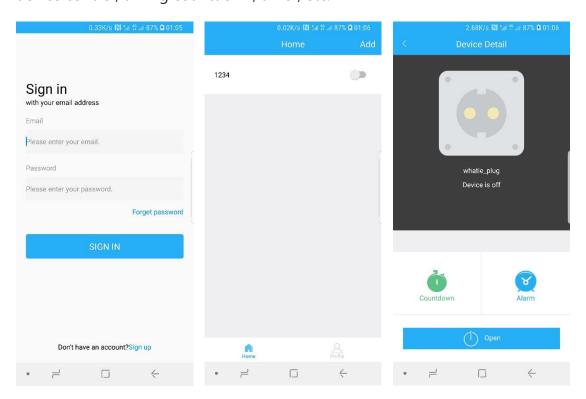
WahtieSDK for Android updated at 2018-06-09

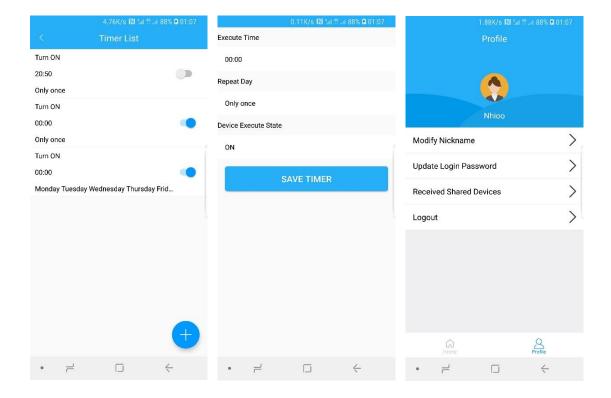
What's new:

All APIs for electrical outlets. SDKs for bulbs will be provided about June 12, 2018.

WhatieSDK is a SDK provided by ATI TECHNOLOGY (WUHAN) CO.,LTD. for the 3rd party accessing to our IOT cloud platform easily and quickly. Using this SDK, developers can do almost all function points on electrical outlets and RGBW bulbs (to be uploaded on June 12), such as user registration/login/logout, smart configuration, add/share/remove devices, device control, timing countdown, timer, etc.



Note: For all function points, no any backend development on cloud platform is needed for integrating the SDK into your APP. You just do all your work in your APP side.



1. Preparation

Sign up a developer account

Sign up a 3rd party developer account at ATI cloud platform to create selfdeveloped products, create function points, and so on.

Note: We have signed up an account for SAKAR, which has been emailed to SAKAR. SAKAR can just skip this step.

Obtain appld and secretKey

Go to Development Platform - Application Management - Create a new application to obtain an appld and secretKey to initialize SDKs (for both Android and iOS).



Note: We have applied appld and secretKey for SAKAR, which has been emailed to SAKAR. SAKAR can just skip this step.

SDK Demo

SDK Demo is a complete APP incorporating the main flows and operations such as registration, login, sharing, feedback, network configuration and device control, etc. The Demo code can be used as a good reference for the 3rd party development. Download link

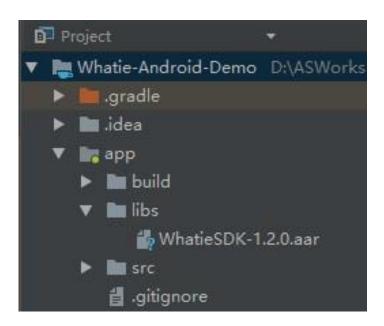
2. SDK Import and Configuration

Requirements

• IDE: Android Studio

Import the .aar lib package

Create a libs directory in your Android Studio project. Copy the downloaded WhatieSDK-xxxx.aar into that directory. For example, as shown in the following figure, a demo project is created, and the .aar package is copied to the libs directory.



