Usage

1. Mobile display advertising on various devices

Re: APP should be installed in the Android Device (I.MX6 Mainboard).

Yes this is the first board we will use

1. Support SD and HD video, audio and slide shows i@ different scales

Re: Currently, the Android OS can support dynamic adaption for the typesetting, we only need to add the LCD resolution to the configurations.

Remark: Adroid OS be installed into the SD card.

3. Screens run off individual off playlists

Re: Do you mean , two screes run/show individual playlists ?

-- Yes that is correct each one will have it own play list, so they will be playing different media at the same time, film A on screen1 and film B on screen two.

 Re: There is a configuration list in local, it shall take turns to play on time. Configuration list shall be updated to the terminal remotely and regularly .

Play lsist will be syncd to the local device from the internet, on a regular basis

We should be able to setup a timer for the device to connect and download new playlist, new videos etc and new configuration

Downloads or syncs should always be in back ground

Remark: Should to confirm with the hardware part whether mainboard can support all of the function requirements.

4.Playlist can be set by time or day, day of week, day of month, beacon trigger, gps location

Re: Does beacon trigger means Bluetooth trigger ?

 What does GPS location mean? Use GPS to track the Android devices’ location ?

We can park this for now , however in the future we will have Bluetooth bacons and will use location based information to trigger playlists

Remark: Bluetooth updates could be achieved at the later version. Can use the wifi , 4G to update at the first software APP version.

 GPS location: To track the device’s location, if the device leave from the safety coverage , it will alert to the background. And should send out the alert by message/email.

 The device ID never be changed. But the node ID shall be changed by the different application site. The playlist should be base on the Node ID.

 What should be recorded into the device ID or Node ID it should be discussed detaily

5. Run Video on two screens at the same time

Re: Do you need to use Touch Function on both two screens ? If yes, do you want to use the touch function synchronously or asynchronously ? Could you send me the LCD resolution?

Only one screen will be touch,

Yes the screen with be operating asynchronously

 both screens screen 16:9 480p

Re: Two screens, individual playlist, does it need to do individual configuration on the playlist ?

 Do you want to do asynchronous operation on these two screens ?

yes

1. The screen A with touch function, simple games for children use. Can be discuss later .

On the first version, just play videos ,basic system version.

使用项：

1. 支持在不同设备上移动播发广告

问题：app是否直接在安卓机上？如果不是安卓机，则是通过手机app，以蓝牙方式更新配置表。

1. 支持在不同的液晶屏尺寸上，播放SD和HD视频，音频和幻灯片显示。

不同分辨率可以支持排版的动态适配

Q：安卓可支持排版的动态适配的，到时候只要把液晶屏的分辨率配置进去就可以了。

1. 每个屏幕上可显示单独的播放清单。

本地会有配置表，定时轮询播放。配置表从后台定期远程更新到终端

Q:播放清单就是配置表。

1. 播放清单可通过以时间，日期，周，月，警示触发，GPS定位来设置

beacon trigger是否是蓝牙触发？

定位功能详细包括哪些，是通过后台看位置？

Q：定位是不是相当于需要看设备的定位。

1. 可以在两路显示屏中同时播放视频。 异步播放视频，只需要使用一个屏的触摸。屏幕尺寸16:9 480P。

两个屏幕，独立播放，分别进行播放的内容的独立配置。

只有一个屏幕可以触摸，和产品需求关系？

Yes the screen with be operating asynchronously

 both screens screen 16:9 480p

异步操作？

Capabilities and Behavior

1. When a screen switches from one playlist to another the current video will finish first

Re:When updating the playlist, the new videos could only be played when the current/local video finished.

Remark:No issues.

1. Video can exits in more than one playlist

Re: Can you give some examples for this application ?

So lets say playlist A is setup for 0900- 1300 and playlist B for 1300 – 1500 and playlist C for 1500 – 1900 and playlist D for 1900- 2300

We may have that same advert for Nike shoes in playlist A and C, but not in B and D

Remark:

-Can choose the videos to play at different time periods.

 -For example, If there is 1 Node ID, and 5 paylists, while connecting 2 different screens, Playlist 1&3 on Screen A, Playlist 2&4 on Screen B.

3. All splash screens can be white boxed so they have individual branding

Re: Do you mean the boot logo shall be blank ? Then you can add the different brands’ logo into it ?

The boot logo should be configurable, yes for one customer we will have one logo for another a different one,

By default at startup no information should be displayed on any screen nothing other than the logo.

We should have multiple levels of debug one should enable the main screen to show status and debug ,

All logs must able be synced back to a central cloud based control center and loaded into a monitoring system

Each device must have two configurable unique IDs one is the device ID and the other is the node ID

Remark: No issues.

4.Updates can be made over the network unattended

Re: Means update remotely ?

Yes we should only have to attend the device in case of physical failure

Remark: No issues.

5.Updates must be possible in the background over networks

Re.: Updates in background ,it will not affect the front-end process.

Yes 😊 exactly

Remark: No issues.

1. Devices must be able to mesh and sync across local devices

Re: Do you mean to use Bluetooth to do local updates ?

