# Video in cars – UX guidelines

For developers adapting video apps for cars

# Contents

# Introduction

This deck provides app developers with design guidance for publishing their video apps to an Automotive OS track on the Play Store with minimal changes.

By following these guidelines, you can provide drivers the safe use of your video app while they're in their parked cars, and restrict them from watching while driving. This safety principle is the foundation of the video in cars experience.

# Terminology

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Terms that are useful to understand in the context of video in cars

| Term | Definition |
| --- | --- |
| **Driving** | Gear in Drive or Reverse |
| **Parked** | Car has come to a full stop but the engine may be switched on. Gear is on P or N. |
| **Stopped** | Defined by OEMs |

# Adapt your app for cars

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In adapting your app for cars, it's important to:

- Understand the user experience for driving and parked states
- Optimize for large screens
- Support portrait and landscape orientation
- Use appropriate touch targets and type sizes
- Use MediaSession to integrate with in-car controls
- Resume video playback from pause

# User experience details

Visual and interaction design with related guidance

# UX details: Video in cars

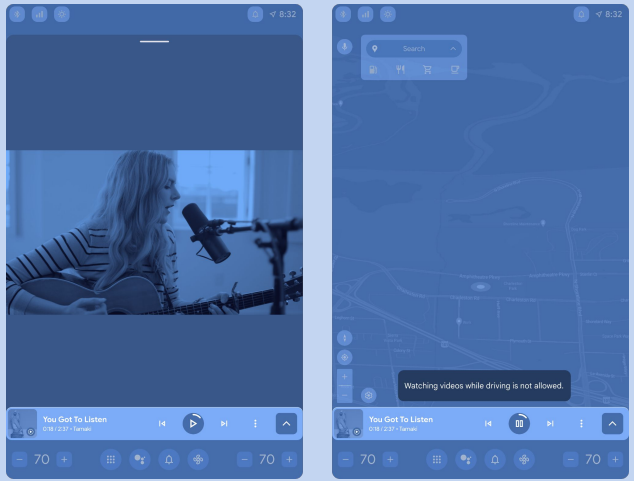
This section describes the interaction models for the following user journeys:

- Starting to drive while playing video
- Starting video apps when parked
- Starting video apps while driving

# Starting to drive while playing video

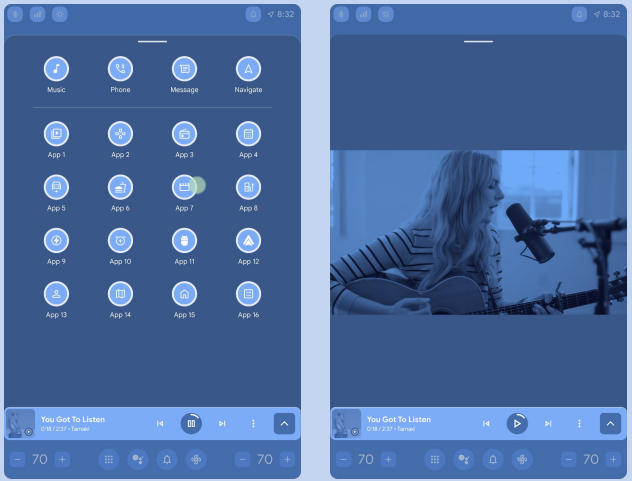
The video app is closed when the user starts driving, revealing the home screen or rear camera.

A toast notification is also triggered informing the user that video playing is paused.



