

Device

java.lang.Object

com.theme.finger.print.Device

All Implemented Interfaces:

[ErrorCode](#)

public final class Device

extends java.lang.Object

implements [ErrorCode](#)

All the functions of such a request for fingerprint module (USB mode and serial port mode), all methods use synchronized blocking access. To cancel the function which currently executing, you can call the method cancel() manually canceled. Due to the serial interface mode transmission fingerprint image is time-consuming, specific parameters "recvBitmap" as needed when you call the following function, Whether you need to transfer the fingerprint image: public synchronized void enroll(final boolean recvBitmap, final OnEnrollListener listen); public synchronized void Mark(final boolean recvBitmap, final OnVerifyListener listen); public synchronized void verify(final int id, final boolean recvBitmap, final OnVerifyListener listen); public synchronized void matchEx(final int id, final byte[] chars, final boolean recvBitmap, final OnMatchExListener listen);

Nested Class Summary

static interface	Device.OnConnectionListener Device connect、disconnect callback
static interface	Device.OnEnrollListener Enroll fingerprint function enroll() callback parameters to prompt the user to operate
static interface	Device.OnMatchExListener
static interface	Device.OnRecvBitmapListener Get the fingerprint image callback
static interface	Device.OnRecvCharListener Read the fingerprint characteristic value callback
static interface	Device.OnSaveCharListener Save the fingerprint characteristic value callback
static interface	Device.OnVerifyListener Fingerprint matches by 1:1 and 1:n on the callback connect

Field Summary

static int	DEVICE_TYPE_UART Mark Device which is constructed by a UART communication type
static int	DEVICE_TYPE_USB Mark Device which is constructed by a USB communication type

Fields inherited from interface com.theme.fingerprint.[ErrorCode](#)

[ERR_ALL_TMPL_EMPTY](#), [ERR_BAD_QUALITY](#), [ERR_BROKEN_ID_NOEXIST](#), [ERR_CONNECTION](#), [ERR_DUPLICATION_ID](#), [ERR_EMPTY_ID_NOEXIST](#), [ERR_FAIL](#), [ERR_FP_CANCEL](#), [ERR_FP_NOT_DETECT](#), [ERR_GEN_COUNT](#), [ERR_MARK](#), [ERR_INVALID_BUFFER_ID](#), [ERR_INVALID_OPERATION_MODE](#), [ERR_INVALID_PARAM](#), [ERR_INVALID_TMPL_DATA](#), [ERR_INVALID_TMPL_NO](#), [ERR_MEMORY](#), [ERR_MERGE_FAIL](#), [ERR_NOT_AUTHORIZED](#), [ERR_SUCCESS](#), [ERR_TIME_OUT](#), [ERR_TMPL_EMPTY](#), [ERR_TMPL_NOT_EMPTY](#), [ERR_VERIFY](#)

Constructor Summary

[Device](#)(Context context, int type)

Construct device examples by “type” type, all parameters have the specific default values: `usb:Device(context, 0x2009, 0x7638)`; `uart: Device(context, "/dev/ttySAC1", 115200)`;

[Device](#)(Context context, int usb_vid, int usb_pid)

Construct Device by a usb drive

[Device](#)(Context context, java.lang.String serialPortName, int speed)

Construct Device by a serial port driver

Method Summary

void	cancel () Cancel the operation currently being performed
boolean	close () Close related communication connections
boolean	connectionTest () Connectivity Test
void	destory () All operations have been completed, release relevant examples
boolean	detectFinger () Detect whether there is a fingerprint inputting status (whether the finger on the fingerprint reader or not) <code>cmd = CMD_FINGER_DETECT(0x0021)</code>
int	downChar (int ramBufId, byte[] templateBuf) Receive the fingerprint Template Data from Host and store in the specific Ram Buffer <code>cmd = CMD_DOWN_CHAR(0x0043)</code>
int	downloadBitmap (byte[] bitmapBuf, int width, int height) Save the image data received from the Host in ImageBuffer.
void	enroll (boolean recvBitmap, Device.OnEnrollListener listen) Enroll fingerprint
int	generate (int ramBufId) Generate fingerprint template “Template” from the fingerprint image in ImageBuffer, and save in the specific Ram Buffer.
boolean	getBitmap () Collect fingerprint images <code>cmd = CMD_GET_IMAGE(0x0020)</code>
int	getBrokenIds (int startTemplateId, int endTemplateId,

