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| **Contact:** | Matt RussellBMW Product & Technology Communications Manager(201) 307-3783/ matthew.russell@bmwna.comDavid J. BuchkoBMW Advanced Powertrain & Heritage Communications(201) 307-3709/ dave.buchko@bmwna.comMonty RobertsBMW Product & Technology Communications(201) 307-3755 / monty.roberts@bmwna.com |
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**BMW ConnectedDrive 2012**

**A new milestone in networked mobility**

**Woodcliff Lake, NJ – July 13, 2012…** BMW ConnectedDrive has been setting the pace in the field of automotive connectivity for many years now, and is renowned for cutting-edge in-car concepts and technologies that enhance the driving experience. New functions and displays mark another milestone in BMW ConnectedDrive development and demonstrate the BMW Group’s commitment to retaining its position as the leading innovator in this field.

* The next generation of the BMW Navigation system receives several enhancements, featuring a design rendered entirely in 3D, a modified display and updated control concept as well as a host of extra Navigation, Office and Multimedia functions.
* Dictation function with full speech recognition: for the first time, the driver is able to compose short texts for emails and SMS messages while driving by simply dictating them. Meanwhile, the function for recording voice memos then sending them by email ensures that any flashes of inspiration at the wheel can be instantly preserved.
* BMW iDrive Touch Controller: following the addition of a multi-touch touchpad, not only does the Controller allow characters to be entered with the touch of a finger, it lets drivers navigate in maps, including zooming in and out.
* The BMW LTE Car Hotspotushers in the next generation of mobile internet. This particular accessory makes the BMW Group the first car manufacturer to bring the ultimate in high-speed mobile internet into the car.
* BMW Apps: the BMW Group’s Software Development Kit (SDK) makes the integration of third-party apps into the vehicle’s on-board control and display logic easier expanding the possibilities for a more pleasant and safer user experience.

The new-generation BMW Navigation system: Taking display and control into the third dimension.

In 1994 that BMW became the first carmaker to offer a built-in navigation system in the BMW 7 Series. That first system arrived in the US in 1997. The new-generation BMW Navigation system boasts a new design and an optimized control concept. This new system will appear in the US this fall in 2013 BMW 5 Series, 5 Series Gran Turismo and 7 Series models as well as the new BMW ActiveHybrid 3. Other models will follow.

For the first time, the individual menus are structured entirely in virtual, three-dimensional spaces and calculations are performed in real time. In addition to easier scrolling and browsing, the high-performance system – featuring a 1.3 GHz processor and dedicated 3D graphics chip – offers top-quality animations and dynamic transitions to improve the whole operating experience.

The previous system’s proven menu navigation has been retained, while new functions have been added to enhance the system’s capabilities and enrich the customer experience. For instance, a new spatial dimension has been added to the way in which the menu levels are displayed: when sub-menus are selected, they appear dynamically from the right, while the corresponding top menus fade into the background on the left, where they are still visible. The tactile feedback for the user is accompanied by a direct visual confirmation of their interaction with the vehicle, which allows them to clearly see their current position within the menu structure on the display.

Besides the new menu display, the route guidance graphics and the map views within the navigation function have also been modified and improved by the addition of various interactive options. The split-screen portion of the central information display, for example, now includes new display functions for the navigation mode. While the driver still enters the destination by selecting the country, city and street, the chosen destination simultaneously appears in the map view on the split screen for easier orientation. If necessary, the driver can use a zoom function to change the section of map shown and check that the selected destination is the intended one.

High Guiding and 3D City Models.
For the purposes of actual route guidance, the familiar guiding function using arrows in the split screen has now been supplemented by a High Guiding variant, which clearly flashes up detailed navigation information in the multifunctional instrument cluster display, the central information display as well as the Head-Up Display. High Guiding is automatically activated when the vehicle comes within a certain range of the next navigation instruction: from a distance of 300 meters, or about 985 feet, outside built-up areas and 150 meters, or about 490 feet, in built-up areas. The reduced arrow display switches to a detailed bird’s-eye perspective of the surrounding area. The driver receives precise directions for changing lanes at the appropriate time. As the driver draws closer to the event, the display gradually shifts from the bird’s-eye map view to an overhead view of the traffic situation for optimum orientation and guidance. A dynamic display of the vehicle’s present position calculated in real time serves as an aid that allows drivers to closely track their progress.

The new navigation view option, “3D City Models”, features a realistic depiction of surrounding streets and buildings to help drivers get their bearings, provided such a visualization of the city in question is stored in the vehicle’s database.

