

# CES 2024 Flutter Demo

AGL would like to redesign the look and feel of the IVI Demo for CES 2024 and beyond.

## Scope:

1. Use Figma to create a new design that includes the AGL Homescreen, HVAC, Dashboard, Settings, Audio mixer, Radio, and Media Player apps in a portrait mode orientation.
  - a. Stretch goal would be to include designs for the telephone, contacts, and navigation apps.
  - b. Stretch goal would be to include an IC design that matches the IVI.
  - c. Stretch goal is make the apps available in both landscape and portrait.
2. From the Figma design create Flutter apps that can be connected to the AGL back end.
3. Connect the Homescreen, HVAC, dashboard, radio, and audio mixer Flutter apps to AGL services via gRPC and show these at CES.
  - a. Stretch goal one is include other apps for CES, but generally the backend will not be ready for the Settings, Navigation, Media player in time for CES.
4. Stretch goal would be include a re-usable open source workflow to take Figma designs to AGL deployment and have that well documented.

## Hardware:

### Main Board

The target hardware for the CES demo is the [AGL reference board](#) with a Renesas R-Car3 SOC. Demo should run in ARM-64 QEMU, Intel QEMU, and Raspberry Pi 4 as well.

### Displays

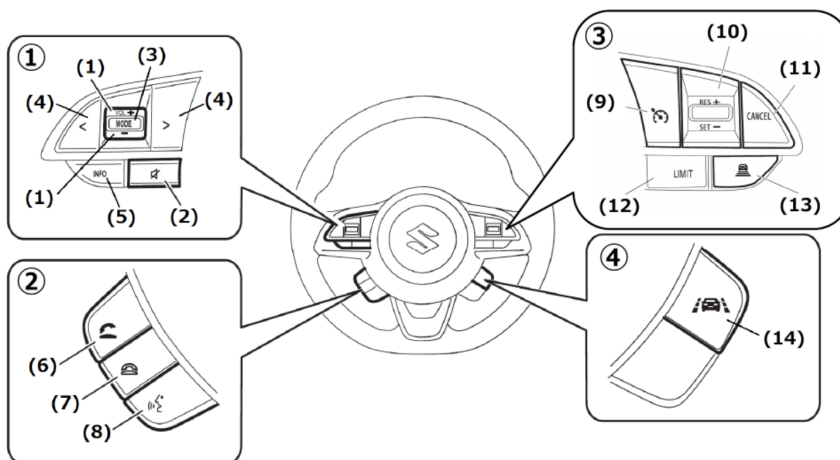
IVI display - 15.6" touchscreen ( GeChic 1503h or [similar](#)) portrait mode in 1080p

Instrument Cluster - 15.6" (GeChic 1503h or similar) landscape more in 1080p

### Vehicle Hardware

HVAC fans and LED connected via ???

Steering wheel connected via CAN with volume up/down and cruise control buttons available.



Buttons:

1: VOL+/-

2: MUTE

3: MODE

4: Prev/Next track

5: INFO

6: Take call

7: Hang up

8: Voice command

9: Cruise On/Off

10: Cruise Res+ / Set-

11: Cruise Cancel

12: LIMIT

13: Distance

14: Lane

Optional - CAN simulator for vehicle data (add link to Suchinton's simulator).

## Wireless Connectivity

Wifi and Bluetooth using the TI module on the reference hardware board.

Audio

USB audio connected.

Cameras

TBD

## Use Cases

### Start-Up Behavior

- \* Start up of the board shall boot directly into the AGL home screen without requiring input via keyboard or mouse to get the main application started.

### Home Screen

Updated home screen art work to differentiate from original CES demos

Optional - ability to select from different themes or color schemes

Optional - ability to reorder apps or on the home screen

### Connectivity

- \* Bluetooth
  - \* Profiles - A2DP and AVRCP.
  - \* Pair/unpair Bluetooth device via settings app
  - \* Connect/ disconnect paired Bluetooth device automatically or via settings app
  - \* Play media from Bluetooth phone using A2DP (controlled from the Bluetooth device)
  - \* Discover media files on the Bluetooth device and control them from the IVI system.
  - \* Optional - Telephony app
  - \* Optional - HFP for telephony
  - \* Optional - Contact sync from paired device
- \* Wifi
  - \* Client
    - \* Connect to open access point
    - \* Connect/reconnect to secure access point
    - \* Disconnect from access point
  - \* Access Point
    - \* Set up and management

### ==== Audio ====

- \* Create front and rear audio zones for applications
- \* Choose zone(s) for each application
- \* Mix audio from multiple sources (can be external or internal) for output to one or more zones

### ==== Video ====

- \* Create front and rear video zones for applications
- \* Optional - Use multiple displays in the rear seat zone
- \* Optional - Create multiple rear seat zones so that different passengers can watch different videos

### ==== Media Player ====

- \* Media Discovery from Bluetooth, SD card, or USB stick
- \* Audio
  - \* Play/pause/next track/last track etc for audio
  - \* Support multi-zone audio (i.e., can have different audio streams routed to different zones)
- \* Play/pause/next track/last track etc for video
- \* Support multi-zone video (i.e., different video streams routed to different displays)

### ==== Navigation ====

- \* Select destination using touch display
- \* Start/stop navigation
- \* Select POI from menu using POI app
- \* Navigate to POI
- \* Map display to the meter synchronized with the navigation
- \* Navigation audio playing from front audio zone only. Note: no audio support in ALS version of the navigation app.
- \* AGL Navigation API
- \* AGL Standard API used by POI App.
- \* Demo to exchange navigation services in our private demonstration.
- \* Optional - lower volume in rear zone by 50% when navigation prompt plays in front

### ==== Web Browser ====

- \* Browse web from wired wifi or Bluetooth connection
- \* Streaming media routed to proper zone (front and/or rear) depending on where the browser is launched from)

## Optional

CAN simulator for vehicle data (add link to Suchinton's simulator).

## Wireless Connectivity

## Apps