	int[] count, int[] firstTemplateId) Check whether the enrolled template in the specific range (the beginning Template number ~ the finishing Template number) is damage or not.
void	getChar (int id, Device.OnRecvCharListener listen) Read the characteristic value data corresponding to id in the fingerprint module (498Byte)
int	getCount () Get the enrolled fingerprint count cmd = CMD_GET_ENROLL_COUNT(0x0048)
java.lang.String	getDeviceInfo () Read the device information cmd = CMD_GET_DEVICE_INFO(0x0004)
int	getDeviceType () Get the currently instancial type {DEVICE_TYPE_USB DEVICE_TYPE_UART}
int	getEmptyId (int startTemplateId, int endTemplateId) Get the first Template number which can be enrolled(do not enroll Template) in the specific range(the beginning Template number ~ the finishing Template number).
java.lang.String	getIdNote (int id) Get the fingerprint remarks cmd = CMD_GET_ID_NOTE(0x0007)
int	getMaxCount () Get the maximum count of fingerprints which can be enrolled
java.lang.String	getModuleSn () Get the module serial number cmd = CMD_GET_MODULE_SN(0x0009)
int	getParam (int paramIndex) Get the set parameters of fingerprint module cmd = CMD_GET_PARAM(0x0003)
static java.util.List<java.lang.Integer>	getSerialPortBaundRates () Enumerate all the serial port baund rates
static java.util.List<java.lang.String>	getSerialPortNams () Get all the serial port names on the device
int	getStatus (int templateId) Get the enrollment status of Template in the specific number
void	identify (boolean recvBitmap, Device.OnVerifyListener listen) Identify fingerprints in 1:N
boolean	isOpend () Whether the communication connection is open or not
int	loadChar (int templateId, int ramBufId) Get the specifically numbered fingerprint template from the fingerprint base and store in the specific Ram Buffer temporarily.
int	match (int ramBufId0, int ramBufId1) Match with Templates from the two specific Ram Buffer.

void	<u>matchEx</u> (int id, byte[] chars, boolean recvBitmap, <u>Device.OnMatchExListener</u> listen) Match the fingerprint characteristics of host (the external of fingerprint module) with the characteristic value data corresponding to id that in the fingerprint module by 1:1
int	<u>merge</u> (int ramBufId, int count) Merge the templates which temporarily store in the Ram Buffer to generate template data and store in the specific Ram Buffer.
void	<u>open</u> (<u>Device.OnConnectionListener</u> l) Open the device communication connections
void	<u>recvBitmap</u> (<u>Device.OnRecvBitmapListener</u> listen) Get the current inputting fingerprint image
boolean	<u>removeAll</u> () Remove all the fingerprint information cmd = CMD_DEL_CHAR(0x0044)
boolean	<u>removeId</u> (int id) Remove the fingerprint information corresponding to the specific id cmd = CMD_DEL_CHAR(0x0044)
int	<u>search</u> (int ramBufId, int startId, int endId, int[] templateId, int[] learnResult) Match the fingerprint template in the specific Ram Buffer with all enrolled fingerprint templates in the specifically searched range(the beginning template number ~ the finishing template number) by 1:N and then return the result.
void	<u>setChar</u> (byte[] chars, <u>Device.OnSaveCharListener</u> listen) Save the fingerprint characteristic values in the fingerprint module
boolean	<u>setIdNote</u> (int id, java.lang.String note) Set the fingerprint remarks cmd = CMD_SET_ID_NOTE(0x0006)
boolean	<u>setModuleSn</u> (java.lang.String moduleSn) Set the module serial number cmd = CMD_GET_MODULE_SN(0x0008)
boolean	<u>setParam</u> (int paramIndex, int paramValue) Set the relevant parameters, which refer to the specific protocol document cmd = CMD_SET_PARAM(0x0002)
boolean	<u>sledCtrl</u> (int state) Control“on/off” of backlight of collector.
int	<u>storeChar</u> (int templateId, int ramBufId, int[] duplicationId) Save the template stored in the specific Ram Buffer in the specifically numbered fingerprint template base.
int	<u>upChar</u> (int ramBufId, byte[] templateBuf) Sent the Template in the specific Ram Buffer to Host.
int	<u>uploadBitmap</u> (int type, byte[] bitmapBuf, int[] width, int[] height) Sent the image saved in the ImageBuffer to Host according to the specific Image Type.
void	<u>verify</u> (int id, boolean recvBitmap, <u>Device.OnVerifyListener</u> listen) Identify fingerprint in 1:1

