Next-generation digital cockpit

Envisioning the cockpit of the future





Android automotive

Passenger display

$(\mathbf{1})$ **Unreal Engine**

VFX

Information display

Using Elektrobit's reference HMI for AAOS (incl. tools and frameworks) to create a seamlessly integrated and personalized experience across all displays.

Use Android Automotive in a multiwindowed experience offering dedicated functions for the passenger

UNREAL Utilizing the full 3D real-time rendering capabilities from Unreal Engine 5 to create an immersive and emotional driving experience, while keeping the overview what happens on the road (ADAS)

Visuals effects such as weather, clouds, rain, flying birds, sunrise, moon, and others create an emotional experience

Unreal rendered display showing additional information such as TPM or sensor views



Real-time ADAS visualization with

dynamic lane change maneuver,

road curvature and exo vehicles

Touch control interface

• Switch between 'ADAS' and 'Trip' View/day/night switch

ADAS



Theming Engine

HVAC display

• Remote HVAC display operated

to climate control functions

• Favorite access buttons

with haptic touch

by AAOS allows for dedicated access

Elektrobit's Theming Engine is the heart of the demo, enabling the seamless switch between different designs and day/night modes consistently across Android Automotive and Unreal Engine.

Theming Engine for Android

Reference HMI for AAOS

• Apps

• Tools

• Frameworks

• Theming Engine

Kick-start development with Elektrobit's

reference HMI for Android Automotive

Download themes from the cloud and activate them via the Theming Manager app.

Adapt your dashboard to your needs at runtime using generative AI.

Al assistant

Technical setup

Animation of Al assistant

HPC architecture

to highlight adaptations

AI customized launcher

The tiles on this launcher can be freely customized (content, color, size) by an Al according to user inputs.

AI wallpaper

According to the user input and the dashboard configuration, we use generative AI to create a fitting wallpaper.

System-wide theming

Apply themes and colors for the whole system including Android and Unreal Engine



Al use case

Display

- ... from first idea to final implementation
- Single curved real-glass dashboard in pillar-to-pillar design incl. touch
- OLED display technology
- Digital side mirrors integrated in drivers axis
- Unique haptic solution in lower HVAC display
- Dynamic ambient light







Shell design



Qualcom

Cockpit domain controller QC8255/Gen4 SOC

U UNREAL **Instrument Cluster (IC)** In-Vehicle Infotainment (IVI) Unreal Engine Android Automotive OS Hypervisor

HMI Domain Controller

System-on-a-chip (SoC)

What is your vision? Elektrobit is your partner for your digital cockpit. From entry level to high end. For light, commercial, off-highway vehicles, and two-wheelers. From scratch to SOP or anywhere in between, and also beyond. Our software products and services, clever engineering tools and technology design capabilities, and our trusted partner landscape guarantee succesfull projects. Cost-efficient and ready in time.

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design, implementation

R&D,

Software