



## SOLUTION BRIEF

# CareAR for the Automotive Industry

## Complexity Challenges

The automotive industry is experiencing massive change. Increasing complexity due to options, IoT connectivity and shift toward Battery Electric Vehicles (BEVs) are contributing to challenges across the entire manufacturing and maintenance chain.

Many new facilities have experienced lower than expected output because of ongoing labor shortages, unexpected machine downtime, and operational issues.<sup>1</sup>

Added complexity also makes it difficult for service technicians to keep up. New technology such as augmented reality can be used to more efficiently train and support service technicians to overcome these challenges.

By 2025, the number of BEVs coexisting with internal combustion engines will probably boost variants per carmaker by 50-100 percent.<sup>2</sup>

## CareAR for Automotive

CareAR is an augmented reality (AR) visual support platform that allows automotive organizations to digitally transform their manufacturing, inspection and maintenance procedures with live visual assistance and immersive self-learning. With CareAR, assembly workers and service technicians are guided by visual prompts while receiving remote, real-time guidance from off-site experts.

Self-learning to speed BEV transition and train less experienced staff is enabled with immersive CareAR augmented reality step-by-step guidance. Computer vision-powered contextual direction with state detection automatically verifies action for quality control supporting more complex electrical systems and efficient maintenance procedure training.

CareAR augmented reality solutions for the automotive industry work to reduce equipment downtime and help service technicians more quickly resolve increasingly complex repair challenges with contextually guided remote assist and self-solve service experiences.

## Use Cases

### Remote Expert Repair Diagnostics and Guidance

Expert guidance for in-the-moment diagnosis and direction

### Step-By-Step Self-Solve Training with State Detection

Digitally transform learning and quality assurance with contextual guidance that auto-adjusts based on motion

### Battery Electric Vehicle Transition

Efficiently guide and train frontline workers to support new procedures and more complex repair diagnostics

## Benefits

### Overcome Complexity

Remote expert diagnostics and guidance upskills service technicians

### Enhance Training

Contextual augmented reality self-learning boosts engagement and comprehension

### Reduce Downtime

Real-time expert guidance speeds resolutions especially for new systems and processes

### Increase Efficiency

Reduce travel and downtime costs with augmented reality remote assistance and self-solve, self-learning guidance

## How it Works

**CareAR® Instruct** - Boosts self-solve and self-learning for frontline employees with step-by-step augmented reality graphical guidance. Hotspot focus engages users with contextual graphical guidance overlaid on actual objects within each user's smartphone or wearable device field of view.



### Detect

3D computer vision  
object detection  
focuses attention



### Guide

Step-by-Step AR self  
guidance enhances  
comprehension



### Verify

State Detection auto  
adjusts steps based  
on motion

**CareAR® Assist** - Engage service technicians and customers with annotated augmented reality visual instruction from "see what I see" remote experts. Diagnose, direct and resolve by making experts immediately accessible to speed issue resolution.



### See

View the service  
situation remotely  
from any location



### Solve

Visually guide and  
collaborate for effective  
problem resolution



### Save

Capture and share  
content in systems  
and with teams

## Technical Requirements

|               |  |
|---------------|--|
| mobile        | iOS 11 or later (includes ARKit)<br>Android 9.0 or later (includes ARCore) |
| desktop       | Windows and Mac  |
| smart glasses | Android 8 or later (includes Google Glass, RealWear, Lenovo)               |
| network       | Automatic video adaptation dynamically adjusts for bandwidth variation     |

## Instruct Features

### ■ Step-By-Step Graphical Guidance

Engaging AR graphical guidance is contextually overlaid with animated motion on target equipment within each user's device field of view.

### ■ Create and Capture Content

Save images and video recording from live service sessions and store in the cloud for collaboration.

### ■ Content Enhanced

Additional 2D, video and MagicLens visualization can supplement each hotspot to enable users to self-customize for their learning style.

## Assist Features

### ■ Anchored Annotations

Remote experts can guide with visual graphics that remain anchored to the intended location in real-time.

### ■ Engagement Agility

App or browser-based augmented reality remote assistance with SMS, email or join by code invite options.

### ■ Multi-User Support

Simultaneous Assist session participants without a limit ability for any concurrent Assist user to stream and annotate based on a host request permission.

## Start Visually Resolving Issues Remotely With Enterprise Augmented Reality

Schedule a demo at: [CareAR.com/demo](https://carear.com/demo)

### Sources:

- <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/can-the-automotive-industry-scale-fast-enough>
- <https://www.oliverwyman.com/our-expertise/insights/2021/aug/dealing-with-car-complexity.html>