

# Reader Elf IOS Interface

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Serial number	version	contents	author	date
1	V1.0.0	New interface files	wzn	2012-08-27
2	V1.0.2	Add calling progress	wzn	2012-11-15
3	V2.0.0	Add double blocks reading and writing	wzn	2013-03-01
4	V3.0.0	Add Ultraright support	wzn	2013-12-01

Security levers: third lever (limited shared documents)

## 一、 Interface notes

**libIvrJack.a is one second development interface based on IOS 4.3 and above platforms (only support real model)**

interface is made up of:

- ◆ IvrJackService — communication control interface
- ◆ IvrJackDelegate — event interface
- ◆ IvrJackStatus — status

### Notes:

This project need refer to *AudioToolbox.framework*、*AVFoundation.framework*、*MediaPlayer.framework* frame。

Detailed usage methods can see iReader example.

## 二、 Interface definication

### (一) IvrJackService

#### 1. Method open

##### Definition:

-(void) open;

##### Notes:

\* open reader elf service.

#### 2. Method :close

##### Definition:

-(void) close;

##### Notes:

\* close reader card elf services.

Method: didEnterBackground

Definition:

-(void) didEnterBackground;

Notes:

\* After application enter background use this method, inform reader card do background treatment.

Methods: didBecomeActive

Definition:

-(void) didBecomeActive;

Notes:

\*applicable projects activated by this method, inform reader card elf services activation treatment.

Method: readTag

Definition: -(int) readTag;

Notes:

\* open label identification.

\* @return 0 success, not 0 failure, please see return value definition.

### 3. Method: getTagUID (old version)

Definition: -(int) getTagUID: (unsigned int \*) uid;

Notes:

\* Get label ID.

\* @param uid success return back to label UID.

\* @return 0 success, not 0 failure, please see return value definition. \*/

### 4. Method: getTagUID

Definition: -(int) getTagUID: (UInt8[]) ids cardType: (UInt8\*) cardType;

Notes:

\* Get label ID

\* @param ids success return back to label UID, ids[0] is UID length, begin from ids[1]UID data.

\* @param cardType (0 means Mifare Classic card, 1 means Ultraright or NTag203)

\* @return 0 success, not 0 failure, please see return value definition. \*/

### 5. Method: tagAuthenticate

Definition: -(int) tagAuthenticate: (UInt8) sector pwds: (UInt8[]) pwds;

Notes:

\* Verify sector block passwords.

\* @param sector sector numbers.

\* @param pwds 6 bytes sector passwords ( default is Key A)

\* @return 0 success, not 0 failure, please see return value definition \*/

### 6. Method: tagReadData

Definition: -(int) tagReadData: (UInt8) block data: (UInt8[]) data;

Notes:

```
/**
 * read label data
 * @param block numbers (0-3)
 * @param data read from sector block, length is 16 bytes.
 * @return 0 success, not 0 failure, please see return value definition.
```

## 7. Method: tagReadBlockData

**Definition:** -(int) tagReadBlockData: (UInt8) sector1 block1: (UInt8) block1 sector2: (UInt8) sector2 block2: (UInt8) block2 pwds: (UInt8[]) pwds data: (UInt8[]) data;

**Notes:**

```
* read label two blocks data
* @param sector1 numbers 1(0-31)
* @param block1 numbers 1(0-3)
* @param sector2 numbers 2(0-31)
* @param block2 numbers 2(0-3)
* @param pwds 6 bytes sector password ( default is Key A)
* @param data read from sector block, length is 32 bytes.
* @return 0 success, not 0 failure.
*/
```

## 8. Methods: tagWriteData

**Definition:** -(int) tagWriteData: (UInt8) block data: (UInt8[]) data;

**Notes:**

```
* Write label data // write label data
* @param block numbers (BLOCK from 0-3)
* @param data written in sector block, length is 16 bytes.
* @return 0 success, not 0 failure, please see return value definition.
```

## 9. Method: tagReadDataUL

**Definition:** -(int) tagReadDataUL: (UInt8) block length: (UInt8) length data: (UInt8[]) data;

**Notes:**

```
* Read Ultraright label data
* @param first block number.
* @param length block number ( 1-4 ), read 4 blocks mostly.
* @param data read from block, length is 4 bytes.
* @return 0 success, not 0 failure, please see return value definition.
```

### Method : tagWriteDataUL

**Definition:** -(int) tagWriteDataUL: (UInt8) block length: (UInt8) length data: (UInt8[]) data;

**Notes:**

```
* Write Ultrarightlabel data
* @param first block
* @param length, 4 blocks, mostly one time can write 4 blocks.
* @param data written into block, length is 4 bytes.
* @return 0 success, not 0 failure, please see return definition.
```

## 10. Return value definition.

- 0 success
- 1 communication failure
- 2 unknown exception error
- 3 read label sector failurely
- 1 low battery
- 2 device is not connected.

## (二) IvJackDelegate

### 1. Event: readerConnect

**Definition:** -(void) readerConnect:(NSString \*) deviceSN;

**Notes:**

- \* device connected successfully.
- \* @param deviceSN serial number. \*/

### 2. Case: readerDisconnect

**definition:** -(void) readerDisconnect;

**notes:**

- \*triggered when device is disconnected. \*/

### 3. Case: readerStatusChange

**Definition:** -(void) readerStatusChange: (IvrJackStatus) status;

**Notes:**

- \*device status change event.
- \* @param statusplease see IvJackStatus.

## (三) IvJackStatus

- \*status: being identifying device. ijsDetecting,
- \* status: device is identifying. ijsRecognized,
- \* status: device unrecognized. ijsUnRecognized,
- \* status: device has been set aside. ijsPlugout

## (一) Calling progress

### 1. Interface calling

2. Take libIvrJack.a file copy into project directory.
3. Refer project catalogues libIvrJack.a
4. Importing below frames in projects.

AudioToolbox.framework

AVFoundation.framework

MediaPlayer.framework

5. Others please see examples

**Notes:**

As this interface use Objective-C++ achieve, so that need you promise this project have one .mm suffix original document. ( you can change any .m suffix file as .mm), or manner specified compile in project properties compile. That is take project of Xcode, Xcode -> Edit Active Target -> Build -> GCC4.2 - Language -> Compile Sources set up As "Objective-C++"

## 6. Label operation

7. Calling readTag method
8. Calling getTagUID method
9. Calling tagAuthenticate method (optional)
10. Calling tagReadData method (optional)
11. Calling tagWriteData method (optional)