The extended toolbar puts extra functions at the driver’s fingertips.
In navigation mode, there is now an extended toolbar that, for the first time, allows the map contents to be customized quickly and easily without having to exit from the map view. The desired change takes effect immediately, and the driver is able to effortlessly switch the view to suit the current situation and the information required. The moment the driver selects the icon for the extended toolbar with the iDrive Controller, a second toolbar appears as an extension of the original icon bar. This can then be used to open additional selection options in the same view, which were previously only accessible via Option menus. The settings here allow the user to call up Advanced Real-Time Traffic Information (ARTTI) or weather information, for example, to display Points-Of-Interest, or quickly switch from the overhead map view to the bird’s-eye view. Depending on the data required, drivers are able to activate individual features, quickly find the necessary information, and then return to their preferred map view.

Interactive map and PIE menu.
The new BMW Navigation system also adds several new functions to the interactive map view. The iDrive Controller can now be simply turned to alter the map scale or tilted to move the section of map in the display, even in a diagonal direction. Another new feature of the interactive map view is the ability to call up special functions directly from the map itself. All the driver has to do is select a point on the interactive map and the PIE menu will open up in front of the map, providing quick and easy access to a wide range of actions. Depending on the information stored, the driver just has to click to show points of interest in the vicinity, view details for them (where available), start navigation to them, change the map view or display the current location or destination. And should any additional data be available for the selected location, such as a telephone number, the driver can retrieve this information with a click too. The benefit lies in the system’s straightforward and quick operation.

ARTTI – Advanced Real Time Traffic Information.
The latest generation of the BMW Navigation system once again employs ARTTI technology for calculating routes and diversions accurately and reliably by factoring in the real-time traffic situation for both route guidance and calculation of the arrival time. By using the 3G mobile network and the vehicle’s built-in SIM card, ARTTI offers the benefit of faster data transmission combined with more extensive coverage. The new system extends beyond major highways and thoroughfares to cover country roads and even a large number of urban routes as well.

**Office functions: connection of two telephones and new-look calendar.**

The arrival of the new BMW Navigation system also sees new functions being added to the BMW ConnectedDrive Mobile Office portfolio. It is now possible to have two telephones connected to the vehicle simultaneously, in which case the contact details from both are combined into a joint contact list for phone calls. Calendar and contact information is imported in next to no time thanks to the high-performance hardware, meaning that both telephones are fully readied for in-vehicle use as quickly as possible.

The calendar from an integrated smartphone is now displayed in an enhanced, new-look format. Appointments appear much in the same way as in popular email programs, while the daily view and calendar navigation have been further simplified, too.

**Multimedia – more music, favorites and extended radio functionality.**

On the multimedia front, a 20 GB hard drive makes for a richer in-car entertainment experience. Meanwhile, the Music collection search function has been reprogrammed to allow the desired track to be located for playback even faster than before. The extended toolbar principle is once again employed for fast access to additional sub-menu options, as well as even greater simplicity and ease of operation.

New playback functions have been added for a more pleasurable entertainment experience. If the driver likes the song that’s currently playing, for instance, and would like to hear more of the same, simply activating the new “More like this” function generates a new playlist containing similar tracks from the Music collection. The facility for saving favorites in the Music collection by clicking on the “Add to favorites” star icon during playback is another new feature. All favorite tracks can then be found together by going to the Playlists menu item.

Radio+: seeing what you’re hearing.
For the first time, FM radio programs are accompanied by graphics in the central information display’s player screen, just like digital radio. Where FM radio stations broadcast the necessary data (via radio text or radio text+), the artist, album and genre cover will now be displayed in the same way as they are when listening to HD radio or using an external device. And even if no data is transmitted by the station, a generic genre cover and the station name will be displayed for a neat, high-quality effect.

**BMW iDrive Touch Controller – fingertip control coming in 2013**

The introduction of the BMW iDrive Touch will integrate a touch-sensitive pad into the iDrive system’s central control unit, the iDrive Controller, for the very first time. Measuring two inches across, the multi-touch surface makes certain in-vehicle control functions more intuitive, faster and easier to use. BMW iDrive Touch will appear on US models beginning in 2013.

Incorporating the touchpad into the iDrive Controller means it is ergonomically positioned where it is easy to reach. Entry, selection and confirmation are performed in the usual way using the control knob’s rotate-and-press mechanism, the direct proximity to the touchpad means there is no need for any fumbling around. The touch surface will add various convenience-enhancing functions to the iDrive Controller, including handwriting recognition as well as navigating in maps.