Wifi or blue tooth for devices to share files locally,

If we have 5 devices in a remote location we would like them to be able to sync between each other rather than all go to the 4 g network to download individually

Re: Mesh network, one device download the playlist, it can share to the other devices to updates. It can use wifi/BT to share the playlist.

7. Setup can by done via next work connect across a network or via Bluetooth

Re: Could you please explain detailly ?

We need a base version of the software that can be put in every deice without individual configuration

When the devices are setup they will only have a base install of the software,

The base install is enough for it to connect and download its individual configuration based in its device ID, this would contain all the device and node configuration information.

Device IDs will almost never change, node IDs will change

Node ids are used for identifying play lists etc

Initial setup should be possible over wifi or 3/4g

It must also be possible to connect to a device using Bluetooth or wifi to access its configuration and logs for maintenance purposes

Re: Does the updates through network or Bluetooth?

Sometimes we will have 4g sometimes wifi, or blue tooth, Bluetooth is also ok just for configuration and maintenance.

Remark: No issues

1. Devices are secured all communication is encrypted

Re: Whether use https to encrypt ? Bluetooth needs to use the user defined encryption protocol (Need to confirm the algorithm for Bluetooth)

If Bluetooth is hard just use wifi

Bluetooth uses less power

Remark: No issues.

1. Devices access requires access to a secure authentication key

 Remark: Need to encrypt the communication from the front-end to background end. Use the encryption protocol to do data transmission. Need to use the specific algorithm to encrypt.

 SD card should be secured, it could be only read by our program. Means all contents in SD card should be encrypted.

9.All communication encrypted all the time

Remark: No issues.

10. Access is only possible from specific site using the sites encryption key or software

 Re: Need to confirm a terminal for background access.

Remark : No issues.

11. All device configurations can be changed remotely

Re: Through API method, there is a turn from front-end to background ,15 minutes a turn, to check whether there is a updates.

We should be able to force a direct connection however

We will have large numbers of devices we need to be able to distribute configuration changes without all going to the central servers all the time, the updates should be possible via the mesh network with other local devices

Remember there are two configurations one for each individual device with device specific into based on device id and another for playlists etc based on node id

Remark: Mesh network, one device download the playlist, it can share to the other devices to updates. It can use wifi/BT to share the playlist.

12. All interfaces for video, and play lists, configurations etc must be api based

Remark: No issues.

Additonal

**13. Node ID-Location ID -region ID- customer ID data structure.**

**14. Set the device in sleepy, standby, wake up mode. When nobody use the cart, it shall be in sleepy or standby mode, but when somebody try to move it, it shall wake up immediately.**

 **The server should configure a spare time to update device, so ,the device should not be affected to use in normal time.**

**15. All the communication logs, data storage which stored in cloud shall be encrypted.**

能力和

1. 当屏幕从1个播放清单转换到另外一个播放清单时，必须先结束目前运行的视频。

更新列表在更新的时候，如果当前本地在播放的清单未播放完成，需先完成本地的播放，再播放新的内容。

1. 视频可以从多个播放清单中退出。

应用场景？

1. 所有的启动画面都是可以配置的，一个客户拥有一个自己独立的LOGO。默认配置中，设备启动的时候除了启动logo，其他信息无需在任何屏幕上展示。我们会有多层次的调试，但是其中一个需要使主屏显示状态和调试。所有的日志必须同步到控制中心的云计算中心和存入到控制系统。每台设备必须拥有两个可配置的唯一的ID，一个是Device ID,另外一个是Node ID.

Node ID？

1. 网络无人值守的时候，程序可以通过网络更新。

远程自动更新

1. 更新需在后端通过网络执行。

自动更新为后台更新不影响前端的进程。

1. 设备必须通过本地设备相连接与同步。

是否是通过蓝牙方式进行本地化更新？

1. 可通过网络或者蓝牙，创建下一个工作联系。

我们需要软件的基础版本可以安装到每台设备上面，不需要单独配置。

当创建设备的时候，他们仅仅只有软件的基础安装。

基于Device ID,基础安装足够用来连接和下载它单独的配置. 这个包含了所有设备和节点配置的信息。Device ID 基本不会改变，但是Node ID会改变。

Node ID 用来验证播放清单等等。

首次创建可通过WIFI或则3G/4G。

它必须能够通过蓝牙，WIFI来连接设备，来登入到他的配置和日志用作维护用途。

更新通过网络或者蓝牙？

1. 设备需被确保，所有通讯都是被加密的。

https协议 （常规用）APP与后台的传输

1. 设备访问，需要获得安全验证密钥

后台可以通过https

蓝牙方式需自定义加密协议 （他们用自己的算法去加密蓝牙传输，确定算法）

1. 只能通过办公网址或者软件才能访问

后台访问需确定端口，确定一个端口

1. 所有的设备参数可以被远程修改。

通过api方式，前端到后端轮询，轮询，15分钟一次，查询一下，是否有数据需要更新。

1. 所有的视频界面，播放清单，参数等等都是基于API。