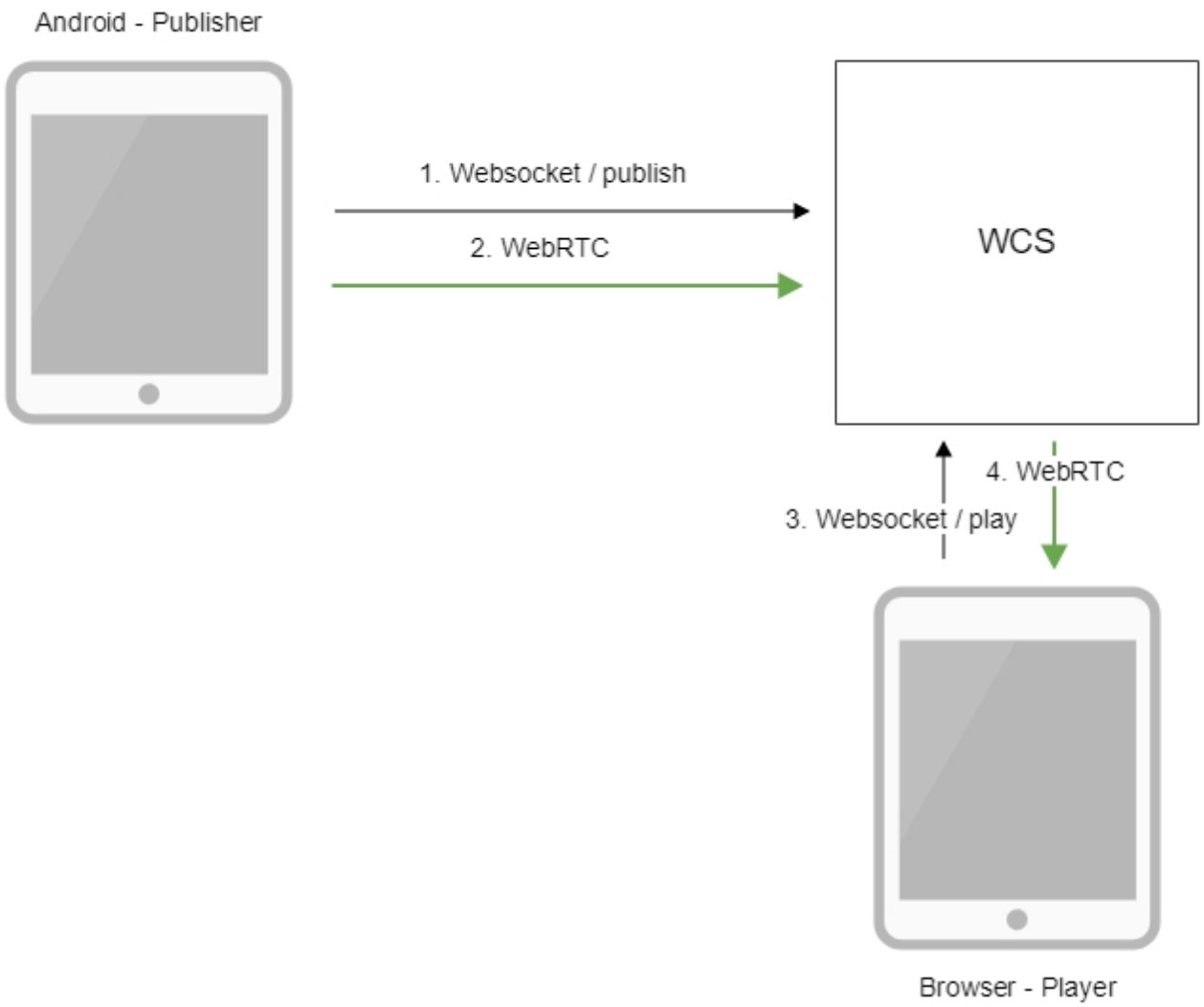
From an Android mobile app via WebRTC

Overview

WCS provides SDK to develop client applications for the Android platform

Operation flowchart



1. The Android device connects to the server via the Websocket protocol and sends the publish command.
2. The Android device captures the microphone and the camera and send the WebRTC stream to the server.
3. The browser establishes a connection via WebSocket and sends the play command.
4. The browser receives the WebRTC stream and plays that stream on the page.

