

# BMW at RETTmobil 2016

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# 1. BMW at RETTmobil 2016 Competence in emergency vehicles.



At this year's RETTmobil trade fair in Fulda (11th to 13th May 2016) the BMW Group once again presents a wide range of models tailored specifically to the requirements of emergency and special safety vehicles on their stand no. 2018 in Hall 2.

RETTmobil has become firmly established as Europe's leading trade fair for rescue and mobility and is a central information platform for international rescue teams, fire services and emergency physicians. This year, the 16th event of its kind, more than 500 exhibitors from 20 countries will present their most recent products and latest technologies on 70,000 square meters of exhibition space in 20 halls. In addition, international trade visitors will gain a comprehensive overview of the latest developments in the fields of emergency services, technical assistance, as well as fire and civil protection.

## **Many years of experience and expertise in special vehicles.**

In this technically challenging environment, the BMW Group presents its experience and expertise, acquired over many decades, in the development and manufacture of special vehicles. As a leading manufacturer of premium automobiles and motorcycles, BMW exhibits in Fulda an extensive range of customized solutions for functional emergency vehicles, on both two and four wheels. These vehicles not only meet the highest standards with respect to functionality, performance and safety, but also in terms of sustainability and cost-effectiveness.

## **BMW exhibits sample products on both two and four wheels.**

With four automobiles and a motorcycle, BMW demonstrates to the professional community its capabilities in the manufacture of emergency vehicles. The focus of the BMW Group's stand (no. 2018 in hall 2) is a fire service command vehicle show car based on the new BMW X1 as well as a BMW i3, extensively upgraded for use by the emergency services. In addition, a vehicle for emergency physicians based on the BMW 2 Series Gran Tourer and the tried-and-tested BMW X3 in the role of a fire service command vehicle demonstrate the extensive expertise of BMW in the construction of vehicles meeting the exacting requirements of operational deployment. A motorcycle for emergency physicians based on the BMW R 1200 RT fittingly rounds off the BMW Group's trade fair presentation, making the outstanding

suitability and high-level functionality of BMW motorcycles for use by the emergency services a tangible experience.

Further information on BMW emergency vehicles can be found on the Internet at [www.bmw-behoerden.de](http://www.bmw-behoerden.de).



## 2. At the focus of the BMW Group stand. Tailor-made vehicles for different operational applications.

### 2.1 The BMW i3 show car. Electric drive for rescue work.

Agile, with powerful acceleration and above all, locally emission-free: these properties make the BMW i3 perfectly suitable as an operational vehicle for the emergency services. BMW was the first manufacturer to provide from the very beginning a fully fledged premium vehicle developed purely for electric mobility with special additional equipment for the emergency and rescue services.

At RETTmobil 2016, BMW exhibits as a show car the BMW i3 with range extender for the emergency services. The special "BMW i3 design" foiling in orange-red with "Emergency Services" printed on the front, the sides and the rear is part of the range of special equipment that includes front and rear flashers in blue, Sepura digital radio preparation and the Hella RTK 7 special signal roof bar system with the KL-LM2 LED flasher module and a worklight. The special signalling system has LED strobe headlights, front and rear stop signal matrices and also features alley lights: these are four white high-power LEDs for immediate close-range illumination. The rear-mounted LED signal bar (LSB) Arrow Stick is also operated via the special signalling system. In addition, the BMW i3 for the emergency services features fast-charging systems for direct and alternating current, so that its batteries can be fully recharged at any available power source in the shortest time possible.

The BMW i3 is driven by a synchronous electric motor, delivering up to 125 kW/170 hp. Combined electricity consumption (NEDC) is 13.5 kWh/100 km. (Combined fuel consumption with range extender: 0.6 l/100 km, combined CO<sub>2</sub> emissions 13 g/km)\*. Under purely electric power, the BMW i3 with range extender has a range of up to 170 kilometres (according to NEDC). The optional range extender, fitted to the trade show vehicle, is a small internal combustion engine that extends the range to up to 150 kilometres. The BMW i3 accelerates from a standing start to 100 km/h, in 7.9 seconds and reaches a top speed of 150 km/h.