**Handwriting recognition.**
The handwriting recognition function enables characters to be entered with a finger by simply “writing” them on the surface of the touchpad. Whereas previously this could only be done with the “Speller” – a circular arrangement of letters in the display – by turning the control knob, the touch-sensitive surface now recognizes the letters and the Speller instantly jumps to the right point of the alphabet. To further reduce driver distraction, a voice output repeats the character that has been recognized.

**Map navigation.**

Apart from recognizing handwriting, the iDrive Touch also makes it possible to navigate freely within the route map shown in the display and zoom in on it, too. The scale is changed using the two-finger pinch gesture already familiar from many laptops and smartphones. If there is a traffic jam ahead, for example, the driver can adjust the scale of the displayed portion of map using the touchpad, move the view to the hold-up and take a look at the suggested alternative route. The driver can also use touch control to mark the points of interest (POIs) stored in the map, then press the control knob to confirm his choice and display more detailed information.

The BMW LTE Car Hotspot brings ultra-high-speed mobile internet into the car.

The BMW LTE Car Hotspotushers in the next generation of mobile internet, and will make the BMW Group the first car manufacturer to bring the high-speed mobile internet experience into the car. All that is required apart from the BMW Car Hotspot is an LTE-capable SIM card, which is inserted into the hotspot. Once it has been put into service in the vehicle, the adapter works just like any hotspot, meaning the passengers can enjoy LTE high-speed internet access on any devices they connect up.The hotspot also comes with a built-in battery pack and antennae, allowing portable use for up to 30 minutes outside the vehicle without an external power supply. A standard USB power supply unit even enables fully autonomous use without the need for either vehicle or battery.

Users connect their device via WiFi to the BMW LTE Car Hotspot, with its Long Term Evolution technology for going online. Of course, the adapter also allows multiple devices to be linked up simultaneously, so that the LTE internet connection can be shared by all passengers. Meanwhile, the galvanic connection to the vehicle antenna improves reception.

The BMW LTE Car Hotspot fits into any BMW center console with a phone base plate, and can be retrofitted quite easily without changing the antenna and without a great deal of installation work. Even older BMW vehicles can be easily equipped with the latest in mobile internet technology by adding this accessory.

The BMW LTE Car Hotspot will be available for US models in 2013.

LTE – high-speed internet.

Streaming music or videos from the internet to a mobile device or to the vehicle is already a reality today, with the data being transmitted over the mobile phone network. The bandwidth of the present UMTS 3G standard is limited, however, meaning that media often cannot be streamed in optimum quality. And because sufficient network coverage isn’t available everywhere, not only is video playback sometimes in low resolution, it is jerky too, while music streaming is plagued by pauses.

Long Term Evolution (LTE) technology will soon put an end to such annoyances. Also known as 4G, LTE is one of the fourth-generation mobile standards, and represents the next generation in communications technology after GSM (2G) and UMTS/HSPA (3G). What makes LTE so special is its exceptionally broad bandwidth combined with very low latency: 3G currently can only achieve a theoretical data transfer rate of 14 Mbit/s, whereas the maximum with LTE is ten times that. With speeds of up to 150 Mbit/s and latency of just a few hundredths of a second, LTE paves the way for a mobile internet experience that matches – and in some cases even surpasses – that offered by a home PC with dedicated broadband line.

Coming soon: LTE for the SIM card integrated in the vehicle.
This will also herald benefits for the mobile services already being offered today under the umbrella of BMW ConnectedDrive, making them faster, more effective and even more widely available. Server-based services, such as in-car video and music streaming, will become even more attractive and easier to use as a result of the high bandwidth and low latency offered by LTE. By incorporating LTE technology into its vehicles, the BMW Group is ideally poised for taking the portfolio of BMW ConnectedDrive in-vehicle services to a whole new level.

Dictation function – writing by speaking.
The new generation of the BMW Navigation system adds various new speech functions to the BMW ConnectedDrive Mobile Office portfolio, most notably a dictation function that employs a full speech recognition system to simply transcribe the driver’s words. The dictated text can then be sent by SMS or email. There is furthermore a voice memo function for making recordings up to two minutes long, which can then either be sent in an email or archived. Meanwhile, the new, more intuitive voice control allows virtually all functions of the BMW Navigation system to be operated more simply, easily, quickly and, most importantly, safely than ever.

People are communicating increasingly by email or SMS, both privately and for business. The BMW Mobile Office functions already made it possible to have messages from a Bluetooth-connected mobile device displayed in the vehicle and read out. With the arrival of an automotive world first in the form of the dictation function, this feature is now complemented by a full speech recognition system. For the first time, this gives drivers the ability to dictate text freely and compose short text-based messages simply by saying what they wish to write.