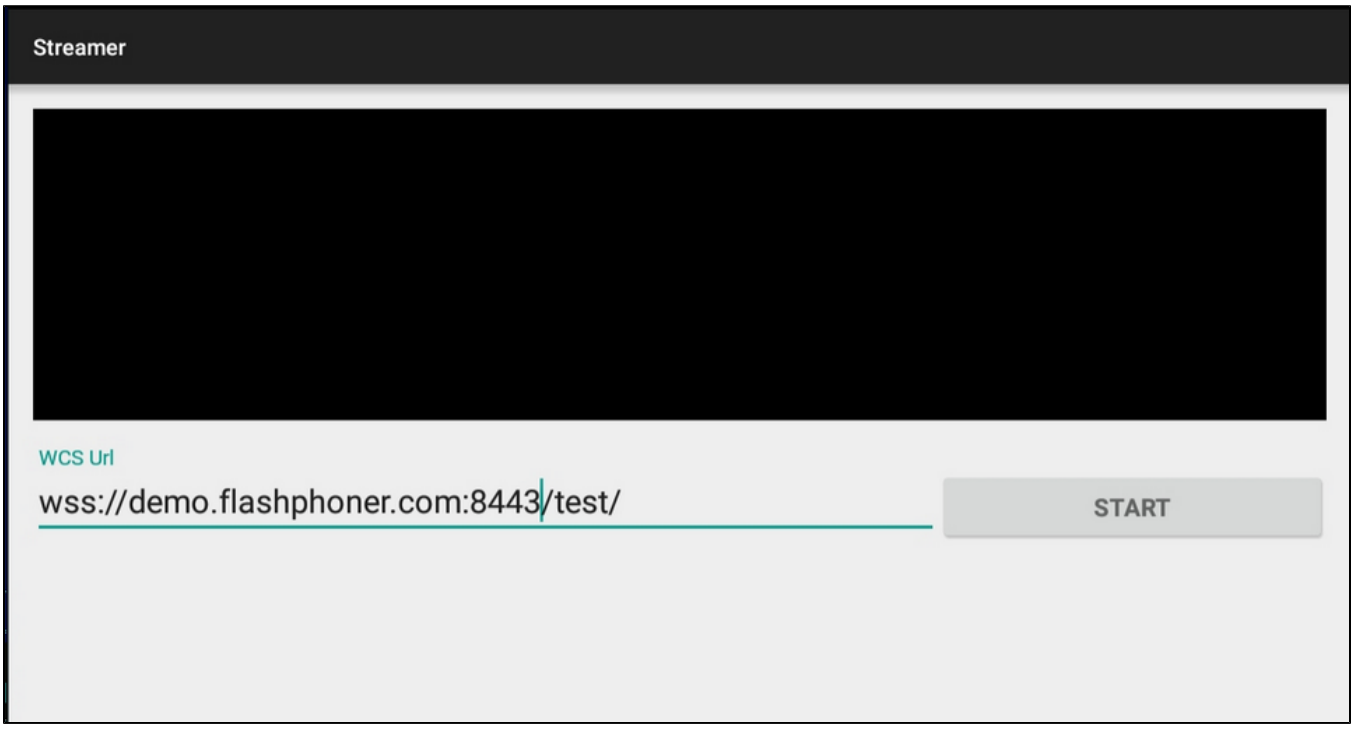
Quick manual on testing

Capturing a video stream using the Android mobile app

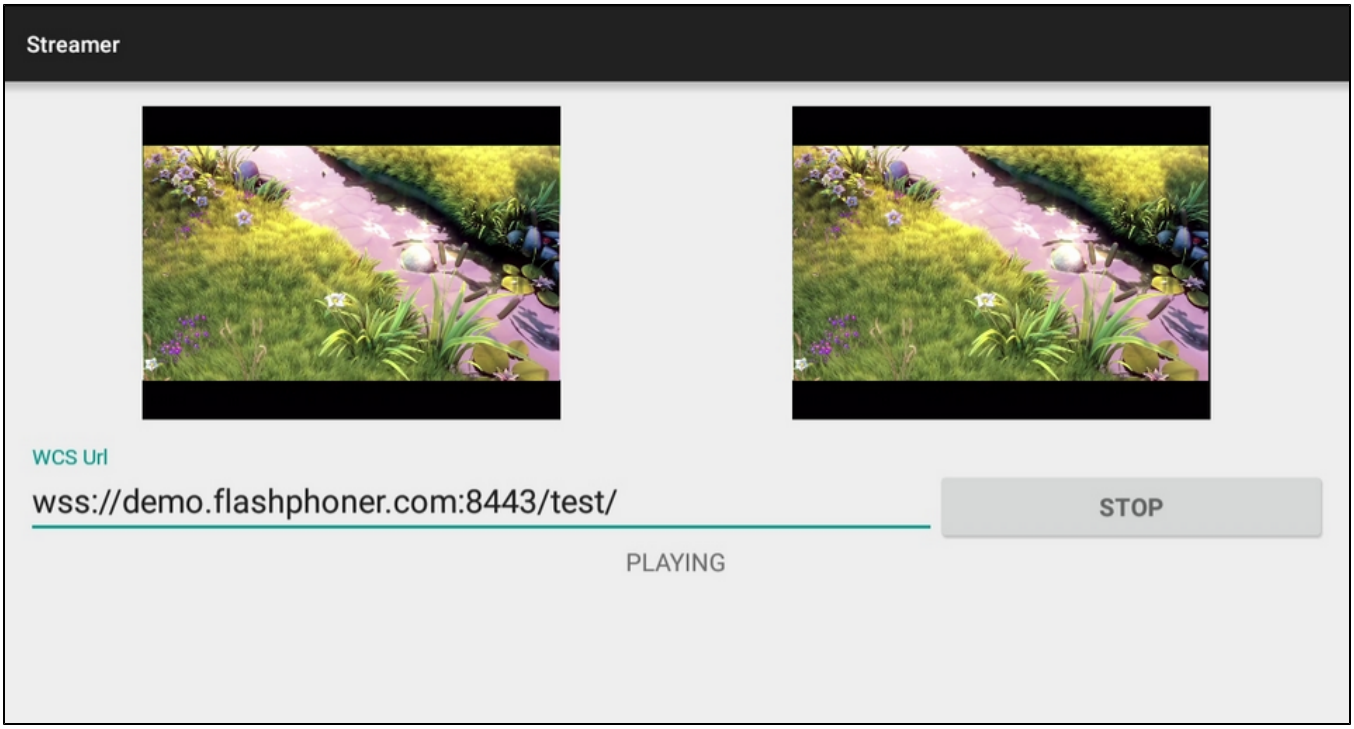
1. For this test we use:

- the demo server at demo.flashphoner.com;
- the Streamer mobile app (Google Play);
- thePlayerweb application to display the captured stream

2. Install the Streamer mobile app on the Android device fromGoogle Play. Start the app on the device and enter the URL as wss://demo.flashphoner.com:8443/test/, where demo.flashphoner.com - is the address of the WCS server, /test/ is the identifier of the stream.

