

CES 2017 in Las Vegas

We are always on.

Connectivity transformed into a personal digital experience

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Notes:

This press kit as well as images and videos relating to CES 2017 are available online at: www.volkswagen-media-services.com/en/CES

Experiencing your personal digital world in a vehicle is made possible at CES

In the future, your own profile and preferences will always be with you – regardless of which Volkswagen model you're driving

Volkswagen presents the next milestone in ease of use

Visionary I.D. electric car being shown for first time in the USA

Volkswagen's show highlights at a glance

>> Connected Community. Even today almost all Volkswagen models have App Connect. Regardless of which smart phone customers use, practically any device can be integrated via MirrorLink, Android Auto or Apple CarPlay. At CES, the company is showing that ecosystems from suppliers such as Amazon go together perfectly with the Volkswagen ecosystem. Person, car and surroundings are connected with one another via the Volkswagen User-ID. Using this ID, drivers will in the future be able to take their personal digital settings and services with them wherever they go – regardless of which Volkswagen or provider they originate from. This creates a totally new user experience.

In terms of integrating Amazon Alexa, for instance, Volkswagen goes one step further, seamlessly connecting the voice assistant with Volkswagen Car-Net services. At CES, the company is making it possible to fully experience how you can communicate with Alexa from your car.

Intuitive Usability. Volkswagen is putting its focus on vehicles with intuitive controls. 'Interactive Experience' systematically builds on the control concepts of the Golf R Touch and BUDD-e. The Volkswagen Digital Cockpit (3D) is, for instance, celebrating its premiere. The Eyetracking function gives a preview of how the operation of vehicle features can be made even quicker and easier in combination with touch and gesture control. Finally, with the AR Head-up Display the real and virtual worlds merge into one.

Smart Sustainability and Automated Driving. The visionary I.D. combines the digitally connected world with an electrically powered car that has innovative controls and, when desired, can drive in fully automated mode. Volkswagen is presenting to the American public for the first time a prototype of this first compact model to be based on the Modular Electric Drive Kit (MEB). <<

Wolfsburg / Las Vegas, January 2017. Under the slogan 'We are always on.', Volkswagen is enabling visitors to CES 2017 to experience its vision of the mobility of tomorrow: moving away from the classic customer/car relationship towards a new mobile community in the era of digitalization – intelligently connected and sustainably mobile.

Visitors to the show can experience this community live in three theme zones: in the 'Connected Community' the focus is on the interconnected user with his or her personal digital preferences. Using their Volkswagen User-ID, they are able to configure settings easily and take them with them wherever they go. No matter in which vehicle they are sitting, they always have their favorite music, screen configuration and correct seat position with them.

'Intuitive Usability' provides a preview of future control concepts – from a three-dimensional instrument cluster and an Eyetracking function all the way to an AR Head-up Display.

In the 'Smart Sustainability' zone, Volkswagen uses the I.D. show car to demonstrate zero-emission and autonomous driving in combination with a totally new design style. The I.D. brings together the four Volkswagen fields of innovation: Connected Community, Intuitive Usability, Smart Sustainability and Automated Driving.

Yesterday's future is already being reflected in production vehicles today. Volkswagen is known for opening up the use of new technologies to mainstream market very quickly. CES 2017 offers exclusive and extremely exciting insights into Volkswagen's ongoing development efforts.

Connected Community

The Volkswagen User-ID – your personal digital center

At CES, Volkswagen is presenting a range of connectivity features systematically geared to the user's digital needs. Supporting future sustainable mobility concepts, it sets aside the conventional fixed link to a single vehicle, without losing out at all on individuality – quite the opposite.

Volkswagen CES App. It is the key to a unique CES experience: using the app (for iOS and Android), visitors create their own profile – i.e. a Volkswagen User-ID set up for the show with

new, innovative functions that are assigned to the user. At the individual user stations, show visitors can also configure personal settings for their personal ID quickly and easily. An array of different functions, such as selecting a favorite ambient light setting, can be performed directly within the app itself. All settings can be stored online and thus taken everywhere with them by the visitors, independent of any specific vehicle. In the Connected Car visitors can try out their personal configuration live.

Home screen. In 2016, Volkswagen introduced the central infotainment display with configurable home screen in the new Golf. In addition to the navigation view, it is possible for content and function-related tiles, such as 'Media', 'Phone' and 'Images', to be individually configured on the high-resolution 9.2-inch screen with its sophisticated glass surface. New at CES: the home screen is no longer linked to the vehicle, but to the individual via their ID. Using their Volkswagen User-ID, visitors sign onto the standard displays that have been set up and configure the screen content according to their wishes. Their settings are associated with their ID and can also be accessed in the Connected Car.

