

MBUX AR Navigation



3rd NDS Public Conference Online on 8. Juni, 2021

8:00 AM – 12:30 PM, CEST (Central European Summer Time)
6:00 AM – 10:30 PM, UTC (Coordinated Universal Time)

3rd NDS Public Conference

Nihat Küçük, Böblingen, June 8th 2021



History



Early of Onboard Navigation Systems

First Commercial Navigation Products

Single Supplier Solutions

- Highly integrated black-box
- Proprietary software stack
- Proprietary software interfaces
- Proprietary map data format
- Proprietary map compilation process
- Impossible to separate software from map data
- Impossible to switch software supplier from data supplier since proprietary formats had a strong functional dependency to navigation software

Caused ...

- High development & maintenance costs (derivatives)
- Steadily increasing number of product variants
- Extremely high migration cost
- Market flooded by steadily increasing data formats
- Map update across car lines not manageable
- Vendor lock-in (proprietary lock-in)
- Every system supplier developed and maintained its own storage format tailored in order to optimally fit its own navigation software

History of Onboard Navigation Systems



NDS: Foundation of an Industry Initiative



Wolfsburg, Germany, 2009



Motivation



History of Onboard Navigation Systems

Navigation Data Standard

Motivation

- Enabling separate infotainment hardware development and navigation software development
- Increasing HW performance doesn't require highly optimized data formats on bit level
- Open up navigation business for non-SW/HW suppliers
- Encourage creation of a map compilation market
- Declare NDS as the mandatory and binding map data format
- Lower development costs due to lower complexity
- Faster go-to-market

Commercialization

- Daimler is among the founding partners of the NDS association
- In March 2014 the first Mercedes-Benz vehicle having NDS on-board was launched (C-Class W205)
- Navigation SW and NDS map stored on a SD card
- Modular approach with separate hardware and navigation software suppliers
- Re-use in different system and car models and lines



1st NDS Car Lines

NDS-powered Car Lines

C-Class W205 (03/2014)



NDS Powered Car Lines

V-Class W447 (05/2014)





MBUX

MBUX AR Navigation System

First MBUX System in 2018 (NTG6)



- Premiere of a completely new infotainment system in the guise of the Mercedes-Benz User Experience (MBUX)
- Initially presented @ CES in Las Vegas, 9-12 January 2018
- Featuring innovative technology based on artificial intelligence and an intuitive operating system
- NDS onboard

MBUX AR Navigation System

MBUX since 2018





MBUX Reloaded

MBUX AR Navigation System

MBUX Reloaded, 2nd generation, launched September 2nd 2020

(S-Class W223)