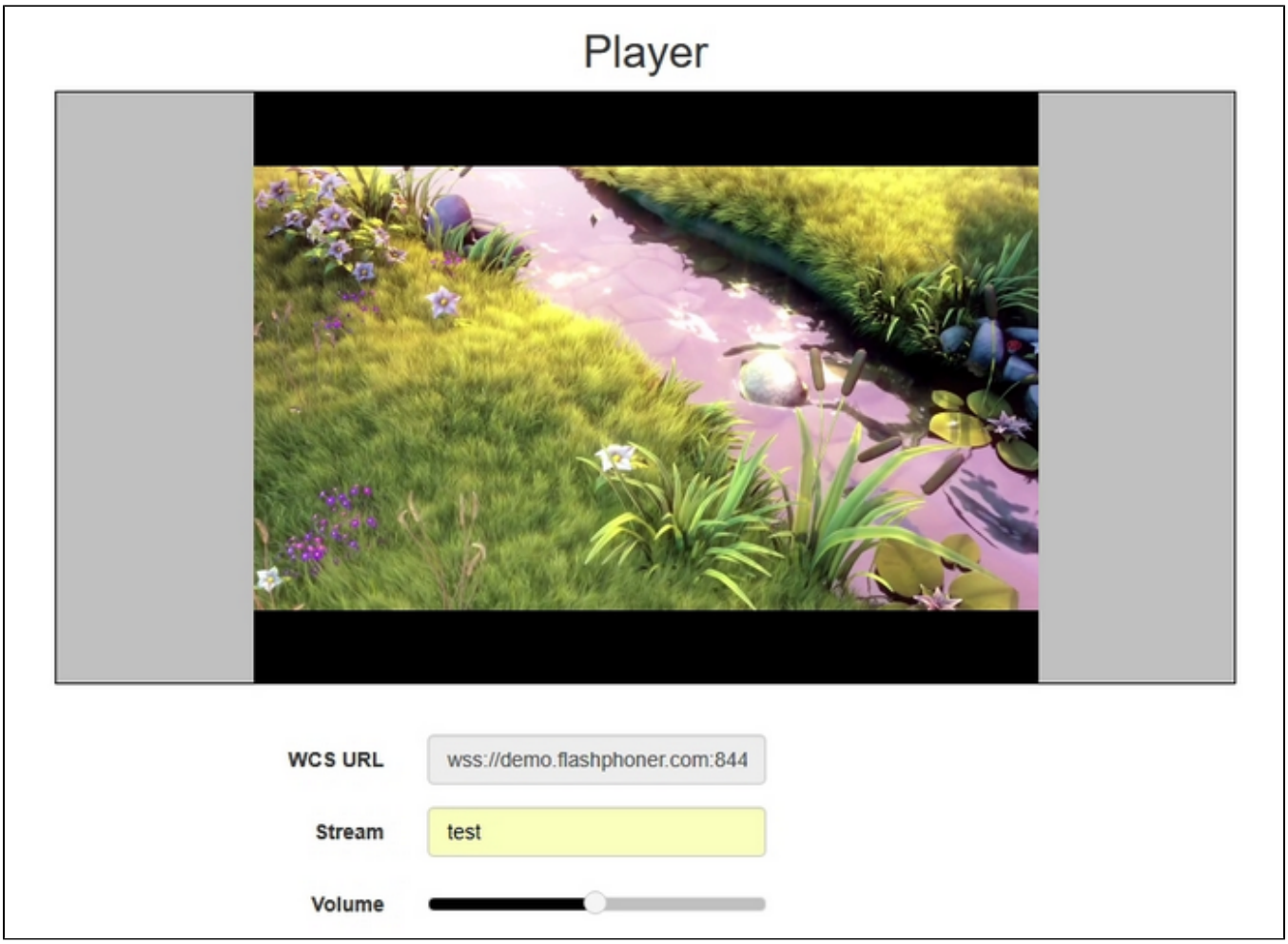


3. Click the "Start" button. Capturing of a video stream from the frontal camera of the device begins, and the stream is published to the server.