Configure the build.gradle

Add the following configuration code in file build.gradle to include the .aar lib package and some 3rd-party plugins.

```
compile(name:'WhatieSDK-x.x.x', ext:'aar')

repositories {
    flatDir {
        dirs 'libs'
    }
```

```
compile 'com.mylhyl:zxingscanner:2.0.0' //encode and decode QRcode compile 'com.lzy.net:okgo:3.0.4' // HTTP connection compile 'com.alibaba:fastjson:1.2.20' //json2object compile 'org.eclipse.paho:org.eclipse.paho.client.mqttv3:1.1.0' //about mqtt compile 'org.eclipse.paho:org.eclipse.paho.android.service:1.1.1' //about mqtt compile 'org.greenrobot:eventbus:3.0.0' // communications among threads
```

Configure the AndroidManifest.xml

Configure appld and secretKey in file AndroidManifest.xml, and configure the appropriate permissions, etc.

```
<application>
       <!- "\ " before appId! -->
       <meta-data
           android:name="appId"
           android:value="\ appId" />
       <meta-data
           android:name="secretKey"
           android:value="appSecretKey" />
</application>
<!-necessary permissions -->
<uses-permission android:name="android.permission.INTERNET" />
<uses-permission android:name="android.permission.ACCESS_WIFI_STATE" />
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
<uses-permission android:name="android.permission.CHANGE_WIFI_MULTICAST_STATE" />
<uses-permission android:name="android.permission.CHANGE_WIFI_STATE" />
<uses-permission android:name="android.permission.WAKE LOCK"/>
<uses-permission android:name="android.permission.CAMERA"/>
<!-necessary services -->
<service android:name="org.eclipse.paho.android.service.MqttService"/>
<service android:name="com.d9lab.ati.whatiesdk.mqtt.MyMqttService"/>
<service android:name="com.d9lab.ati.whatiesdk.tcp.TcpService"/>
<service android:name="com.d9lab.ati.whatiesdk.udp.UdpService"/>
```

Initialize the Whatie SDK in the application

[Description]

This is mainly used to initialize EventBus, communication services and other components.

[Sample Code]

```
public class DemoApplication extends Application {
    @Override
    public void onCreate() {
        super.onCreate();
        EHomeInterface.getINSTANCE().init(this);
    }
}
```

[Cautions]

While appld and secretKey should be configured in file

AndroidManifest.xml, or in the build environment configuration, they can also be written in the code.

3. User Management

The SDK provides user management functions, such as user registration, user login, user logout, login password update, and change nickname.

Note:

- all other information on user management procedure is not needed for SDK.
- 2. The user email and password ciphertext will be also stored in our cloud platform.
- 3. No any backend development (on cloud side) is needed for integrating the SDK into your APP.

3.1 User registration

Note: The following example code is a successful call of the registration method. After registration, user logins automatically, and it is unnecessary to call the login method anymore.

Email registration

No verification code is required during email registration. Users may register their accounts directly using their emails.

```
*

* @param tag context

* @param email email account name

* @param passwd account password

* @param callback

*/

EHomeInterface.getINSTANCE().registerAccountWithEmail(mContext,

etEmail.getText().toString().trim(),

etPwd.getText().toString().trim(),

new UserCallback() {

@Override

public void onSuccess(Response<BaseModelResponse<User>> response) {
```

```
@Override
public void onError(Response < BaseModelResponse < User >> response) {

});
```

3.2 User login

Upon a successful call, the user's session will be stored locally by the SDK.

When the app is launched next time, the used is logged in by default and no more login process is required.

The session will timeout if the app remains unused for a long time. In this case, the notification of the expired session should be processed to ask the user to log in again.