Features on Demand. A predefined feature set per vehicle? Those days will soon be over. In our everyday digital world we are accustomed to there being an app for practically everything we need available to us within seconds. Why not in the car as well? 'Features on Demand' facilitates the retrospective enabling of infotainment functions. Within the app or at the relevant user station at CES, visitors can pick favorites for their personal ID in a virtual Volkswagen store from services such as Digital Voice Enhancement, In Car Communication, Car-Net and Ready for Nav. At CES, the 'Test' option is available for selection. Later on, scenarios such as Test, Rent and Buy will be offered.

Digital Key. Unveiled at CES 2015, this function, which lets you use your smart phone as your key, is now a standard feature in the USA. Up until now, however, it has been tied to a specific vehicle and only covers remote opening and closing functions. At this year's show, the Digital Key is being shown with a whole array of technical possibilities: all visitors need to do is hold their smart phone containing their Volkswagen User-ID up against the Connected Car's door handle and the doors are immediately unlocked. Access rights can also be managed – and shared – for multiple vehicles. If, for instance, my partner or children want to get something from the car, I as the owner

can give them unlocking rights for a certain length of time. It is also possible to imagine using the Digital Key to temporarily grant someone I know access to the car trunk so that they can put something in there or take something out for me.

Partner Services. Your favorite television series or audio book for the journey: streaming services enable you to take them with you into your vehicle and enjoy them from there. Here too it's the Volkswagen User-ID that makes this possible. CES visitors can link to the partner services by app or via the portal at the user station. Want to try them out? The Connected Car is specially equipped for video streaming presentations with two tablets mounted on the backs of the front seats. Once the content concerned has been transferred to the vehicle, control is via the central infotainment display.

Home-Net. At CES Volkswagen is not only connecting driver and car in unprecedented fashion, but on top of that is integrating the home as well. Visitors are, for instance, able to try out the apps Doorbird, 'LG' and Volkswagen My Rules. Doorbird alerts the driver on the central infotainment display whenever anyone is at the front door of their home ringing the video door bell. 'LG' enables such functions as switching the lights at home on or off remotely. The technology helps the forgetful as well: a message appears via the advanced Volkswagen My Rules app whenever you leave something important behind at home. A trigger or connecting a phone causes the app initiate a search for all linked Bluetooth tags. And what's really great is that Volkswagen is launching these MirrorLink-based apps in Europe before the end of the year. In North America, Doorbird is already available.

Amazon Alexa. What would a connected community be without a common language? Volkswagen is demonstrating a perfect combination of the external digital world and its own connectivity features. For instance, the company is making it possible for people fully experience how they can communicate with the virtual assistant Amazon Alexa from inside the vehicle.

Via the hands-free system in their car, users can contact the Alexa Voice Service of their Amazon Echo system at home or in their office. This means that users can operate all of the functions, like control of lights and heating or access to weather information and news, from their car in a very easy and convenient way. Users can also ask Alexa to perform functions such as to resume the audio book begun at home.

Alexa considers herself being spoken to whenever she hears her name.

Volkswagen is additionally combining the Alexa Voice Service with functions from Car-Net. This will make it even easier in the future for users to schedule appointments or plan errands and always stay connected and up-to-date in their vehicles even more conveniently. This in turn makes it possible to control Car-Net functions from home or the office: if, for example, you intend to quickly buy some flowers while out in your car later on, you can program your navigation device with the following voice command: "Alexa, ask Volkswagen the way to the nearest flower shop." You can also find out if you can get there without having to stop for fuel: "Alexa, ask Volkswagen how much fuel is left in the tank."

Visitors at the show will have the unique opportunity to try out Alexa's integration in all its forms. Volkswagen is setting up a living room especially for this purpose.

The Connected Car

In the Connected Car, visitors to CES can integrate their personal digital world into the vehicle. What they experience is a systematic continuation of the eGolf Touch, which Volkswagen presented at last year's show. In addition to the integration of functions via the Volkswagen User-ID, another very notable feature is its new, intelligent voice-controlled navigation. This system's natural, free voice control represents a milestone in user interaction.

- The voice control works using natural speech ("I want to fill up", "I'm hungry").
- It can be activated using any keyword selected from a list.
- The activation word can come anywhere in the sentence ("Volkswagen, I want to go to Phoenix" or "I want to go to Phoenix, Volkswagen").
- If asked to do so, the system can explain the reasons for the route it proposes ("Volkswagen, why are you suggesting that filling station?" - "That filling station is located directly on the route").

- The POI search function can be linked with the driver's own Facebook account – the navigation system then takes any favorites saved on Facebook into account in its route planning.
- Through artificial intelligence, the system becomes increasingly familiar with a user and his or her preferences over time and utilizes this knowledge for personalized route suggestions.

Standard apps

The fact that the technologies Volkswagen is showing at CES are not just future visions is proven out by a look at the current Car-Net offering: at the 'Wall of Apps' visitors can learn about the range of standard apps already available today.

