# 1 文件加载流程解析

文件生成规则：

CMAKE时编译，BUILD时打包到执行文件夹；

文件调用规则：

SDL\_CORE初始化时加载，见sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数；

load\_capabilities\_from\_file()函数功能：

从hmi\_capabilities.json配置文件中获取各种参数配置，并配置到本地变量中；

# 2 文件内容解析

{

"UI":

{

"language":"EN-US",//UI当前使用语言

"languages":[ //语言集

"EN-US","ES-MX","FR-CA","DE-DE","ES-ES","EN-GB","RU-RU","TR-TR","PL-PL","FR-FR","IT-IT","SV-SE","PT-PT","NL-NL","ZH-TW",

"JA-JP","AR-SA","KO-KR","PT-BR","CS-CZ","DA-DK","NO-NO"

],

"displayCapabilities"://可显示功能项

{

"displayType":"GEN2\_8\_DMA",//显示类型：GEN-2,8英寸显示屏

"textFields": [{//支持的文本显示集

"name": "mainField1",//name：第一组主字段的第一行

"characterSet": "TYPE2SET",//字符集：

"width": 500,//宽度：500

"rows": 1//第一排

},

{

"name": "mainField2",//name：第一组主字段的第二行

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "mainField3",//name：第二组主字段的第一行

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "mainField4",//name：第二组主字段的第二行

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "statusBar",//bar on NGN状态

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "mediaClock",/多媒体时钟字段文本值

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "mediaTrack",//NGN和gen1.1 MFD路线显示，此字段只支持多媒体程序

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "alertText1",//告警文本的第一行

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "alertText2",//告警文本的第二行

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "alertText3",//告警文本的第三行

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "scrollableMessageBody",//滚动消息体（可包含换行符和TAB键）

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "initialInteractionText",//初始化交互文本

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "navigationText1",//导航消息第一行

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "navigationText2",/导航消息的第二行

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "ETA",,//导航预计到达时间

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "totalDistance",//导航到达目的地总距离

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "navigationText",//更新导航文本列表

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "audioPassThruDisplayText1",//音频消息第一行

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "audioPassThruDisplayText2",/音频消息第二行

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "sliderHeader",//滚动消息文件头

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "sliderFooter",//滚动消息文件尾

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "notificationText",//通知消息体

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "menuName",//首选消息体

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "secondaryText",//次选消息体

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "tertiaryText",//第三选消息体

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "timeToDestination",//导航到达目的地的时间

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "turnText",//更新导航

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

},

{

"name": "menuTitle",//菜单按钮可选的标题

"characterSet": "TYPE2SET",

"width": 500,

"rows": 1

}

],

"imageFields"://支持的图像显示集

[

{

"name":"softButtonImage",//软件图像按钮

"imageTypeSupported"://图像支持类型

[

],

"imageResolution"://图像分辨率

{

"resolutionWidth":35,//分辨率宽度

"resolutionHeight":35//分辨率高度

}

},

{

"name":"choiceImage",//首选的图像字段

"imageTypeSupported":

[

],

"imageResolution":

{

"resolutionWidth":35,

"resolutionHeight":35

}

},

{

"name":"choiceSecondaryImage",//次选的图像字段

"imageTypeSupported":

[

],

"imageResolution":

{

"resolutionWidth":35,

"resolutionHeight":35

}

},

{

"name":"menuIcon",//菜单图像字段

"imageTypeSupported":

[

],

"imageResolution":

{

"resolutionWidth":35,

"resolutionHeight":35

}

},

{

"name":"cmdIcon",//增加命令

"imageTypeSupported":

[

],

"imageResolution":

{

"resolutionWidth":35,

"resolutionHeight":35

}

},

{

"name":"appIcon",//应用程序图标

"imageTypeSupported":

[

],

"imageResolution":

{

"resolutionWidth":35,

"resolutionHeight":35

}

},

{

"name":"graphic",//SHOW 图像

"imageTypeSupported":

[

],

"imageResolution":

{

"resolutionWidth":35,

"resolutionHeight":35

}

},

{

"name":"locationImage",//目的地可选图像

"imageTypeSupported":

[

"GRAPHIC\_PNG"//PBG图像

],

"imageResolution":

{

"resolutionWidth":35,

"resolutionHeight":35

}

}

],

"mediaClockFormats"://多媒体时钟格式

[

"CLOCK1","CLOCK2","CLOCK3","CLOCKTEXT1","CLOCKTEXT2","CLOCKTEXT3","CLOCKTEXT4"

