar "real life safety" philosophy, which focuses primarily on increased safety under real-world conditions rather than standardised crash test results.

#### Plug-in hybrid enables consumption figures of 3 I/100 km in the luxury class

In 2009 we have presented a near-series production technology vehicle with the Vision S 500 Plug-in HYBRID. It gives a concrete outlook on the Plug-In HYBRID of the next Mercedes-Benz S-Class generation and can travel up to 30 kilometres on electric power alone. Its drive train consists of the new V6 gasoline engine with direct injection, a hybrid module with an output of approximately 44 kW/60 hp and a lithium-ion battery with a storage capacity of over 10 kWh. With its efficient drive and  $CO_2$  bonus for battery-electric operation, it achieves a certified fuel consumption of just 3.2 litres of fuel per 100 kilometres ( $CO_2$  emissions: 74 g/km). This makes it the first luxury class car in the three-litre consumption category.

#### 3D Body Engineering: Daimler formula for greater efficiency

Beyond engine technology, we are setting all the wheels in motion for making more efficient vehicles. We call this concept "3D Body Engineering". Our approach takes account of all three relevant dimensions of body manufacture:

- First: **Aero Engineering**. Nearly all Mercedes-Benz passenger-car model series already have an extremely low drag coefficient. This makes a notable contribution not only towards significantly lower standard consumption, but also to a considerable reduction in real consumption. With a C<sub>d</sub> value of 0.24, the E-Class Coupé is the world's best production vehicle in this regard. The C, E and S-Class Saloons as well as the CL and CLS also consistently achieve outstanding values of around 0.26. On the same level is the B-Class. Its drag coefficient has been improved by 14,5 per cent compared to its predecessor.
- Second: **Hybrid Body Engineering**. In this area of study, the key element is intelligent lightweight design following the "right material in the right place" principle including aluminium, magnesium and carbon. The latest example of its systematic implementation is the new SL, which weighs up to 140 kilograms less than the outgoing model.
- Third: **Safety Engineering**. This occupies a spot of at least equal importance alongside the others. That is because the best possible safety has traditionally been a matter of top priority at Mercedes-Benz. Here as well, the new SL proves that Daimler is able to meet all three requirements together: not only is the new model lighter and more agile than its predecessor, it also offers the best crash safety in its class.

# 3. Independence in time and space

The ability to go whenever, wherever and however one wants – that is the very essence of mobile freedom. But in recent times, the ability to access information online, anytime anywhere, has also become an indispensable component of everyday life. The same is true for the time spent in the car.

# Fully informed: always online for improved safety, infotainment and comfort

With the @yourCOMAND infotainment strategy, Mercedes-Benz is meeting customers' growing demand for independence: the car becomes a mobile communications centre, providing the driver and passengers' access to all modern media and services at any time.

An example of the systematic improvement of safety following an incident or accident can be found in the area of Connectivity. Since June 2012, the internet-capable COMAND Online multimedia system is expanded across Europe to include eCall, the automatic in-vehicle emergency call. In a severe accident, emergency services will be able to be notified automatically and will receive information within minutes on the exact location of the accident and the vehicle model. This information will be transmitted automatically via the driver's smartphone connected to COMAND Online.

Smartphones with internet access are a key element for accessing this and other cloud-based services in the vehicle. When these mobile terminal devices are connected with the vehicle, their internet-based telematics and infotainment functions will be available. The perfect interplay between a smartphone and a vehicle is exhibited by the "Drive Kit Plus for the

iPhone®": Mercedes-Benz has thoroughly integrated the Apple iPhone® into the display and operating concept in the new A-Class. Thus the driver has access to key iPhone content, which is shown on the in-vehicle display and can be operated easily and conveniently via the controller on the centre armrest. A particularly interesting feature is the integration of Siri, the intelligent voice recognition software on the iPhone 4S. Mercedes-Benz is the first car manufacturer to bring this smart technology to the car. It acts as a personal assistant. Among other things, it allows users to access personal calendars and make or cancel appointments using natural voice commands. Short messages can also be dictated and read aloud, and emails sent. It also allows our customers to conveniently access their entire music collection on the iPhone, get the latest weather forecasts, and much more.

