

# BMW at the IAA Cars 2017 in Frankfurt. Long version.



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# 1. Unadulterated dynamics and modern luxury: The BMW Concept 8 Series.



The BMW Group is using the IAA Cars 2017 show in Frankfurt to present the BMW Concept 8 Series, the essence of a modern-day BMW coupe wrapped up in an enthralling design study. The study car will serve as a taster of a forthcoming BMW model – the new BMW 8 Series Coupe, slated for launch in 2018 and part of the biggest model offensive in the company's history. The NUMBER ONE > NEXT strategy sees the BMW Group aiming to significantly increase sales and revenues in the luxury class, and the BMW 8 Series Coupe plays an important role here. "The number 8 has always represented the pinnacle of sports performance and exclusivity at BMW," explains Chairman of the Board of Management of BMW AG Harald Krüger. "The forthcoming BMW 8 Series Coupe will demonstrate that razor-sharp dynamics and modern luxury can go hand-in-hand. This will be the next model in the expansion of our luxury-car offering and will raise the benchmark for coupes in the segment. In the process, we will strengthen our claim to leadership in the luxury class."

The BMW Concept 8 Series reveals much of what is to come. "The BMW Concept 8 Series is our take on a full-blooded high-end driving machine," says Adrian van Hooydonk, Senior Vice President BMW Group Design. "It is a luxurious sports car which embodies both unadulterated dynamics and modern luxury like arguably no other. For me, it's a slice of pure automotive fascination."

## **The exterior brings together the past and the future.**

The BMW Concept 8 Series is immediately recognisable as a BMW, but also displays new design ideas and form-building techniques. "The design of the BMW Concept 8 Series provides a fresh interpretation of iconic BMW styling cues," adds van Hooydonk. "And it also showcases a new approach to the use of forms which is reflected particularly prominently in the car's surfacing. A handful of crisp lines mark out clear surfaces, and the car's volumes are powerfully sculpted. Together, these elements make a forceful statement and create a model brimming with character. In short, this is a driver's car."

## **The flanks: expansive surfaces set within a sporting outline.**

The silhouette of the BMW Concept 8 Series spreads low and powerfully over the road. The interplay of a long bonnet and flowing roofline bring dynamic allure to the car's flanks, while the striking upward sweep of the concept's

trailing edge provides a crisp conclusion to the car's rearward flow and adds another sporting flourish.

Within the car's silhouette, the refreshingly clean yet also dramatic arrangement of surfaces and forms catches the eye and creates a crisp, modern look. The sharply drawn lines coursing over taut volumes represent a visual promise of the vividly dynamic driving experience that awaits.

A look at the details reveals two expressively styled character lines providing the border for surfacing that appears to be formed by air rushing out of the Air Breathers. Further back, the eye is guided to the pronounced flaring above the rear wheels. The flanks as a whole draw attention to a new aspect of BMW's expertise in the execution of surfaces. Skilfully moulded line sources and flowing highlights accentuate the athletic contours of the BMW Concept 8 Series. And the exclusively developed exterior paint finish Barcelona Grey Liquid – a greyish-blue with highly iridescent pigments – shows off the surfacing to optimum effect. Large (21-inch) light-alloy wheels feature a sporty and exclusive multi-spoke design and aero elements, generate visual depth and set the seal of the compelling appearance of the car when viewed in profile.

### **The front end: sporty, low-slung and visually striking.**

A large kidney grille, slim twin headlights and large air intakes form a striking, sporty front-end graphic. The classic BMW template has a fresh interpretation here, taking the company's design language in a different direction. For example, the two kidneys are very low to the road and spread broadly across the front end. Taking inspiration from BMW coupes of years past, the kidneys are brought together by an unbroken frame to form a single large element. The grille widens as it extends downwards, emphasising the dynamic character of the BMW Concept 8 Series. Together with super-slim laser headlights and the hexagonal take on the "twin circular" theme, it brings a focused look to the front end.

The large side air intakes in the front apron intensify the car's wide, sporting stance on the road and promise a very pure dynamic experience. The carbon-fibre element between them underlines the car's sporty, high-performance character.

### **The rear: bold and modern.**

Emotional surfacing also dominates at the rear of the BMW Concept 8 Series, creating a low, highly sculpted tail with maximum width-enhancing effect. The rear is defined by the interplay between volumes and lines, which extend around from the flanks and shape the rear section of the car. The powerful

wheel arches hint at the car's dynamic talents and advertise its rear-wheel drive. And the tapering of the passenger cell and the car's wide track shine a particularly vivid spotlight on this area of the car.

The slim, stretched-out rear lights extend far into the sides of the car and provide a connection between the rear and flanks. The lights themselves take the form of L-shaped blades and project out from the rear. They emphasise the width of the car and its muscular stance on the road, and their slender form gives the rear an ultra-sporty and modern flavour.

The dark, stylised carbon-fibre diffuser in the lower section of the rear apron adds extra lightness and a sportier feel to the rear graphic. Large, trapezoidal exhaust tailpipes frame the rear section and point to the dynamic driving experience to come.

### **The interior: an emotionally rich blend of dynamics and luxury.**

The interior focuses on the essential: the task of driving. Once behind the wheel, the driver is wrapped in the tightly enclosed ambience typical of sports cars. The surfaces and lines all gravitate forwards and underscore the dynamic driving experience. The grouping of functions into control clusters, e.g. in the centre stack, the centre console and the doors, gives the interior a clear graphic structure.

Among the standout design elements in the interior are the fluid transition from the instrument panel into the doors and the sporty, enveloping feel of the interior. This impression is magnified by the smooth connection between the centre console and instrument panel, which together form the nucleus of the interior. The high centre console and the instrument panel's low visual focus add further emphasis to the snug and sporty feeling of space.

The interior of the BMW Concept 8 Series actively explores the contrasts between emotion and engineering, dynamic flair and luxury; its form suggests supreme sportiness, while exquisite materials exude exclusivity and high-grade design. For example, all of the driver's contact points with the car are brimming with sporting character. The exclusive sports seats are slim in design, the carbon-fibre shell providing the basic structure and the finest leather making them the perfect place to sit. The steering wheel continues along similar lines, its hand-polished aluminium spokes arrowing forward purposefully, and the red-anodised shift paddles bring the race track to mind. The contrast of aluminium and dark leather on the gripping surfaces emphasises this luxurious sense of sportiness in various details.

Merino leather in Dark Brown and Fjord White lends the interior a high-quality ambience. Accent surfaces in carbon fibre and hand-polished aluminium create deliberate contrasts and radiate a sporty and technical feel. Plus, a faceted ground gearshift lever and the iDrive Controller made from Swarovski glass with a smoky quartz look treat the interior to some modern and classy finishing touches.

### **A sign of things to come.**

The BMW Concept 8 Series is a preview of a model BMW is set to introduce (in a similar form) in the coming year. The BMW 8 Series Coupe will build on the company's successful tradition of luxurious sports cars and adds another exciting model – a genuine dream car – to its existing luxury-class line-up. The BMW 8 Series Coupe will bring together razor-sharp dynamics and modern luxury, and set new benchmarks in the luxury coupe segment.”.

### **An M8 is also planned. The BMW M8 will set the seal on the sporting model range.**

The BMW M8 is the icing on the cake of the sporty BMW 8 Series line-up. Alongside the ongoing development of the standard 8 Series, the engineers at BMW M are also working flat out on the M model. A fully camouflaged, early prototype of the future BMW M8 was unveiled in a driving presentation as part of the support programme for the Nürburgring 24-hour race. Classical M features like larger air intakes, modified brakes and a sports exhaust with four tailpipes hint at the significantly boosted power and dynamic potential of the car and whet the appetite for a driving experience of intense emotional richness.

“The conception and development of the standard BMW 8 Series and the M model have run in parallel,” explains Frank van Meel, President BMW M Division. “The future BMW M8 will build on the genes of the 8 Series and augment its DNA with added track ability and generous extra portions of dynamic sharpness, precision and agility. It all flows into a driving experience that bears the familiar BMW M hallmarks and satisfies our customers’ most exacting requirements.”

## 2. Freedom on four wheels: The BMW Concept Z4.



The BMW Group is using the IAA Cars 2017 show in Frankfurt to present its exciting new take on a BMW roadster. Dynamic, progressive and an irresistible purveyor of thrills, the BMW Concept Z4 boasts lithe and compact proportions, a dynamic silhouette and an emotionally appealing use of forms. The attention-grabbing design study offers a look ahead to the series-production version of the car set to be unveiled over the course of next year.

“The BMW Concept Z4 is an all-out driving machine,” said Adrian van Hooydonk, Senior Vice President BMW Group Design. “Stripping the car back to the bare essentials allows the driver to experience all the ingredients of motoring pleasure with supreme directness. This is total freedom on four wheels.”

### **A statement of unbridled driving pleasure.**

The sporty and progressive BMW Concept Z4 encapsulates the BMW Group’s vision of a modern roadster. “The BMW Concept Z4 expresses the new BMW design language from all perspectives and in all details. From the dynamic-looking front to the striking flanks to the clean-cut tail end: a few lines and the subtle interplay between surfaces are enough to generate a sense of power and emotion,” adds van Hooydonk.

### **BMW’s roadster tradition, reloaded.**

The BMW Concept Z4 adopts classical roadster design cues, such as a long wheelbase, a low-slung, stretched silhouette and a compact rear end, wraps them in a fresh, confident package and enriches them with the contemporary BMW design language. A shorter bonnet and crisp overhangs ensure the driver sits closer to the centre of the car than in previous BMW roadsters. This gives the new proportions a focused, sporty and agile feel. The outline of the car follows a distinct wedge shape, which fills the BMW Concept Z4 with dynamism before it even pulls away. The large domes stretching out rearwards from the cabin elegantly integrate the function of rollover bars and provide a sporting conclusion to the low-to-the-road silhouette at the rear.

### **Reimagining the design language and surfaces.**

The clearly sculpted shark nose at the front end spawns dramatic surface contouring that extends the full length of the flanks. The new direction taken by BMW’s design language can be seen here in just a few precise lines that

form clear surfaces, while the body's volumes are powerfully sculpted. The surfaces and forms therefore create an extremely modern and emotionally engaging impression. The large Air Breathers rearwards of the front wheels act as the source of the flanks' elaborately modelled surfaces (they appear to be shaped by the flow of air as it exits the Air Breathers). Light and shaded surfaces develop in a rising movement towards the rear, then twist to form muscular wheel arches and athletic volumes. All of which shines a bright stylistic spotlight on the car's rear-wheel drive. The dramatic interplay of lines and surfaces underscores the wedge shape of the flanks and infuses them with even greater dynamism. And the low door sills, with their distinctive crease, makes the body appear closer to the road, emphasising the low-slung sensation when viewing the car from the side.

The expressive Energetic Orange frozen exterior paint finish showcases the contrasts of light and shade in the surfacing, accentuating the three-dimensionality of the exterior. And the 20-inch light-alloy wheels in a sporty bi-colour double-spoke design provide harmonious finishing touches to the styling of the flanks.