],

"graphicSupported":true,//图像支持

"templatesAvailable"://可用模板

[

"DEFAULT","MEDIA","NON-MEDIA","ONSCREEN\_PRESETS","NAV\_FULLSCREEN\_MAP","NAV\_KEYBOARD",

"GRAPHIC\_WITH\_TEXT","TEXT\_WITH\_GRAPHIC","TILES\_ONLY","TEXTBUTTONS\_ONLY",

"GRAPHIC\_WITH\_TILES","TILES\_WITH\_GRAPHIC","GRAPHIC\_WITH\_TEXT\_AND\_SOFTBUTTONS",

"TEXT\_AND\_SOFTBUTTONS\_WITH\_GRAPHIC","GRAPHIC\_WITH\_TEXTBUTTONS",

"TEXTBUTTONS\_WITH\_GRAPHIC","LARGE\_GRAPHIC\_WITH\_SOFTBUTTONS",

"DOUBLE\_GRAPHIC\_WITH\_SOFTBUTTONS","LARGE\_GRAPHIC\_ONLY"

],

"screenParams"://屏幕参数

{

"resolution"://分辨率

{

"resolutionWidth":800,

"resolutionHeight":350

},

"touchEventAvailable"://触屏事件配置

{

"pressAvailable":true,//单击触屏有效

"multiTouchAvailable":false,//多点触屏无效

"doublePressAvailable":false//双击触屏无效

}

},

"numCustomPresetsAvailable":8,

"imageCapabilities"://图形显示能力

[

"DYNAMIC",//动态

"STATIC"//静态

]

},

"audioPassThruCapabilities"://音频播放配置

{

"samplingRate" : "44KHZ",//采样率：44KHZ

"bitsPerSample" : "RATE\_8\_BIT",//频率：8BIT

"audioType" : "PCM"//音频类型：脉冲

},

"hmiZoneCapabilities":"FRONT",//人际界面支持功能：前

"softButtonCapabilities"://软件按键支持功能

[

{

"shortPressAvailable":true,//短按有效

"longPressAvailable" :true,//长按有效

"upDownAvailable" :true,//上下按有效

"imageSupported" :true//图形支持

}

]

},

"VR":

{

"capabilities":["TEXT"],

"language":"EN-US",//当前使用语言

"languages": //语言集

[

"EN-US","ES-MX","FR-CA","DE-DE","ES-ES","EN-GB","RU-RU","TR-TR","PL-PL","FR-FR","IT-IT","SV-SE","PT-PT","NL-NL","ZH-TW",

"JA-JP","AR-SA","KO-KR","PT-BR","CS-CZ","DA-DK","NO-NO"

]

},

"TTS":

{

"capabilities":"TEXT",

"language":"EN-US",//当前使用语言

"languages"://语言集

[

"EN-US","ES-MX","FR-CA","DE-DE","ES-ES","EN-GB","RU-RU","TR-TR","PL-PL","FR-FR","IT-IT","SV-SE","PT-PT","NL-NL","ZH-TW",

"JA-JP","AR-SA","KO-KR","PT-BR","CS-CZ","DA-DK","NO-NO"

]

},

"Buttons"://按键

{

"capabilities"://支持功能

[

{

"name":"PRESET\_0",//0键

"shortPressAvailable":true,//短按支持

"longPressAvailable" :true,//长按支持

"upDownAvailable" :true//上下按支持

},

{

"name":"PRESET\_1",//1键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"PRESET\_2",//2键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"PRESET\_3",//3键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"PRESET\_4",//4键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"PRESET\_5",//5键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"PRESET\_6",//6键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"PRESET\_7",//7键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"PRESET\_8",//8键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"PRESET\_9",//9键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"OK",//OK键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"SEEKLEFT",//左键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"SEEKRIGHT",//右键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"TUNEUP",//上键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

},

{

"name":"TUNEDOWN",//下键

"shortPressAvailable":true,

"longPressAvailable" :true,

"upDownAvailable" :true

}

],

"presetBankCapabilities"://预设存储能力

{

"onScreenPresetsAvailable":true

}

},

"VehicleInfo"://车辆信息

{

"make" :"Ford",//制造商

"model" :"Fiesta",//模式

"modelYear" :"2013",//车型

"trim" :"SE"