4. Open the Player web application, specify the stream identifier test in the "Stream" field

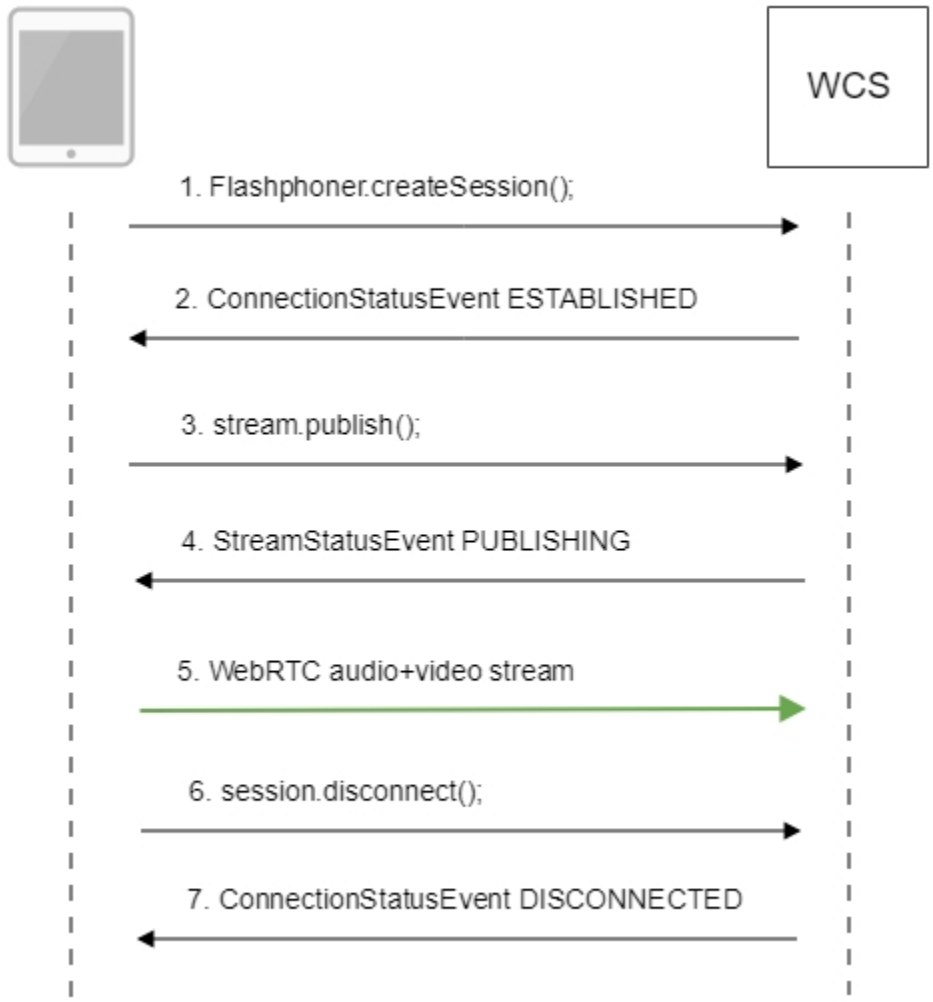
5. Click the "Start" button. Broadcasting from the mobile device starts



