NO. 3 • JUNE 2020

Mini Cooper SE
Infotainment Summary

From tea time to e-time!
British, electric and nostalgic

FEEL FREE TO SHARE

screens

READ ME!

For this report we spent more than **50 hours** testing this car's infotainment system. Thousands of interactions were made and literally every possible button was used.

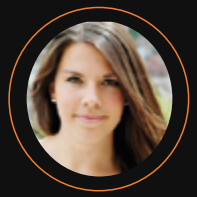
We went through **hundreds of use cases**, both stationary and while driving, and looked at the car as intensely as possible. We guess the only other people were probably its developers. This report represents only a fraction of our findings.

We captured **the entire HMI structure** and documented every possible click in a giant tree with hundreds of entries. Therefore: Contact us if you have any questions about this infotainment system. We know almost everything that can be found out when using it.

The best part about this: We have **recorded everything** and made the video material available in a tool called screens.

screens is an interactive video-based online platform, which enables you to **compare the latest infotainment systems** in-depth.

Whether it is ADAS, media, apps, navigation, speech or radio. Operated in the instrument cluster, the head unit, the head-up display or in the rear seat entertainment. You can check out **every possible interaction on video**. We render the videos searchable and interactive so you can find a particular sequence much faster than in the actual car.



Josina Formann
Head of Production
+49 (0)711 / 219 55 126
j.formann@screensstudio.com

Click here to create your **trial account** and dive deeply into the infotainment system right from your desk.

We are looking forward to your feedback!

HOW TO USE THIS REPORT?

This report is clickable. It contains numerous links to videos and photos on our infotainment database **screens**.

Simply click on the underlined words and watch the related videos in your screens account.

You don't have one, yet? Then simply visit

www.screensstudio.com/signup

and use this key to gain limited access:

CEZGL-0CDJB-ZD4RO-LWTRQ-CBW2R

Have fun exploring the new Mini Cooper SE.


MINI
24.04.2020

Mini Cooper SE

The new Mini Cooper SE is the first all-electric Mini offering the power of a new way of urban electric lifestyle. Connected, playful, colourful, the Mini still remain true to the iconic style created by Sir Alec Issigonis.

The head unit of the Mini Cooper SE consists of an 8,8-inch display framed by a round ambient lighting element. Apart from the colourful lighting concept, the digital instrument cluster needs to be mentioned. Compared to earlier instrument clusters , this new 5,5-inch digital cluster makes its debut in the Mini Cooper SE by providing more information on driving relevant content e.g. charge status, range, date, odometer and outside temperature. All of that combined with an easier to read layout than ever before. Mini uses this particular approach to show how they meet the requirements of an infotainment system that shows a fully electric vehicle's, most crucial information in the driver's field of view, best.
In addition to the instrument cluster, it is possible to display vehicle and traffic related information on the extendable head-up display, as well.

While other vehicle manufacturers focus on minimalism regarding the interior, the Mini Cooper SE offers a variety of input modualities based on different senses. Besides the six touch-sensitive favourite buttons next to the head unit, there are various toggle switches and hard keys in the centre console area to control the head unit's main features. In addition, the head unit area is framed by a round light element which, for example, changes between red and blue when setting the interior temperature.

Let us have a closer look at the Mini Cooper SE.

In the following report we will go into more detail about the various features and displays.

CAR OVERVIEW

TABLE OF CONTENTS

Ambient lighting

Light plays a exeeptionally special role in terms of directing attention to content or specific areas in a room or on a surface. When entering the Mini Cooper SE, it is obvious that the interior design concept increasingly works with light to emphasise interactions between the driver and the system. The motto is playful but target-oriented. Especially the round light element above the head unit plays a destinctive role and can be customized by either selecting

a standard view

- None
- Driving mode
- Battery state of charge
- Ambient light

or an event view

- Heartbeat
- Navigation
- Park Assist
- Telephone
- USB/Bluetooth
- Climate
- Sound
- Driving mode
- Menu selection

Based on the selected view, the light element e.g. adapts to the color of the current menu feature, reacts to an incoming call or the selected temperature or adapts to the color code of the distance detecting of the park assist.

Assessment

\+ The interaction between the colour element above the head unit and the rest of the ambient lighting in the dashboard is consistent and the colour gradients are very smooth. The colour codes used, such as ***blue*** for ***cold*** and ***red*** for ***warm*** or ***warning***, correspond to the regular colour schemes.

