How can software suppliers create future car user experiences?

Elektrobit, the visionary supplier of embedded software products and services is your answer.
Deliver stunning, next-generation automotive user interfaces

Disruption is affecting every industry. In the automotive industry, this is most visible in the transformation of the classic vehicle into a software-driven Internet of Things (IoT) device. Personalization, connectivity, and mobility-as-a-service are becoming increasingly important for drivers and passengers.

In order to stand out in a marketplace that is growing more competitive by the day, automotive manufacturers are seizing the opportunity to showcase their distinct advantages in providing their drivers and passengers user interfaces that are sleek, intuitive, and above all, seamlessly integrated.

Elektrobit has created a big move from simple driver information centers, to in-vehicle infotainment systems, to connected cockpits that integrate with multiple technologies simultaneously.

At EB, we believe that an optimal interaction between human and machine is characterized by three aspects:

EXCELLENT USABILITY saving you operator time

HIGH EFFICIENCY saving both time and money

MAXIMUM PRODUCTIVITY ultimately giving your company a competitive advantage
The secret to our success is simple. We're passionate about promoting the interactions between humans and machines through exceptionally designed software tools and solutions and our skilled engineering teams.

With over 30 years of serving the industry, EB is the industry expert for embedded and connected software. As your trusted partner in building industry-leading human machine interfaces (HMIs), we are already powering 50 million vehicles and are chosen by 9 out 10 major OEMs in the automotive industry, making us the clear choice of HMI designers and leading engineers around the globe, for 15 years and counting.

Our mission is to deliver HMIs optimized for your target platform - HMIs that meet your expectations for high quality, that perfectly integrate multimodal input and output devices, and that can be easily maintained over multiple variants and even multiple life cycles of your product.
Driven by artificial intelligence and connectivity, the cockpit is gradually transforming from a driving space to a new kind of living space, as consumer expectations continue to shift the traditional focus on hardware technologies for power and control to a greater focus on replicating the HMI of smartphones. From mobile phones to cars, the trend of "software definition" will take the lead in the intelligent cockpits.

EB offers comprehensive UX/HMI solutions within the context of the automotive software industry. It has both witnessed and become deeply involved in the evolution of the cockpit. What will the major trends be for the future of intelligent cockpits? What HMI solutions will EB provide to enhance user experience? As cockpit functionality continues to expand, what new requirements will be placed on the software?

Faced with these trends in future automotive user experience, EB is ready. In terms of car HMI system development, EB has extensive experience and continues to enhance the driving experience through our suite of market leading tools and world class HMI design and engineering services along the complete HMI value chain to support automotive manufacturers in developing the next generation of cockpit user interfaces that are connected, smart and safe.
Along the complete HMI value chain

- Update
- Research
- Industrialize and Deploy
- Design and Prototype
- Develop
- Test and validate

**Market leading tool**
EB GUIDE: All-in-one automotive HMI development toolchain, including framework for augmented reality UIs

**World class HMI design and engineering services**
- UI and application development services
- Voice assistants (e.g. Amazon Alexa) and speech engines integration
- Android automotive services
- Integration services
- Testing & validation services
EB GUIDE – Comprehensive HMI development toolchain for best-in-class HMI creation

As cars become increasingly connected and smart, EB GUIDE's integrated functionality is gradually expanding, incorporating a complete suite of products that enables car makers, automotive suppliers, and software developers to design, develop, test, and deploy advanced HMIs on any device, including vehicle head units, head-up displays, and instrument clusters.

Thanks to its easy to use and graphical way of modeling both the user interface look and feel, and its ability to operate it without the need of the underlying target, it accelerates your time-to-market and provides reliable support throughout the entire development journey: from the HMI creation, to rapid prototyping, executable specification, simulation and continuous deployment on all types of devices throughout their lifetimes. We partner with you to ensure seamless deployment across devices and automotive platforms.

Because EB GUIDE is based on cutting-edge technology and is continually updated, you can tap into the industry’s latest innovations before they’re mainstream, giving you a competitive advantage.

Within EB GUIDE, there is a suite of exceptional tools and plug-ins such as EB GUIDE Studio, EB GUIDE Graphics Target Framework (GTF), EB GUIDE arware, and EB GUIDE Monitor.
EB GUIDE Studio

EB GUIDE Studio helps users to graphically define menu screens and logic control using hierarchical state charts.

EB GUIDE Monitor

EB GUIDE Monitors allows you to observe, control, debug and optimize the EB GUIDE model during simulation.

EB GUIDE GTF

EB GUIDE GTF allows you to run your UI on any target exactly as you see it on your development machine (WYSIWYG).

