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| **Title：** | **HardKeyService按键实现** |

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| **Version** | **Date** | **Document Owner** | **Changes** |
| V1.0 | 2020-05-12 | PanJuan | 初稿 |
| V1.1 | 2020-05-13 | PanJuan | 根据MRD定义keycode以及根据定向后对应的模块定义action。 |
| V1.2 | 2020-05-13 | PanJuan | 更新KeyCode常量名，加上按键模块便于识别。 |
| V2.0 | 2020-06-02 | PanJuan | 更新自定义按键的注册回调方案 |
| V2.1 | 2020-06-02 | PanJuan | 注册函数增加参数传递当前AppID |
| V2.2 | 2020-06-04 | PanJuan | 说明API类名以及补充回调参数value的说明 |
| V2.3 | 2020-06-08 | PanJuan | 增加随心看AppID |
| V2.4 | 2020-07-08 | PanJuan | 增加RACM后排PlayPause、Shuffle、Repeat三个按键 |

# 文档

MRD文档：https://github.ford.com/APIMCIS/APIMCIS/tree/master/02\_Specification/03\_Desay\_RD/DCV1/219\_IVI\_interface\_via\_press\_physical\_switch\_实体键IVI交互\ Ford\_MRD\_Switch\_Input\_Matrix\_V09.xlsx

用于参考实现各模块按键对应功能。

Jar包：FordSDK.jar 主要相关类：com.ford.vendor.FordHardKeyManager.java

# HardKeyService设计

物理按键分发分为两种：

## 一部分按键对接到原生的keycode：

App可以用Android原生的方法（如onKeyDown/onKeyUp）监听下面这几个原生的物理按键：

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| **按键Label** | **对应的原生的KeyCode** |
| Up | KeyEvent.***KEYCODE\_DPAD\_UP*** |
| Down | KeyEvent.***KEYCODE\_DPAD\_DOWN*** |
| OK | KeyEvent. ***KEYCODE\_DPAD\_CENTER*** |
| Vol + | KeyEvent.***KEYCODE\_VOLUME\_UP*** |
| Vol - | KeyEvent.***KEYCODE\_VOLUME\_DOWN*** |
| Mute | KeyEvent***.KEYCODE\_VOLUME\_MUTE*** |
| Back | KeyEvent***.KEYCODE\_BACK*** |

## 自定义的物理按键通过注册回调获取：

* App通过调用注册函数registerKeyEvent(int AppID, IKeyEventCallback callback)监听物理按键信息，回调函数onCustomKeyEvent(int keyCode, int keyAction, String value)接收物理按键信息，函数在ForSDK.jar里面的FordHardKeyManager.java
* registerKeyEvent 参数1： int AppID 传入调用监听按键模块对应AppID，用于定向回调时使用，比如，随心听app里面注册监听物理按键，则AppID传入**APP\_ID\_BAIDU\_RADIO。**

AppID的定义参考下面的 **2.2.1 自定义按键模块AppID**

* 回调函数onCustomKeyEvent的参数意义如下：

参数1：int keyCode 传递按键的名称，值定义参考下面的 **2.2.2 自定义KeyCode**

参数2：int keyAction 传递按键事件，值定义参考下面的 **2.2.3 自定义Key的KeyAction**

参数3：String value 传递附加信息，比如：source切源按键，value会传递下一个需要播放的源类型；seek按键， value会传递当前源类型。源类型的值参考com.ford.audio.FordAudioManager.java里面的定义，其中：

// 在线电台

public static final String CAR\_AUDIO\_TYPE\_ONLINE\_NETWORKSTATION = "online\_network\_station";

// 在线音乐

public static final String CAR\_AUDIO\_TYPE\_ONLINE\_MUSIC = "online\_music";

// USB 0 音频

public static final String CAR\_AUDIO\_TYPE\_USB\_0 = "usb0";

* 物理按键的服务中会将触发了的物理按键做模块定向，比如：**Push to Talk (Voice)(PTT)**这个按键会被分发到注册监听了**APP\_ID\_VR**的模块去；媒体相关的按键会根据当前源类型找到注册了对应的**APP\_ID\_XX**的模块进行回调。