},

"SyncMessageVersion"://版本

{

"majorVersion": 3,

"minorVersion": 0

}

}

# 3文件每一子项调用流程解析

## 3.1 UI

### 3.1.1 "language":"EN-US",//UI当前使用语言

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；语言信息存入HMILanguageHandler::last\_state\_；
2. HMI开启时，SDL\_CORE会从HMI获取此语言信息，并更新；
3. 手机端连接时，SDL\_CORE会获取语言信息并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

hmi\_capabilities.active\_ui\_language ()

hmi\_language\_handler\_.get\_language\_for

### 3.1.2 "languages":[ //语言集

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；语言信息存入HMICapabilities::ui\_supported\_languages\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取支持语言信息，并更新；
3. 当收到手机端ChangeRegistrationID命令时，会将手机端发送过来的语言和支持的语言进行对比，流程见下：

void ChangeRegistrationRequest::Run()

bool ChangeRegistrationRequest::IsLanguageSupportedByUI(hmi\_language)

HMICapabilities::ui\_supported\_languages()

### 3.1.3 "displayCapabilities"://可显示功能项

#### 3.1.3.1 "displayType":"GEN2\_8\_DMA",//显示类型：GEN-2,8英寸显示屏

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；displayType信息存入display\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取displayType，并更新display\_capabilities\_；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取display\_Type并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

hmi\_capabilities.display\_capabilities()->getElement(hmi\_response::display\_type);

HMICapabilities::display\_capabilities()

#### 3.1.3.2 "textFields": [{//支持的文本显示集

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；textFields信息存入display\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取textFields，并更新display\_capabilities\_；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取text\_Fields并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

hmi\_capabilities.display\_capabilities()->getElement(hmi\_response:: text\_Fields);

HMICapabilities::display\_capabilities()

1. 接收到手机SendLocationID时，SDL\_CORE会从display\_capabilities\_(text\_field)中检查是否有locationName、locationDescription、addressLines、phoneNumber信息，若有则会发送SendLocationRequest到HMI，调用流程：

SendLocationRequest::Run()

SendLocationRequest::CheckHMICapabilities

#### 3.1.3.3 "imageFields"://支持的图像显示集

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；imageFields信息存入display\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取imageFields，并更新display\_capabilities\_；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取image\_Fields并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

hmi\_capabilities.display\_capabilities()->getElement(hmi\_response:: image\_Fields);

HMICapabilities::display\_capabilities()

#### 3.1.3.4 "mediaClockFormats"://多媒体时钟格式

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；imageFields信息存入display\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取mediaClockFormats，并更新display\_capabilities\_；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取media\_Clock\_Formats并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

hmi\_capabilities.display\_capabilities()->getElement(hmi\_response:: image\_Fields);

HMICapabilities::display\_capabilities()

#### 3.1.3.5 "graphicSupported":true,//图像支持，"imageCapabilities"://图形显示能力

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；graphicSupported信息存入display\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取graphicSupported，并更新display\_capabilities\_；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取image\_capabilities信息，并更新信息来确定返回值，发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

hmi\_capabilities.display\_capabilities()->getElement(hmi\_response:: image\_capabilities);

HMICapabilities::display\_capabilities()

#### 3.1.3.6 "templatesAvailable"://可用模板

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；templatesAvailable信息存入display\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取templatesAvailable，并更新display\_capabilities\_；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取:templates\_available并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

hmi\_capabilities.display\_capabilities()->getElement(hmi\_response:: templates\_available);

HMICapabilities::display\_capabilities()

1. 手机端发送SetDisplayLayoutRequest时，SDL\_CORE接收到HMI回复后，检查display\_capabilities\_变量是否有templates\_available，若有则返回给手机端，调用流程：

void SetDisplayLayoutRequest::on\_event(const event\_engine::Event& event)

hmi\_capabilities.display\_capabilities()->getElement(hmi\_response::templates\_available)

#### 3.1.3.7 "screenParams"://屏幕参数

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；screenParams信息存入display\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取screenParams，并更新display\_capabilities\_；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取screen\_Params并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

hmi\_capabilities.display\_capabilities()->getElement(hmi\_response:: screen\_Params);

HMICapabilities::display\_capabilities()

#### 3.1.3.8 "numCustomPresetsAvailable":8,

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；numCustomPresetsAvailable信息存入display\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取numCustomPresetsAvailable，并更新display\_capabilities\_；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取num\_Custom\_Presets\_available并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

hmi\_capabilities.display\_capabilities()->getElement(hmi\_response:: num\_Custom\_Presets\_available);

HMICapabilities::display\_capabilities()

### 3.1.4 "audioPassThruCapabilities"://音频播放配置

1. DL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；信息存入audio\_pass\_thru\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取信息，并更新void audio\_pass\_thru\_capabilities\_变量；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取audio\_pass\_thru\_capabilities\_并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

response\_params[strings::audio\_pass\_thru\_capabilities] =

\*hmi\_capabilities.audio\_pass\_thru\_capabilities()

const smart\_objects::SmartObject& audio\_pass\_thru\_capabilities)

