

BMW AR Project

January 2025

CGI



Classification level

Client Classified / Public



Agenda

01



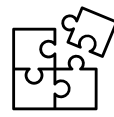
Project
Summary

02



Challenges

03



Results

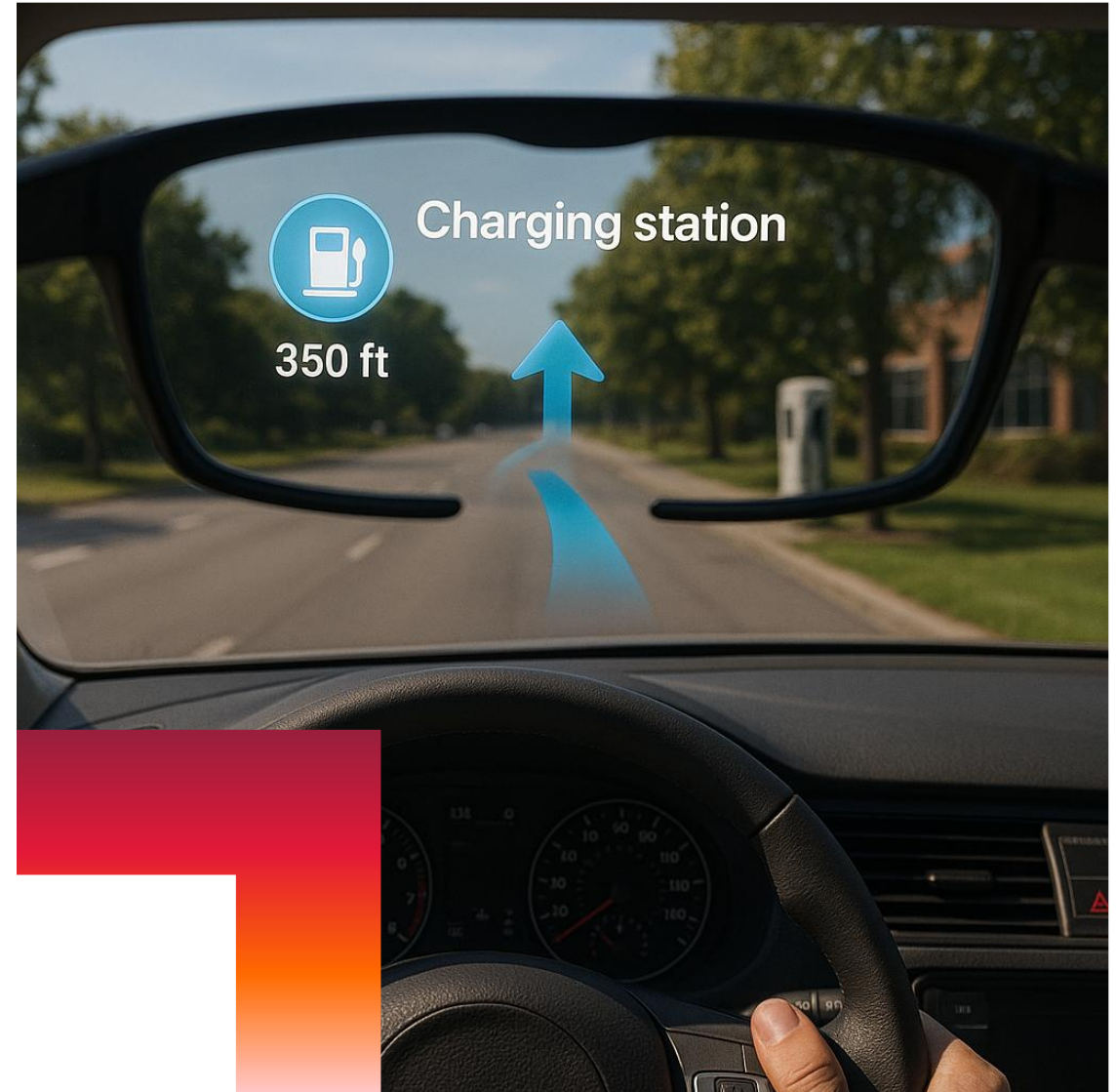
Project Summary



Investigated the challenges posed by the use of **Augmented Reality** glasses in the **automotive** sector.



Included research-oriented investigations and **proofs of concepts**, and at the later stages, the design of a **commercial product** (series development).



Challenges



Investigation of enhanced **tracking** techniques for moving vehicles



Communication with vehicle, retrieval of accurate information from vehicle and backend services