\+ Contrary to all expectations, the optional and continuously changing colors are neither unpleasant, distracting nor disturbing while driving.

– The basic concept is very colourful and, unlike other ambient lighting concepts, very present, which in turn does not suit every personal taste.

MENU SELECTION

INCOMING CALL

CLIMATE

PARK ASSIST

Touchsensitive favourite buttons

Personalization is more important than ever. It's not only a matter of the correct seat position or height of the steering wheel, but the appropriate arrangement of the content in the infotainment system. Therefore the most frequently used features should be quickly operated and activated - one click would be ideal.

In order to fulfil these individual preferences, there are six touchsensitive buttons in the Mini Cooper which can be deposited by individual favourites across features and levels. While in other vehicles destinations or radio channels can only be stored in the respective feature, the driver can now store the currently shown content like features, submenu features, telephone contacts, radio channels or tracks of media sources by simply pressing and holding one of the six touchsensitive areas.

Assessment

+ The six buttons are touchsensitive areas. Therefore a light touch is all it takes to open the favourite and a longer touch saves the currently shown content to the button within a few seconds. With this simple priorisation of content across features and levels, the Mini Cooper demonstrates a high degree of individualization that has not been seen in other infotainment systems, so far.

+ If you're not sure which content you've stored at which number, you can easily touch and swipe over the six sensitive buttons to open a preview of the stored content. If you release your finger the particular favourite is opened automatically.

– The infotainment system doesn't offer any kind of hints or explanations on the levels or features which can be stored as favourites. Consequently, it takes some time and many attempts to understand the principle.

– You can't delete a favourite. You can only overwrite it with a longpress or reset all with a factory reset.

TOUCHSENSITIVE FAVOURITE BUTTONS

Mini connected

Connectivity is more in demand than ever in the automotive sector. Online features in the infotainment system itself, smartphone applications or interactions with the vehicle via a manufacturer's own application - there are countless ways to bring connectivity into the vehicle. The Mini Cooper SE combines all of the above. For example, the manufacturer's own app ***Mini connected*** makes it possible to send destinations to the vehicle directly. In the Mini connected feature, the user has the possibility to access

Service related features such as mini messages

Vehicle apps such as amazon alexa, news, weather services, online search via google, a location related wiki and a so-called BMW info feature

Smartphone apps like Spotify or the calendar by connecting the smartphone e.g. via bluetooth

Assessment

\+ The amount of connected services makes a statement in comparison to other systems. With the arrangement of the services on the second level of the infotainment system architecture it only takes a few clicks to find and operate them.

\+ The integration of the Spotify app to the infotainment layout is intuitively operable and optimally embedded into the level structure. Thus it stands out from other integrations.

– Although the system offers some help texts in general, a short introduction to the Mini connected feature is missing , e.g. which requirements must be met or which applications can be included.

– The Mini Connected Android app has a different structure and offers less content than the application for iOs devices.

SERVICE

VEHICLE APPS

MINI CONNECTED

Overview

The digital 5,5-inch instrument cluster is the result of the additional content demands made to the cluster by the characteristics of a fully electric vehicle e.g. information about the recuperation, the range etc. Unfortunately, this exact approach of extended presentation of information is not optimally implemented. Compared to other instrument clusters, it quickly becomes apparent that especially the contents on the left and right side are very difficult to view, depending on the height of the driver. The fact that the instrument cluster is part of the steering wheel and therefore automatically adjusts when the steering wheel height is adjusted does not do much for this effect, either. Unfortunately, the display is a little blurry, as well.

Display Size 5,5“

IC OVERVIEW

Features & Content Distribution

The majority of the different elements is arranged in the first level of the infotainment system architecture. In comparison to other vehicle in the small car sector it has to be mentioned that there is no active menu strucutre to be found in the instrument cluster. Instead the Mini has a passive reaction to controls on the steering wheel and the centre console. Therefore, the features listed below have to be understood as reactions in form of pop up windows and icons.