Email login

```
/**

* ensure single sign-on, or the background service will report a mistake

* @param mContext The activity that uses this method

* @param email user's email

* @param password user's password

* @param callback callback of network cummunication

*/

EHomeInterface.getINSTANCE().loginWithEmail(mContext, email, password, new UserCallback() {

@Override

public void onSuccess(Response < BaseModelResponse < User >> response) {

if (response.body().isSuccess()) {

EHome.getInstance().setLogin(true);

EHome.getInstance().setmUser(response.body().getValue());
```

```
EHome.getInstance().setToken(response.body().getToken());
          SharedPreferenceUtils.put(mContext,
                    Code.SP_MD5_PASSWORD, MD5Utils.encode(password));
       } else {
        if(response.body().getMessage()!=null||!response.body().getMessage()
          .isEmpty()) {
         Toast.makeText(mContext,response.body().getMessage(),
Toast.LENGTH_SHORT).show();
         } else {
         Toast.makeText(mContext, "login fail", Toast.LENGTH_SHORT).show();
          }
     }
          @Override
    public void onError(Response < BaseModelResponse < User >> response) {
        super.onError(response);
        if(response.body().getMessage()!=null||!response.body().getMessage().isEmpty()) {
        Toast.makeText(mContext,response.body().getMessage(),
Toast.LENGTH_SHORT).show();
     } else {
        Toast.makeText(mContext, "login fail", Toast.LENGTH_SHORT).show();
   }
  });
```

3.3 Password reset by users

Password reset with an email address

If you forget your password, you can reset your password with the e-mail address consisting of 3 steps:

Sending a verification code to the mailbox

```
* @param email

* @param callback

*/
EHomeInterface.getINSTANCE().sendVerifyCodeByEmail(mContext, email, new
BaseCallback() {

          @Override
          public void onSuccess(Response < BaseResponse > response) {
          }

          @Override
          public void onError(Response < BaseResponse > response) {
                super.onError(response);
          }
     });
```

• Get and check the verification code

```
/**
 * @param tag
 * @param email
 * @param verifyCode
 * @param callback
 */
EHomeInterface.getINSTANCE().checkVerifyCode(mContext, email, verifyCode,
                  new BaseCallback() {
                       @Override
                       public void onSuccess(Response < BaseResponse > response) {
                            if (response.body().isSuccess()) {
                           } else {
                           }
                       }
                       @Override
                       public void onError(Response < BaseResponse > response) {
                            super.onError(response);
                  });/**
```

• Reset the password

```
* @param email
     * @param password
     * @param callback
EHomeInterface.getINSTANCE().resetPasswordByEmail(mContext, email, md5password,
new BaseCallback() {
             @Override
             public void onSuccess(Response < BaseResponse > response) {
                 Toast.makeText(mContext,
                                             "Set
                                                    new
                                                            password
                                                                         success.",
Toast.LENGTH_SHORT).show();
             @Override
             public void onError(Response < BaseResponse > response) {
                 super.onError(response);
                 Toast.makeText(mContext,
                                             "Set
                                                              password
                                                                          failed.",
                                                     new
Toast.LENGTH_SHORT).show();
        });
```

3.4 Password reset by old password

If you just want to update your password, you can reset your password with the e-mail address and old password

```
/**

* @param mContext

* @param email

* @param oldPwd

* @param newPwd

* @param baseCallback

*/
EHomeInterface.getINSTANCE().changePassword (mContext, email, oldPwd, newPwd, new BaseCallback() {

          @Override
          public void onSuccess(Response < BaseResponse > response) {
          }

          @Override
```

```
public void onError(Response < BaseResponse > response) {
          super.onError(response);
     }
});
```

3.4 Updating a user's device list

Update the user's current device list.

[Sample Code]

```
/**

* After get device list, "saveDevices" method must be called.

* @param mContext

* @param callback

*/

EHomeInterface.getINSTANCE().getMyDevices(mContext , new DevicesCallback() {

@Override

public void onSuccess(Response < BaseListResponse < DeviceVo >> response) {

if (response.body().isSuccess()) {

EHomeInterface.getINSTANCE().saveDevices(response.body().getList());

}

@Override

public void onError(Response < BaseListResponse < DeviceVo >> response) {

super.onError(response);

}

});
```

3.5 Update the nickname

The user can change user name by update the nickname.

```
/**

* @param tag context

* @param nickName new nickname

* @param callback

*/
```

3.6 Logout

The user can logout the APP by the method as below.

[Sample Code]

```
/**
 * EHome. getInstance().logOut() must be called when logout success.
 * @param mContext
 * @param baseCallback
 */
EHomeInterface. get/NSTANCE().logOut(mContext,
   new BaseCallback() {
    @Override
    public void onSuccess(Response < BaseResponse > response) {
          EHome.getInstance().logOut(); // This method must be called when logout
success.
    }
   @Override
   public void onError(Response < BaseResponse > response) {
          super.onError(response);
    }
});
```

4. SmartConfig and Device Init

4.1 SmartConfig

You can complete your SmartConfig by the following 4 steps.

