Flutter demo apps on AGL

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Flutter applications into AGL

- Goal of this presentation is to describe how to start testing flutter applications integration into the AGL demo platform.
- Multiple resources to start creating flutter apps from the scratch or using existing samples:
  - **https://flutter.dev/docs/get-started/codelab**
  - **https://flutter.dev/docs/development/ui/layout/tutorial**
  - **https://gallery.flutter.dev/**

Flutter apps and WAM

- Flutter apps can be built as web bundles, and displayed and run using the Web Application Manager into the HTML homescreen.
- Packaged and tested together with other web applications in the HTML-only UI.
  https://confluence.automotivelinux.org/display/MAIN/Flutter+apps+on+AGL+with+t
- More specific details on how to build the HTML UI demo image:
  https://www.youtube.com/watch?v=quM6DXOAVvM

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Native support on AGL

- Native flutter embedder for Wayland with ivi-homescreen presented by Toyota:
  - **https://confluence.automotivelinux.org/pages/viewpag pageId=49155374**

Building flutter web bundles

```
# Develop the app and package it for web
# adding the correspoding config.xml
flutter build web
cd build/web
zip -r flutter-webapp.wgt

# For installing into Qemu
scp -P2222 *wgt root@localhost:
qemux86-64$  afm-util install flutter-webapp.wgt
```

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Application framework integration

- API integration with the AppFramework bindings for the webapps was done with JS interfaces:
  - **https://github.com/AGL-web-applications/agl-js-api/tree/master/src**
- In flutter we are now using an AGL/JS dart wrapper:
  - **https://github.com/rogerzanoni/agljs.dart**
- Imports `AGLJS` dependency from the repository into the `pubspec.yaml`

Application framework integration (JS)

https://github.com/AGL-web-applications/agl-js-api/blob/master/src/audiomixer.js

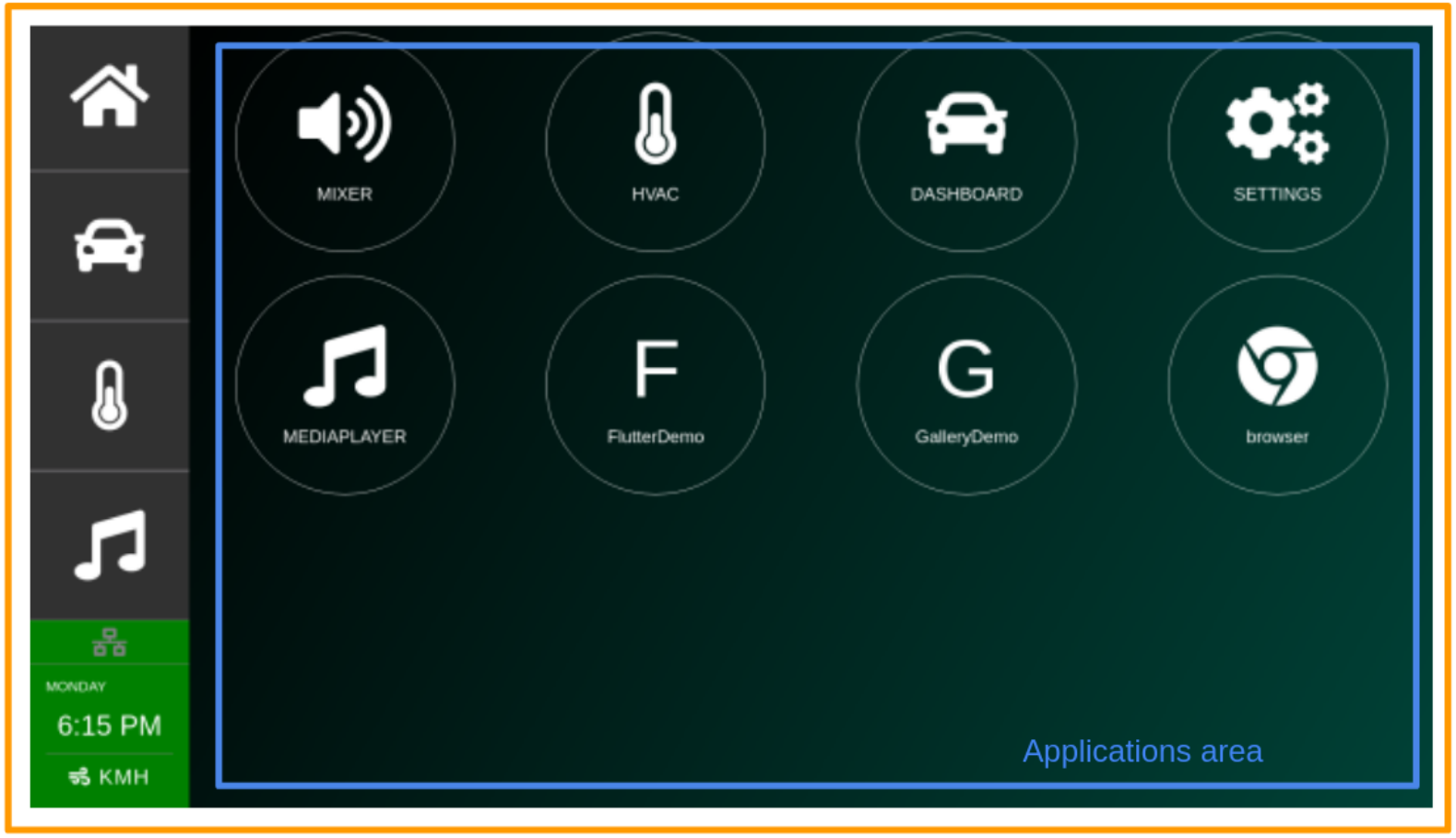
```
export function list_controls() {
    return api_call("audiomixer/list_controls", {});
}
export function set_volume(control, value) {
    return api_call("audiomixer/volume", {
                control: control,
                value: value
            });
}
export function on_volume_changed(handler) {
    return api_subscribe("audiomixer/subscribe", {
        event: "volume_changed"
    }, handler);
}
```