### **Low and progressive – the front end.**

The design of the BMW Concept Z4's front end is undeniably sporty in nature. The relationship between the low-set, broad kidney grille and the positioning of the headlights higher up sparks deliberate associations with the BMW Z8 and lends the BMW Concept Z4 a certain flamboyance. In place of the customary bars, the inside of the kidney grille features elaborately designed mesh, whose vertical orientation recalls the sporty, functional kidney design of early BMW roadsters such as the BMW 328 Mille Miglia. In a departure from the BMW norm, the Concept Z4 provides a vertical interpretation of the classical four-eyed headlight look, with two overlapping tubes on each side. The turn signal indicators point diagonally towards the kidneys from above and underline the dynamic flair of the front end. And the clamshell bonnet with stylised gill vents curves over the wheels, creating an intriguing and virtually seamless sweep over the front end as a whole.

The front apron cuts a genuinely athletic figure with its sculptural design language. Its trio of large air intakes are a nod to the powerful engine further back and so carry the promise of a dynamic driving experience. The large carbon-fibre insert in the central air intake is straight out of the motor sport playbook and champions the use of detail to emphasise the front end's dynamic presence. Together, these design elements compose a fresh and memorable face for the Concept Z4 – one which pays a very modern and sporting tribute to the celebrated roadsters of BMW's past.

### **Athletic and eye-catching – the rear end.**

The design of the BMW Concept Z4 likewise references details and qualities from BMW's rich roadster tradition and updates them for the years ahead. The wide and low design of the rear picks up the lines of the car's flanks and massages them into a modern rear of beguiling clarity in terms of surfaces and styling elements. The powerfully flared wheel arches give the car broad haunches, which are emphasised by the slim, L-shaped rear lights and therefore further enhance the car's sporting stance. Above the rear lights, the boot lid – complete with prominent spoiler – stretches across to the burly wheel arch extensions, sending out a message of power-infused agility. Below, large air outlets in the rear apron create their own dynamic impression. The carbon-fibre diffuser adds a sporty and exclusive flourish and signs off the rear end at its lowest point to the road.

### **Exterior and interior in unison.**

The kinship between the interior and exterior of the BMW Concept Z4 is evident in both forms and colour scheme. The design language of the interior takes the powerful, three-dimensional character of the exterior and adds another voice to the dynamic chorus. Much of the interior adopts the colour of the car body, creating a clear visual link between the interior and exterior. Only a classy chrome trim strip provides separation.

### **Maximum focus on the driving experience.**

At the same time, the interior serves to reinforce the total focus on the driving experience too. The driver's seat as well as the door trim panels, instrument panel and centre stack that encircle the driver are finished entirely in black, meaning that they stand out prominently from the coordinated orange shades of the exterior and the rest of the interior. Together they form a clearly defined area that wraps around the driver like a capsule, producing a very sporty sensation. This creates a pure-of-purpose driving environment with a pronounced "cone of vision", where the steering wheel as well as the surrounding black surfaces appear to be surging forward and, in so doing, accentuate the cabin's powerful driver focus.

The instrument cluster and central information display form a high-quality cluster of screens that are integrated into the driver's cockpit to flawless ergonomic effect. The two displays are now positioned at almost the same height and in close proximity to one another, which gives the impression of a single, cohesive unit. They work together to deliver the right information at the right time. The driver can choose which elements they wish to call up (via touch command) from the content available in the information display – route guidance, playlists or other infotainment features. Above the instrument cluster,



the Head-Up Display presents the key driving information within the driver's direct field of view.

**Prominent surfacing.**

Emerging from the driver's side of the cabin is a sporty instrument panel of inherent lightness. The clever arrangement of surfaces and edging breaks up the considerable volumes and engenders the impression of a powerfully chiselled muscle. The clear wraparound design from the doors to the instrument panel enhances the sporty, cocooned feeling in both seats.

**Pared back to the essentials.**

In keeping with the focus on the essentials, all the controls are grouped into "function islands". Nothing distracts from the driving experience. Trim elements inside the cabin are likewise minimalist in nature. Indeed, it is instead the classy materials, carefully applied polished chrome accents and swish, hexagonal laser-cut motifs in the seats that do most to create the interior's exclusive ambience. Carbon-fibre door sill finishers and embossed asymmetrical logos in the seats and instrument panel set the seal on the interior's sporting profile.

### 3. Captivating looks, luxurious comfort, inspirational practicality: The new BMW 6 Series Gran Turismo.



BMW is presenting an extensively updated successor to one of the most creative vehicle concepts of recent years. The new BMW 6 Series Gran Turismo blends the long-distance comfort of a luxury sedan with alluring coupe style. The impressive functionality offered by this body format and the high standards of driving comfort and spaciousness that provide the ideal setting for a relaxing journey are among the features that defined the character of the new car's predecessor – the founder of this vehicle genre. These strengths have now been further honed in the new BMW 6 Series Gran Turismo, whose systematic evolution from the BMW 5 Series Gran Turismo is particularly evident in the new model's sporting elegance, highly advanced equipment features, innovative control and assistance systems, and a leap forward in dynamism and efficiency.

"The BMW 6 Series Gran Turismo offers a unique combination of luxurious interior comfort and flexible practicality, packaged within a truly elegant design. Coupled with the sporty, dynamic driving characteristics our customers enjoy, this car is an outstanding vehicle which further enhances the upper end of our BMW model line-up," comments Dr Ian Robertson, Member of the Board of Management of BMW AG, responsible for Sales and Brand BMW.

The new BMW 6 Series Gran Turismo will make its public debut at the IAA Cars 2017. The market launch will then get underway in November 2017, when there will initially be a choice of three engines from the BMW Group's latest generation of power units. The BMW xDrive intelligent all-wheel-drive system will also be available for two model variants from launch.

#### **Lighter, sportier, more comfortable and more efficient.**

A combination of intelligent lightweight engineering and increased use of aluminium and high-strength steel grades for body and chassis components has shaved an average of around 150 kilograms off the weight of the new BMW 6 Series Gran Turismo compared to the outgoing model. Together with the considerable improvement in the car's aerodynamic properties, the increase in power and the superior efficiency of the new engines, this endows the car with sportier performance at the same time as optimising fuel economy. Depending on the engine variant, the sprint from 0 to 100 km/h (62 mph) is completed up to 0.7 seconds quicker (BMW 630i Gran Turismo) than in the equivalent predecessor model, while fuel consumption and

emissions figures in the NEDC test cycle are as much as 15 per cent lower (BMW 640i Gran Turismo, BMW 630d Gran Turismo). Handling dynamics and driving comfort in the new BMW 6 Series Gran Turismo both reap the benefits of the extensive improvements made to chassis technology. Self-levelling air suspension comes as standard at the rear axle, while ride comfort especially can be further enhanced by opting for the Adaptive suspension (featuring front and rear air suspension plus Dynamic Damper Control). The Executive Drive option, which is offered in combination with the Integral Active Steering system and also includes active roll stabilisation, gives the vehicle a sportier edge. The two-axle air suspension allows the vehicle's ride height to be adjusted manually, meaning that ground clearance can be increased by 20 millimetres at the touch of a button to negotiate dirt tracks or steep ramps, for example. The vehicle can also be lowered by 10 millimetres – either manually by again pushing a button, or automatically when SPORT mode is engaged via the Driving Experience Control switch or the car's speed exceeds 120 km/h (75 mph). All optional suspension systems are now available in conjunction with BMW xDrive.

### **Design: dynamic proportions and elegant, flowing lines.**

An exterior length of 5,091 millimetres (an increase of 87 millimetres on its predecessor), an unchanged width of 1,902 millimetres and a reduction in height of 21 millimetres (to 1,538 millimetres) give the new BMW 6 Series Gran Turismo dynamically stretched proportions. The front end has a distinctive, powerful appearance, with the lenses of the standard LED headlights extending all the way to the large BMW kidney grille. BMW's signature sporting elegance comes to the fore particularly prominently when the car is viewed in profile, thanks to familiar features such as the long bonnet, set-back positioning of the cabin, a wheelbase of 3,070 millimetres, doors with frameless windows, and an elongated window outline stretching deep into the rear end. The roofline sweeps down, coupe-style, to merge into a tail section that is now 64 millimetres lower in height. Rear lights with three-dimensional styling add an eye-catching touch.

The low-slung silhouette also has a beneficial effect on the car's aerodynamic properties, combining with active air flap control and other measures including Air Curtains, Air Breathers and an automatically extending rear spoiler to lower the drag coefficient (Cd) from the predecessor's figure of 0.29 to as little as 0.25.

### **Ideal blend of driving pleasure, long-distance comfort and functionality.**

The interior has been designed to provide a driver-focused cockpit and an extremely spacious passenger compartment. The raised seating position optimises the driver's all-round view and, together with the faultlessly

ergonomic arrangement of the controls, helps to create an imperious sense of driving pleasure. The cabin's lines, materials and precision workmanship imbue it with a highly sophisticated, premium feel. The rear compartment of the new BMW 6 Series Gran Turismo comprises three full-size seats offering maximised legroom. Exhaustive optimisation of the cabin's packaging sees the new model's far flatter roofline still translating into extra headroom, while the restyled rear seat unit and improved soundproofing make it even more comfortable to travel in. The electrically-adjustable comfort seats optionally available for the rear allow the backrest angle to be altered at the push of a button.

The BMW 6 Series Gran Turismo features a one-piece tailgate that opens and closes electrically as standard. The boot capacity of 610 litres is 110 litres larger than the predecessor model's. The boot sill has been lowered by more than five centimetres and is now flush with the boot floor. The 40:20:40 split backrest can be released remotely and folded flat electrically via a button in the boot. All of which means that maximum load space has increased to 1,800 litres – up 100 litres on the outgoing model. The two-piece luggage compartment cover has a rigid structure and can be stowed away in a compartment underneath the boot floor.

### **New generation of engines, eight-speed Steptronic transmission as standard, BMW xDrive as an option.**

The line-up of engines available for the new BMW 6 Series Gran Turismo feature cutting-edge TwinPower Turbo technology and team up with the eight-speed Steptronic transmission as standard. The 2.0-litre four-cylinder petrol unit in the new BMW 630i Gran Turismo delivers a maximum output of 190 kW/258 hp and peak torque of 400 Nm (295 lb-ft). It propels the car from 0 to 100 km/h (62 mph) in 6.3 seconds and posts combined fuel consumption of 6.6–6.2 litres per 100 kilometres (42.8–45.6 mpg imp)\* and CO<sub>2</sub> emissions of 152–142 grams per kilometre\*.