#### **A vision becomes reality.**

The fully electric BMW i3 as a part of the everyday life of operational and emergency services is no longer just a vision. In the meantime, emergency services in Bavaria, Milan, Los Angeles and London have added the BMW i3 to their fleet of vehicles.

\* Consumption figures were determined on the basis of the ECE test cycle, dependent on the tyre format.

## 2.2 BMW X1 xDrive20d: Fire service command vehicle show car.



The new BMW X1 is the result of a thorough upgrade a few months ago of the most successful model series in the sports activity vehicle segment. Now the new model generation is celebrating its premiere as a fire service command vehicle show car at the BMW Group stand in hall 2 at RETTmobil 2016. The exterior features of the command vehicle show car include special foiling in the fire service design applied to the body paintwork in Alpine white, a flat roof bar special signalling system as well as blue front and rear flashers. In the interior, the new BMW X1 fire service command vehicle has been prepared for an analogue Teledux-9 radio system.

### **Advanced, intelligent drive.**

The BMW X1 xDrive20d is powered by a four-cylinder turbo diesel delivering 140 kW/190 hp and a maximum torque of 400 Nm. The consumption of the model with the optional 8-speed Steptronic sports transmission is a combined 5.1 litres\* of diesel per 100 kilometres. This corresponds to CO<sub>2</sub> emissions of only 133 g/km\* and highlights the outstanding efficiency of the drive. Equipped in this way, the BMW X1 reaches 100 km/h after 7.6 seconds from a standing start and has a top speed of 220 km/h. The driving force is channelled to all four wheels through BMW xDrive. This intelligent all-wheel drive system expands the dynamic potential of the vehicle even further by distributing the driving force within fractions of a second to each wheel individually, depending on road conditions and the adhesion between the tyre and the road surface.

A total of six engines are available for the new BMW X1: three petrol-driven and three diesels. They cover a power range from 100 kW/136 hp to 170 kW/231 hp (combined fuel consumption: 6.6 to 4.1 l/100 km, combined CO<sub>2</sub> emissions 152–109 g/km)\*. In addition to the versions equipped with the BMW xDrive intelligent all-wheel drive system, the models BMW X1 sDrive18i and BMW X1 sDrive18d are available fitted with dynamic front-wheel drive.

## 2.3 BMW 220d xDrive Gran Tourer: The vehicle for emergency physicians.



With the BMW 2 Series Gran Tourer, BMW has developed a unique series combining an excellent use of space with the dynamic driving experience that is so characteristic of BMW. The BMW 2 Series Gran Tourer on display has been designed as a vehicle for emergency physicians. The appropriate foiling indicates the specific purpose of the vehicle. The two blue LED front flashers behind the radiator grille and the two blue LED flashers in the tailgate can be activated when on a trip covered by special rights for rescue operations. The multi-purpose roof antenna (4 m), which can be used to receive GPS (Global Positioning System) signals as well as for the TETRA digital trunked radio, is connected to the preparations for installing the AEG TX9 system and Sepura digital radio. An additional battery with a capacity of 70 ampere-hours (Ah) ensures the continuing functional availability of all onboard electrical and electronic equipment in the field, even when the engine is switched off. Chargers for both vehicle batteries charge the power storage system back up again comfortably during operational deployment. In addition to an accident data recorder, an additional LED light in the luggage compartment and a steel partition grille behind the rear seats complete the list of equipment fitted to this BMW emergency physician vehicle.

### **Powerful diesel combined with the intelligent all-wheel drive system.**

The BMW 220d xDrive Gran Tourer is powered by a four-cylinder turbo diesel engine delivering 140 kW/190 hp at a maximum torque of 400 Nm. The consumption of the model with the 8-speed Steptronic transmission is a combined 5.1–4.9 litres\* of diesel per 100 kilometres. This corresponds to CO<sub>2</sub> emissions of just 134–128 g/km\* and delivers – considering the power of the engine – exceptionally good economic efficiency. With this power unit, the BMW 220d xDrive Gran Tourer accelerates in 7.6 seconds to 100 km/h from a standing start and clocks a top speed of 218 km/h. The BMW xDrive intelligent all-wheel drive system distributes the driving force variably to each of the four wheels, taking into account the traction of each individual wheel.