int	verify (int templateId, int ramBufId, int[] learnResult) Match the template in the specific Ram Buffer with the specially numbered template from the database by 1:1 and then return the result.
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Methods inherited from “ java.lang.Object”

equals, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Field Details

DEVICE_TYPE_USB

```
public static final int DEVICE_TYPE_USB
```

Mark Device which is constructed by a USB communication type

Please refer to:

[Constant Field Values](#)

DEVICE_TYPE_UART

```
public static final int DEVICE_TYPE_UART
```

Mark Device which is constructed by a UART communication type

Please refer to:

[Constant Field Values](#)

Construction method details

Device

```
public Device(Context context,int type)
```

Construct Device examples by “type” type, all parameters have the specific default values:

```
usb:Device(context, 0x2009, 0x7638); uart: Device(context,
"/dev/ttySAC1", 115200);
```

Parameters:

context -

```
type: {DEVICE_TYPE_USB, - DEVICE_TYPE_UART}
```

Device

```
public Device(Context context, int usb_vid,int usb_pid)
```

Construct Device by a USB drive

Parameters:

context -

usb_vid -

usb_pid -

Device

```
public Device(Context context, java.lang.String serialPortName,
              int speed)
```

Construct Device by a serial port driver

Parameters:

context -

serialPortName -

speed -

Method details

Get Device Type

```
public int getDeviceType()
```

Get the currently instancial type{DEVICE_TYPE_USB, DEVICE_TYPE_UART}

Return:

{DEVICE_TYPE_USB, DEVICE_TYPE_UART}

open

```
public void open(Device.OnConnectionListener l)
```

Open the device communication connections

close

```
public boolean close()
```

Close the related communication connections

Return:

true: Close successfully, otherwise, the operation fails

destory

```
public void destory()
```

All operations have been completed, release the relevant examples

cancel

```
public void cancel()
```

Cancel the operation currently being performed

isOpen

```
public boolean isOpen()  
    Whether the communication connection is open or not  
Return:
```

Connection Test

```
public boolean connectionTest()  
    Connectivity Test  
Return:
```

enroll

```
public void enroll(boolean recvBitmap,  
    Device.OnEnrollListener listen)  
    Enroll fingerprint  
Parameters:  
    recvBitmap: Indicate whether need to return the collected fingerprint  
    image through onBitmap()-  
    listen -
```

identify

```
public void identify(boolean recvBitmap,  
    Device.OnVerifyListener listen)  
    Identify fingerprint in 1:N  
Parameters:  
    recvBitmap: Indicate whether need to return the collected fingerprint  
    image through onBitmap()-  
    listen -
```

verify

```
public void verify(int id,  
    boolean recvBitmap,  
    Device.OnVerifyListener listen)  
    Verify fingerprint in 1:1  
Parameters:  
    id: the fingerprint id needed to verify -  
    recvBitmap: Indicate whether need to return the collected fingerprint  
    image through onBitmap()-  
    listen -
```

recvBitmap

```
public void recvBitmap(Device.OnRecvBitmapListener listen)  
    Get the current inputting fingerprint image  
Parameters:  
    listen -
```