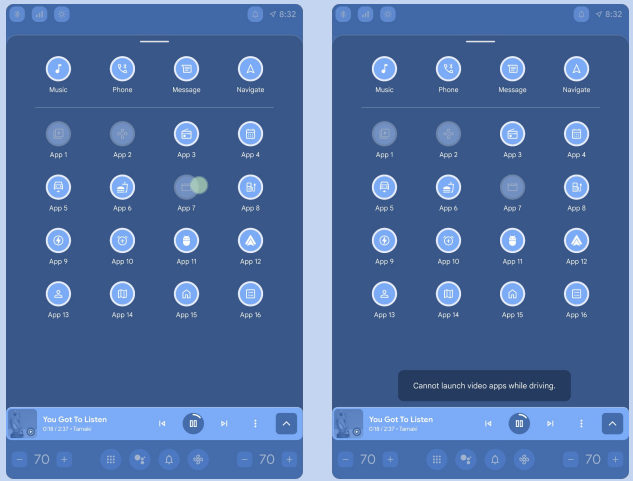
# Playing video when parked

Tapping on the video app will resume the playback session.



# Starting video apps while driving

Starting a video app while driving will trigger a toast notification informing that video playback is unavailable while driving.



# Requirements

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Use the guidelines covered here to make sure your Video in cars experience meets UX design requirements and recommendations:

- Support portrait and landscape orientation
- Use appropriate touch target sizes
- Use appropriate type sizes
- Meet task requirements

To fully understand the guidelines, make sure to read the definitions of MUST, SHOULD, and MAY to the right.

**MUST, SHOULD, and MAY**

UX guidelines are expressed as instructions that you MUST, SHOULD, or MAY follow. At a high level, you can understand these labels as follows:

**MUST** = Required (enforced either in the API or in Android app quality for cars)

**SHOULD** = Recommended

**MAY** = Optional

For details, including a discussion of MUST NOT and SHOULD NOT, visit Meaning of Must, Should & May.

# Portrait and landscape orientation

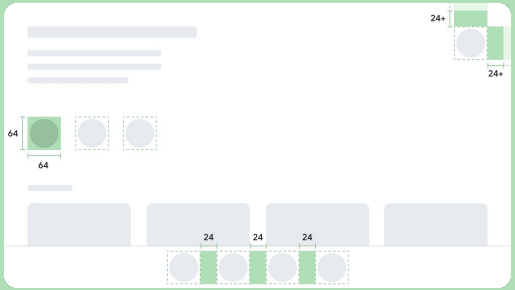
To provide an enhanced screen experience, the app MUST:

- **Support portrait and landscape**
  Ensure that both types of screen orientation are supported

# Touch targets

Car displays are usually positioned away from the driver, increasing the likelihood of users missing their touch targets. Therefore, for parked experiences, the app SHOULD:

- Provide touch targets with a minimum size of 64 x 64dp
- Add at least 24dp of space between touch targets
- Provide safe margin from screen edges of at least 24dp



# Type sizes

Text legibility in the context of a car can be affected by many factors, such as lighting, time of day, font proportions (thin, medium, bold), and contrast.

Therefore, for parked experiences, the app SHOULD:

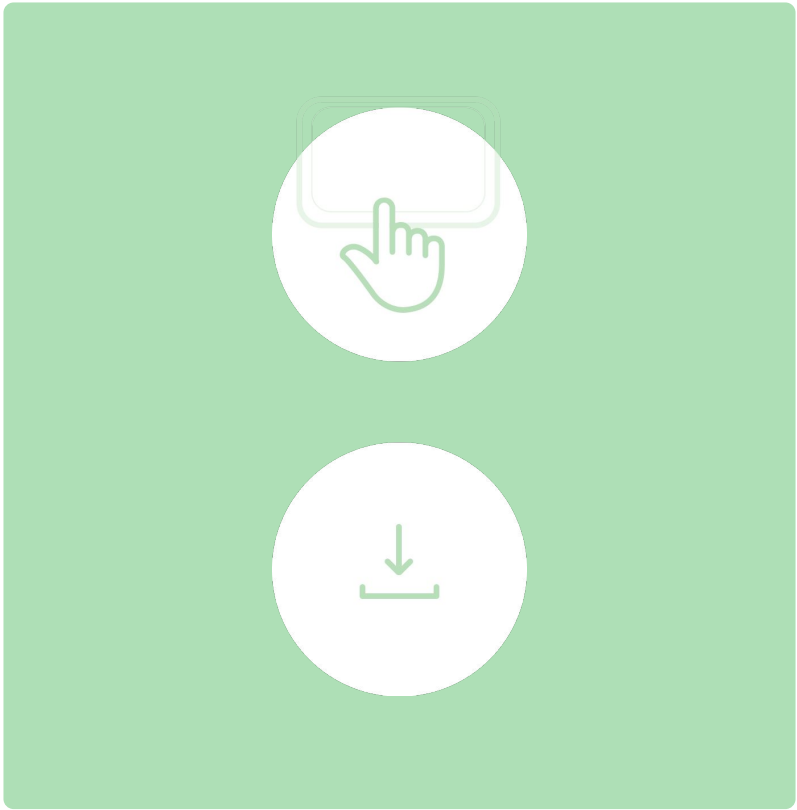
- Provide type sizes of at least 24dp

# Task requirements

These are requirements for tasks that users can perform in your app.

- MUST make tasks achievable with touch screens
- SHOULD allow access to downloaded content when there is no connectivity
- SHOULD display a timestamp in Playback view
- SHOULD display metadata for content: title and subtitle, if applicable, in Playback view in the pause state

For additional task requirements, see the next slide



# Task requirements, continued

- SHOULD display a progress indicator in Playback view
- SHOULD include interactive playback controls in Playback view
- SHOULD support the primary playback actions in the Playback controls
- SHOULD display a way to pause (or mute) and resume video at all times in Playback view

For additional task requirements, see the preceding slide

# Best practices

# Best practices

This section provides research-backed recommendations for adapting your app to be highly usable and appropriate for the in-car context.

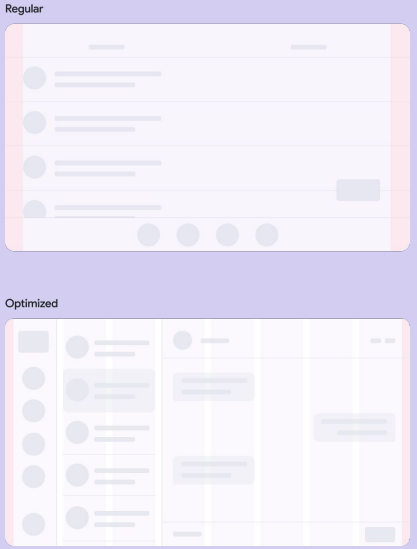
As **App developers**, you should:

- Optimize for large screens
- Support portrait and landscape orientations
- Use MediaSession
- Resume playback from pause

# Optimize for large screens

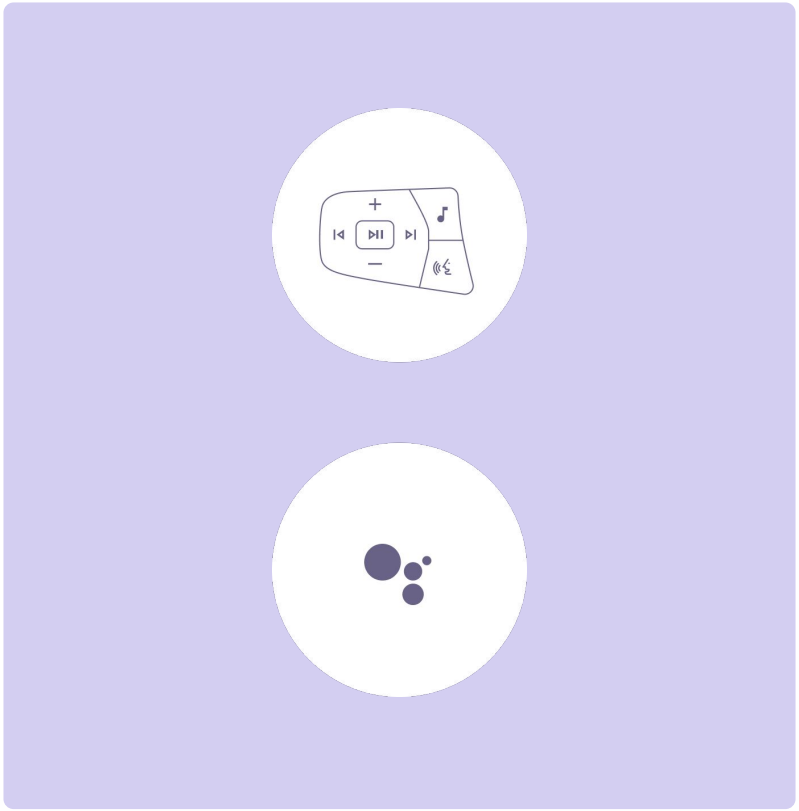
Large screens present unique opportunities, such as enabling easy discoverability of your app's functionalities, showcasing content, and facilitating seamless in-app navigation, which helps improve the overall user experience.