Application framework integration (Dart)

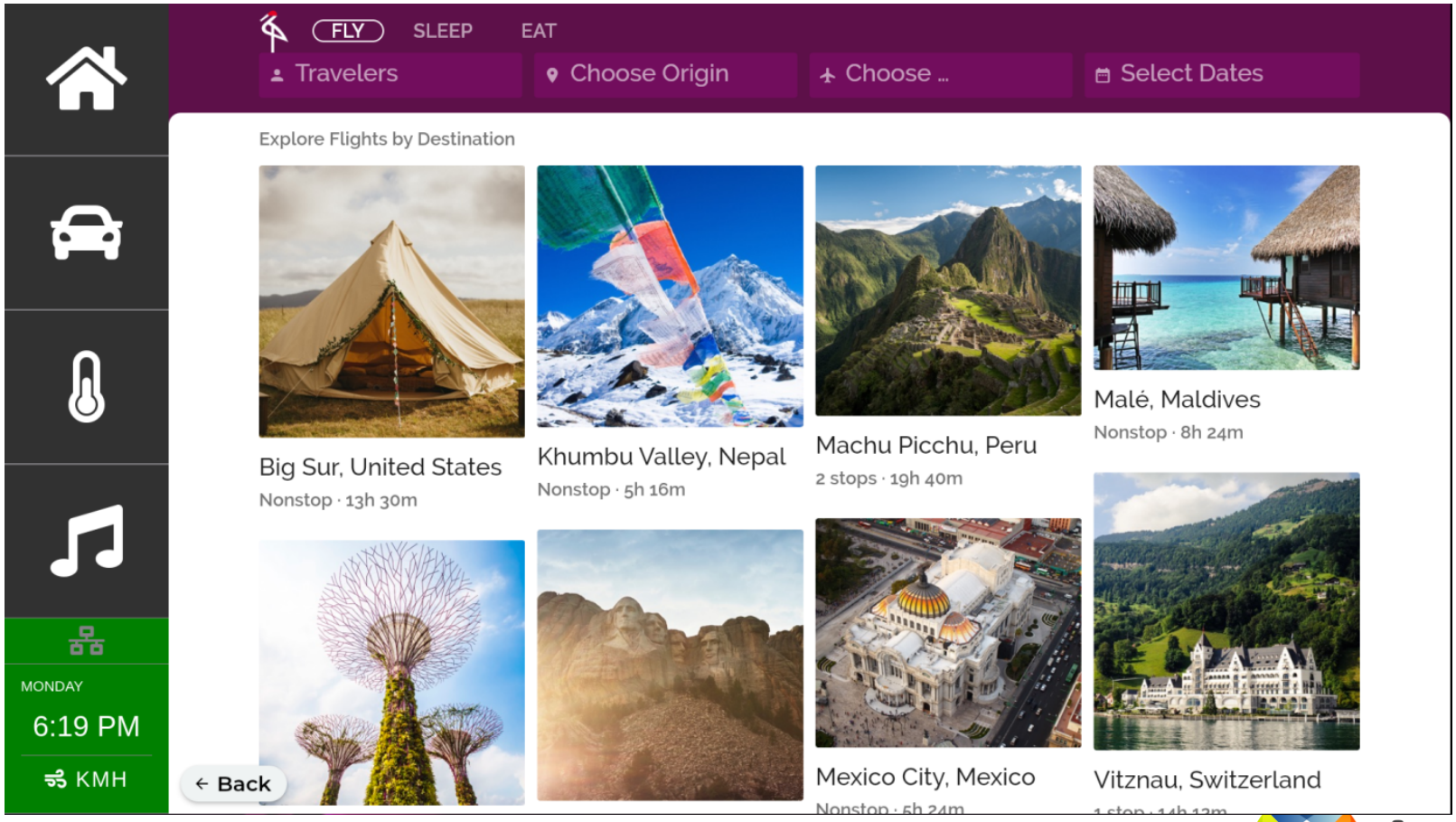
https://github.com/rogerzanoni/agl-flutter-web-listview/blob/audiomixer_test/lib/main.dart

```
void _retrieveControls() {
    Future<List<AfmMixerControl>> runnablesFuture =
        promiseToFuture<List<AfmMixerControl>>(AGLJS.audiomixer.list_cont
    runnablesFuture.then((List<AfmMixerControl> controls) =>
        _resetVolume(controls));
}

void _resetVolume(List<AfmMixerControl> controls) {
    controls.forEach((mixerControl) =>
        AGLJS.audiomixer.set_volume(mixerControl.control, 0));
}

void _registerAudiomixerCallbacks() {
    AGLJS.audiomixer.on_volume_changed(allowInterop((data) => _retrieveAp
}
```

AGL web homescreen structure



AGL web homescreen structure



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AGL web homescreen structure

Ongoing work

- Continue the integration with the AppFramework
  - Adapt AGL-JS api calls into `agljsdart` wrapper.
- Migration of `flutter-launcher`, `flutter-hvac`, `flutter-mixer`, etc.
- Test embedding web applications with flutter `WebView` plugin.
- Review the layout of the homescreen and overall demo apps look and feel.

Open questions

- Integration with native ivi-homescreen.
- Running multiple flutter applications homescreen and launcher.
- Adapt dart wrapper to the new App Framework bindings.
- Handling of application life cycle.

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