EB GUIDE aware

EB GUIDE aware enables the creation of augmented reality solutions especially for augmented reality head-up displays.

Download the Community Edition of EB GUIDE Studio for free
www.eb-guide.com
EB GUIDE – Faster, easier development and deployment

Powerful HMIs are usually a team effort. That’s why we designed EB GUIDE to support team demands. As such, it provides **built-in user interface modularization**. With this feature, you can split the user interface into **multiple parts** that can be **modeled individually**. By this, we enable **multiple developers** to work at the same time on different parts of the overall user interface, help improve the team collaboration and productivity, and reduce development time and costs.

**EB GUIDE’s model-based approach** allows you to design the HMI with unique desktop tools and execute it with EB GUIDE’s run-time components, which are specifically engineered to run on automotive devices. EB GUIDE lets you instantly test the changes on the desktop/PC and quickly deploy them to the target devices.

Another advantage is the dynamic lifecycle of such a model. In case you need to update only a part of the HMI, you just shut down that particular part, exchange it, and start it anew. And all this happens on-the-fly.

“EB GUIDE provides a mature HMI framework and HMI development environment for automotive production. An important feature of EB GUIDE is that it fits very well into the Volkswagen HMI development process. The Volkswagen skinning and internationalization process is seamlessly operated via plug-ins. Volkswagen's HMI development sets high requirements and expectations in every respect. EB GUIDE makes a significant contribution to fulfilling these requirements again and again.”

Gunnar Wegner,
Head of VW HMI System Development
Recently, EB is partnering with Unity to enable next-gen immersive, real-time 3D experiences in automotive cockpits. This collaboration harnesses the power of Unity’s real-time 3D rendering platform, and EB GUIDE. By combining their expertise, EB and Unity are enabling their customers to jump-start next-gen real-time 3D automotive HMIs by accelerating time to market and providing a reliable foundation throughout the entire development journey.

Car makers and tier 1 suppliers will benefit greatly from the unique combination of experience and expertise from EB in automotive HMI development, and from Unity in immersive real-time 3D HMIs. This in turn will enable smartphone-like, automotive-grade user interfaces in vehicles.

“We are collaborating with Elektrobit because they are the only expert in the automotive industry with a solution that is able to go from UI design concept to series production. Real-time 3D is redefining the in-car experience for vehicles of the future. As we accelerate into the era of highly automated vehicles, the HMI experience is moving to the forefront.”

Julien Faure, General Manager & Vice President, Industrial and Media & Entertainment, Unity.
A toolkit for advanced augmented reality HUD

Provide your drivers with a real-time augmented reality experience. Create an intuitive, user-friendly head-up display (HUD) which is seamlessly connected with in-car sensor data and the EB-based advanced HMI platform. Design a HUD which provides essential visual information and assists with Adaptive Cruise Control, lane departure and guidance alerts, pedestrian and pre-crash warning systems, and parking spot detection. Help your driver to focus on the road without the need for additional dashboard displays, increasing the overall driver and vehicle safety.

EB GUIDE arware enables the creation of augmented reality solutions to make driving safer, build driver trust in the vehicle, and improve driver experience. With EB, you are provided with extraordinary tools – tools which assist with the creation of augmented reality (AR) – precisely when you need them, without cutting corners on quality, innovation, and the overall user experience. EB GUIDE arware will help you to augment navigation information on the road or emphasize the track course.

Using the car's GPS and sensors to acquire and identify objects in the car's environment, EB GUIDE arware calls these objects to the attention of the driver within the field of view on the HUD – all in real time, leveraging EB GUIDE to visualize data. This combination of AR and HMI design means you have the capability to develop your AR solution more quickly, one package for all your development needs.

Download the EB GUIDE arware demo for free
www.eb-guide.com
EB is committed to providing tools that enable exceptional virtual driving experiences. Therefore, in order to further strengthen and enhance the capabilities in augmented reality for the HUD, EB has partnered up with Ansys.

The primary focus of the partnership is the virtual testing of AR HUD systems in the dynamic driving-experience setting to enable a streamlined development process in car manufacturing, thereby shortening the time to market, and positively impacting your bottom line.

By combining Ansys VRXPERIENCE with EB GUIDE arware, we have successfully formed an end-to-end simulation toolchain, from virtual prototyping to UX. Tap into virtual prototyping to significantly improve the user experience, testing different models and scenarios early in the design process, while respecting time and budgetary restraints.

"By combining our know-how, automakers will be able to assess augmented reality content in a life-like driving experience. We are very proud to contribute to speeding up AR-HUDs’ time-to-market as virtual testing enables a very short iteration loop between embedded software development and test and driver experience."