Features

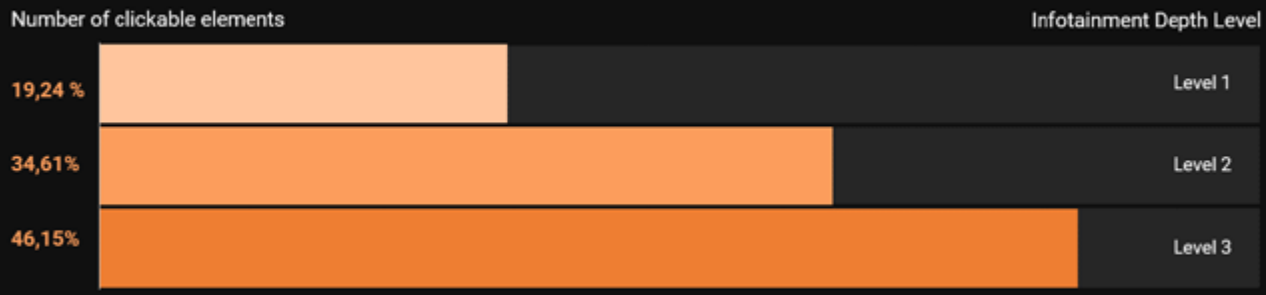
Limiter

Adaptive cruise control

Up

Down

Telephone



HMI-SITEMAP

Overview

The Mini Cooper SE head unit contains six main features of which four can be also opened via hardkeys in the centre console: media, telephone, navigation and map as a subfeature of navigation. The head unit can be operated by touch input as well as a control unit in the centre console. Comparing the interaction feedback of the system for both input modularities, it must be noted that it is easier to control features by using the contol unit. One reason for this is that displayed help texts and previews in the right part of the head unit can be accessed by the control unit without selecting the feature. When interacting with the touch screen, the features are usually opened directly by selecting them which means that the help text and previews at times are not shown at all. Also, the respective options of the different levels can only be selected via the ***options button*** in the centre console.

Display Size 8,8“ HU OVERVIEW

Features & Content Distribution

The main features of the head unit are mini connected, my mini, navigation, communication, apps and media. Each main feature has its own colour code matching perfectly with the overall color concept. All in all, the head unit layout is divived into three parts and offers the possibility to display a split screen in the right third. In addition, a preview and explanatory texts for the selected menu are displayed, as well. The horizontal navigation through the system is quickly understood.