### 自定义按键模块AppID

**//本地收音机**

**public static final int APP\_ID\_RADIO = 1000;**

**//蓝牙音乐**

**public static final int APP\_ID\_BT\_MUSIC = 1001;**

**//随心听**

**public static final int APP\_ID\_BAIDU\_RADIO = 1002;**

**//蓝牙电话**

**public static final int APP\_ID\_BT\_PHONE = 1003;**

**//语音**

**public static final int APP\_ID\_VR = 1004;**

**//设置**

**public static final int APP\_ID\_SETTINGS = 1005;**

**//电源管理**

**public static final int APP\_ID\_POWER\_MANAGEMENT = 1006;**

**//导航**

**public static final int APP\_ID\_NAVIGATION = 1007;**

**//rvc**

**public static final int APP\_ID\_RVC = 1008;**

**//EA**

**public static final int APP\_ID\_EA = 1009;**

**//随心看**

**Public static final int APP\_ID\_BAIDU\_VIDEO = 1010;**

### 自定义KeyCode

按键定义如下，对应MRD（Ford\_MRD\_Switch\_Input\_Matrix\_V08.xlsx）中的label列：

**/\* SWCs (CAN)方向盘按键 \*/**

**public static final int KEYCODE\_SWC\_SEEK\_MINUS = 2000;//Seek-**

**public static final int KEYCODE\_SWC\_SEEK\_PLUS = 2001;//Seek +**

**public static final int KEYCODE\_SWC\_SEEK\_LEFT\_PHONE = 2002;//Seek Left + Phone "SEND"**

**public static final int KEYCODE\_SWC\_SEEK\_RIGHT\_PHONE = 2003;//Seek Right + Phone "End"**

**public static final int KEYCODE\_SWC\_PUSH\_TO\_TALK = 2004;//Push to Talk (Voice)(PTT)**

**public static final int KEYCODE\_SWC\_PHONE\_SEND\_END = 2005;//Phone "Send&End"**

**public static final int KEYCODE\_SWC\_MENU = 2006;//MENU**

**public static final int KEYCODE\_SWC\_DISP = 2007;//DISP**

**public static final int KEYCODE\_SWC\_AUDIO = 2008;//Audio**

**public static final int KEYCODE\_SWC\_SETTING = 2009;//Setting**

**public static final int KEYCODE\_SWC\_NAVIGATION = 2010;//Navigation**

**/\* Mini ICP (LIN) 中控按键\*/**

**public static final int KEYCODE\_ICP\_POWER\_VOLUME = 3000;//Power Volume**

**public static final int KEYCODE\_ICP\_DAT = 3001;//DAT Shortcut**

**public static final int KEYCODE\_ICP\_AUDIO\_POWER\_ONOFF = 3002;//Audio "Powor On/Off"**

**public static final int KEYCODE\_ICP\_SEEK\_LEFT = 3003;//Seek Left**

**public static final int KEYCODE\_ICP\_SEEK\_RIGHT = 3004;//Seek Right**

**public static final int KEYCODE\_ICP\_PLAY\_PAUSE = 3005;//Play / Pause icon**

**public static final int KEYCODE\_ICP\_REAR\_AUDIO\_LOCK = 3006;//Rear Audio Lock**

**public static final int KEYCODE\_ICP\_PARKING\_CAMERA = 3007;//Parking+Camera Hot Key**

**public static final int KEYCODE\_ICP\_SOUND\_MENU = 3008;//Sound Menu**

**public static final int KEYCODE\_ICP\_SOURCE\_ALL\_MEDIA = 3009;//Source (All MEDIA)**

**public static final int KEYCODE\_ICP\_DISPLAY = 3010;//Display**

**/\* RCCM CCH/EFP \*/**

**// 暂时无定义**

**/\* RACM (CAN)后排按键 \*/**

**public static final int KEYCODE\_RACM\_SOURCE = 4000;//Source**

**public static final int KEYCODE\_RACM\_SEEK\_FORWARD = 4001;//Seek Forward**

**public static final int KEYCODE\_RACM\_SEEK\_BACK = 4002;//Seek Back**

**public static final int KEYCODE\_RACM\_PLAY\_PAUSE = 4003;// Play Pause**

**public static final int KEYCODE\_RACM\_SHUFFLE = 4004;//** **Shuffle**

**public static final int KEYCODE\_RACM\_REPEAT = 4005;//** **Repeat**

### 自定义Key的KeyAction

**public static final int KEYACTION\_UP = 0; //短键的up事件**

**public static final int KEYACTION\_DOWN = 1; //短按的down事件**

**public static final int KEYACTION\_LONG\_UP = 2; //长按的up事件**

**public static final int KEYACTION\_LONG\_DOWN = 3; //长按的down事件**

**public static final int KEYACTION\_ERROR = 4; //错误事件**

备注：

短按：KEYACTION\_DOWN->KEYACTION\_UP

长按：KEYACTION\_DOWN-> KEYACTION\_LONG\_DOWN->KEYACTION\_LONG\_UP