### 3.1.5 "hmiZoneCapabilities":"FRONT",//人际界面支持功能：

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；hmiZoneCapabilities信息存入hmi\_zone\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取hmiZoneCapabilities，并更新hmi\_zone\_capabilities\_；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取hmi\_zone\_capabilities并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile() params[hmi\_response::hmi\_zone\_capabilities] =

\*hmi\_capabilities.hmi\_zone\_capabilities();

HMICapabilities::hmi\_zone\_capabilities()

### 3.1.6 "softButtonCapabilities"://软件按键支持功能

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；softButtonCapabilities信息存入soft\_buttons\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取hmiZoneCapabilities，并更新soft\_buttons\_capabilities\_；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取soft\_button\_capabilities并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

response\_params[hmi\_response::soft\_button\_capabilities] =

\*hmi\_capabilities.soft\_button\_capabilities(); HMICapabilities::soft\_button\_capabilities()

## 3.2 VR

### 3.2.1"capabilities":["TEXT"],

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；信息存入vr\_capabilities\_变量；
2. HMI开启时，SDL\_CORE会从HMI获取vr\_capabilities，并更新vr\_capabilities\_；
3. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取vr\_capabilities并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

response\_params[strings::vr\_capabilities] =\*hmi\_capabilities.vr\_capabilities()

const smart\_objects::SmartObject\* HMICapabilities::vr\_capabilities()

### 3.2.2"language":"EN-US",//当前使用语言

与3.1.1类似，不做详述

### 3.2.3"languages": //语言集

与3.1.2类似，不做详述

## 3.3 TTS

### 3.3.1"capabilities":"TEXT",

与3.2.1类似，不做详述；

### 3.3.2"language":"EN-US",//当前使用语言

与3.1.1类似，不做详述

### 3.3.3"languages"://语言集

与3.1.2类似，不做详述

## 3.4 Buttons //按键

### 3.4.1 "capabilities"://支持功能

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；信息存入button\_capabilities\_变量；
2. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取button\_capabilities并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

response\_params[hmi\_response::button\_capabilities] =

\*hmi\_capabilities.button\_capabilities();

const smart\_objects::SmartObject\* HMICapabilities::button\_capabilities()

1. 手机端连接发送SubscribeButtonID时，SDL\_CORE会获取button\_capabilities与手机端信息比较，调用流程：

void SubscribeButtonRequest::Run()

bool SubscribeButtonRequest::CheckHMICapabilities

hmi\_caps.button\_capabilities()

### 3.4.2 "presetBankCapabilities"://预设存储能力

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；信息存入preset\_bank\_capabilities\_变量；
2. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取preset\_bank\_capabilities并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

response\_params[hmi\_response::preset\_bank\_capabilities] =

\*hmi\_capabilities.preset\_bank\_capabilities();

HMICapabilities::preset\_bank\_capabilities()

1. 当SDL\_CORE收到Buttons\_GetCapabilities命令时，SDL\_CORE会配置preset\_bank\_capabilities，调用流程：

CommandSharedPtr HMICommandFactory::CreateCommand

void ButtonGetCapabilitiesResponse::Run()

void set\_preset\_bank\_capabilities

## 3.5 VehicleType //车辆信息

1. SDL\_CORE初始化时sdl\_core/src/componnents/application/src/Hmi\_capablities.cc文件load\_capabilities\_from\_file()函数会加载hmi\_capabilities.json文件并获取信息；信息存入vehicle\_type\_变量；
2. 手机端连接发送RegisterAppInterfaceID时，SDL\_CORE会获取vehicle\_type并发送到手机端，调用流程：

void RegisterAppInterfaceRequest::SendRegisterAppInterfaceResponseToMobile()

response\_params[hmi\_response::vehicle\_type] =

\*hmi\_capabilities.vehicle\_type();

const smart\_objects::SmartObject\* HMICapabilities::vehicle\_type()

1. 当SDL\_CORE收到HMIVehicleInfo\_GetVehicleType命令时，SDL\_CORE配置vehicle\_type，调用流程：

CommandSharedPtr HMICommandFactory::CreateCommand

void VIGetVehicleTypeResponse::Run()

void HMICapabilities::set\_vehicle\_type

# 4 结论

流程总结：

1. hmi\_capabilities.json为SDL\_CORE各项功能参数初始化文件；
2. 当HMI开启时，SDL\_CORE会从HMI获取部分参数并更新；
3. 手机端连接注册时，会获取所有参数，部分参数手机端也会通过其他命令来获取。

结论：hmi\_capabilities.json文件不能删除。