Get Char

```
public void getChar(int id,  
                    Device.OnRecvCharListener listen)  
    Read the characteristic value data corresponding to id that in the fingerprint module (498Byte)
```

Parameters:

id -

setChar

```
public void setChar(byte[] chars,  
                    Device.OnSaveCharListener listen)  
    Save the fingerprint characteristic values in the fingerprint module
```

Parameters:

id -

chars -

Match Ex

```
public void match Ex(int id,  
                     byte[] chars,  
                     boolean recvBitmap,  
                     Device.OnMatchExListener listen)
```

Match the fingerprint characteristic values of host (the external of fingerprint module) with the characteristic values corresponding to id that in the fingerprint module by 1:1

Parameters:

id: the required comparative characteristic value id -

recvBitmap: Indicate whether need to return the collected fingerprint image through on Bitmap() -

chars: The fingerprint characteristic value data in host -

Remove Id

```
public boolean remove Id(int id)  
    Remove the fingerprint information corresponding to the specific id cmd =  
    CMD_DEL_CHAR (0x0044)
```

Parameters:

id -

Return:

Whether the operation succeeds or not

Remove All

```
public final boolean remove All()  
    Remove all the fingerprint information cmd = CMD_DEL_CHAR(0x0044)
```

Return:

Whether the operation succeeds or not

Get Count

```
public int get Count()  
    Get the enrolled fingerprint number cmd = CMD_GET_ENROLL_COUNT(0x0048)
```


Return:

Return -1 if get failure, otherwise return the actual number

Get Max Count

```
public int get Max Count()
```

Get the maximum count of fingerprints that can be enrolled

Return:

setParam

```
public boolean set Param(int paramIndex,  
                          int paramValue)
```

Set the relevant parameters, which refer to the specific protocol document cmd = CMD_SET_PARAM(0x0002)

Parameters:

paramIndex -

paramValue -

Return:

Get Param

```
public int get Param(int paramIndex)
```

Get the related setting parameters of fingerprint module cmd = CMD_GET_PARAM(0x0003)

Parameters:

paramIndex -

Return:

Failure to get the marks if less than 0, otherwise return the specific parameter values

Get Device Info

```
public java.lang.String get Device Info()
```

Read device information cmd = CMD_GET_DEVICE_INFO(0x0004)

Return:

Set Id Note

```
public boolean set Id Note(int id,  
                           java.lang.String note)
```

Set the fingerprint remarks cmd = CMD_SET_ID_NOTE(0x0006)

Parameters:

id -

note - <= 16byte

Return:

Get Id Note

```
public java.lang.String get Id Note(int id)
```

Get the fingerprint remarks cmd = CMD_GET_ID_NOTE(0x0007)

Parameters:

id -

Return:

Set Module Sn

```
public boolean set Module Sn(java.lang.String moduleSn)
    Set the module serial number cmd = CMD_GET_MODULE_SN(0x0008)
```

Parameters:

Module Sn -

Return:

Get Module Sn

```
public java.lang.String get Module Sn()
    Get the module serial number cmd = CMD_GET_MODULE_SN(0x0009)
```

Return:

Get Bitmap

```
public boolean get Bitmap()
    Collect the fingerprint image cmd = CMD_GET_IMAGE(0x0020)
```

Return:

Detect Finger

```
public boolean detect Finger()
    Detect whether there is a fingerprint input status (whether finger on the fingerprint reader or not) cmd = CMD_FINGER_DETECT(0x0021)
```

Return:

upload Bitmap

```
public int upload Bitmap(int type,
                          byte[] bitmapBuf,
                          int[] width,
                          int[] height)
```

Sent the image saved in the Image Buffer to Host according to the specific Image Type. If the Image Type is 0, then send the whole map; if the Image Type is 1, then sent the 1/4 image (take a point from four points).cmd = CMD_UP_IMAGE(0x0022)

Parameters:

type -

bitmapBuf -

width -

height -

Return:

Return the error code

download Bitmap

```
public int download Bitmap(byte[] bitmapBuf,
                             int width,
                             int height)
```

Save the image data received from the Host in Image Buffer. Host sent the image to Target by 496bytes unit. cmd = CMD_DOWN_IMAGE(0x0023)

Parameters:

bitmapBuf -

width -

height -

Return:

Sled Ctrl

```
public boolean sled Ctrl(int state)
```

Control“on/off” of backlight of collector. cmd = CMD_SLED_CTRL(0x0024)

Parameters:

state -

Return:

Store Char

```
public int store Char(int templateId,  
                      int ramBufId,  
                      int[] duplicationId)
```

Save the templates stored in the specific Ram Buffer in the specifically numbered fingerprint template base. cmd = CMD_STORE_CHAR(0x0040)

Parameters:

templateId -

ramBufId -

duplicationId -

Return:

Load Char

```
public int load Char(int templateId,  
                    int ramBufId)
```

Get the specifically numbered fingerprint template from the fingerprint base and store in the specific Ram Buffer temporarily. cmd = CMD_LOAD_CHAR(0x0041)

Parameters:

templateId -

ramBufId -

Return:

Up Char

```
public int up Char(int ramBufId,  
                  byte[] templateBuf)
```

Sent the Template in the specific Ram Buffer to Host.
cmd = CMD_UP_CHAR(0x0042)

Parameters:

ramBufId -

templateBuf -

Return:

Down Char

```
public int down Char(int ramBufId,  
                     byte[] templateBuf)  
    Receive the fingerprint Template Data from Host and store in the specific Ram Buffer. cmd =  
    CMD_DOWN_CHAR(0x0043)  
Parameters:  
    ramBufId -  
    templateBuf -  
Return:
```

Get Empty Id

```
public int get Empty Id(int start Template Id,  
                        int end Template Id)  
    Get the first Template number which can be enrolled(do not enroll Template) in the specific  
    range (the beginning Template number ~ the finishing Template number). cmd =  
    CMD_GET_EMPTY_ID(0x0045)  
Parameters:  
    Start Template Id -  
    End Template Id -  
Return:  
    Return the relevant id, if less than 0, means get failure.
```

Get Status

```
public int get Status(int template Id)  
    Get the enroll status of Template in the specific number. cmd =  
    CMD_GET_STATUS(0x0046)  
Parameters:  
    Template Id -  
Return:
```

Get Broken Ids

```
public int get Broken Ids(int start Template Id,  
                          int end Template Id,  
                          int[] count,  
                          int[] first Template Id)  
    Check whether the enrolled template in the specific range (the beginning Template number ~  
    the finishing Template number) is damage or not. cmd = CMD_GET_BROKEN_ID(0x0047)  
Parameters:  
    Start Template Id -  
    End Template Id -  
    count -  
    first Template Id -  
Return:
```

generate

```
public int generate(int ramBuf Id)  
    Generate fingerprint template “Template” from the fingerprint image in ImageBuffer, and  
    save in the specific Ram Buffer. cmd = CMD_GENERATE(0x0060)  
Parameters:
```

ramBufId -

Return:

merge

```
public int merge(int ramBufId,  
                 int count)
```

Merge the templates which temporarily store in the Ram Buffer to generate template data and store in the specific Ram Buffer. The merge count can be 2 or 3: It will be generated to Template of Ram Buffer0 and Ram Buffer1 if the count is 2. It will be generated to Template of Ram Buffer0、 Ram Buffer1 and Ram Buffer2 if the count is 3. cmd = CMD_MERGE(0x0061)

Parameters:

ramBufId -

count -

Return:

match

```
public int match(int ramBufId0,  
                 int ramBufId1)
```

Match with Templates from the two specific Ram Buffer. cmd = CMD_MATCH(0x0062)

Parameters:

ramBufId0 -

ramBufId1 -

Return:

search

```
public int search(int ramBufId,  
                  int startId,  
                  int endId,  
                  int[] templateId,  
                  int[] learnResult)
```