In many markets a total of seven engines are available for the BMW 2 Series Gran Tourer, in others six engines: three petrol-driven and three or four diesels. They cover a power range from 70 kW/95 hp to 141 kW/192 hp (combined fuel consumption: 6.2 - 3.9 l/100 km, CO<sub>2</sub> emissions 144–104 g/km)\*.

\* Consumption figures were determined on the basis of the ECE test cycle, dependent on the tyre format.

## 2.4 BMW X3 xDrive20d: The all-round command vehicle.



With the BMW X3 xDrive20d, BMW demonstrates how comfortable and functional, but also how fast and emotional a modern command vehicle can be. The BMW X3 shown at RETTmobil is equipped with the dynamic M Sport package and 20-inch M light alloy wheels, double-spoke 310 M, with mixed tyres. These, together with the heavier tint of the rear side windows and the rear window, lend additional emphasis to the dynamic character of the BMW X3. On the exterior, the specially designed BMW foiling and the DBS 4000 roof bar signalling system with alley lights, worklights, power flash, auxiliary flash, ASG full matrix front and rear, as well as pressure chamber loudspeakers unmistakably identify this fire service command vehicle at first glance. Two blue LED front flashers fitted behind the radiator grille and a further two blue LED flashers installed in the tailgate complete the light signals controlled by the roof bar system. The system is operated via the user-friendly HBE 300 hand control unit, with an integrated microphone.

### **Everything is ready for the installation of the radio system.**

The command vehicle has also been prepared for the installation of an AEG TX9 with a control handset and Sepura digital radio. Instead of the fin antennas fitted with the BMW Professional navigation system, the fire service command vehicle has a combination antenna (2 m/4 m) of 600 mm antenna length, which is suitable for analogue radio as well as for the TETRA digital trunked radio. An auxiliary battery, 12 V/60 Ah, part of the basic equipment in vehicles designed for the emergency services, provides a secure supply of power to the electrical and electronic supplementary equipment in the BMW X3 command vehicle, which also includes an accident data recorder. The steel partition grille fitted behind the backrests ensures that any equipment loaded is always separated from the passengers. An additional LED luggage compartment light helps the user to find pieces of equipment quickly, even in poor lighting conditions.

### **The power unit combines dynamic with efficiency.**

The powerful two-litre, four-cylinder turbo diesel, delivering 140 kW/190 hp at a maximum torque of 400 Nm, ensures that the vehicle is propelled by a dynamic but efficient driving force. The consumption of the BMW X3 xDrive20d with optional 8-speed Steptronic transmission is a combined 5.3–4.9\* litres per 100 kilometres, while the corresponding CO<sub>2</sub> emissions of 139–129 g/km\* are the very best found in this vehicle segment.

\* Consumption figures were determined on the basis of the ECE test cycle, dependent on the tyre format.

The 8-speed Steptronic transmission operates either automatically or manually via shift paddles on the steering wheel. The BMW xDrive intelligent all-wheel drive system channels the drive power to all four wheels. It enhances both traction on difficult surfaces as well as driving safety and heightens the dynamic potential of the vehicle even further by distributing the driving force within fractions of a second to each wheel individually, depending on road conditions and traction between the tyre and the road surface. From a standing start, the BMW X3 xDrive20d accelerates in 8.1 seconds to 100 km/h and the top speed is 210 km/h.

In addition to the models fitted with the BMW xDrive intelligent all-wheel drive system the BMW X3 sDrive18d is available with rear-wheel drive. A selection of seven engines are available for the BMW X3 – three petrol-driven and four diesels – with engine outputs ranging from 110 kW/150 hp up to 225 kW/313 hp (combined fuel consumption: 8.3–4.7 l/100 km; combined CO<sub>2</sub> emissions: 193–123 g/km)\*.

## 2.5 BMW R 1200 RT: The motorcycle for the emergency physician.



The amount of time gone by between an accident occurring and first aid being administered often decides the success of rescuing or reviving an injured person. Therefore arriving at the scene as soon as possible is of utmost importance to an emergency physician. This can be a problem in metropolitan areas in particular due to high traffic volumes and densely built neighborhoods. In situations such as these, the strengths of motorcycles can be fully exploited as vehicles for the emergency services.