Using a mobile device to write messages while at the wheel is a dangerous distraction from what’s happening on the road. The dictation function changes all that, however, as it allows short emails or text messages to be composed quickly, easily and, above all, safely while on the move all by the power of speech – with no need for drivers to take their hands off the steering wheel or their eyes off the road. The multilingual dictation function can recognize text read out in six languages at present. Just as with similar desktop applications, punctuation marks and instructions such as “new line” can be dictated, too, if the driver wishes to obtain an end result that is grammatically correct and easy to read.

The speech recognition technology is supplied by the company Nuance under the name Dragon Drive! Messaging, and the recognition work is performed on a remote server while the text is still being dictated. The sheer volume of the cloud server’s vocabulary is of tremendous benefit for a full speech recognition system, as it allows it to draw on millions of words without having to take up any memory space or computing power in the vehicle. Just a few seconds after dictation has been completed, the transcribed text will appear in the display and can also be read out if desired. Needless to say, drivers have a number of easy-to-use editing tools at their disposal for conveniently putting the final touches to emails and SMS messages.

In the US, he dictation function is incorporated within BMW AssistTM, and will be included as part of the available Convenience Plan which is available as an upgrade from the standard Safety Plan. The Convenience Plan already includes several convenient features including – BMW Online™, Concierge services and Critical Calling.

BMW Online™ allows online access to up-to-date fuel prices, news, weather conditions and forecasts, the latest DOW, S&P 500 and NASDAQ indices from Bloomberg, and the powerful reach of the Google Maps™ database – delivered on the vehicle’s Control Display.

The driver can be connected to a live concierge at the push of the SOS button or from “Concierge” menu option in the navigation system. The response specialist can offer assistance with restaurant and hotel recommendations, movie times and ticket information, flight arrival and departure gates and times as well as fuel pricing and availability. They can research and advise the traffic conditions based on your current location. Critical Calling allows the subscriber to make up to four operator-assisted calls per year from car. Using the SOS button to speak with a BMW Assist response specialist, they can then connect the driver to their requested party for up to five minutes.

Voice memos and more intuitive voice control.

The range of office functions offered by BMW ConnectedDrive has been expanded by another speech-based feature, too. The voice memo function, in contrast to the dictation function, allows the driver to make direct voice recordings of up to two minutes in length and send them instantly by email if required. The benefit of this is that it allows the driver to make a quick note of any ideas or to-do lists with an additional facility for forwarding them to whomever they may concern – without any great distraction from what’s happening on the road. Alternatively, drivers can simply take the recorded memos with them on a USB stick when they leave the vehicle.

The improved voice control offered by the Navigation system is designed to enable more intuitive operation of practically all functions by allowing the driver to phrase commands or questions in whole sentences (in German or English at present) and call up multiple functions with a single utterance, in the same way that the navigation destination can be entered with just one statement. The result is a voice control system that is even more intuitive and easy and convenient to use, making it safer too. All the driver has to do to phone someone, for example, is say the command: “Connect me with John Smith”, whereupon the system recognizes both the desire to make a phone call and the person the driver wishes to speak to. This works regardless of which order the first and surnames are registered in. The system then double-checks that the displayed number should be dialed before placing the call. The already sophisticated method of destination entry has also been further simplified and speeded up. The prompt “Navigate to London, 63 Park Lane” is sufficient to complete entry of the navigation destination. It is even possible to start composing an email or SMS message by voice control regardless of the current position in the menu structure. This can also be done by stating the intended recipient’s name when in Contacts and selecting their email address, which the system then automatically adds to the address field. All that now remains to do is to enter the subject and text of the message using the dictation function. The upshot of this is that speech can now be used to activate or initiate virtually all functions and actions – from tuning in to a radio station to modifying route criteria. What’s more, the system is as unerring in its answers to questions such as “How do I adjust the sound settings?” and “Are there any traffic messages” (when in the map view) as it is with system-related queries instigated with a simple “Help” or “What can I say here?”

Voice control at the BMW Group.
The BMW Group has built up many years of experience with voice control of vehicle functions. The introduction of full-word commands in 2006 was followed by a further milestone in 2009, when the BMW Group became the world’s first carmaker to offer a system capable of understanding an entire address – i.e. town, house number and street – read out in one go. By so doing, the BMW Group once again set a new standard for rapid, precise entry of navigation destinations. The voice-controlled search for music on the internal hard drive introduced in 2009 was another unique feature, and in 2010, voice control was extended again to include external music players. The overriding aim of voice control is to facilitate easy, quick and, most importantly, safe operation of the increasingly complex array of infotainment functions, especially for navigation, entertainment and telephone/communication applications.