Match in 1:N of the fingerprint template in the specific Ram Buffer and all enrolled fingerprint templates in the specifically searched range(the beginning template number ~ the finishing template number) and then return the result. cmd = CMD_SEARCH(0x0063)

Parameters:

ramBufId -

startId -

endId -

templateId -

learnResult -

Return:

verify

```
public int verify(int templateId,  
                  int ramBufId,  
                  int[] learnResult)
```

Match in 1:1 of the template in the specific Ram Buffer and the specially numbered template from the database and then return the result. cmd = CMD_VERIFY(0x0064)

Parameters:

templateId -
ramBufId -
learnResult -

Return:

Get Serial Port Nams

```
public static java.util.List<java.lang.String> getSerialPortNams ()
```

Get all the serial port names on the device

Return:

Get SerialPort BaundRates

```
public static java.util.List<java.lang.Integer> getSerialPortBaundRates ()
```

Enumerate all the serial port baund rates

Soft Packages **com.theme.finger.print**

Connection Summary	
<u>Device.OnConnectionListener</u>	Device connect, disconnect callback
<u>Device.OnEnrollListener</u>	Enroll fingerprint function enroll() callback parameters to prompt the user to operate
<u>Device.OnMatchExListener</u>	
<u>Device.OnRecvBitmapListener</u>	Get the fingerprint image callback
<u>Device.OnRecvCharListener</u>	Read the fingerprint characteristic values callback
<u>Device.OnSaveCharListener</u>	Save the fingerprint characteristic values callback
<u>Device.OnVerifyListener</u>	Fingerprints match in 1:1 and 1:n on the callback interface
<u>ErrorCode</u>	

Class Summary	
<u>Device</u>	All the functions of such a request for fingerprint module (USB mode and serial ports mode), all methods use synchronized blocking access.

1. Interface Device.OnConnectionListener

Inclusive category:

[Device](#)

```
public static interface Device.OnConnectionListener
```

Device connect, disconnect callback

Method Summary

void	onConnected() Device connect successfully
void	onDisConnected() Disconnect, or not successfully connect to the device
void	onNotFound() No find the specific device
void	onPermissionDenied() Find the device, but the device permissions do not pass

Method Details

onConnected

```
void onConnected()  
    Device connect successfully
```

onDisConnected

```
void onDisConnected()  
    Disconnect, or not successfully connect to the device
```

onPermissionDenied

```
void onPermissionDenied()  
    Find the device, but the device permissions do not pass
```

onNotFound

```
void onNotFound()  
    No find the specific device
```

2. Interface Device.OnEnrollListener

Inclusive category:

[Device](#)

```
public static interface Device.OnEnrollListener
```

Enroll fingerprint function enroll() callback parameters to prompt the user to operate

Method Summary

void	onEnrollFinished (int id) Finish enrollment
void	onEnrollStep (int step, int count, boolean retry)

Method Details

onEnrollStep

```
void onEnrollStep(int step,  
                  int count,  
                  boolean retry)
```

Parameters:

step: - The current number of verification

count: Total number of times that require verification -

retry: Whether need to restart due to the acquisition of quality problems -

onEnrollFinished

```
void onEnrollFinished(int id)  
    Finish enrollment
```

Parameters:

id - : Return the enrolled id

3. Interface Device.OnMatchExListener

All super interfaces:

[Device.OnRecvBitmapListener](#)

Inclusive category:

[Device](#)

```
public static interface Device.OnMatchExListener  
extends Device.OnRecvBitmapListener
```

Method Summary	
void	onMatchSuccess (int id) Match success

Methods inherited from interface <code>com.theme.finger.print.Device.OnRecvBitmapListener</code>
onEndRecv , onStartRecv

Method Details

onMatchSuccess

void `onMatchSuccess`(int id)
Match success

Parameters:

id -

4. Interface `Device.OnRecvBitmapListener`

All known subinterfaces:

[Device.OnMatchExListener](#)

Inclusive category:

[Device](#)

```
public static interface Device.OnRecvBitmapListener
```

Get the fingerprint image callback

Method Summary	
void	onEndRecv () Tip the ending of inputting fingerprint
void	onStartRecv () Tip inputting fingerprint

Method Detail

onStartRecv

void `onStartRecv`()
Tip inputting fingerprint

onEndRecv

void onEndRecv()

Tip the ending of inputting fingerprint

5.Interface Device.OnRecvCharListener

Inclusive category:

[Device](#)

```
public static interface Device.OnRecvCharListener
```

Read the fingerprint characteristic values callback

Method Summary

void	onRecvChar (int id, byte[] chars) Return to read the fingerprint characteristic value datas
------	--

Method Detail

onRecvChar

```
void onRecvChar(int id,  
                byte[] chars)  
    Return to read the fingerprint characteristic value datas
```

6.Interface Device.OnSaveCharListener

Inclusive category:

[Device](#)

```
public static interface Device.OnSaveCharListener
```

Save the fingerprint characteristic values callback

Method Summary

void	onSaveCharSuccess (int id) Save the fingerprint characteristic values successfully
------	---

Method Details

onSaveCharSuccess

```
void onSaveCharSuccess(int id)  
    Save the fingerprint characteristic values successfully
```

Parameters:

id -

7.Interface Device.OnVerifyListener

Inclusive category:

[Device](#)

```
public static interface Device.OnVerifyListener
```

Fingerprint matches by 1: 1 and 1: n on the callback interface

Method Summary

void	onEndVerify (int index) Tip the ending of inputting fingerprint
void	onStartVerify (int index) Tip inputting fingerprint
void	onVerifySuccess (int id, boolean updated, int useTime) Verify succeed

Method Details

onStartVerify

```
void onStartVerify(int index)  
    Tip inputting fingerprint  
Parameters:  
    index: - The currently verified serial number
```

onEndVerify

```
void onEndVerify(int index)  
    Tip the ending of inputting fingerprint  
Parameters:  
    index: - The currently verified serial number
```

onVerifySuccess

```
void onVerifySuccess(int id,  
                    boolean updated,  
                    int useTime)  
    Verify succeed  
Parameters:  
    id: If not found the verified fingerprint id, return -1 -  
    updated: Whether to update the fingerprint database about the current collected fingerprint -  
    useTime: Time consuming -
```

8.Interface ErrorCode

All known implementing classes:

[Device](#)

```
public interface ErrorCode
```

Field Summary

static int	ERR_ALL_TMPL_EMPTY Do not exist enrolled Template
static int	ERR_BAD_QUALITY The fingerprint image quality is not good
static int	ERR_BROKEN_ID_NOEXIST Do not exist damaged Template
static int	ERR_CONNECTION Device is disconnected
static int	ERR_DUPLICATION_ID The fingerprint has been enrolled
static int	ERR_EMPTY_ID_NOEXIST Do not exist the Template ID that can be enrolled
static int	ERR_FAIL Instruction processing fails
static int	ERR_FP_CANCEL Cancel manually
static int	ERR_FP_NOT_DETECTED No fingerprints input on the sensor
static int	ERR_GEN_COUNT The fingerprint merged count is invalid
static int	ERR_IDENTIFY It has been matched by 1: N, but the same Templates do not exist
static int	ERR_INVALID_BUFFER_ID Buffer ID is incorrect
static int	ERR_INVALID_OPERATION_MODE
static int	ERR_INVALID_PARAM Using an incorrect parameter
static int	ERR_INVALID_TMPL_DATA The specific Template Data is invalid
static int	ERR_INVALID_TMPL_NO The marked Template Data is invalid
static int	ERR_MEMORY External Flash programming errors
static int	ERR_MERGE_FAIL Template merge fails
static int	ERR_NOT_AUTHORIZED No communication password confirmation

static int	ERR_SUCCESS Instruction processing succeeds
static int	ERR_TIME_OUT No fingerprint inputting in the TimeOut time
static int	ERR_TMPL_EMPTY No enrolled Template exists in specific number
static int	ERR_TMPL_NOT_EMPTY Template exists in the specific number
static int	ERR_VERIFY Failure match with Templates in the specific number by 1:1