Generating an output of 250 kW/340 hp and maximum torque of 450 Nm (332 lb-ft), the 3.0-litre six-cylinder in-line petrol engine enables the new BMW 640i Gran Turismo to accelerate to 100 km/h (62 mph) from rest in 5.4 seconds, while the new BMW 640i xDrive Gran Turismo is a tick faster at 5.3 seconds. The combined fuel consumption of the two models comes in at 7.4–7.0 litres per 100 kilometres (38.2–40.4 mpg imp) and 8.2–7.7 litres per 100 kilometres (34.5–36.7 mpg imp)\* respectively, which equates to CO<sub>2</sub> figures of between 169 / 159 grams and 187 / 177 grams per kilometre\*.

The 3.0-litre six-cylinder in-line diesel engine producing 195 kW/265 hp and peak torque of 620 Nm (457 lb-ft) can likewise be combined with all-wheel drive as an option. The new BMW 630d Gran Turismo and the new BMW 630d xDrive Gran Turismo race from 0 to 100 km/h (62 mph) in 6.1 seconds and 6.0 seconds respectively. The combined fuel consumption and emissions figures are 5.3–4.9 litres per 100 kilometres (53.3–57.7 mpg imp)\* and 139–129 grams per kilometre\* for the BMW 630d Gran Turismo and 5.9–5.5 litres per 100 kilometres (47.9–51.4 mpg imp)\* and 154–144 grams per kilometre\* for the BMW 630d xDrive Gran Turismo.

### **Uniquely versatile control system.**

The new BMW 6 Series Gran Turismo is equipped with a display and control system offering unrivalled versatility for operating vehicle, navigation, communication and infotainment functions. At the heart of it all is the iDrive system, complete with the Touch Controller on the centre console and the Control Display, now in the form of a freestanding touchscreen. The high-resolution display has a screen diagonal of 10.25 inches, while its tile-style menu layout with animated graphics in live mode facilitates intuitive operation. The new BMW 6 Series Gran Turismo also offers the convenience of both enhanced voice control and BMW gesture control. And customers can specify the new-generation BMW Head-Up Display, too, whose projection area is 70 per cent larger than before.

### **Assistance systems that smooth the way to automated driving.**

The driver assistance systems fitted in the new BMW 6 Series Gran Turismo make use of the standard stereo camera as well as optional radar and ultrasonic sensors to monitor the vehicle's surroundings. The Collision and Pedestrian Warning with City Collision Mitigation comes as standard, while the list of options includes the new, improved version of Active Cruise Control with Stop & Go function operational at speeds between 0 and 210 km/h (130 mph). The Steering and lane control assistant (active in the same speed range) represents another step along the road to automated driving. It uses road markings and vehicles driving ahead for orientation and helps the driver to keep the vehicle in the detected lane. The Lane Departure and Lane Change Warning systems, Side Collision Warning and the evasion aid likewise enhance convenience and safety by coming to the driver's assistance with corrective steering inputs. The Crossing traffic warning, Priority warning, Crossroads warning and Wrong-way warning systems similarly do their bit to avoid potentially hazardous situations. And the BMW 6 Series Gran Turismo can also be ordered with the Remote Control Parking feature.

\* Fuel consumption figures based on the EU test cycle, may vary depending on the tyre format specified.

### **BMW Connected: personal mobility assistant, new services.**

BMW 6 Series Gran Turismo owners can also enjoy the benefits of BMW Connected, intelligent connectivity enabling this digital personal mobility assistant to help drivers reach their destination easily and with minimal stress – and not only when they are in their car. To this end, calendar entries from a smartphone can be used for route planning, for instance, the ideal departure time can be calculated on the basis of real-time traffic data and the navigation destination can be transferred to the owner's car. Once inside, drivers are able to manage calendar, e-mail and contact data via the Microsoft Exchange function. Their smartphone is integrated wirelessly via Bluetooth and inductive charging is also possible.

Real Time Traffic Information indicates the presence of tailbacks and slow-moving traffic, On-Street Parking Information helps to find available parking spots at the side of the road, and the Remote 3D View function allows drivers to view live images of their car and its immediate vicinity on their smartphone.

The fuel consumption and CO<sub>2</sub> emissions figures shown were determined according to the European Regulation (EC) 715/2007 in the version applicable at the time of type approval. The figures refer to a vehicle with basic configuration in Germany and the range shown considers the different size of the selected wheels and tires.

The CO<sub>2</sub> efficiency specifications are determined according to Directive 1999/94/EC and the Pkw-EnVKV, and based (for classification) on the fuel consumption and CO<sub>2</sub> values as per the NEDC cycle.

Further information on official fuel consumption figures, specific CO<sub>2</sub> emission values and the electric power consumption of new passenger cars is included in the following guideline: "Leitfaden über Kraftstoffverbrauch, die CO<sub>2</sub>-Emissionen und den Stromverbrauch neuer Personenkraftwagen" (Guideline for fuel consumption, CO<sub>2</sub> emissions and electric power consumption of new passenger cars), which can be obtained from all dealerships, from Deutsche Automobil Treuhand GmbH (DAT), Hellmuth-Hirth-Str. 1, 73760 Ostfildern-Scharnhausen and at <http://www.dat.de/en/offers/publications/guideline-for-fuel-consumption.html>.

## 4. Sporty, authoritative and boundlessly innovative: The new BMW X3.



The BMW X3 was the car that launched the mid-size SAV (Sports Activity Vehicle) segment in 2003. Since then, BMW has recorded more than 1.5 million new registrations of the X3 across the two model generations so far. And now the new BMW X3 is set to write the next chapter in this success story with an even more striking, dynamic design language, powerful yet also efficient drive systems and luxurious appointments. Like all members of the successful X family, it blends standout driving qualities on any terrain with unrestricted everyday usability.

### **Sharper design and three model variants.**

The third generation of the BMW X3 follows in its predecessors' tyre tracks by combining rugged off-road looks with a sporting presence. Its familiar proportions, including very short front and rear overhangs, shine the spotlight on the perfect 50:50 distribution of weight between the front and rear axle. The potent dynamic intent of the new BMW X3 is highlighted by a chunky kidney grille and foglamps featuring a hexagonal design for the first time on a BMW X model. At the rear, the light clusters (whose three-dimensional look in optional full-LED guise give them considerable visual impact), markedly downward-sloping roof spoiler and twin exhaust tailpipes bring matters to a suitably muscular conclusion.

The xLine, M Sport and Luxury Line trim variants (the latter is a new addition to the line-up) and the range of BMW Individual items enable the appearance of the BMW X3 to be adapted even more precisely to the customer's personal tastes. In addition to the standard 18-inch light-alloy wheels (previously: 17-inch), customers can dip into the options list for wheel/tyre combinations in sizes up to 21-inch. As well as making various exterior tweaks, the three trim variants also adapt the ambience inside the car to their particular themes. The interior of the new BMW X3 displays unbeatable fit and finish and material quality, and is even classier and more luxurious than its predecessor. Comfort levels are further elevated by a host of new equipment options like three-zone automatic climate control, the Ambient Air package, active seat ventilation, the cargo function of the standard 40:20:40 split/folding rear seat backrests and the panoramic glass roof that brings extra airiness to the interior and further enhances perceived quality.

Another new equipment item is the optional BMW Display Key, which not only locks and unlocks the BMW X3 by radio remote control, but also shows a variety of status information on the car and serves as the control unit for the optional auxiliary heating, for example.

### **Optimised combination of dynamic sharpness and ride comfort.**

The BMW engineers have employed far-reaching chassis modifications to significantly improve the driving dynamics, directional stability and steering feel of the new BMW X3. The car that emerges is even sportier than its predecessor, yet avoids compromising on ride comfort. Chassis options include M Sport suspension, Dynamic Damper Control, M Sport brakes and variable sport steering.

### **Even more efficient line-up of engines and intelligent lightweight design.**

Two diesel engines and three petrol units will be available from launch (or shortly afterwards) for the new BMW X3. The 265 kW/360 hp BMW X3 M40i (combined fuel consumption: 8.4 – 8.2 l/100 km [33.6 – 34.5 mpg imp]; combined CO<sub>2</sub> emissions: 193 – 188 g/km)\* gives the X3 range its first M Performance Automobile and is joined by a second petrol model in the shape of the BMW X3 xDrive30i producing 185 kW/252 hp (combined fuel consumption: 7.4 l/100 km [38.2 mpg imp]; combined CO<sub>2</sub> emissions: 168 g/km)\*\*. The two diesel models are the BMW X3 xDrive20d with 140 kW/190 hp (combined fuel consumption: 5.4 – 5.0 l/100 km [52.3 – 56.5 mpg imp]; combined CO<sub>2</sub> emissions: 142 – 132 g/km)\* and the BMW X3 xDrive30d developing 195 kW/265 hp (combined fuel consumption: 6.0 – 5.7 l/100 km [47.1 – 49.6 mpg imp]; combined CO<sub>2</sub> emissions: 158 – 149 g/km)\*. The BMW X3 20i with 135 kW/184 hp (combined fuel consumption: 7.4 – 7.2 l/100 km [38.2 – 39.2 mpg imp]; combined CO<sub>2</sub> emissions: 169 – 165 g/km)\*\* and choice of all-wheel drive or rear-wheel drive (not in Europe) will follow shortly after the launch of the new X3. All the engine variants will team up as standard with an optimised version of the eight-speed Steptronic transmission.

The rigorously applied BMW EfficientDynamics development strategy for the new BMW X3 includes both fuel-economy-optimising powertrains and the extensive application of intelligent lightweight design measures. For example, the increased use of aluminium components in the engine and suspension has reduced the weight of the relevant assemblies. Consequently, the new BMW X3 is up to 55 kilograms lighter than the respective predecessor models in similar specification. Added to which, the new BMW X3 boasts a class-

\* Fuel consumption und CO<sub>2</sub> emissions figures are based on the EU test cycle and may vary depending on the tyre format specified.

\*\* Fuel consumption und CO<sub>2</sub> emissions figures are provisional, based on the EU test cycle and may vary depending on the tyre format specified.



beating drag coefficient of  $C_d = 0.29$ .

### **BMW ConnectedDrive: semi-automated driving and cutting-edge connectivity.**

When it comes to the BMW Personal CoPilot features focusing on driver assistance and (semi-)automated driving, the new BMW X3 can be specified as an option with the latest generation of Active Cruise Control and the Driving Assistant Plus safety package, including Steering and lane control assistant, Lane Change Assistant (est. from December 2017) and Lane Keeping Assistant with side collision protection. This extensive line-up of assistance systems puts clear water between the new BMW X3 and its direct rivals.

The second pillar of BMW ConnectedDrive – alongside the BMW Personal CoPilot driver assistance systems – is formed by BMW ConnectedDrive Services and apps. As a result, the new BMW X3 now also features BMW Connected. Working on the basis of a flexible platform, the Open Mobility Cloud, this new integrated digital concept for enhanced personal mobility uses various touchpoints (such as smartphones and smartwatches) to integrate the car seamlessly into the user's digital life. This means, for example, that it can transfer mobility-related information, such as addresses from calendar entries, from a smartphone into the car, enter them automatically as destinations into the navigation system and calculate the optimum departure time for the journey.