Features

MINI connected

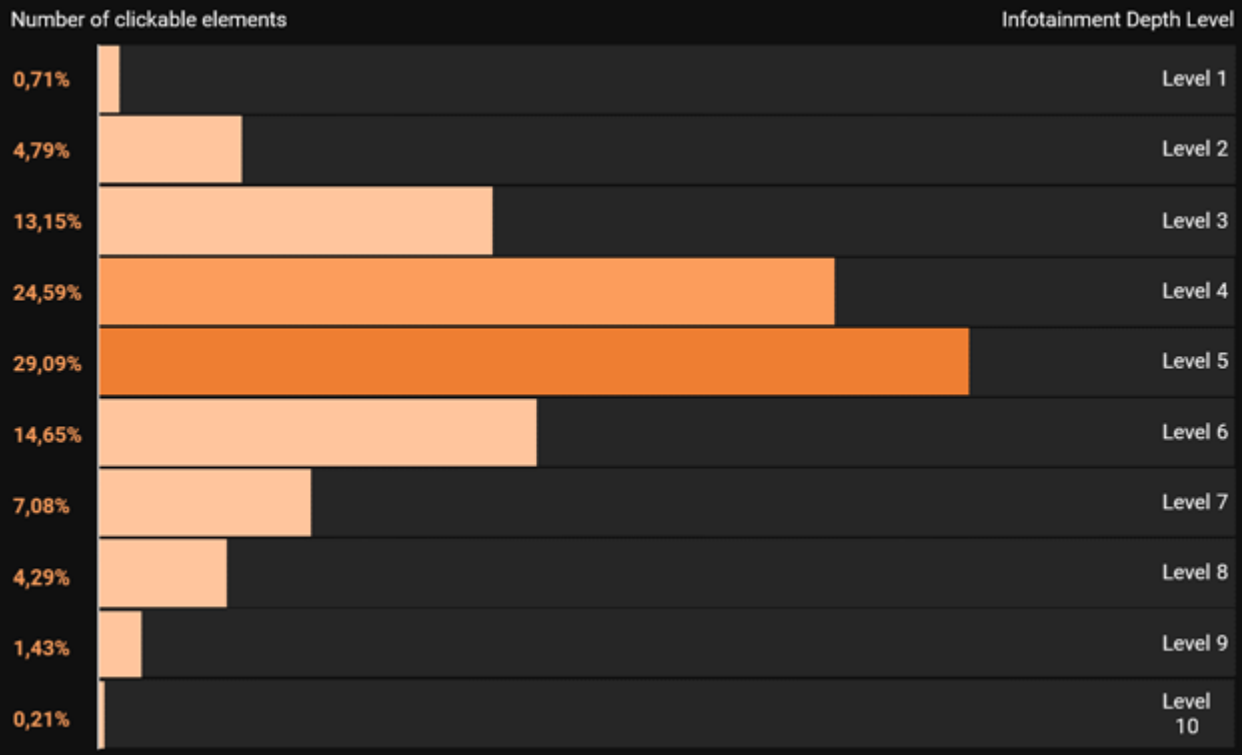
My MINI

Navigation

Notifications

Apple CarPlay / Communication

Media

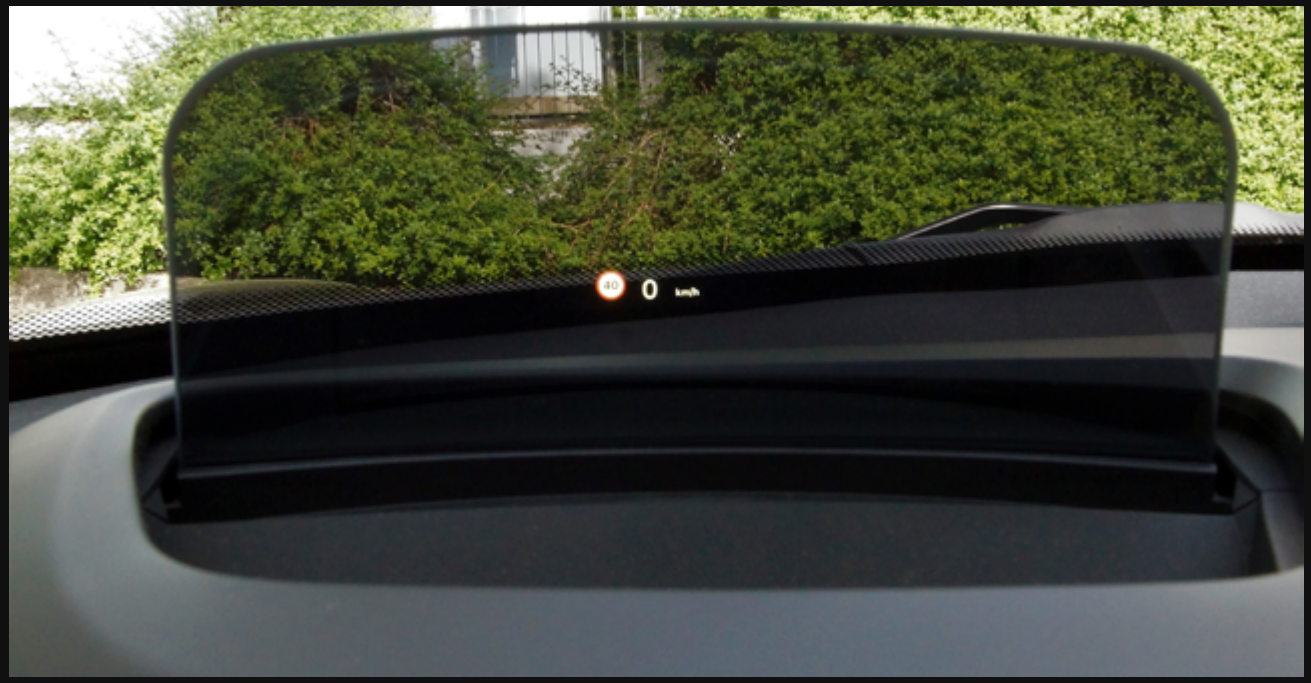


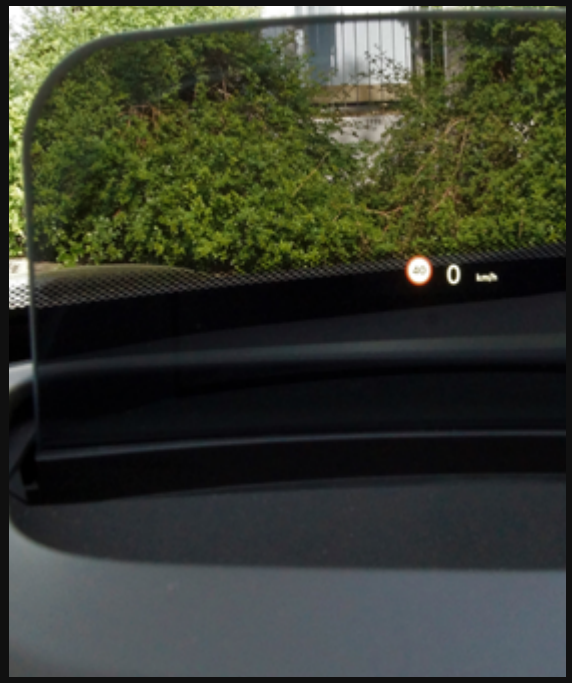
HMI-SITEMAP

Overview

The extendable head-up display of the Mini Cooper SE complements the instrument cluster with additional information about speed, traffic signs or the assistance systems status. The contents are not directly projected onto the windshield, but are displayed in the driver's field of vision in an extendable, semi-permeable window. It can be activated or deactivated by using the head unit.

HUD OVERVIEW





Features

The head-up display can be configured in the settings feature of the head unit. The user can adjust the brightness, the contrast as well as the rotation degree. In addition, the driver can choose four different content categories: cruise control, navigation, check control messages or entertainment/telephone which are then displayed in the head-up display. The design of the arrangement and basic features are similar to the head-up display of the big BMW X7 brother, but of course minimized in scope and size. Since the icons of the assistance systems are displayed rather small in the instrument cluster, the head up display is an important addition to the driving experience.