### **Best qualifications as an emergency services motorcycle.**

Even the standard BMW R 1200 RT production model possesses the best qualifications for use as an emergency physician motorcycle. Thanks to its ultra-modern frame with two selectable riding modes and Automatic Stability Control (ASC) fitted as standard equipment, the BMW R 1200 RT can be adapted to road conditions, thus additionally improving riding safety. The BMW R 1200 RT excels through refined ergonomics for improved ground accessibility, which benefits riders of all statures when manoeuvring and when getting on and off the machine. The best possible protection from wind and weather is provided by the optimized windshield, thus ensuring maximum riding comfort.

### **Practical equipment features.**

The BMW R 1200 RT shown at RETTmobil in Fulda is fitted with several pieces of customized special equipment that have been specifically designed for an emergency physician's motorcycle. The appearance of the motorcycle is marked by the emergency physician foiling in fluorescent red, contrasting with the base paint in Glacier silver. Blue LED flashing beacons at the front and a blue LED rotating signal beacon on a telescopic pole in conjunction with the electronic audible signalling system indicate to other road users at an early stage the particular urgency of the journey when riding to an incident covered by the special rights for emergency services. A public address system allows the emergency physician to give clearly audible instructions to bystanders or other emergency personnel. The technical preparations for the installation of a digital radio are at the rear of the motorcycle. The BMW R 1200 RT is equipped with two side-mounted panniers labelled "Emergency Physician" with a total volume of 56 litres for the secure transportation and storage of the emergency physician's medical equipment. Protection rails around the panniers and below the front of the fairing protect the motorcycle from

damage. An auxiliary battery guarantees long periods of operation, even if all of the electrical and electronic equipment used to secure the scene of an accident is activated while stationary or if an external load is connected to the electrical outlet of the motorcycle.

### **Convincing performance and efficiency.**

In order to quickly reach the scene of an incident, the 274 kg (DIN curb weight) BMW R 1200 RT is fitted with a powerful air/water-cooled two-cylinder boxer engine with 1,170 cc capacity, delivering 92 kW/125 hp at 7,750 rpm and a maximum torque of 125 Nm at 6,500 rpm. Simultaneously the drive unit is sure to impress with an extremely economical average fuel consumption (according to ISO 7118) of 3.9 litres per 100 km at 90 km/h, 5.3 l/100 km at 120 km/h. On the road, the BMW R 1200 RT delivers an extremely dynamic riding performance, accelerating from 0 to 100 km/h in 3.8 seconds and achieving a top speed of over 200 km/h.

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 the 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>. Leitfaden CO<sub>2</sub> (GuidelineCO<sub>2</sub>) (PDF – 2.7 MB)



### **3. Internationally sought-after specialists. BMW special vehicles deployed worldwide in more than 15 countries.**

With decades of experience and specialist expertise in the construction of emergency vehicles, BMW also enjoys an excellent international reputation. It is no wonder that BMW automobiles are deployed with police forces, fire services and rescue organizations around the globe. In Europe, the United Kingdom, Italy and Switzerland have the largest fleets of BMW emergency vehicles. Beyond Europe's borders, Azerbaijan, Bahrain, Dubai, Hong Kong, Qatar, the Democratic Republic of Congo and Taiwan also rely on emergency vehicles supplied by BMW.

#### **The most popular BMW emergency vehicle worldwide: the BMW 3 Series.**

Internationally, the BMW 3 Series enjoys the greatest popularity as the basis for BMW emergency vehicles, with slightly more touring models in this series having been put into service. Most of the emergency vehicles based on the BMW 3 Series are currently in service in Italy, the United Kingdom and Azerbaijan.

#### **Tried and tested: the popular BMW 5 Series.**

There is continuing strong demand for the successful BMW 5 Series; the sedan model is in service in Dubai and Taiwan, in addition to further locations. Norway, Switzerland and the United Kingdom also rely on sedan and touring models from the BMW premium class. Since its market launch in 2010, the sixth generation of the BMW 5 Series has been the leader in its class of vehicles in terms of design, driving dynamics and efficiency. It has thus become the most successful BMW 5 Series generation to date; furthermore, for the last six years it has commanded the top of the sales leader boards in the segment worldwide by a significant margin.