(1) Define inner class "WhatieAsyncTask" in activity to config network.

```
private class WhatieAsyncTask extends AsyncTask < String, Void, List < IEsptouchResult >> {
    @Override
    protected void onPreExecute() {
    @Override
    protected List<|EsptouchResult> doInBackground(String... params) {
         int taskResultCount = -1;
         synchronized (mLock) {
              String apSsid = mWifiAdmin.getWifiConnectedSsidAscii(params[0]);
              String apBssid = params[1];
              String apPassword = params[2];
              String taskResultCountStr = params[3];
              taskResultCount = Integer.parseInt(taskResultCountStr);
              mEsptouchTask = new EsptouchTask(apSsid, apBssid, apPassword,
mContext);
         List<IEsptouchResult>
                                                       resultList
mEsptouchTask.executeForResults(taskResultCount);
         return resultList;
    }
    @Override
    protected void onPostExecute(List<IEsptouchResult> result) {
         IEsptouchResult firstResult = result.get(0);
         if (!firstResult.isCancelled()) {
              if (firstResult.isSuc()) {
              } else {
              }
```

```
}
```

(2) Get network token by getNetToken:

[Sample Code]

```
/**

* @param tag

* @param baseStringCallback

*/
EHomeInterface.getINSTANCE().getNetToken(mContext, new BaseStringCallback() {

@Override

public void onSuccess(Response < BaseModelResponse < String >> response) {

if (response.body().isSuccess()){

}

}

@Override

public void onError(Response < BaseModelResponse < String >> response) {

super.onError(response);

}

});
```

(3) After getting SmartConfig token:

```
private EspWifiAdminSimple mWifiAdmin = new EspWifiAdminSimple(this);
String apSsid = mWifiAdmin.getWifiConnectedSsid();

String apBssid = mWifiAdmin.getWifiConnectedBssid();

/**

* Must be connected to 2.4 G Wi-Fi,

* and router, mobile phone and device are close enough

* @param apSsid

* @param apBssid

* @param tokenAndPwd token + router's password

*/

new WhatieAsyncTask().execute(apSsid, apBssid, tokenAndPwd, "1");
```

(4) Return message of the config device procedure:

Bind Success:

Receiving the MqttBindSuccessEvent event.

Bind failed:

Receiving the MqttAlreadyBindEvent event means the device has been bound by others.

4.2 Device Init

You can initialize your device once you have a successful device binding (i.e., you receive a MqttBindSuccessEvent message).

[Sample Code]

```
/**

* @param tag

* @param devId

* @param name

* @param baseCallback

*/
EHomeInterface.getINSTANCE().getStarted(mContext, event.getDevId(), event.getName(), new BaseCallback() {

@Override

public void onSuccess(Response < BaseResponse > response) {

if(response.body().isSuccess()){

@Override

public void onError(Response < BaseResponse > response) {

super.onError(response);

}

});
```

5.Device

5.1 OnOff Device

You can turn on/off the device by the following method.

[Sample Code]

```
/**

* Turn on or turn off outlets.

* @param devId devId of device

* @param status true is On, false is Off

*/
EHomeInterface.getINSTANCE().updateOutletsStatus(devId, status);
}
```

5.2 Rename device

The device name can be renamed.

```
/**
 * @param tag
                              context
                            devId of device
 * @param devld
 * @param newName
                                new device name
 * @param devicesCallback
EHomeInterface.getINSTANCE().updateDeviceName(mContext,
deviceVo.getDevice().getDevId(), newName,
               new BaseCallback() {
                         @Override
                         public void onSuccess(Response < BaseResponse > response) {
                                   if (response.body().isSuccess()) {
                                            Toast.makeText(mContext, "Change name
success.", Toast.LENGTH_SHORT);
                                       } else {
                                            Toast.makeText(mContext,
response.body().getMessage(), Toast.LENGTH_SHORT).show();
                                       }
                                   @Override
```

5.3 Unbind device

You can unbind your device. If the device is unbound, the device is reset to network-pending state.