Integration with **external data** sources like web

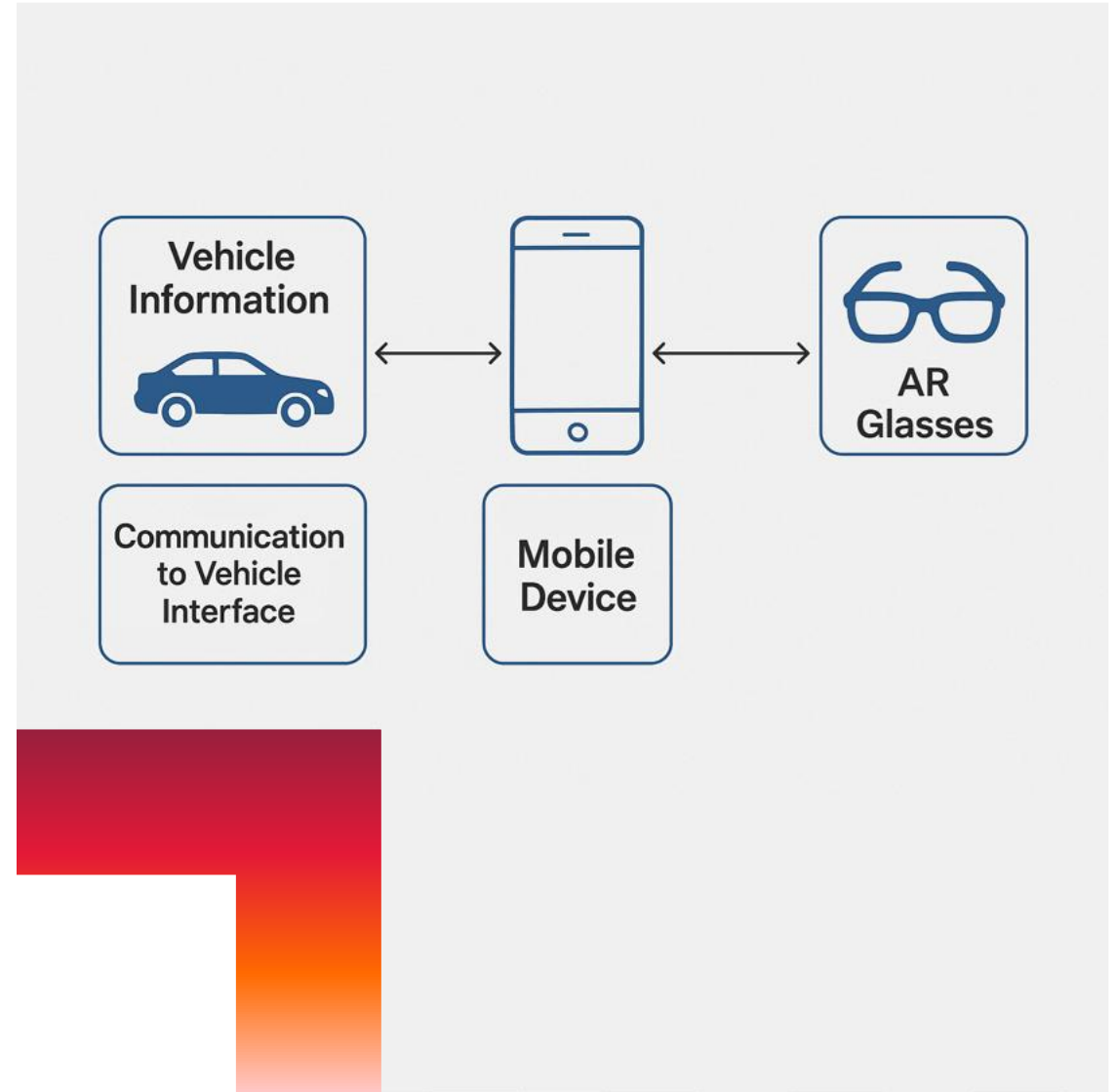
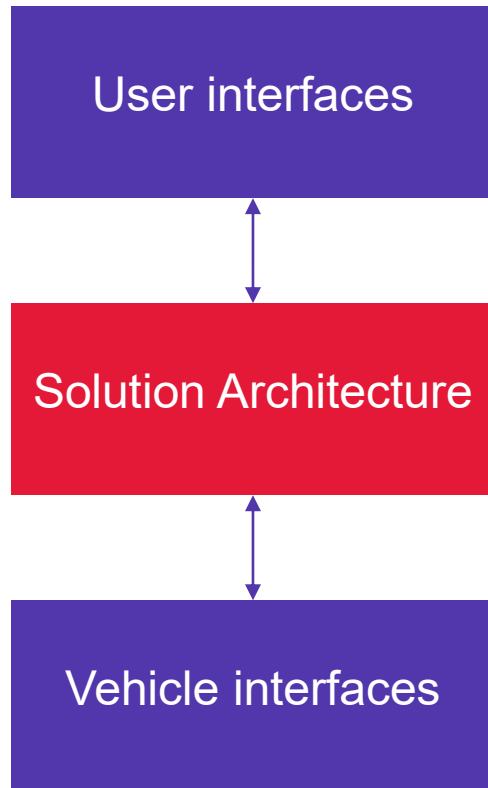


Multi-user support



Investigation of multiple augmented reality systems with **different capabilities** and **price** points

Results



Results (1)



Development of **time synchronization** algorithms.



Development and implementation of algorithms to **authenticate** and **request** information from vehicle and backend service.



Preparation of **configuration** data to map vehicle types and user preferences to **asset placements**.



Development of guidelines to develop applications which can run both in the **car display** and in the **virtual world**, and methods to let the user **drag and drop** an application from the car display into the virtual world and back.

Results (2)



Development and implementation of communication algorithms for **shared world** experiences.



Use of **game engines** and **standardized** augmented reality frameworks where possible to ease development and help with **portability** of developed solutions.



Use of **high-end**, state of the art augmented reality hardware to develop previews of the expected landscape of affordable products in a medium-scale timeframe (**5-10 years**), and showcase **usecases**.



Use of **mid-range** augmented reality hardware to showcase minimum-viable-product (**MVP**) **usecases** for currently available, affordable devices ready for **market adoption**.