# tvOS vs iOS

# About tvOS

tvOS is the operating system used in Apple TV.

Presented for the first time in 2015 with tvOS version 9.0, based on iOS 9. Prior to tvOS, the Apple TV had an operating system called Apple TV Software, which reached version 7.9. Its validity was from 2007 to 2014 with version 7.0 although versions were released until 2022 with final 7.9

It is the only device that has its own TVML language and is one of the options we have to develop apps for Apple TV.

# About tvOS (technologies)

- **TVML y TVMLKit**

It a̶l̶l̶w̶e̶s̶ allowed you to create a client server application, using TVML and Javascript, storing it on a server and rendering the interface with TVMLKit. You can combine SwiftUI or UIKit.
<span style="color:red">Deprecated in tvOS18</span>

# About tvOS (technologies)

- ## TVML y TVMLKit

It ~~altwes~~ allowed you to create a client server application, using TVML and Javascript, storing it on a server and rendering the interface with TVMLKit. You can combine SwiftUI or UIKit.
Deprecated in tvOS18

- ## TVUIKit y UIKit

It allows you to create apps as we know them for iOS. With some limitations and some additions. Using UIKit for the interface part.

# About tvOS (technologies)

- ## TVML y TVMLKit

It ~~altwes~~ allowed you to create a client server application, using TVML and Javascript, storing it on a server and rendering the interface with TVMLKit. You can combine SwiftUI or UIKit.
<span style="color:red">Deprecated in tvOS18</span>

- ## TVUIKit y UIKit

It allows you to create apps as we know them for iOS. With some limitations and some additions. Using UIKit for the interface part.

- ## SwiftUI

It allows you to create apps as we know them for iOS. With some limitations and some additions. But in this case using SwiftUI for the interface.

# That we don't have tvOS vs iOS

- Almacenamiento en el dispositivo.

- Webkit /Safari Services

- PassKit (Apple Pay and Wallet)

- PDFKit

- Playground Support

- ARkit

# That we don't have tvOS vs iOS

- Core Motion

- Speech

- IOBluetooth

- WidgetKit

- Contacts

- HealthKit

# What do we have tvOS vs iOS?

- ~~TVMLKit~~ <span style="color:red">Deprecated in tvOS18</span>

- TVUIKit

- TVServices

- DeviceDiscoveryUI

# To take into account developing for tvOS

- Focus management

- AppIcon y TopSelf

- Specific Xibs (iOS ones cannot be used)

- Text input.

- TabBar

# App Icon y Top Shelf

The icon of a tvOS app is different from an iOS app. They have several layers, specifically 3, Back, Middle and Front. It is for the parallax effect it has when obtaining the focus.

The Top Shelf is the image that is shown in the background when the app icon has the focus. Creating an extension of the app can be made dynamic and that highlights the contents of the app. It is one of the functionalities provided by TVUIKit.

# Siri Remote

In tvOS the user interaction with the app is through the. If we want to capture those gestures to customize actions, we can make use of UITapGestureRecognizer and with the allowedPressTypes property indicate which gestures we are interested in.

```swift
let tapGesture = UITapGestureRecognizer(target: self,
                                        action: #selector(remotePlayButtonTapped))
let gestures = [NSNumber(value: UIPress.PressType.playPause.rawValue)]
tapGesture.allowedPressTypes = gestures
view.addGestureRecognizer(tapGesture)
```

# Focus management

The system manages the focus for us but it does it with adjacent elements in the direction we make in the gesture in the control. It's not always what we want / need. To have a more personalized management, the system provides us with some tools.

# Focus management (UIKit)

- **adjustImageWhenAncestorFocused**. Allows UIImageView to respond when an ancestor becomes focused. It allows us to apply a parallax effect to a UIImageView when its superview gets the focus

- **focusedFrameGuide**. It allows us to access the frame of a UIImageView when it has the focus.

- **restoresFocusAfterTransition**. UIViewController property, which allows us to decide if we want the focus to be restored to the element where it was after a transition.

- **canBecomeFocused**. Property of UIView. By default false, overwriting this property we can change that.

# Focus management (UIKit)

- **UIFocusGuide**. An object that exposes nonview areas as focusable. It represents an invisible, focusable region that can redirect focus movement to other views.

- **UIFocusEnvironment**. A protocol with a set of methods that define the focus behavior for a branch of the view hierarchy. Conformed by UIViewController, UIView, UIWindow and UIPresentationController

# Focus management (UIKit)

- **setNeedsFocusUpdate**. Submits a request to the focus engine for a focus update in this environment.

- **updateFocusIfNeeded.** Tells the focus engine to force a focus update immediately.

- **didUpdateFocus(in:with:).** Called immediately after the system updates the focus to a new view.

# Focus management (UIKit)

- **UITableView, UICollectionView**

  1. **rememberLastFocusedIndexPath.** A Boolean value that indicates whether the table view automatically returns the focus to the cell at the last focused index path

  2. **collectionView(_:canFocusItemAt:).** Asks the delegate whether the item at the specified index path can be focused.

  3. **indexPathForPreferredFocusedView(in:).** Asks the delegate for the table view's index path for the preferred focused view

  4. Important if **restoresFocusAfterTransition** on the controller is enabled **rememberLastFocusedIndexPath** can be ignored after a transition.

  Delegate function **indexPathForPreferredFocusedView** won't be called the collectionView or tableview to be in **preferredFocusEnvironments**.

Demo time

# Links of interest

**TV Markup Language (TVML)**
**Implementing a hybrid TV app with TVMLKit**

**Planning your tvOS app**

**TVUIKit**
**Creating immersive experiences using a full-screen layout**
**Mastering the Living Room With tvOS**

**TVServices**

**DeviceDiscoveryUI**

**Public Apple Frameworks**

Q & A

@pmnuz08