#### **A variety of applications: the BMW X models.**

The fact that internationally, the BMW X5 is the third most popular BMW series as an emergency vehicle may seem surprising at first glance, but given the broad spectrum of applications together with the attractive range of engines, the popularity of the BMW X5 with rescue workers and police authorities makes perfect sense. In addition to the United Kingdom and Switzerland, Qatar and Norway also deploy the BMW X5 on official duties. In addition to the BMW X5, the BMW X3 and BMW X1 are also available as emergency vehicles.

**Variable space concept in action: the BMW 2 Series Gran Tourer.**

The police authorities in Switzerland and the United Kingdom are already deploying the latest vehicle concept of an emergency vehicle from the BMW range in the form of the BMW 2 Series Gran Tourer and are benefiting from its particularly versatile interior.

**The next generation of emergency vehicles: the BMW i3 and BMW i8.**

Not only the Bavarian police are currently learning that sustainability and locally emission-free driving can also harmonize with the everyday duties of an emergency vehicle, in the truest sense of the word. Also authorities in Italy, the United States and the United Kingdom are deploying the first emergency vehicles based on the electrically driven BMW i3. Its high degree of agility and manoeuvrability and its comprehensive functionality come into their own, especially in urban areas. In contrast, the particularly dynamic characteristics of the advanced plug-in hybrid BMW i8 sports car, in addition to its outstanding efficiency, speak for its deployment. Both of these attributes impressed the police authorities in the USA and in Dubai – they use the innovative sports car as an emergency vehicle, too.

## 4. Comprehensive systems with a long-standing tradition

### Outstanding quality and practical skills.



For almost 60 years, BMW has been developing state of the art emergency vehicles of outstanding quality in collaboration with both national and international authorities. Adapted to the respective local regulations and directives, BMW special vehicles meet the same high standards as the base vehicle itself in terms of quality, functionality and safety and unite maximum safety with cost-effectiveness and innovative technology.

The history of BMW as a manufacturer of emergency vehicles dates back to the 1950s. At that time, the Munich police authorities put new BMW 501 and BMW 502 patrol cars into service. These models, fitted with powerful six-cylinder and eight-cylinder engines became known throughout the country thanks to the German TV series "Funkstreife Isar 12" and even back then the "Baroque Angels" as the sedans were affectionately nicknamed set standards in terms of reliability and serviceability.

#### **The integration of future users into the development process.**

Since that time, BMW elevated the development and manufacture of emergency vehicles to a new level of professionalism. This also includes involving the future users of the emergency vehicles in the development phase. Representatives of the fire services, rescue services and other institutions contribute their practical experience and collaborate closely with BMW engineers to define the requirements of a new emergency vehicle fit for practical deployment. These are then compared with the specifications of the base model and implemented by renowned specialist companies, integrating the latest technical developments. This process results in comprehensive vehicle concepts that unite the specific needs of the customers with the high quality standards of BMW.

The emergency vehicles planned using this procedure are built in an integrated production process, which in terms of quality, functionality and safety achieves a level which cannot be reached by the more usual retrofitting of individual components. Thus, the installation of measuring, radio and signal control technology in all model series is integrated into the series production process. Emergency vehicles based on models in the BMW 3 Series and BMW 5 Series are fully assembled on the same production lines as the series production models themselves.

**Full manufacturer's warranty on the entire emergency vehicle.**

In order to maintain the high level of BMW standards, the emergency vehicles including all fittings, installations and additions, are required to pass a series of rigorous tests, the requirements of which exceed the demands of current test standards. This is how BMW guarantees that the customer will receive a customized emergency vehicle of the outstanding quality for which BMW is known. All components are perfectly matched and work safely and reliably as integral parts of an overall concept. Accordingly, BMW grants all components of any special equipment installed at the factory the full BMW manufacturer's warranty.

This is based on nearly 60 years of experience in the construction of special vehicles for the police, fire and rescue services. The expertise, innovation and quality of the ongoing development of BMW emergency vehicles are built on this solid foundation.