- **Car-Net App:** Conveniently manage the remote functions of the 'Security & Service' pack using your smart phone. Originally used exclusively in electric models, the Car-Net App is also available in an increasing number of models with internal combustion engines – even now nearly all Volkswagens are 'always on'.
- **App Connect:** This enables practically all smart phones (Android 5.0 or Apple iOS 8.1 and above) to be fully integrated into the vehicle by Apple CarPlay, Android Auto or MirrorLink, and so their use is totally legally while driving.
- **Media Control:** Using Media Control, users are, for example, able to enter the navigation route into the infotainment system or update the playlist very easily via smart phone or tablet. Video streaming is now also integrated.

Intuitive Usability

The rapid progress of digitalization is changing user behavior and with it the requirements for instruments, displays and controls. However, even in the digital age Volkswagen's aim remains the same: user operation must be simple and the ergonomics perfect. To this end, the communication channels between person and car are continually being optimized.

Volkswagen Digital Cockpit (3D). 'Interactive Experience' shows the next stage in the development of the Volkswagen Digital Cockpit (3D). Two screens set one behind the other create a 3D feel with a fascinating impression of depth. The three-dimensional presentation combined with excellent image quality makes learning to use the display even easier and quicker for the user.

Eyetracking. Add to this a function that recognizes which way the driver is looking and the user-friendliness is further increased significantly. The technology makes it possible for information not to have to be shown constantly on the display. Graphical animations are intentionally shown only when the driver looks at the screen. At the same time, users reach the control they want faster, as there are no longer any intermediate steps in the menu. A nice side-effect: fewer controls on the steering wheel.

AR Head-up Display. Another highlight is the AR Head-up Display. It projects information graphics in virtual form out ahead of the vehicle. This technology has the advantage that it is less tiring on the driver's eyes than displays inside the vehicle. In terms of function and feel Volkswagen goes way beyond what other manufacturers have presented to date. That is because the AR Head-up Display shows information on two levels.

- Level 1: Data of relevance to the route or the distance to the vehicle ahead appears on the road several meters ahead of the vehicle. As a result of the natural positioning on the road itself, the display fits seamlessly into the surroundings, the driver registers what is being shown more easily and understands it at once – driver distraction is significantly reduced.
- Level 2: All other data, such as infotainment indicators, are presented by the AR Head-up Display closer to the windshield. Here drivers are able to access any

personally relevant information without having to take their eyes off the road.

Central infotainment display and multifunction steering wheel. Here Volkswagen is systematically building on the control concepts of the Golf R Touch (CES 2015) and BUDD-e (CES 2016). Regardless of the fact that gesture control is now a standard feature in the new Golf, Volkswagen continues to fine-tune the touch slider control function. The Interactive Experience system's central infotainment display thus has multi-finger recognition. It lets users adjust the air conditioning system or audio volume via a menu, for example. Tactile feedback and the way that functions and interactions are illuminated help users to find their way around without having to take their eyes off the road. The same principle is used on the multi-function steering wheel's control pods and here too improves the ease of use.

Smart Sustainability and Automated Driving

I.D. – the vehicle concept of a new age

The visionary I.D. combines the digitally connected world with an electrically powered car that, when desired, can drive fully autonomously. The concept car celebrated its world premiere last year at the Paris Motor Show. At CES Volkswagen is presenting it for the first time to the American public. The production version of the I.D. is planned to launch as early as 2020 and then also to be ready for fully autonomous driving starting in 2025.

Electric drive. The first compact Volkswagen to be based on the Modular Electric Drive Kit (MEB), the I.D., is powered by a 125 kW / 170 PS electric motor. Its maximum range of up to 600 kilometers and a target price on a par with a Golf with an engine of comparable power make the matter of 'zero emissions' something that can be taken in stride.

Design. At the same time the I.D. presents a totally new design style. In the interior, for instance, Volkswagen has realized an open-space concept: somewhat shorter than a Golf, it offers the spaciousness of a Passat. This was made possible by the new drive concept architecture with an electric motor on the rear axle and a high-voltage battery in the vehicle floor, which enables a long wheelbase with short overhangs and thus more space and flexibility. At the same time, the I.D. already takes us

ahead to the year 2025: in 'I.D. Pilot' mode the I.D. is the first Volkswagen concept car to offer fully autonomous driving. 'I.D. Pilot' is activated by touching the VW logo on the steering wheel, which then disappears into the instrument panel and gives the driver an entirely new feeling of space.

From every perspective the exterior looks highly engaging. Everything is very clear. Sturdy volumes, maximum precision, a charismatic front end, iconic C-pillars, flowing, sculpted surfaces and expressive wheels define Volkswagen electric mobility.

Connectivity and control. A lot of what Volkswagen is showing at this year's CES will be found again in the I.D. Drivers will open and turn on the I.D. using their smart phone as a Digital Key. Their personal seat and air-conditioning settings, favorite radio stations and media playlists, sound system settings, contact details of friends and business partners and the configuration of their navigation systems will be stored in their personal Volkswagen User-ID. Also on board: the AR Head-up Display and Eyetracking.

In this way, the I.D. combines the themes of the Connected Community, Intuitive Usability and Smart Sustainability – and supplements them with autonomous driving. Bring on the future!