MBUX AR Navigation System

MBUX Reloaded, September 2nd 2020

Mercedes-Benz: MBUX Travel Knowledge



MBUX AR Navigation System

MBUX Reloaded, January 11th 2021



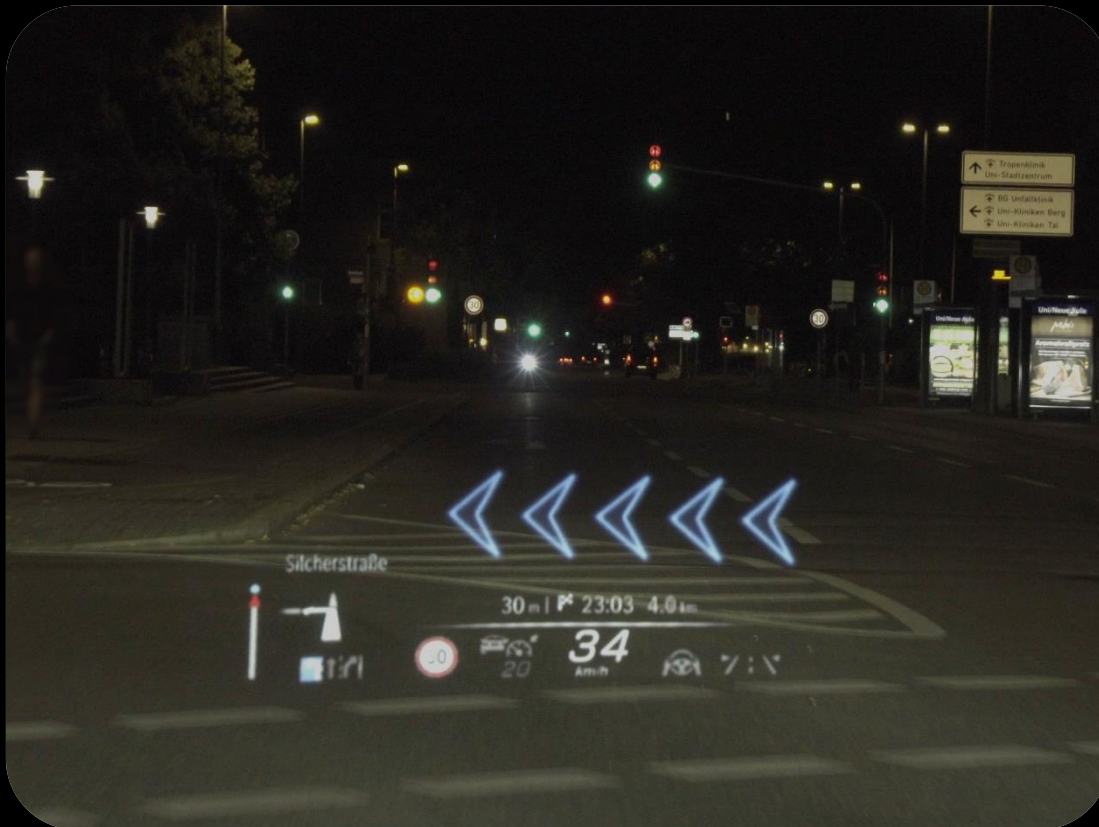
MBUX AR Navigation System

Augmented Reality meets ADAS



MBUX AR Navigation System

Augmented Reality meets Navigation



MBUX AR Navigation System

Augmented Reality meets Navigation

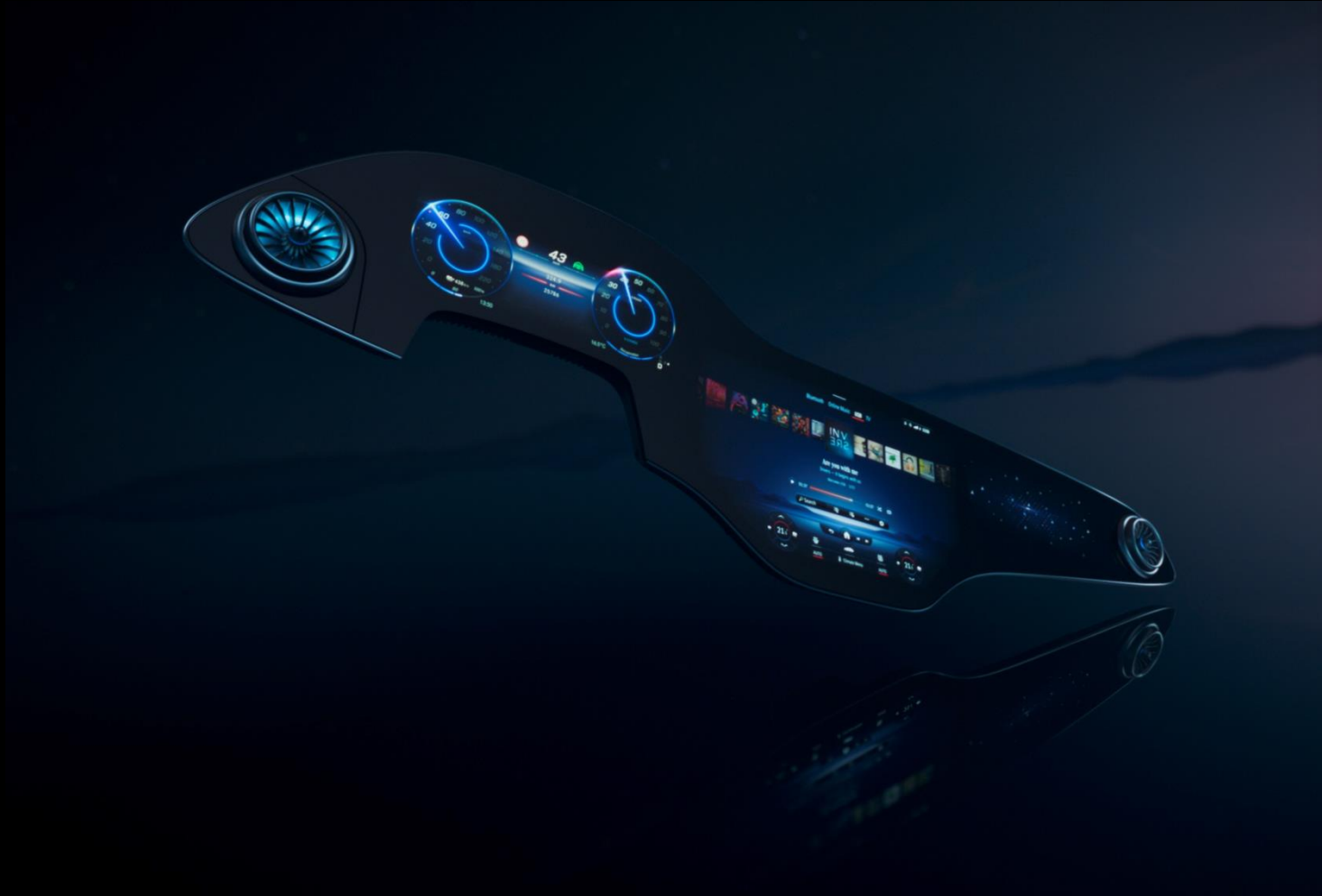