[Sample Code]

```
/**

* @param devld

*/
EHomeInterface.getINSTANCE().unbind(item.getDevice().getDevld());
```

5.4 Remove offline device

The device can be removed if it is offline. Usually, this function is called when the device is offline and out of control.

```
EHome.getInstance().removeDevice(item.getDevice().getDevId());
                                    } else {
                                         Toast.makeText(mContext,
                                                                        "delete
                                                                                   fail.",
Toast.LENGTH_SHORT).show();
                                     }
                                }
                                @Override
                                public void onError(Response < BaseResponse > response)
                                     super.onError(response);
                                     Toast.makeText(mContext,
                                                                     "delete
                                                                                   fail.",
Toast.LENGTH_SHORT).show();
                                }
                           });
```

Data model

DeviceVo

```
private Device device;
private List<FunctionPoint> functionList;
private HashMap<String, Boolean> functionValuesMap; //Code.FUNCTION_MAP_KEY
private String homeName;
private int homeld;
private String roomName;
private boolean host;
private boolean hasCountDown;
```

Device

```
private int id;
private String name;
private int sellerId;
private int productId;
private Product product;
private long createTime;
private long updateTime;
private String uuid;
private String devId; // about device control
```

```
private boolean actived;
private String authKey;
private String secKey;
private String localKey;
private String version;
private double lat;
private double lng;
private boolean deleted;
private String token;
private String status;//Code.DEVICE_STATUS_NORMAL, Code.DEVICE_STATUS_OFFLINE,
Code.DEVICE_STATUS_BUG
private long firstActiveTime;
private boolean isVirtual;
private boolean state;
private long rowld;
```

6. Sharing Devices

6.1 Share your device by email

The device can be shared to your friend by his/her email (note: such email has been registered as a user).

```
else {
     }
}

@Override
    public void onError(Response < BaseResponse > response) {
        super.onError(response);
     }
});
```

6.2 Query shared devices

[Sample Code]

```
* devices sharing from others
* After getting shared devices list, "saveSharedDevices" method must be called.
* @param mContext
 * @param devicesCallback
 */
EHomeInterface.getINSTANCE().querySharedDevices(mContext, new DevicesCallback() {
    @Override
    public void onSuccess(Response < BaseListResponse < DeviceVo >> response) {
         if (response.body().isSuccess()) {
          EHomeInterface.getINSTANCE().saveSharedDevices(response.body().getList());
         }
    }
    @Override
    public void onError(Response < BaseListResponse < DeviceVo >> response) {
         super.onError(response);
    }
});
```

6.3 Save shared device

```
/**

* call this method after querySharedDevices() success

* @param list the list returned by querySharedDevices()

*/
EHomeInterface.getINSTANCE().saveSharedDevices(list);
```

6.4 Remove shared device

The device can be removed if you don't need this device. Usually, this function is called when the device is a device shared to you from your friend.

[Sample Code]

```
/**
 * @param mContext
 * @param devld
                                     device's devld
 * @param baseCallback
 */
EHomeInterface.getINSTANCE().removeSharedDevice(mContext, devId,
new BaseCallback() {
    @Override
    public void onSuccess(Response < BaseResponse > response) {
         if (response.body().isSuccess()) {
        EHome.getInstance().removeDevice(devId); //this method must be called after
delete success.
         }
    }
    @Override
    public void onError(Response < BaseResponse > response) {
         super.onError(response);
    }
});
```

7. Timer

7.1 Add a timer

Set a timer to operate the device on some specific time. Your operation on the device will take effect once the time of the timer arrives.

Important Note: loops: @"0000000", each bit, 0: off, 1: on, representing from left to right: Sunday Saturday Friday Thursday Wednesday Tuesday Monday.