Third-party apps – “BMW ready”.

In 2010, the BMW Group became the first carmaker to enable comprehensive, application-based integration of the Apple iPhone into vehicles. Apps extend the range of in-car services using the smartphone, making it possible to use features such as web radio, GoogleTM Local Search or FacebookTM safely and easily in the vehicle. But that’s just the start, as the application-based concept is designed to allow the use of “external” apps, paving the way for third-party services to be integrated into BMW and MINI models. With these third-party apps, the range of functions can basically be expanded at will: updating the app or installing another compatible app simply adds new functions, without having to make any modifications to the vehicle itself.

The first third-party apps to be fully integrated in the US were the music streaming service Pandora® and the online music subscription service MOG®. An integration for Stitcher will be available later this year.

By integrating these third-party apps, the BMW Group gives customers the option of continuing to use the preferred service providers already familiar to them when driving in their car, too. In future, this will allow the wide array of infotainment functions that BMW drivers enjoy when at home or out and about to be smoothly transferred to their vehicle.

Software Development Kit for third-party apps.
In order to ensure optimum integration of third-party applications into the vehicle, the BMW Group offers providers a special Software Development Kit (SDK). The SDK contains guidelines and specific tools that are intended to help the third-party providers develop compatible, vehicle-adapted versions of their apps. Following an approval process, the applications are certified by the BMW Group for MINI Connected, BMW Apps or Rolls-Royce Connect and made available to load on the smartphone.

The prerequisite for all apps is that they meet the requirements for distraction-free operation. The SDK consists of the framework as well as the necessary development tools (e.g. a simulation of the iDrive control logic in the vehicle [HMI]). The framework seamlessly integrates the apps into the display and control concept, thereby allowing them to be operated using the iDrive Controller and the steering wheel buttons. The app is also able to use the audio system and process vehicle data. Deeply embedding the app in the BMW display and control concept in this way forms the basis for optimum usability during the journey.

Coming soon: BMW Apps go Android.

From July 2013, **smartphones powered by Android platform** will also be able to benefit from application-based integration. With a market share of more than 50 percent, Android has become the most prevalent smartphone operating system. The BMW Group is therefore vigorously driving forward development in this area. By extending application-based smartphone integration to Android users as well, BMW now covers the bulk of the smartphone market and is opening up BMW apps to an even wider community.

The first concrete results are currently taking shape. The BMW Group specifically chose Samsung as its pilot partner for Android integration. The company is the world market leader across all mobile phone segments, **including Android powered smartphones,** making it an obvious choice for the BMW Group to join forces with Samsung for the launch of the app-based integration of Android. Android integration will be gradually rolled out to include other manufacturers. The BMW Group is once more highlighting its leadership position in in-car smartphone integration.

Leading the way for many years.
Opening up the platform for apps from other providers once again underlines the leading role played by the BMW Group when it comes to integrating mobile devices and internet-based services into the vehicle. The BMW Group became the first carmaker to enable integration of the Apple iPod into its vehicles’ audio systems back in 2004. And in 2007, the BMW Group gave an exclusive presentation of the first technology for integrating the iPhone into its in-car infotainment system in time for the phone’s launch.

**BMW Group In America**

BMW of North America, LLC has been present in the United States since 1975. Rolls-Royce Motor Cars NA, LLC began distributing vehicles in 2003. The BMW Group in the United States has grown to include marketing, sales, and financial service organizations for the BMW brand of motor vehicles, including motorcycles, the MINI brand, and the Rolls-Royce brand of Motor Cars; DesignworksUSA, a strategic design consultancy in California; a technology office in Silicon Valley and various other operations throughout the country. BMW Manufacturing Co., LLC in South Carolina is part of BMW Group’s global manufacturing network and is the exclusive manufacturing plant for all X5 and X3 Sports Activity Vehicles and X6 Sports Activity Coupes. The BMW Group sales organization is represented in the U.S. through networks of 338 BMW passenger car and BMW Sports Activity Vehicle centers, 139 BMW motorcycle retailers, 113 MINI passenger car dealers, and 32 Rolls-Royce Motor Car dealers. BMW (US) Holding Corp., the BMW Group’s sales headquarters for North America, is located in Woodcliff Lake, New Jersey.

Information about BMW Group products is available to consumers via the Internet at: [www.bmwgroupna.com](http://www.bmwgroupna.com).

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