Gesture control allows various navigation and infotainment system functions to be operated intuitively using finger and hand gestures. Meanwhile, the likewise optional Voice Assistant lets the driver use everyday language to have their requests turned into the appropriate actions instead of having to use set spoken commands. And the optional Head-Up Display enables the most important driving-related information to be projected directly into the driver's field of vision. The Head-Up Display in the new BMW X3 is unrivalled in its segment for graphics, resolution and display options.

The fuel consumption and CO<sub>2</sub> emissions figures shown were determined according to the European Regulation (EC) 715/2007 in the version applicable at the time of type approval. The figures refer to a vehicle with basic configuration in Germany and the range shown considers the different size of the selected wheels and tires. The values of the vehicles labelled with (\*\*) are already based on the new WLTP regulation and are translated back into NEDC-equivalent values in order to ensure the comparison between the vehicles. With respect to these vehicles, for vehicle-related taxes or other duties based (at least inter alia) on CO<sub>2</sub> emissions, the CO<sub>2</sub> values may differ to the values stated here (depending on national legislation).

The CO<sub>2</sub> efficiency specifications are determined according to Directive 1999/94/EC and the Pkw-EnVKV, and based (for classification) on the fuel consumption and CO<sub>2</sub> values as per the NEDC cycle.

Further information on official fuel consumption figures and specific CO<sub>2</sub> emission values of new passenger cars is included in the following guideline: "Leitfaden über Kraftstoffverbrauch, die CO<sub>2</sub>-Emissionen und den Stromverbrauch neuer Personenkraftwagen" (Guideline for fuel consumption, CO<sub>2</sub> emissions and electric power consumption of new passenger cars), which can be obtained free of charge from all dealerships and at <https://www.dat.de/en/offers/publications/guideline-for-fuel-consumption.html>.

## 5. Fresh impetus for pure driving pleasure: The new BMW i3, the new BMW i3s.



The BMW i3 is recognised the world over as a symbol of driving pleasure, sustainability and intelligent connectivity in the urban traffic environment, which is why it has become the best-selling electric car in the premium compact segment. The recipe for success of the BMW i3 has now been further improved, thanks not just to refreshing styling accents, cutting-edge equipment features and new digital services, but also to the addition of a new model variant. For making its debut alongside the new edition of the first ever premium car to be conceived from the outset for all-electric mobility is the BMW i3s. With a higher output, model-specific chassis technology, noticeably more dynamic driving qualities and design features all of its own, it generates a particularly intense blend of the unrivalled sporty driving pleasure associated with electric cars from the BMW Group. By offering a premium-quality, all-electric driving experience, meaning zero local emissions, together with a whole new level of connectivity technology, both models represent the future of urban mobility.

Carefully crafted design modifications underline the dynamic and emotionally engaging character of the new BMW i3 and new BMW i3s. The trademark BMW i Black Belt running from the bonnet over the roof to the car's rear end is now complemented by A-pillars and roof lines that also sport a black finish. The range of paint finishes now also includes the new Melbourne Red metallic and Imperial Blue metallic variants.

The new BMW i3 and new BMW i3s come equipped with all-LED headlights as standard. The turn signal indicators now also feature LED technology and are integrated into the front apron in the form of horizontal strips. The restyling of the front and rear aprons accentuates the car's width, as do the chrome-design horizontal trim strip and the positioning of the model and eDrive badges on the outer edges of the boot lid.

### **The new BMW i3: new styling accents for a sense of sporty elegance.**

The front bumper is completely painted in the body colour and has a black U-shaped surround that reinforces the car's presence when viewed from the front. Moving round to the rear end, the powerfully moulded contours and the contrast in colour between the black surround and the body-coloured inlay create an energetic and expressive appearance.

The new silver-coloured roof line accent adds a further touch of elegance and dynamism. It widens towards the rear, thereby accentuating the stream flow, as the distinctive outline of the side windows is known.

### **The new BMW i3s: a thoroughly dynamic performer.**

The new BMW i3s incorporates a number of design elements all of its own that underscore its particularly dynamic character. At the front, the bumper inlay as well as the U-shaped surround encircling it have a black finish. The front apron's side sections are bordered on their lower edge by accent strips in BMW i Blue or Frozen Grey that further emphasise the width of the car. The accent in the closed BMW kidney grille is also painted in high-gloss black on the BMW i3s to give the grille a larger and more prominent appearance. The rear apron of the new BMW i3s is likewise composed of individually styled contours, while the black surround frames an extra-wide, body-coloured inlay. On the new BMW i3s, the roof line accent also sports the same high-gloss black finish as the A-pillars.

The new BMW i3s comes equipped as standard with sports suspension that includes a 10-millimetre drop in ride height. The additional 40 millimetres of track width compared to the BMW i3 is given added impact by the black wheel arch borders. The BMW i3s is available with exclusive 20-inch light-alloy wheels in double-spoke design that are 20 millimetres wider than the previously available versions.

The Lodge interior design line available as an option for the BMW i3 and BMW i3s includes a new covering for the seat surfaces in Solaric Brown. The new blue seat belt option provides a splash of colour in the interior in typical brand style. The BMW i3s supplements all this with special model lettering on the front floor mats as standard.

### **Emission-free fun at the wheel: now with two power options.**

The synchronous electric motor powering the new BMW i3 (power consumption combined: 13.6 – 13.1 kWh/100 km\*) generates a maximum output of 125 kW/170 hp. Its peak torque is 250 Nm (184 lb-ft), all of which is available instantly from a standstill, as is usual with electric motors. 0-100 km/h (62 mph) is achieved by the new BMW i3 in 7.3 seconds. Its top speed is limited to 150 km/h (93 mph). Located low in the vehicle floor, the lithium-ion high-voltage battery provides a range of 290 to 300 kilometres (180-186 miles)\* based on the NEDC cycle, 235 to 255 kilometres (146 to 158 miles)\*\* as per the WLTP and up to 200 kilometres (124 miles)\*\*\* in everyday use.

\* Consumption and emissions figures as well as ranges according to NEDC test cycle, may vary depending on the tyre format specified.

\*\* Ranges according to WLTP test cycle, may vary depending on the tyre format specified and the equipment level.

\*\*\* Figures according to BMW range measurements in everyday use in urban areas, exterior temperature: 20°C, heating/air conditioning, pre-conditioning, COMFORT driving mode. Range dependent on various factors. In particular: personal driving style, route characteristics, exterior temperature, pre-conditioning.

The new BMW i3s provides an even sportier interpretation of silent mobility with zero local emissions and features a high-performance 135 kW/184 hp electric motor (power consumption combined: 14.3 kWh/100 km\*) that generates peak torque of 270 Nm (199 lb-ft). Its updated drive system includes modified motor control and specific taper roller bearings, which have been utilised to further optimise power delivery and the performance curve at higher rpm. At the limits of the motor speed range, power and torque levels are up to 40 per cent higher than for the BMW i3. Just 6.9 seconds is enough to see the new BMW i3s burst past 100 km/h (62 mph) on its way to a top speed of 160 km/h (99 mph). Its electric range runs to 280 kilometres (174 miles)\* based on the NEDC cycle, 235 to 245 kilometres (146 to 152 miles)\*\* as per the WLTP and up to 200 kilometres (124 miles)\*\*\* in everyday use.

Both models draw their energy from the lithium-ion high-voltage battery developed by the BMW Group with a capacity of 94 ampere hours (Ah) or 33 kilowatt hours (kWh). A range extender engine can be ordered as an option for both the new BMW i3 and the new BMW i3s.

**Bringing outstanding driving dynamics to the electric vehicle segment, with instantaneous torque, superb traction and precisely controllable drifts.**

The agile handling characteristics of both models are improved still further by the optimised Dynamic Stability Control (DSC) system. This comprehensively revised, faster responding traction control system guarantees confident handling under all driving conditions. A globally unique form of wheel speed limiting ensures increased directional stability, both under dynamic acceleration and on the overrun with strong regenerative braking. Traction during pull-away on snow and wet roads has also been noticeably improved. DTC (Dynamic Traction Control) mode now boosts agility at higher speeds and during sporty cornering, even allowing mild and safely controllable drifts when grip levels are reduced.

What's more, the new BMW i3s boasts sports suspension with specially developed springs, dampers and anti-roll bars. Drivers can also select SPORT mode using the Driving Experience Control switch. This initiates more direct accelerator response and tighter steering characteristics.

**BMW iDrive with new menu display, On-Street Parking Information.**

The updated version of the iDrive operating system teams up with the Navigation system Professional to provide increased resolution and a main

\* Consumption and emissions figures as well as ranges according to NEDC test cycle, may vary depending on the tyre format specified.

\*\* Ranges according to WLTP test cycle, may vary depending on the tyre format specified and the equipment level.

\*\*\* Figures according to BMW range measurements in everyday use in urban areas, exterior temperature: 20°C, heating/air conditioning, pre-conditioning, COMFORT driving mode. Range dependent on various factors. In particular: personal driving style, route characteristics, exterior temperature, pre-conditioning.

menu presented in the form of horizontally arranged tiles with a live mode. The voice recognition system has also been further optimised. New to the options list are Apple CarPlay preparation and a WiFi hotspot. The digital On-Street Parking Information search service can now also be used alongside the Real Time Traffic Information system.

### **BMW Connected: seamless connectivity.**

The new BMW i3 and new BMW i3s are fully connected and can be seamlessly integrated into the driver's lifestyle thanks to the new digital services from BMW Connected – intelligent route planning (including mid-journey stops at charging stations), sharing of the current trip status via text message and live link, and highly personalised in-car display of relevant information.

### **New charging cable, BMW i Wallbox, BMW Digital Charging Service.**

The functionality of the standard charging cable supplied with the new BMW i3s has been optimised and includes a temperature sensor. The most recent incarnation of the BMW i Wallbox can supply 11 kW of power to charge the high-voltage battery. This allows enough energy for an electric range of around 180 kilometres (112 miles) to be transferred in under three hours – five times quicker than with the standard charging cable.

With the introduction of its unique BMW Digital Charging Service, BMW becomes the world's first carmaker to integrate electric mobility with its customers' digital worlds. The BMW i3 is integrated perfectly into the customer's smart ecosystem. This allows BMW customers to optimise charging costs, make best use of self-generated solar energy for charging and even earn money through integration into the smart grid.

\* Consumption and emissions figures as well as ranges according to NEDC test cycle, may vary depending on the tyre format specified.

\*\* Ranges according to WLTP test cycle, may vary depending on the tyre format specified and the equipment level.

\*\*\* Figures according to BMW range measurements in everyday use in urban areas, exterior temperature: 20°C, heating/air conditioning, pre-conditioning, COMFORT driving mode. Range dependent on various factors. In particular: personal driving style, route characteristics, exterior temperature, pre-conditioning.

All figures relating to performance, consumption and range are provisional.