Google Material provides guidelines to optimize your app for large screens. These guidelines will help improve your app's layout, touch targets, and type sizes on both tablets and cars.



# Use MediaSession

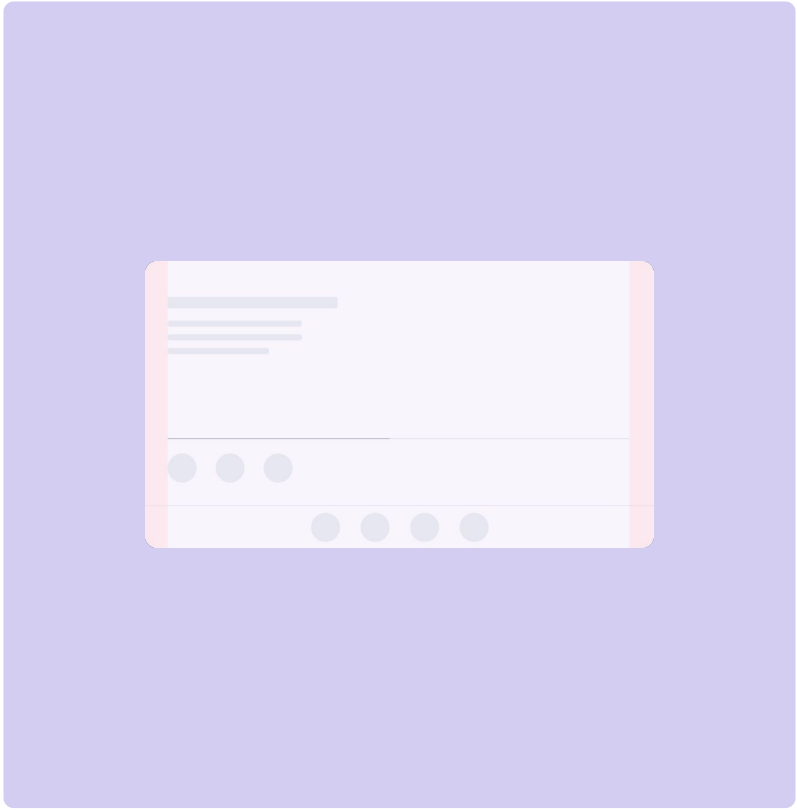
Drivers prefer easy access to an app's controls through AAOS-level media controls, car's physical controls, and Assistant voice controls. In order to enable this seamless transfer of controls, the app should integrate with MediaSession. For example, when MediaSession is implemented, the driver can pause playback by asking Google Assistant, and without using the app's UI.



# Resume playback from pause

Drivers prefer to continue watching videos from where they were paused. If the video restarts instead of resuming from where it was left off, drivers may perceive this as a suboptimal experience.

In order to enhance the experience around continuation of video playback, the app should allow the video to resume from where it was paused.



# Safety principle

# Safety Principle

**Restrict driver from watching videos while driving**

Activities that deeply engage the driver's visual attention, such as watching videos, must be restricted while driving. To make sure the driver is not distracted while on the road, videos must be a parked state experience for the driver.

# **android** for cars