Features

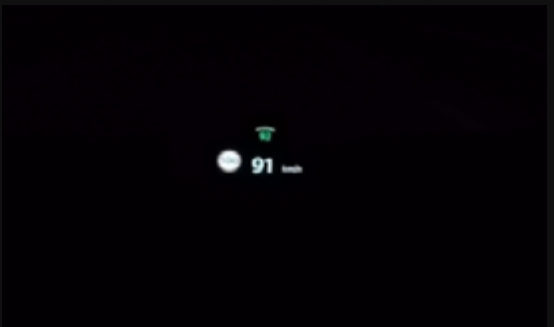
Cruise control

Navigation

Check control messages

Entertainment/telephone

CRUISE CONTROL

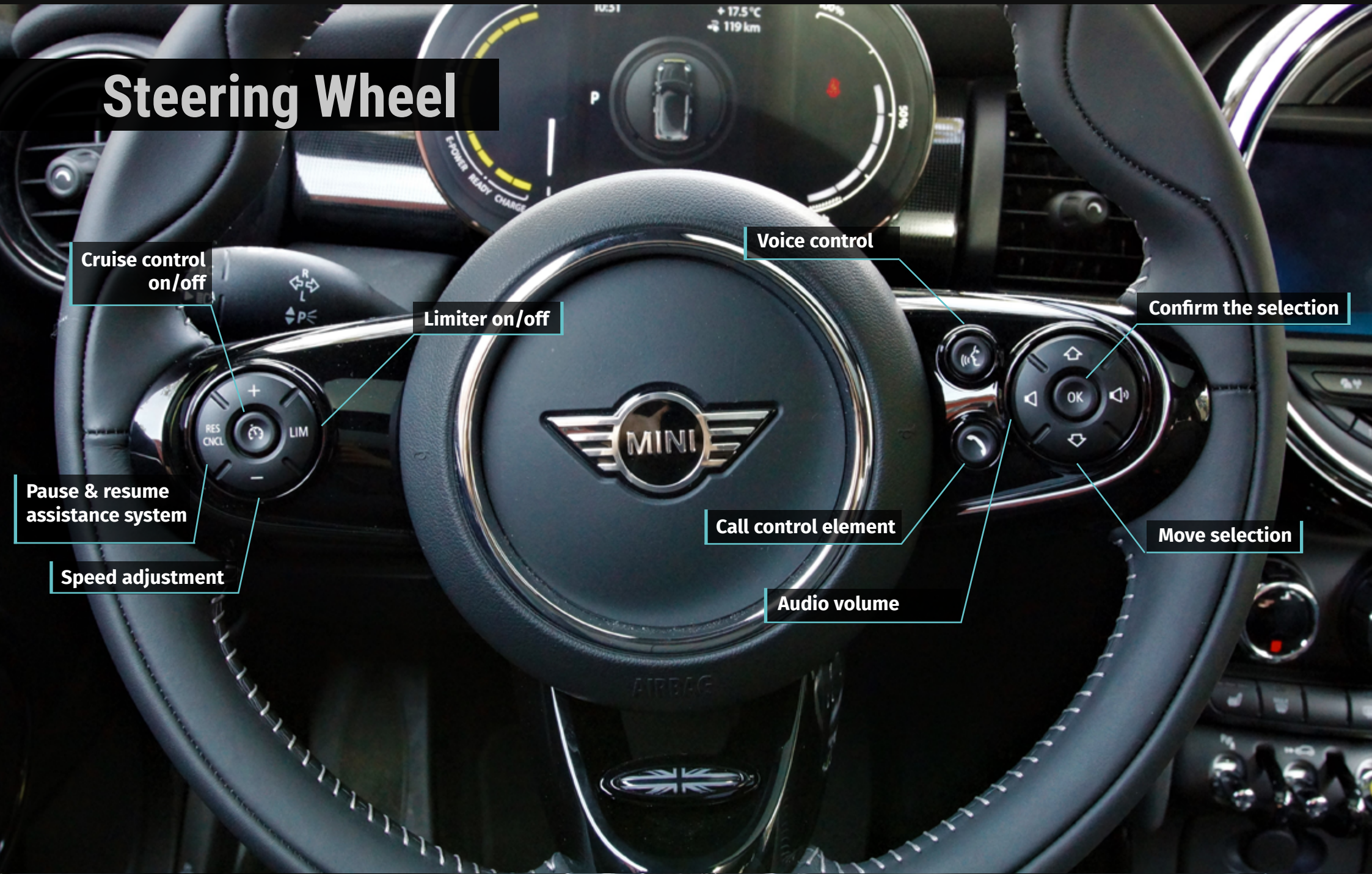


NAVIGATION

CONTROL MESSAGES

TELEPHONE

Steering Wheel



Next to head unit

Operating field of centre console

Center Console

From tea time to e-time!

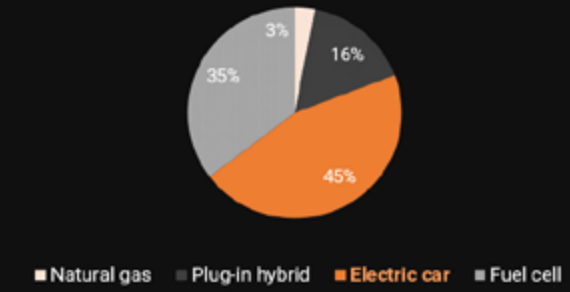
The Cooper SE is Mini's the first fully electric vehicle which electrifies the usual go-kart feeling with 184 hp. For the infotainment this drive change means e.g. a systematically implementation of electrical vehicle features, the suggestion of charging stations to the route guidance and a detailed presentation of range and recuperation, which required a new instrument cluster concept of the brand.

But aren't electric vehicles more than a go-kart for the city? Not even vehicles of the future? We asked our LinkedIn community this exact question . And the winner was: the electric vehicle. That means, it is now e-time! The question that remains is whether mobility in the future will be limited to short distances in the city or whether it will go beyond urban boundaries? And what exactly does this mean for the design of the infotainment system?

If you look at the electric vehicles section on our database screens and compare the respective ranges, it is immediately obvious that electric vehicles are not only intended for short distances and that there is an ever increasing development in the field of electric vehicles. Ranging from the small car up to the SUV car segment.