Further information on official fuel consumption figures, specific CO<sub>2</sub> emission values and the electric power consumption of new passenger cars is included in the following guideline: "Leitfaden über Kraftstoffverbrauch, die CO<sub>2</sub>-Emissionen und den Stromverbrauch neuer Personenkraftwagen" (Guideline for fuel consumption, CO<sub>2</sub> emissions and electric power consumption of new passenger cars), which can be obtained from all dealerships, from Deutsche Automobil Treuhand GmbH (DAT), Hellmuth-Hirth-Str. 1, 73760 Ostfildern-Scharnhausen and at <http://www.dat.de/en/offers/publications/guideline-for-fuel-consumption.html>.

## 6. Occupying the dynamic high ground: The new BMW M5.



The new BMW M5 (fuel consumption combined: 10.5 l/100 km [26.9 mpg imp]\*; CO<sub>2</sub> emissions combined: 241 g/km\*) takes BMW M GmbH into new territory, with M xDrive all-wheel drive featuring in the high-performance sedan for the first time. This change of tack sees the M5 exploring new dynamic dimensions and offering greater everyday practicality in all driving conditions. The new car is committed to building on the tradition of a concept – the luxurious four-door business sedan with a taste for the race track – first glimpsed in 1984 with the original BMW M5.

The new M xDrive developed by BMW M GmbH is the most emotionally engaging all-wheel-drive system yet to grace the high-performance segment. It works with a central transfer case with multi-plate clutch and distributes drive fully variably between the front and rear axle, as required. Another ingredient in the car's supreme traction in all road and weather conditions is the Active M Differential at the rear axle, which also works fully variably and has a locking effect between 0 and 100 per cent.

The character of M xDrive can be adjusted as desired. The driver has five different configurations to choose from based on combinations of the DSC modes (DSC on, MDM, DSC off) and M xDrive modes (4WD, 4WD Sport, 2WD). In the basic setting with DSC (Dynamic Stability Control) activated and 4WD, the system permits slight slip through the rear wheels when accelerating out of corners – and therefore plays its part in giving the new BMW M5 its sporting agility. In M Dynamic mode (MDM, 4WD Sport) M xDrive allows easily controlled drifts. The three M xDrive modes with DSC switched off have been conceived to sate the appetites of keen drivers and primarily for use on the track. Here, the driver can choose from three configurations up to and including pure rear-wheel drive (2WD). This mode allows the driver to pick their own drift angle and treats connoisseurs to driving dynamics in their purest form.

Providing ample power for the new BMW M5 is a 4.4-litre V8 bi-turbo engine with M TwinPower Turbo technology. The M engineers have carried out significant revisions to the outgoing model's power unit. For example, newly developed turbochargers, ultra-efficient indirect charge air cooling and increased fuel injection pressure together help to raise output and, above all, torque. The engine develops 441 kW/600 hp at 5,600 – 6,700 rpm, while peak torque of 750 Nm (553 lb-ft) is placed at the driver's disposal from as

low down as 1,800 rpm and remains there until 5,600 rpm. A map-controlled, fully variable oil pump ensures oil is supplied as and when the new BMW M5 needs it, even on the track. The car's impressive performance figures speak for themselves: 0 to 100 km/h (62 mph) in just 3.4 seconds, 0 to 200 km/h in 11.1 seconds (124 mph). Top speed, meanwhile, is an electronically limited 250 km/h (155 mph), but the optional M Driver's Package can keep the fun coming to 305 km/h (189 mph).

The new BMW M5 channels all that power through a specially tuned eight-speed M Steptronic transmission with Drivelogic. In D mode it provides all the comfort and convenience of fully automatic gear changes, but the driver can also switch to sequential manual shifts using either the compact selector lever on the centre console or the steering wheel-mounted paddles. Drivelogic allows the driver to adjust the transmission's characteristics to their personal preferences. For track use, the eight-speed M Steptronic unit serves up lightning-fast shift times, helping to give the new BMW M5 its exceptional agility and dynamic flair.

The suspension of the new BMW M5 is likewise designed to deliver both maximum traction for everyday use and supreme dynamic performance on the track. Like the engine, transmission and M xDrive system, it has been tuned by experts and racing drivers at venues including the world's most exacting test facility – the Nürburgring Nordschleife circuit. Sophisticated stiffening elements in the front and rear structures ensure the body structure is extremely rigid and therefore that the car provides instantaneous feedback, in particular when the driver is pushing hard on the road or track.

The driver can also choose from Comfort, Sport and Sport Plus modes for the Variable Damper Control (VDC) system – which has M-specific tuning – and the M Servotronic steering. And the engine's characteristics can also be configured to the driver's tastes via the Efficient, Sport and Sport Plus modes. The two M1 and M2 buttons on the M leather steering wheel can be used to store two set-ups combining the driver's preference of engine, transmission, suspension and M xDrive modes, the DSC mode and Head-Up-Display settings. The driver can then activate their preferred set-up by pressing the relevant button.

The new BMW M5 includes revisions to its bodywork over the regular BMW 5 Series to satisfy its challenging dynamic brief. The M engineers have redesigned the broader front side panels and front bumper trim to include larger apertures for the air feeding the cooling systems and brakes. Also new is the rear diffuser. The exhaust system's quartet of tailpipes are a visual pointer to the power generated by the BMW M5 and also lay on a suitably

sporting soundtrack for the job in hand, courtesy of their flap control system. The driver can use a button to adjust the engine sound as desired. The bonnet, which also has an M-specific design, is made from aluminium and boasts eye-catching sculpture lines. These extend into the extremely lightweight carbon fibre-reinforced plastic (CFRP) roof – a standard feature of the new M5. The weight savings contributed by the CFRP roof and other components such as the exhaust system help to ensure the new BMW M5 with M xDrive all-wheel drive is lighter than its predecessor.

The new BMW M5 is fitted as standard with M compound brakes, which are lighter than conventional grey cast iron items and therefore also bring down the car's weight. With blue-painted six-piston fixed callipers at the front and single-piston floating callipers at the rear, plus perforated, inner-vented brake discs all round, the M compound brakes have the speed-shedding power to befit the car's dynamic potency. The optional M carbon ceramic brakes, which can be identified by callipers painted in a gold colour and shave another 23 kilograms off the M5's weight, can withstand even greater punishment.

The new BMW M5 comes as standard with polished 19-inch light-alloy wheels (front: 9.5 x 19, rear: 10.5 x 19) in Orbit Grey and M-specific tyres (front: 275/40 R 19, rear: 285/40 R 19). 20-inch items can be specified as an option (front: 275/35 R 20 tyres on 9.5 x 20 rims, rear: 285/35 R 20 tyres on 10.5 x 20 rims). Standard specification for the new BMW M5 also features Merino leather and M seats with electric adjustment. The options list includes newly developed M multifunction seats, which stand out with their bucket-seat-style construction and even better lateral support.

The new BMW M5 can be ordered from September 2017, priced at €126,500 in France, and deliveries will begin in spring 2018. Scheduled for launch on the same sales start date as the standard M5 is the BMW M5 First Edition. This special-edition version – limited to a run of 400 examples worldwide – has BMW Individual Frozen Dark Red Metallic paintwork. Its price for the French market is to be announced at a later stage.

The fuel consumption and CO<sub>2</sub> emissions figures shown were determined according to the European Regulation (EC) 715/2007 in the version applicable at the time of type approval. The figures refer to a vehicle with basic configuration in Germany and the range shown considers the different size of the selected wheels and tires.

The CO<sub>2</sub> efficiency specifications are determined according to Directive 1999/94/EC and the Pkw-EnVKV, and based (for classification) on the fuel consumption and CO<sub>2</sub> values as per the NEDC cycle.

Further information on official fuel consumption figures, specific CO<sub>2</sub> emission values and the electric power consumption of new passenger cars is included in the following guideline: "Leitfaden über Kraftstoffverbrauch, die CO<sub>2</sub>-Emissionen und den Stromverbrauch neuer Personenkraftwagen" (Guideline for fuel consumption, CO<sub>2</sub> emissions and electric power consumption of new passenger cars), which can be obtained from all dealerships, from Deutsche Automobil Treuhand GmbH (DAT), Hellmuth-Hirth-Str. 1, 73760 Ostfildern-Scharnhausen and at <http://www.dat.de/en/offers/publications/guideline-for-fuel-consumption.html>.



## 7. Innovative technology for a new legend: The new BMW M8 GTE.



BMW Motorsport presents its new top-of-the-range model for the international GT racing scene at the International Motor Show (IAA) in Frankfurt am Main: the BMW M8 GTE. Before the BMW 8 Series Coupé goes on sale, the race car will compete on the track next season, including in the FIA World Endurance Championship (FIA WEC). It is with this series that BMW Motorsport will also make its return to the iconic 24 Hours of Le Mans (FRA). As such, the BMW M8 GTE will be associated with both innovative, cutting-edge technology and decades of motorsport tradition.

The BMW M8 GTE enjoyed a successful roll-out on 1<sup>st</sup> July 2017 at the BMW Group plant in Dingolfing (GER) – the very place where the production model of the new BMW 8 Series will be manufactured. The close link between production and motor racing is one of the cornerstones of the development of the BMW M8 GTE. The knowledge gained from race outings with the new car in the FIA WEC and the IMSA WeatherTech SportsCar Championship (IWSC) in North America will be directly incorporated in the development of the production model, which is running parallel to the motorsport project.

“The BMW M8 GTE is our new GT flagship and will go head to head with the strong opposition in this sector,” said BMW Motorsport Director Jens Marquardt. “For us, the presentation of the uncamouflaged car at the IAA is the next important step on the road to our first race outing, which we plan to be the 24 Hours of Daytona in 2018. The FIA WEC and the IMSA series in North America are a top competitive environment for our new challenger. With the BMW M8 GTE, we are bringing cutting-edge technology to the top international class of GT racing, whilst at the same time tying in with our tradition at Le Mans. The development of the BMW M8 GTE is on schedule, and we can hardly wait to see the car challenging for victories in 2018.”

### **A new degree of efficiency.**

The V8 engine with BMW TwinPower Turbo Technology, which is restricted by regulations to a capacity of 4.0 litres, has a nominal base output of more than 500 hp, depending on the classification. The cylinder block and cylinder head are taken from the production engine and are produced in the light alloy foundry at the BMW Group plant in Landshut (GER). The focus of the development work is on achieving the greatest possible efficiency and

maximum durability. The powerful production engine provides the perfect basis. The power transmission in the BMW M8 GTE takes place via a sequential, six-speed racing gearbox.

### **Artificial intelligence gives engineers greater freedom.**

“Virtual development” plays a central role in the development of the BMW M8 GTE. For example, the traction control is being developed with the assistance of an artificial intelligence system. Topology optimisation with 3D printing gives the engineers far greater freedom in their search for innovative and creative solutions for the design of the car. Rapid prototyping also allows them to take delivery of a new part, as a usable prototype, just 24 hours after the virtual development.