Field Details

ERR_SUCCESS

static final int ERR_SUCCESS
Instruction processing succeeds

Please refer to:
[Constant Field Values](#)

ERR_FAIL

static final int ERR_FAIL
Instruction processing fails

Please refer to:
[Constant Field Values](#)

ERR_CONNECTION

static final int ERR_CONNECTION
Device is disconnected

Please refer to:
[Constant Field Values](#)

ERR_VERIFY

static final int ERR_VERIFY
Failure match with Templates in the specific number by 1:1

Please refer to:
[Constant Field Values](#)

ERR_IDENTIFY

static final int ERR_IDENTIFY
It has been matched by 1: N, but the same Templates do not exist

Please refer to:
[Constant Field Values](#)

ERR_TMPL_EMPTY

static final int ERR_TMPL_EMPTY
No enrolled Template exists in specific number
Please refer to:
[Constant Field Values](#)

ERR_TMPL_NOT_EMPTY

static final int ERR_TMPL_NOT_EMPTY
Template exists in the specific number
Please refer to:
[Constant Field Values](#)

ERR_ALL_TMPL_EMPTY

static final int ERR_ALL_TMPL_EMPTY
Do not exist the enrolled Template
Please refer to:
[Constant Field Values](#)

ERR_EMPTY_ID_NOEXIST

static final int ERR_EMPTY_ID_NOEXIST
Do not exist the Template ID that can be enrolled
Please refer to:
[Constant Field Values](#)

ERR_BROKEN_ID_NOEXIST

static final int ERR_BROKEN_ID_NOEXIST
Do not exist the damaged Template
Please refer to:
[Constant Field Values](#)

ERR_INVALID_TMPL_DATA

static final int ERR_INVALID_TMPL_DATA
The specific Template Data is invalid
Please refer to:
[Constant Field Values](#)

ERR_DUPLICATION_ID

static final int ERR_DUPLICATION_ID
The fingerprint has been enrolled
Please refer to:
[Constant Field Values](#)

ERR_BAD_QUALITY

static final int ERR_BAD_QUALITY
The fingerprint image quality is not good

Please refer to:
[Constant Field Values](#)

ERR_MERGE_FAIL

static final int ERR_MERGE_FAIL

Template merge fails

Please refer to:
[Constant Field Values](#)

ERR_NOT_AUTHORIZED

static final int ERR_NOT_AUTHORIZED

No communication password confirmation

Please refer to:
[Constant Field Values](#)

ERR_MEMORY

static final int ERR_MEMORY

External Flash programming errors

Please refer to:
[Constant Field Values](#)

ERR_INVALID_TMPL_NO

static final int ERR_INVALID_TMPL_NO

The marked template id is invalid

Please refer to:
[Constant Field Values](#)

ERR_INVALID_PARAM

static final int ERR_INVALID_PARAM

Using an incorrect parameter

Please refer to:
[Constant Field Values](#)

ERR_TIME_OUT

static final int ERR_TIME_OUT

No fingerprint inputting in the TimeOut time

Please refer to:
[Constant Field Values](#)

ERR_GEN_COUNT

static final int ERR_GEN_COUNT

The fingerprint merged count is invalid

Please refer to:
[Constant Field Values](#)

ERR_INVALID_BUFFER_ID

static final int ERR_INVALID_BUFFER_ID
Buffer ID is incorrect

Please refer to:

[Constant Field Values](#)

ERR_INVALID_OPERATION_MODE

static final int ERR_INVALID_OPERATION_MODE

Please refer to:

[Constant Field Values](#)

ERR_FP_NOT_DETECTED

static final int ERR_FP_NOT_DETECTED
No fingerprints input on the sensor

Please refer to:

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ERR_FP_CANCEL

static final int ERR_FP_CANCEL
Cancel manually

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