In the long term, our aim is to develop the car into a mobile communications centre which provides the driver and passengers access to all of their data and online services - quickly, conveniently and securely. Our strategy to achieve this is called "@yourCOMAND" - a premium concept for future telematics and infotainment solutions in the vehicle. We have implemented this strategic approach for the first time in our current Mercedes-Benz F 125! research vehicle. This entirely cloud-based telematics solution is based on four pillars.

- **Seamless Experience** assimilates multimedia systems featuring seamless, comprehensive content networking.
- **Natural Handling** stands for an operating concept which largely makes use of natural language and intuitive gestures.
- **Sensory Perfection** includes the visual and audible realm high-resolution screens and high-end sound, for example.
- **Remote Convenience** means that the vehicle and its multimedia system as well as all applications and content can be entirely preconfigured remotely.

Our DICE (Dynamic & Intuitive Control Experience), which we presented in January at the Consumer Electronics Show in Las Vegas, goes one step further. The system impressively demonstrates how intelligent communication between the vehicle and the driver, and with other road users and the entire surroundings, can be implemented in the future. Thus for example, all relevant information for a trip can be displayed over a large area of the windscreen and easily manipulated by the driver using intuitive gestures.

# Smart connectivity increases flexibility and range

Particularly in all-electric vehicles, connectivity with the internet provides additional benefits. For example, smart fortwo electric drive vehicles can be pre-cooled or heated as needed based on the programmed departure time if connected to the mains electricity supply. The pre-entry climate control can be started automatically at any time via the internet or a smartphone. Specifically for the smart fortwo electric drive, additional customised functions can be added to the smart drive app for the iPhone®. The current charge level or the

SmartCharging configuration can also be easily checked and controlled from a PC at home via a web portal or from a smartphone. The Vehicle Homepage gives any smart fortwo electric drive customer the ability to display the range in a visually pleasing manner on an interactive map with 3D views.

# Mobility services – mobility is more than the car

Integrating state-of-the-art information technology into cars makes us more independent in time and space. Daimler further increases this level of freedom: by offering numerous mobility services.

Over the coming years, interest in owning one's own car will tend to grow rather than decline in much of the world's population. At the same time, particularly in large urban areas, there is a growing number of people who either park their cars on the outskirts of the city or do without a vehicle entirely – but who nevertheless are unwilling to settle for compromises in comfort and independence. Car-sharing and other networked infrastructure concepts are therefore becoming increasingly important: for people with and without a car of their own. Our car2go car-sharing programme has already been launched successfully in fifteen cities: in Ulm, Hamburg, Düsseldorf, Berlin, Cologne, Amsterdam and Vienna in Europe, in Austin, San Diego, Washington D.C., Portland and Miami in the U.S. and in Canada in Vancouver, Toronto and Calgary. As sixteenth city Stuttgart will also follow this year. The first mobility programme in the world with maximum flexibility and without fixed rental stations, car2go offers its customers the opportunity to hire vehicles on the spur of the moment, anytime anywhere, without having to arrange a time or drop-off location in advance.

Mercedes-Benz Rent and CharterWay offer further mobility services with car hire solutions for passenger cars and commercial vehicles. Fleetboard provides support for commercial vehicle fleets in vehicle management, smart customers receive premium service and discounts in APCOA car parks and from Europcar – and that is just the beginning. In the area of electric mobility, too, we are developing numerous services for our customers, including wall boxes for the quick-charge feature and vehicle homepages which compare specific routes against the electric car's available range, for example. We are convinced that in future a successful car-maker will have to do more than just build attractive vehicles. It will also have to be a provider of integrated mobility solutions.

#### Daimler is shaping the mobility of the future

Mobility has always involved more than just the car. We ride bicycles, buses and trains; for long trips, we take the aeroplane, for short trips, we go on foot. But no other means of transport offers as much flexibility and freedom as the car. That is why Daimler is developing the car of tomorrow. What distinguishes it from its past? Not very much, essentially: it keeps us mobile, assists us and accompanies us. We can also choose from a wide range of different vehicle models. But the car of tomorrow will become less and less dependent on oil; it will connect us with its surroundings and increase our driving comfort and safety. Moreover, this vehicle will be much more than the sum of its parts – our customers will benefit from

supplementary services, even if they do not own the cars themselves. In short, it will make us even more independent. Having recognised this early on, we at Daimler are actively shaping the future of mobility in all areas to ensure sustainable personal mobility.