### **Motor racing and production go hand in hand – design similarities.**

Racing and production engineers closely worked together within the framework of the BMW M8 GTE project. For instance, consistent lightweight design also plays a crucial role in the development of the new GT sports car. A significant weight reduction is achieved through the extensive use of ultra-light CFRP components. At a length of 4,980 mm and a width of 2,046 mm, the car weighs just 1,220 kilograms. The design of the BMW M8 GTE also reflects the close relationship to the BMW 8 Series and the BMW M8. This is particularly apparent in the same roof line and the design of the front and rear lights.

### **Peak performance in aerodynamics development.**

Work on the aerodynamics of a new race car is as time-consuming as it is indispensable. As such, it is all the more important for the BMW engineers to be able to work on the chassis of the BMW M8 GTE with maximum efficiency from the outset. A new algorithm allows a significant increase in CFD calculations, thus making it possible to use greater computing power to clearly increase the number of possible simulations, before progressing to the wind tunnel. Here, BMW Motorsport uses synergies with production development and benefits from the perfect test conditions in the BMW Group Aero Lab. One of the results of the aero development is innovative aero rims, which will be presented as a concept at the IAA.

### **Latest 3D measurement technology in use.**

The close interdependence between production and motorsport development continues in another two important areas: the same 3D measurement technology that was used on the BMW M4 DTM, which made its first race outing in 2017, is also used on the BMW M8 GTE. The ultra-modern measurement system from the BMW production development department provides the perfect quality control once the race car has been

assembled. With such a complex car as the BMW M8 GTE, which is built completely by hand, it is essential that all the dimensions are correctly adhered to and implemented.

### **Long history of BMW Motorsport in Le Mans.**

BMW Motorsport returns to Le Mans with the FIA WEC in 2018. The last time a BMW race car featured on the grid was back in 2011, with the BMW M3 GT2. One year prior to that, the Jeff Koons' (USA) BMW M3 GT2 Art Car had caught the eye, as it wrote the latest chapter in the story of the BMW Art Car Collection at Le Mans. Among the BMW Art Cars that had started previously at Le Mans were Alexander Calder's (USA, 1975) BMW 3.0 CSL, the BMW 320i designed by Roy Lichtenstein (USA, 1977) and Andy Warhol's (USA, 1979) BMW M1.

BMW Motorsport's greatest sporting hour in Le Mans came in 1999, when Yannick Dalmas (FRA), Joachim Winkelhock (GER) and Pierluigi Martini (ITA) took overall victory in a BMW V12 LMR. The McLaren F1 GTR, powered by a BMW engine, had previously triumphed at the "Circuit de la Sarthe" in 1995.

The first time a BMW car started at the 24 Hours of Le Mans was back in 1939, when a BMW 328 claimed a class victory after 236 laps of racing. After 1972, BMW cars regularly lined up at the endurance classic.

## 8. **Luxury, elegance and dynamism by tradition:** **The BMW 7 Series Edition 40 Jahre.**



For four decades now, the “7” in the model designation of a BMW has been a worldwide recognised symbol of luxury, driving pleasure and innovations. With its top-of-the-range models, the premium car manufacturer showcases the latest results of its outstanding technological competence and a profound understanding of maximum comfort, progressive style and uncompromising quality. This tradition-steeped combination of innovation and exclusivity still strongly influences the character of the luxury sedans even in the sixth model generation and with the BMW 7 Series Edition 40 Jahre, it is currently expressed in a particularly concentrated way. With exclusive exterior and interior design features, these edition models emphasise the representative elegance and progressive styling of these luxury sedans. The BMW 7 Series Edition 40 Jahre will be making its world debut at the 2017 Frankfurt International Motor Show (IAA).

The BMW 7 Series Edition 40 Jahre models are being produced in a limited quantity of 200 units and tailored to individual customer specifications at the BMW Dingolfing plant, which has served as the birthplace of these luxury sedans since as far back as 1977. The know-how gained there in the production of exceptionally high-class premium automobiles offers the ideal prerequisites for the production of the anniversary edition, the exclusive character of which is reflected, among other things, in extraordinarily sophisticated car body paints and in meticulously crafted interior equipment details. The edition models will be on offer from October 2017 with either a standard or a long wheelbase in conjunction with all six, eight and twelve-cylinder engines available for the BMW 7 Series (combined fuel consumption: 12.8 – 2.1 l/100 km; combined CO<sub>2</sub> emissions: 294 – 49 g/km) as well as with optional intelligent four-wheel drive technology BMW xDrive and in the BMW iPerformance Automobile version with a plug-in hybrid drive system.

### **Expressive body colours, exquisite materials, maximum manufacturing precision.**

Supreme presence, sporting elegance and emotionally appealing aesthetics characterise the exterior design of the current BMW 7 Series. In addition to the generous amount of space and modern functionality, it is above all the exquisite and meticulously processed materials that contribute towards a feel-good ambience. The BMW 7 Series Edition 40 Jahre enhances the fascinating aura of these luxury sedans first and foremost through expressive

car body colours. There is a choice of two variants. The exclusive BMW Individual colour Frozen Silver metallic sets a markedly progressive accent, its silk-matt sheen intensively emphasising the controlled powerful design of the exterior surfaces. The exclusive BMW Individual body colour Petrol Mica metallic takes up on the tradition of discreet and elegant shades of blue used on the bodywork of BMW luxury sedans. It fascinates through exceptional brilliance, appealing iridescent effects and a unique impression of depth. The colours, which are applied in a particularly elaborate process, come in conjunction with the M Aerodynamics Package, the BMW high-gloss Shadow Line and 20-inch BMW Individual light alloy wheels in a V spoke design. A further exterior design feature is the edition signet designed exclusively for the model anniversary and located on the B pillar coverings and on the door sills.

Inside the edition models too, the combination of selected materials, exclusive design and high-precision workmanship so characteristic of BMW Individual equipment options provides for an outstandingly sophisticated appearance. The BMW Individual full leather trim Merino fine grain in the colour combination Smoke White/Cohiba or Smoke White/Black with hand woven piping in Smoke White harmonises perfectly with the BMW Individual Alcantara Smoke White roof liner. Moreover, BMW 7 Series Edition 40 Jahre models are all fitted with comfort seats both at the front and rear. BMW Individual interior trim strips are offered either in a black piano lacquer finish or in the high-grade wood finish Eucalyptus straight-grained Smoke Brown high gloss, depending on the upholstery colour. Within the area of the instrument panel on the front seat passenger side they boast an edition signet. The exclusive flair is rounded off by two Smoke White comfort cushions from the BMW Individual manufactory, which, like the headrests, also bear the edition signet, as well as by floor mats in Smoke White with either black or Cohiba brown edge binding respectively.

### **Redefining luxury – the BMW 7 Series' mission over the past 40 years.**

Exclusive design features contribute towards the unique appearance and unmistakable interior atmosphere offered by the edition models. All options from the range of special equipment for the BMW 7 Series are available for an upgraded configuration according to the customer's personal preferences and with which additionally enhanced driving pleasure and travel comfort can be achieved. With that, the BMW 7 Series Edition 40 Jahre represents the consistently further developed status of these luxury sedans as a symbol of supreme styling and innovative technology over six model generations. For four decades now and with its top-of-the-range models, BMW has managed to create a brand-typical interpretation of exclusive driving pleasure, whilst also giving the term luxury a new meaning time and time again.

In its latest generation, the still existing balance between sportiness and elegant presence that is so characteristic of the BMW 7 Series is bestowed with an additional appeal through driver assistant systems with which BMW is assuming a leading position on the way to fully automated driving, as well as with connectivity solutions that seamlessly connect exclusive mobility with the driver's digital lifestyle. With systems such as the steering and lane guidance assistant, which can be activated up to a speed of 210 km/h, and the lane departure assistant, available at speeds between 70 and 180 km/h, the current BMW 7 Series achieves an unrivalled level of functionality for the optimisation of comfort and safety in varying traffic situations. The remote parking function, which made its world debut in the current BMW 7 Series, is yet a further innovation underlining BMW's development expertise in the field of automated driving.

Additionally, the personal digital mobility assistant BMW Connected offers a networking technology that is unique in the automotive sector and facilitates connectivity between the vehicle and individual end devices such as the Smartphone and the Smartwatch via the flexible platform Open Mobility Cloud, helping the driver reach his or her destination comfortably and stress-free. Furthermore, the BMW 7 Series is the only model in its competitive environment to feature the Remote 3D View function. This technology provides the driver with a live image of the vehicle and its environment on the Smartphone.

The classic luxury features also redefined in the new BMW 7 Series include the ride comfort and well-being of passengers in the rear compartment. The optional panorama glass roof Sky Lounge, Executive Lounge Seating, Executive Lounge Rear Console and Rear Seat Entertainment Experience featuring BMW Touch Command also set standards in this field.

### **Pioneer of inspiring innovations.**

By tradition, the BMW 7 Series assumes a pioneering role for technological innovations that ultimately also enhance driving pleasure in other series and regularly set decisive impulses for the entire automotive sector. Whether the Check Control System (1977), the first 12-cylinder engine in a German post-war automobile (1987), the first integral navigation system in a European production vehicle (1994), the revolutionary iDrive operating concept, the BMW Online mobility service including E-mail account (2001) or the premiere of unrestricted Internet usage inside a vehicle (2008), path-breaking innovations have been consistently first presented in a BMW 7 Series across many generations. The list of technological milestones linked to the history of the BMW 7 Series is therefore long and fascinating.

In order to continue with this tradition, the expertise gained from the development of BMW i automobiles was also incorporated into the current model generation. An intelligent material mix combining carbon fibre reinforced plastic (CFRP), aluminium and steel into the bodywork structure lends the BMW 7 Series a unique synthesis of solidness and lightweight construction. BMW eDrive technology used on BMW iPerformance plug-in hybrid models offers the promise of luxury driving comfort that is also locally emission-free.

Irrespective of which engine variant the customer opts for, the BMW 7 Series completely redefines supreme driving pleasure also behind the wheel. BMW gesture control made its world debut in the new BMW 7 Series. The Driving Experience Control feature also offers the ADAPTIVE mode with which the vehicle set-up is adaptively oriented to driving style and prevailing road conditions. Ride comfort and sportiness benefit to an equal extent from the optional Executive Drive Pro system with Active Roll Stabilisation. Moreover, when launched, the current BMW 7 Series was the world's first luxury sedan to be equipped with laser light headlamps. BMW laser light with anti-glare high beam BMW Selective Beam is available as an option. Thanks to this technology, the range of the high beam vs. LED headlights increases to as far as 600 metres – in the true sense of the word a further pioneering innovation featured by the BMW 7 Series.