User Experience, Reloaded

MBUX AR Navigation System

EQS with the MBUX (2021)



MBUX AR Navigation System

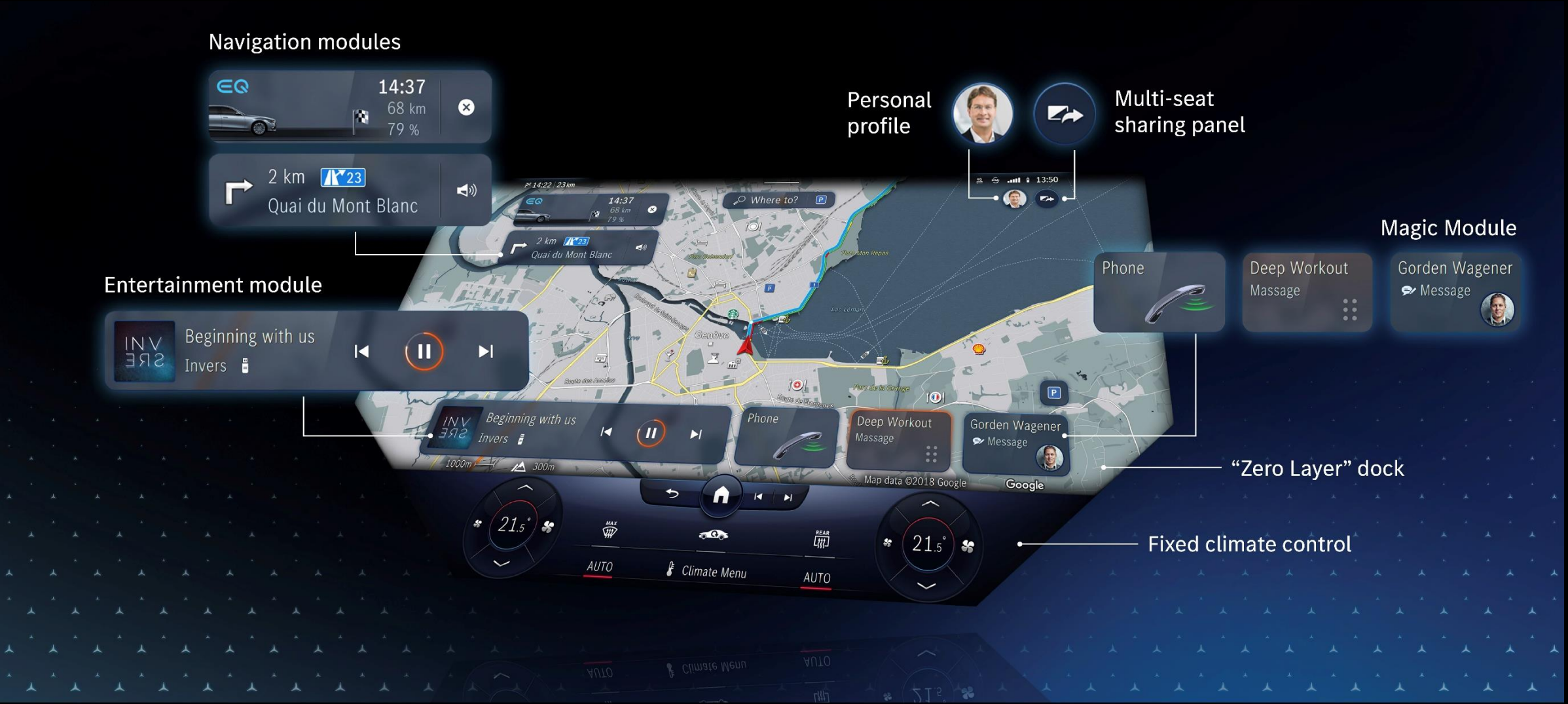


EQS – MBUX Hyperscreen – Some Facts



MBUX AR Navigation System

EQS – MBUX Hyperscreen – “Zero Layer”





Thank you.

Any Questions?



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Navigation Maps

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