[Sample Code]

```
* @param mContext
 * @param deviceId
 * @param timerType //A seventh-bit binary string. From the lowest bit to highest bit,
indicating Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday respectively.
"1" means this timer will execute, and "0" means not. For example, "1100000" means timer
will execute on Sunday and Saturday, "0000000" means timer will execute only once without
repeat.
  * @param hour //from "00" to "23"
 * @param min //from "00" to "59"
 * @param dps //execution state of device
 * @param baseCallback
 */
EHomeInterface.getINSTANCE().addTimer(mContext, deviceId,
                                                                           finishHour,
                                                               timetype,
finishMin, deviceState, new BaseCallback() {
             @Override
             public void onSuccess(Response < BaseResponse > response) {
             @Override
             public void onError(Response < BaseResponse > response) {
                  super.onError(response);
        });
```

7.2 Update timer status

You can update/modify the assigned timer.

```
/**

* @param mContext

* @param clockld

* @param state //state of timer

* @param baseCallback

*/
EHomeInterface.getINSTANCE().updateTimerStatus(mContext, clockld, state, new BaseCallback() {
```

```
@Override
public void onSuccess(Response < BaseResponse > response) {
}
@Override
public void onError(Response < BaseResponse > response) {
    super.onError(response);
}
});
```

7.3 Remove a timer

Delete a specified timer under a specified device.

[Sample Code]

```
/**

* @param mContext

* @param clockld

* @param baseCallback

*/
EHomeInterface.getINSTANCE().removeTimer(mContext, clockld,
new BaseCallback() {
          @Override
          public void onSuccess(Response < BaseResponse > response) {
          }
          @Override
          public void onError(Response < BaseResponse > response) {
                super.onError(response);
          }
        });
```

7.4 Obtain all timers of a device

Obtain all timers under a specified device.

```
/**
*
```

8. Timing Countdown for a specific device

You can create a timing countdown for a specific device.

8.1 Add a timing countdown

Your operation on the device will take effect once timing countdown is finished.

@param state: the status of the device is to be when countdown is finished

@param duration : the duration of timing countdown. The unit is second,

such as 10seconds; if 10 minutes, the value is 600.

```
/**
*
```

```
* @param devId device's devId

* @param state desired state in the future

* @param duration

*/
EHomeInterface.getINSTANCE().addTimerClockWithDeviceModel(devId, state, duration);
```

8.2 Obtain a timing countdown

Get a timing countdown under a specific device, and then, you can show its value in the

APP.

[Sample Code]

8.3 Update a timing countdown

Once you update a timing countdown, it will become a new one.

```
/**
 * @param devld
 * @param state
 * @param duration
 */
```

EHomeInterface.getINSTANCE().updateTimerClockWithDeviceModel(devId, state, duration);

8.4 Remove a timing countdown

[Sample Code]

```
* @param devld
 */
EHomeInterface.getINSTANCE().removeTimerClockWithDeviceModel(devId);
```

9. Necessary Event

All event meanings can be found in the corresponding class file. Please check the usage of Eventbus at first glance. For all the usage of these EventBus, associated Event should be handled properly.

Turn on event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttReceiveOnEvent event) {}
```

Turn off event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttReceiveOffEvent event) {}
```

Unbind event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
```

```
public void onEventMainThread(MqttReceiveUnbindEvent event) {}
```

Offline event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttReceiveStatusEvent event) {}
```

Bind success event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttBindSuccessEvent event) {}
```

Already bind event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttAlreadyBindEvent event) {}
```

Shared device: turn on event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttReceiveSharedOnEvent event) {}
```

Shared device: turn off event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttReceiveSharedOffEvent event) {}
```

Shared device: offline event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttReceiveSharedStatusEvent event) {}
```

Set countdown success event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttSetCdSuccessEvent event) {}
```

Cancel countdown success event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttCancelCdSuccessEvent event) {}
```

Add/open timer success event

```
@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttSetTimerSuccessEvent event) {}
```

Delete/close timer success event

@Subscribe(threadMode = ThreadMode.MAIN, priority = 1, sticky = true)
public void onEventMainThread(MqttCancelTimerSuccessEvent event) {}

Welcome to contact us:

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