## 9. Mobile solutions for any eventuality: Emergency and special-purpose vehicles by BMW and BMW Motorrad.



The BMW Group has been supporting fire, rescue, police and emergency services with customised mobility solutions for over sixty years. Increasing innovations and more and more new models from various segments are helping response teams and authorities to perform a broad spectrum of tasks as they rise to ever greater challenges. Emergency and special-purpose vehicles by BMW offer not only superior specialist equipment but also the very latest in efficiency, driver assistance systems and connectivity.

The latest addition to the range of special-purpose vehicles is the new BMW 5 Series Touring police patrol car, presented at the IAA 2017. Dynamic and flexible in equal measure, the five-door features a range of specific specialist equipment, such as body foiling in Traffic Blue, an in-car control centre with radio master switches and a control unit for radio devices, a more powerful generator, an additional battery in the luggage compartment, front and rear flashing lights, and a special signalling system. In addition, the BMW 5 Series Touring features the intelligent all-wheel system BMW xDrive as well as a comprehensive range of special equipment to provide the best possible assistance for emergency teams.

### **A wealth of expertise and first-hand experience.**

Over the last 60 years, BMW has gained a wealth of experience in the development and production of special-purpose vehicles for fire, rescue and police services as well as emergency physicians. Munich police first used patrol vehicles by BMW in the late 1950s. Based on the BMW 501 and 502 – known affectionately as “baroque angels” – the two types of sedan were powered by sizeable six- and eight-cylinder engines. They were considered the benchmark for reliability and operational usability. Today, the range of special-purpose vehicles includes nine car series (the BMW 2 Series Gran Tourer, BMW 2 Series Active Tourer, BMW 3 Series, BMW 5 Series, BMW 7 Series, BMW X1, BMW X3, BMW X5 and BMW i3) and four types of bike (BMW F 700 GS, BMW F 800 GS, BMW F 800 GT and BMW R 1200 RT).

For the best possible performance, functionality, safety and reliability, the vehicles are developed in close collaboration with their prospective users. Their practical experience is then incorporated into the upcoming versions of fire prevention, rescue and police cars. BMW also incorporates many of the latest technical innovations developed by renowned and experienced



providers of specialist equipment. Some of this, such as control technologies for measurement, radio and signalling equipment, is fitted during regular production, often on the same assembly lines as normal cars. This allows us to achieve a level of quality that would otherwise be impossible, if items were fitted retrospectively.

Finally, every special-purpose BMW – specialist fittings and add-ons included – undergoes rigorous testing that far exceeds the standard requirements. The end product is a tailored solution consisting of perfectly balanced components that interact as integral constituents of an overall system, just as the customer expects them to.

## 10. Into the future with sound knowledge and strong partners: Automated driving at the BMW Group.



The progressive automation of driving will be a key element of the transformation that personal mobility is set to go through over the coming years. The driver assistance systems available in today's BMW and MINI models already offer extensive support in a variety of driving situations. The technology will continue to evolve, with first highly automated then fully automated driving, before finally progressing to autonomous driving, which will allow the task of driving to be delegated to the vehicle occasionally or even completely.

The BMW Group is doing everything possible to strengthen its development capabilities in the field of automated and autonomous driving. To this end, not only is the company able to draw on its many years of experience and sound knowledge, it also has the expertise of strong partners to call on. As long ago as 2006, a self-driving BMW 3 Series was completing laps around a race track, and the BMW Group has been testing out highly automated prototypes on the A9 motorway in Germany since 2011. Its stake in HERE, one of the world's leading technology providers in the navigation data sector, forms the basis for developing high-precision map material. And a collaboration with Intel and Mobileye is creating a digital ecosystem for the development of high-quality automated driving functions that are safe and secure. These will then be incorporated into series production development of the BMW iNext, for instance. At Campus Unterschleißheim, the BMW Group's new development centre for automated driving, the company is now pooling all of its expertise in the areas of vehicle connectivity and automated driving. Elsewhere, a fleet of 40 BMW 7 Series cars have been adapted to serve as test cars in highly and fully automated driving trials.

### **From the Track Trainer to BMW Gesture Control Parking.**

The BMW Group has already demonstrated its technological expertise in the field of automated driving on several occasions over the course of recent years. One particularly impressive example is the BMW Track Trainer that was presented back in 2006. This system enabled a self-driving BMW 3 Series to lap the circuit at Hockenheim on its own – while driving at race speeds and following the racing line. Since mid-2011, test vehicles from the BMW Group have been driving on the A9 motorway from Munich towards Nuremberg without any driver input. These research prototypes, which accelerate, brake and perform overtaking manoeuvres all by themselves, have been undergoing

systematic improvement ever since. As part of the research initiative Ko-HAF – a German abbreviation standing for Cooperative Highly Automated Driving – the BMW Group has been drawing up standards since 2015 that seek to provide additional verification of highly automated driving functions. This centres on the exchange of data between multiple highly automated vehicles to provide a reliable forecast of the traffic situation.

At the 2014 Consumer Electronics Show (CES) in Las Vegas, the BMW Group unveiled Drift Assistant technology for highly automated vehicle control when driving at the limits of performance. One year later at the same venue, a research vehicle based on the BMW i3 was on show that offered 360° collision prevention thanks to its comprehensive and fully reliable position detection and environmental sensing capabilities. This also opened up the possibility of fully automatic parking in multi-storey car parks. Here, the driver gets out of the car and the Remote Valet Parking Assistant guides the vehicle through the car park's different storeys unaided. At the 2016 edition of the CES, the BMW Gesture Control Parking research application was presented. This enables fully automated manoeuvring of a BMW i3 into and out of parking spaces perpendicular to the road, and is triggered by a simple wave of the hand that is detected by a smartwatch and relayed to the car.

### **Technological development in three key areas.**

The BMW Group is following a clearly defined strategy for automated and autonomous driving and has identified three key technological elements. High-definition (HD) live mapping is needed for determining positions with pinpoint accuracy. The reliable acquisition and real-time processing of information about the environment – and the ability to make safe decisions with regard to manoeuvres that are similar to those a human would reach – call for high-performance sensors, a supercomputer and intelligent software. Measures must also be taken to ensure the total integration in the vehicle of a system that is safe and has high availability.

The HD mapping includes information on the number of traffic lanes and on access roads or exit roads, for instance, as well as “landmarks” that have been surveyed exactly. By comparing this information against GPS data and camera images, the vehicle's position can be pinpointed to the exact lane at all times. Besides cameras and radar sensors, ultrasonic sensors and laser scanners are also used for highly accurate environmental sensing. This makes it possible to register other road users as well as objects and potential obstacles, and to assess them in terms of their type and size, position and distance, as well as speed and direction of movement. All the data is processed by a single data centre that is housed in the boot of the current prototypes. This is where the driving strategy is computed that specifies how the vehicle should respond to

the traffic situation and implements the necessary dynamic driving actions using the steering, accelerator and brakes.

### **Holdings and partnerships.**

High-definition maps allow the forecasting horizon to be extended beyond the range of the sensors. This allows system limitations or situations that a highly automated vehicle – on extremely rare occasions – does not handle perfectly to be recognised at an early stage so that the task of driving can be delegated to the driver again in good time. High-precision maps therefore have an essential role to play in overcoming the enormous challenges of highly automated driving, which is why the BMW Group has acquired a stake in the digital map company HERE, for instance.

The location platform developed by HERE combines high-definition maps with location-based, real-time traffic information to provide the user with a detailed representation of the real world that is accurate to the second. This platform is based on HERE's industry-leading mapping technology and draws on information from a wide range of data sources, including vehicles, mobile phones, the transport and logistics sector and even infrastructure. In future, the plan is for data delivered by the sensors on several million vehicles to be combined to form a single data pool, which will help accelerate the development of a shared location platform. The next phase of development, to allow updating of HD maps via the BMW fleet, is now almost complete.

In July 2016, the BMW Group, Intel and Mobileye announced a wide-ranging collaboration. Since the start of this collaboration, the three companies have developed a scalable architecture that can be adapted by other manufacturers and developers so that they can pursue their own design objectives and achieve differentiation between brands. This non-exclusive platform offers an ecosystem for the development of autonomous driving.

Intel's contribution to the partnership is its innovative, high-performance computing solutions. What's more, Intel's world-leading processors and FPGA technologies can deliver the most efficient balance of processing speed and capacity, while still satisfying the stringent demands of the automotive industry in terms of heat build-up and safety. Mobileye brings to the table its patented EyeQ<sup>®5</sup> high-performance computer vision processor, which offers world-leading image processing technology operating at the highest levels of energy efficiency and safety. The BMW Group and Mobileye are jointly developing related solutions in the field of sensor data fusion, in order to provide a comprehensive model of the vehicle environment based on input from radar, camera, lidar and ultrasonic sensors. A driving policy based on

artificial intelligence is also being developed to help with mastering the infinite number of complex driving situations.

The BMW Group's responsibility in these pioneering partnerships is to develop the core functions and the testing and safeguarding environment, including simulation. The company's contribution is also aligned to its business goals. BMW places particular importance on the design of the safety concept. This is because the company wants to provide other platform users with the best possible starting point for their own implementations, as well as establish fundamental confidence in the platform as it is developed.

### **Focused knowhow: the Unterschleißheim campus.**

At the end of 2016, around 600 employees at the BMW Group were working on the development of highly automated driving. In 2017, the BMW Group is now pooling together all the company's vehicle connectivity and automated driving expertise at a new campus in Unterschleißheim near Munich.

The new development centre is set to facilitate agile, company-wide collaboration as well as helping to enable high levels of individual decision-making. Once the new facility is fully completed, there will be over 2,000 employees stationed there working on all the developments required for the next steps on the road to fully automated driving – from the software right through to road testing. Elsewhere, a total of 40 BMW 7 Series test vehicles for highly and fully automated driving on motorways and in urban environments will be built in 2017 and trials started. These vehicles will be put into operation at Intel (USA), Mobileye (Israel) and BMW Group (Munich) facilities.

### **The next step: highly automated driving in the BMW iNext.**

By developing these BMW 7 Series advanced prototypes collaboratively, the partners will ensure the timely roll out of the BMW Group's first highly-automated production vehicle – the BMW iNext, due in 2021. The BMW iNext is the BMW Group's first venture into highly-automated driving. From a technical perspective, the BMW iNext will also be capable of fully automated and autonomous driving. Whether or not this is achievable in practice depends on a number of external factors, but it is not yet possible to predict how these will develop.

Delegating the responsibility for controlling the vehicle to the vehicle itself for a certain period of time is due to become permissible by law in Germany as well as in further countries in the near future. At present, the driver is responsible for the task of driving at all times, even if they are allowed to take their hands off the steering wheel for a few seconds for a substantial strain-

relieving effect on long journeys, in particular. While it is true that humans are responsible for most traffic accidents, at the same time they are the best preventers of accidents, too. Current systems already work very well, yet they are certainly not yet able to substitute human intelligence in certain situations. And the driver needs to be aware of this.