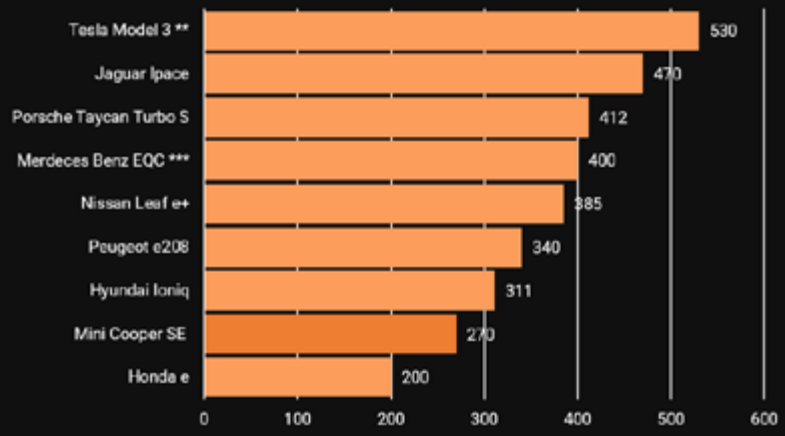
Which drive system will prevail in the future?

LinkedIn survey | screens GmbH | May 2020



E-performance | Range in kilometers*

due to WLTP Worldwide Harmonised Light-Duty Vehicles Test Procedure



* Maximum values based on manufacturer information. Electric range varies depending on individual driving behaviour, route profile and environmental conditions
** Longe Range performance model
*** 471 km due to NEFZ

From tea time to e-time!

Two important keywords for this development are: EV features and charging processes. Our detailed evaluation of the HMI architecture shows that the integration of so-called EV features in addition to the main features, such as media or navigation is becoming increasingly important in order to enable the user to monitor the state of charge or programme charging timers intuitively. However, comparing the depth of information and arrangement of these features in the system, still shows huge differences.

For instance, the Mini Cooper SE offers this kind of information in an additional split screen shown in the right third of the head unit while the Hyundai Ioniq implements an electric vehicle feature on the same level of the main features. Porsche also presents its own menu with a charge feature, which can be selected in the head unit and the sub unit. Peugeot presents the feature energy within the menu car apps with information on recuperation and the setting of a possible charging timer.

Mini Cooper SE | Split screen eDrive

Hyundai Ioniq | Energy features

Porsche Taycan | Charge feature

Peugeot e208 | Energy

All in all, the field of electric mobility is an area that requires new user scenarios and use cases which are not limited to urban areas. The Mini Cooper SE is a perfect example for the electrification of a vehicle series to fullfill current requirements and to go with the futuristic approach of alternative drive systems in one's garage, the public transport and in the small- and sports cars segment. We will see how the role and placement of the EV features in the infotainment system will develop!

Equipment Level

Cooper SE Trim XL

Display Sizes

Head Unit	8,8“
Instrument Cluster	5,5“

Software Version

Telephone: TT-002.134.001

Media: MT-002.134.001

Input Modalities

Touchscreen

Touchpad

Speech

Application

MINI connected

Connectivity

CAR OVERVIEW

A new vehicle every three weeks

We have analyzed over 350 vehicles and selected the most interesting ones in terms of infotainment systems. Currently we provide a new vehicle in the database **screens** every three weeks. We will increase the number of units as soon as we can offer vehicles, available on the American and Asian markets in addition to the European market as well.

CW 26

Porsche Taycan

Update: Passenger Display

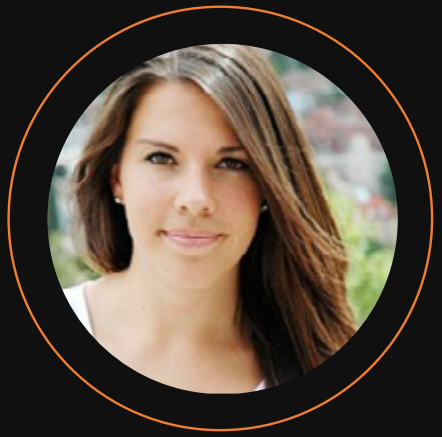
CW 29

Honda e

Feel free to contact our experts!

Do you have questions, suggestions, praise or criticism?

Do not hesitate to contact us! We spend almost 24/7 in the car and know (almost) everything about infotainment systems. You wouldn't believe how motivated we are to share this knowledge with you.



Josina Formann

Head of Production
+49 (0)711 / 219 55 126
j.formann@screensstudio.com

YouTube LinkedIn