Ludovic Manillier, SPEOS Expert Manager, Ansys.
Engineering services: customized solutions that deliver a rich user experience

EB provides competent and experienced teams who have not only mastered existing technologies but are passionate about developing new technology. With a cooperative framework of technology partners such as Amazon and Google, industry consortia, and associations, EB is positioned to offer collaborative engineering services that customers can take advantage of.

Complete execution of HMI development
We know how to cover multiple car models, all regional variants, and multiple model years, from entry level to high-end variants and all state-of-the-art features.

Training and consulting
We offer basic concepts through intermediate and advanced UX topics with training courses that can be customized to suit your project needs. In addition, we consult car makers and suppliers to bring the latest automotive technologies into the car.

Support in all phases of the development cycle
Experienced teams for developing the complete user interface - from specification and design to translation processes as well as subcontractors for design work and translations.

Customer projects
We support Tier 1 suppliers and OEMs throughout the UX project life cycle by taking over responsibility for specific parts of projects or even the entire project. With our global team of trained experts in America, Europe, and Asia, we are the trusted partner for the value creation in your project.
EB’s cockpit system solution is a fully-fledged service that provides the entire cockpit, extending from specification to design and conception to production engineering.

EB provides the overall integration as well as solutions such as UX design, the high-performance computer for the cockpit domain with fully featured customer-specific software packages. Based on customers’ demands, EB can also provide the integration of Google Automotive Services (GAS), multiple speech assistants, and driver monitoring or digital mirror systems. To minimize integration and coordination efforts, EB offers system components such as premium 3D cover glass solutions for stunning interior displays as well as pillar-to-pillar display panels and rear seat infotainment solutions.

EB’s cockpit system solution leverages a system overarching approach combining several software components to deliver one holistic, intuitive cockpit solution for all driving related information and infotainment. The resulting solution is modular and scalable. It offers a more seamless, immersive user experience that carmakers can leverage to offer holistic, intuitive HMI experiences to their customers while capitalizing on creating outstanding OEM branding. With EB, you get a single vendor with extensive technical expertise and know how that results in cost effectiveness.
Amazon Alexa – Build a voice-first in-car experience powered by Amazon Alexa

Voice assistants in the vehicle are mainly used for simple commands, such as finding a destination or making a call. Conveying information via speech is fast and safe, when drivers need to keep two hands on the wheel. For voice to evolve, what needs to happen to make the shift to really becoming an assistant to the driver?

As car makers look for solutions, they will need to examine which use cases are best and what roles industry stakeholders play. In addition, other factors such as embedded functionality, cloud connectivity, and multiple voice assistants which work together seamlessly must be considered.

Amazon Alexa has proven to be an incredibly beneficial consumer technology, helping to simplify and organize life at home. Now, EB is giving car makers and Tier 1s the opportunity to take Alexa out of the home, into the car and on the go. By integrating Amazon Alexa into the HMI of your vehicles, you're giving drivers direct access not only to all car-specific functionalities but also to the whole digital ecosystem comprising Amazon web services and third-party skills they know and love.

You can now ask Alexa to play music, get directions, place calls, control the car’s heating, ventilation and air-conditioning, listen to audiobooks and more, while keeping your hands on the wheel and your eyes on the road.

EB makes it easy for car makers and Tier 1s to integrate Amazon Alexa Auto SDK into their cockpit software platforms and to provide a combination of relevant driving information with infotainment applications.
Deliver richer in-car user experiences with EB's services for Android Automotive

Drivers want their in-car experience to mimic their smartphone experience. Expecting the newest and most innovative technology and intuitive software, drivers want to download and install apps, access their music library and more to personalize their in-car experience to make their ride comfortable, entertaining, and connected.

EB makes it easy for car makers and Tier 1s to give drivers what they want with our services for Android Automotive, a comprehensive set of products and services to support the integration of Android Automotive into infotainment devices, bringing digital innovations into the automotive world. Car makers and Tier 1s benefit from the Android ecosystem of applications, services and app developers gain the ability to customize their user interfaces to offer unique, brand-new in-car experiences and give drivers the ability to install Android apps.

With EB services, car makers go to market faster while reducing development costs and leveraging the Android ecosystem to bring cutting-edge technology to drivers more easily.
Elektrobit (EB) is an award-winning and visionary global supplier of embedded and connected software products and services for the automotive industry. A leader in automotive software with over 30 years serving the industry, EB’s software powers over one billion devices in more than 100 million vehicles and offers flexible, innovative solutions for car infrastructure software, connectivity & security, automated driving and related tools, and user experience. EB is a wholly owned subsidiary of Continental.