For this reason, the BMW Group is anxious to make it clear to its customers that the products currently available are driver assistance systems and names them accordingly. Technology has advanced to the stage where we are now on the cusp of highly automated driving. This doesn't just entail the further development of existing sensor systems, it also calls for a whole new understanding of safety, a stable cloud-based backend and highly dynamic HD mapping information. This represents a big and extremely challenging technological leap forward.

If a vehicle is to temporarily assume responsibility for controlling itself, then we need fail-operational systems, where a fault does not result in failure of the entire system. Brakes, steering and the electrical system that supplies them each require a double safeguard to ensure that the vehicle can continue to be driven in the event of a fault. The BMW Group together with its partners will complete these large-scale tasks by 2021.

# 11. The reinvention of urban mobility on two wheels: The BMW Motorrad Concept Link.



The BMW Group is using the IAA Cars 2017 show to present its vision of zero-emission urban mobility on two wheels: the BMW Motorrad Concept Link. Inspired by the BMW Motorrad Vision Next 100, the design study unites digital connectivity with the demands of urban mobility on two wheels. It treads new paths and moves beyond established conventions both with regard to design and technology.

“The BMW Motorrad Concept Link stands for a new understanding of urban mobility. It links the digital and analogue world and places the focus on the rider and his mobility needs. In the way it links functionality and digitalisation it performs both as a means of transport as well as a communication device. For me the BMW Motorrad Concept Link, with its timeless and reduced style, is more than a concept – it is rather a symbol for a new era.” explains Edgar Heinrich, Head of Design of BMW Motorrad.

## **Design as a distinguishing and segment-defining feature.**

The special character of the concept vehicle becomes clear right away thanks to the completely new design language. “The BMW Motorrad Concept Link is not based on today’s concepts, but rather meets the basic functionality needs, the technical architecture and the digital reality of today’s users. The technical realities of electric drive – such as the flat energy packs in the underfloor and the compact drive on the rear wheel – allowed us to create a highly distinctive design which shapes a new segment. The resulting expressive power of the vehicle is absolutely new for BMW Motorrad and breaks with all conventional viewing patterns.” explains Alexander Buckan, Head of Vehicle Design at BMW Motorrad.

The low-slung, stretched body and the flat seat combined with the diagonally rising front section create a modern yet distinctive silhouette. The use of colours emphasises this even further: the front trim in Liquid Metal Titanium contrasts with the semi-matt black body. The colours are oriented diagonally which underlines the dynamic potential of the BMW Motorrad Concept Link.

## **Tailor-made for the requirements of urban mobility.**

The new and emphatically function-driven architecture provides a high level of riding pleasure due to the E-drive. The BMW Motorrad Concept Link is ideally suited to meet the requirements of modern urban mobility with fast

acceleration and easy handling. Due to its low overall height, getting on is easy from the side or even from the back. A reverse gear ensures that it is easy to manoeuvre, making it ideal to park in tight city spaces.

The seat bench can be adjusted lengthwise to suit every preference. The proportions also make room for new storage space. In the centre section, underneath the seat bench, a luggage compartment offers versatile storage opportunities. The rider can access this quickly and easily at all times using a sliding door. With its new architecture, the BMW Motorrad Concept Link combines riding pleasure and functionality in an ideal way.

### **A timeless interpretation of clear shapes and modern technology.**

Taking a closer look, clear lines, large-area surfaces and simple, precise shapes emphasise the state-of-the-art look of the BMW Motorrad Concept Link. The two-tone colour design reinforces this further. A large matt black area, the technical heart, shapes the core of the concept. It stretches from the front to the rear, and in addition to the tyres and front lights, also integrating the drive unit and the suspension elements. The two iconic LEC front lights are characterised by minimalist design. Their clear-cut layout and the slim contours accentuate the modern and trail-blazing visual appeal of the front section.

The powerfully expressive contours of the side panels framing the dark core of the vehicle, optimise aerodynamics and also provide protection against wind and weather. The sides of the wheels are completely covered, underscoring the contemporary overall visual appeal.

The BMW Motorrad Concept Link also deliberately showcases the technology used as part of the design package. That is why the side panels don't completely cover the side section at the rear. Instead they stretch across the vehicles side like little wings allowing views of the technical elements like drive unit, cooling ribs, single-sided swing arm, spring strut and tooth belt. At the same time they help improve aerodynamic air flow. The iconic rear lights have been integrated into the rear side panels in the form of two C-shaped light elements.

### **Deliberate contrasts and numerous individualisation options.**

Contrasts are deliberately played on in conjunction with the clear shapes of the BMW Concept Link to give it a powerful and impressive appearance. The orange-coloured cables connecting battery pack and drive on the right side are highly contrasting in appearance and make a clear and self-assured statement. Their diameter already hints at the power in the drive unit.



The seat bench also makes both a functional and visually powerful statement, the flat seat area being kept separate from the vehicle's body. This emphasises the lightness of the side view thereby highlighting the agile and easy handling. The seat bench allows views of the aluminium structure within. It can be adapted to suit different needs in numerous ways. It can be either a sporty single-seater, a seat bench for two or anything in between giving the concept vehicle a distinctive visual and functional character.

Further customisation options, such as side panels in different colours or different windshields, allow the rider to express his personality, making the BMW Motorrad Concept Link the ideal companion for any situation.

### **Connecting rider, vehicle and environment.**

Inspired by the BMW Motorrad Vision NEXT 100, the BMW Motorrad Concept Link interprets the connection between rider, vehicle and the environment for urban use. It keeps the rider connected while riding, thereby expanding his mobile world by providing him with new opportunities. Among other things, the Concept vehicle knows what's in the rider's calendar and therefore his next destinations. As a result it can plan the fastest or most scenic route and even select the most suitable music if required.

The focus is also on being able to enjoy the riding experience without any distractions. The classic instrument cluster has been dropped. Instead speed, navigation and battery information is projected onto the windshield directly into the rider's field of vision. Secondary information is displayed on the large-surface panel, which matches the design perfectly and is located below the handlebars. The panel enables a large number of possible ways of interacting with the outside world and for communicating with other vehicles. The touch sensitive surface of the large-size panel displays and controls extensive infotainment, connectivity and routing information. Freely programmable, touch-enabled buttons on the handlebars allow the rider to access preferred and frequently used functions without having to remove his hands from the handlebars.

### **Intelligent rider equipment.**

The interaction between vehicle and rider wear holds great potential with regard to rider safety, comfort, functionality and riding experience. On the BMW Motorrad Concept Link, the rider equipment is also connected to the vehicle. To highlight this connection, a motion on the arm of the jacket opens and closes the sliding door of the luggage compartment.

A stitch on the arm signifies the active area. The rider wear is also a fashion statement and deliberately not recognisable as motorcycle gear. Light

shoulder and elbow protectors have been integrated into the stylish short coat made of water-repellent loden cloth. However they are not visible in the modern cut of the coat.

With the combination of the emissions-free, dynamic drive, a new design language, connectivity and fashionable yet functional rider equipment, the BMW Motorrad Concept Link embodies BMW Motorrad's understanding of the future of urban mobility.

## 12. Individually crafted high-tech and innovation for top performance on the race track: The new BMW HP4 RACE.



Fascinating technical solutions for maximum performance on the race track have always been the hallmark of hand-picked factory racing motorcycles modified to perfection down to the last detail. With the new BMW HP4 RACE, BMW Motorrad presents a purebred racing bike in a production run of 750. It is individually crafted by a small, highly specialised team, ensuring the very highest level of quality.

In terms of engine, electronics and spring elements, the new BMW HP4 RACE is in the same category as current superbike factory racing machines, even surpassing this level in the area of suspension with its carbon fibre frame. Weighing 171 kilograms when fully fuelled and road ready, the new BMW HP4 RACE is even lighter than the factory racing bikes currently used in the Superbike World Championship and is only slightly above the MotoGP factory racers in terms of weight.

### **Industrially manufactured carbon fibre main frame in monocoque construction, self-supporting rear frame and wheels made of carbon fibre.**

With the BMW HP4 RACE, BMW Motorrad is the first motorcycle manufacturer in the world to present a main frame made entirely of carbon fibre and weighing just 7.8 kilograms that is produced industrially in small series, thereby making this future-oriented technology available for anyone to purchase. The front and rear wheel are also made of this high-tech material, enabling a weight reduction of approximately 30 per cent as compared to light alloy forged wheels while retaining a deliberately rigid design.

### **Öhlins spring elements, light alloy underslung swingarm and Brembo monoblock brake calipers from the Superbike World Championship.**

The new BMW HP4 RACE likewise meets the highest demands of racing technology in the area of spring elements and brakes. Both the FGR 300 upside-down fork and the TTX 36 GP spring strut are supplied by the Swedish manufacturer Öhlins, with identical parts being used both in the Superbike World Championship and in MotoGP. The light alloy underslung swingarm made of milled and sheet metal parts is also a component used in the Superbike World Cup.

Featuring two Brembo GP4 PR monoblock brake calipers, the brake system of new BMW HP4 RACE also has parts otherwise only to be found in World Cup machines. Coated titanium pistons and single-piece aluminium calipers with chemically nickel-plated surface make for what is currently the very best combination of materials available. In conjunction with 6.75 mm thick 320 millimetre T-type racing steel brakes, the system ensures stunning brake performance.

**Purebred racing engine and close-ratio racing gearbox with adapted transmission ratios according to World Cup specifications.**

The new BMW HP4 RACE has a purebred racing engine similar to specifications 6.2 and 7.2 as in the Endurance and Superbike World Championships. The peak output is 158 kW (215 hp) at 13900 rpm. The maximum torque of 120 Nm is reached at 10000 rpm. The maximum engine speed has been increased as compared to the engine of the BMW S 1000 RR from 14200 rpm to 14500 rpm. With the aim of achieving the best possible performance, a 6-speed close-ratio racing gearbox is used with optimised transmission ratios and various secondary ratios (diverse pinions and chain sprockets included).

**Weight-optimised electrical system, 2D dashboard along with Dynamic Traction Control DTC, Engine Brake EBR, Wheelie Control and other electronic features.**

The new BMW HP4 RACE comes with an extensive package of electronic control and assistance systems as well as a weight-optimised on-board electrical system which has been optimised to meet racing needs. A wealth of information is available on the 2D dashboard with transferable data memory (2D logger).

Wide-ranging set-up options for different track layouts and road surface conditions are provided by the audibly perceptible Dynamic Traction Control controlled by ignition cut, Engine Brake EBR and Wheelie Control. These can be programmed selectively for each gear according to rider preference, allowing optimum use of the enormous riding dynamics potential offered by the new BMW HP4 RACE. Other electronic features are the Pit Lane Limiter for observing speed limits in the pit lane and Launch Control for perfect race starts.

**Light trim carbon fibre trim parts and hand-brushed aluminium fuel tank.**

The carbon fibre trim, the intake silencer cover and the seat hump in the new BMW HP4 RACE feature the BMW HP Motorsport colours. A hand-brushed aluminium fuel tank sealed with a clear finish underscores the bike's high-quality racing look.