Forensic Attribution of CarPlay-Initiated Calls via iOS Unified Logs

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INTRODUCTION

In France, holding a mobile phone while driving **is prohibited by the law,** whereas the use of in vehicle infotainment (IVI) systems such as Apple CarPlay **is legally permitted,** provided that the handset is not physically manipulated while driving.

In the context of road traffic accident investigations, mobile forensic examinations commonly rely on call history artifacts to determine whether a call was placed at the time of the incident. However, while these artifacts indicate the occurrence and timing of outgoing calls, they do not provide accurate information on the interaction method used to initiate these calls.

As a result, calls initiated through Apple CarPlay may be misclassified as illegal handheld phone use.

This study explores the forensic potential of iOS Unified Logs for distinguishing calls initiated directly on the handset from those initiated via the Apple CarPlay interface.

METHODS

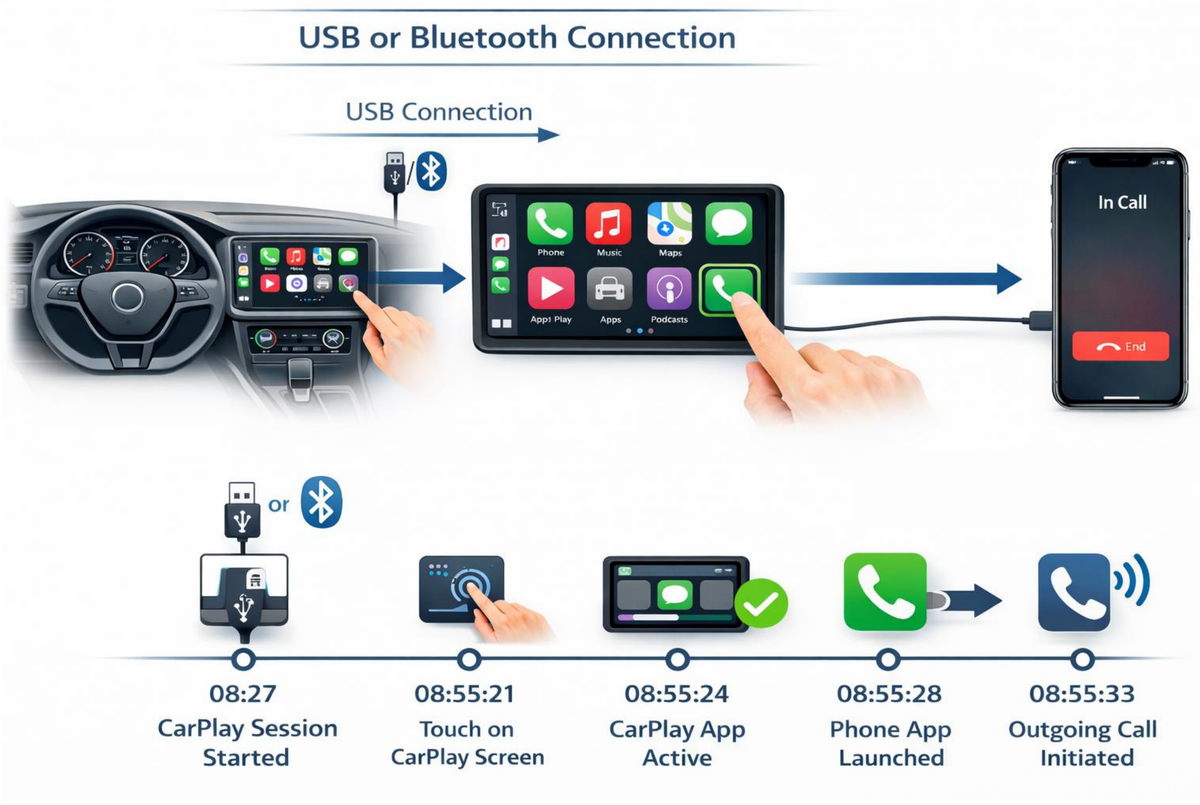
- An **iPhone 13** was connected via USB using a Lightning cable to a **CarPlay-enabled vehicle**, and **Unified Logs** were acquired **in tracev3 format using a macOS system** (Tahoe) with the apple device in an unlocked state.
- The extracted logs were analyzed using the macOS Console and correlated with outgoing call events.
- The analysis focused on identifying CarPlay session initialization, detecting user interactions on the vehicle's CarPlay dashboard, filtering logs by timeline, and linking these events to the launch of the Phone app and call initiation.

COLLECTING DEVICE LOGS

Collect iOS Unified Logs with a single Terminal command

```
log collect --device "DEVICE_NAME" –output ~/Desktop/unified_logs.logarchive
```

CARPLAY INTERACTION



In this study, the iPhone was connected to the vehicle via USB.

KEY FORENSIC EVIDENCE

CarPlay Session Activation

```
2026-01-24 08:27:00.000000+0100  kernel   AppleUSBHostPort::cableChangeOccurred : powering on
2026-01-24 08:27:01.214532+0100  CarPlay  ACCCarPlayService Connecting to CarKit Connection Time
2026-01-24 08:27:02.889417+0100  CarPlay  Beginning session
```

Confirms active CarPlay connection prior to the call.

User Interaction via Vehicle Interface

```
2026-01-24 08:55:21.102348+0100  CarPlay   Touch input detected on CarPlay screen
2026-01-24 08:55:21.245917+0100  UIKit     CarPlay Touches began with event: UITouch type: Direct
2026-01-24 08:55:21.246108+0100  UIKit     window: DashBoard.DBDashboardMainWindow
2026-01-24 08:55:21.246319+0100  UIKit     frame = (0 0; 406 244)
2026-01-24 08:55:21.389552+0100  CarPlay   Allowing tap for icon view 'com.apple.mobilephone'
```

User tap detected on Phone app via CarPlay.

Call Initiation

```
2026-01-24 08:55:28.512734+0100  CarPlay        app<com.apple.mobilephone> has an outgoing endpoint
2026-01-24 08:55:29.087456+0100  CallServicesd Call started outgoing
2026-01-24 08:58:47.339812+0100  CommCenter    CallState: Voice Call ended
```

These logs show that the Phone app was launched via CarPlay, an outgoing call was initiated, and the call ended

TAKEAWAY MESSAGE

iOS Unified Logs are a valuable forensic data source.

They can be easily acquired via macOS Terminal and provide insights into user behavior and system interactions. Incorporating them into mobile forensic workflows helps distinguish legal vehicle system use from illegal phone manipulation during traffic investigations.

Acknowledgement: This work was conducted independently and did not receive any external funding.