Call flow

Below is the call flow when using the Streamer example

StreamerActivity.java



1. Establishing connection to the server.

Flashphoner.createSession();code

```
 String url;
     final String streamName;
     try {
         URI u = new URI(mWcsUrlView.getText().toString());
         url = u.getScheme() + "://" + u.getHost() + ":" + u.getPort();
         streamName = u.getPath().replaceAll("/", "");
     } catch (URISyntaxException e) {
         mStatusView.setText("Wrong uri");
         return;
     }

     /**
      * The options for connection session are set.
      * WCS server URL is passed when SessionOptions object is created.
      * SurfaceViewRenderer to be used to display video from the camera is set with method SessionOptions.
setLocalRenderer().
      * SurfaceViewRenderer to be used to display preview stream video received from the server is set with
method SessionOptions.setRemoteRenderer().
      */
     SessionOptions sessionOptions = new SessionOptions(url);
     sessionOptions.setLocalRenderer(localRender);
     sessionOptions.setRemoteRenderer(remoteRender);

     /**
      * Session for connection to WCS server is created with method createSession().
      */
     session = Flashphoner.createSession(sessionOptions);
```

2. Receiving from the server an event confirming successful connection.

ConnectionStatusEvent ESTABLISHEDcode

```
     public void onConnected(final Connection connection) {
         runOnUiThread(new Runnable() {
             @Override
             public void run() {
                 mStartButton.setText(R.string.action_stop);
                 mStartButton.setTag(R.string.action_stop);
                 mStartButton.setEnabled(true);
                 mStatusView.setText(connection.getStatus());

                 /**
                  * The options for the stream to publish are set.
                  * The stream name is passed when StreamOptions object is created.
                  */
                 StreamOptions streamOptions = new StreamOptions(streamName);

                 /**
                  * Stream is created with method Session.createStream().
                  */
                 publishStream = session.createStream(streamOptions);
```

3. Publishing the stream.

stream.publish();code

```
    @Override
    public void onRequestPermissionsResult(int requestCode,
                                           @NonNull String permissions[], @NonNull int[] grantResults) {
        switch (requestCode) {
            case PUBLISH_REQUEST_CODE: {
                if (grantResults.length == 0 ||
                        grantResults[0] != PackageManager.PERMISSION_GRANTED ||
                        grantResults[1] != PackageManager.PERMISSION_GRANTED) {
                    mStartButton.setEnabled(false);
                    session.disconnect();
                    Log.i(TAG, "Permission has been denied by user");
                } else {
                    /**
                     * Method Stream.publish() is called to publish stream.
                     */
                    publishStream.publish();
                    Log.i(TAG, "Permission has been granted by user");
                }
            }
        }
    }
```

4. Receiving from the server an event confirming successful publishing of the stream.

StreamStatusEvent, status PUBLISHINGcode

```
     publishStream.on(new StreamStatusEvent() {
         @Override
         public void onStreamStatus(final Stream stream, final StreamStatus streamStatus) {
             runOnUiThread(new Runnable() {
                 @Override
                 public void run() {
                     if (StreamStatus.PUBLISHING.equals(streamStatus)) {

                         /**
                          * The options for the stream to play are set.
                          * The stream name is passed when StreamOptions object is created.
                          */
                         StreamOptions streamOptions = new StreamOptions(streamName);

                         /**
                          * Stream is created with method Session.createStream().
                          */
                         playStream = session.createStream(streamOptions);
```

5. Sending audio and video stream via WebRTC

6. Stopping publishing the stream.

session.disconnect();code

```
                } else {
                    mStartButton.setEnabled(false);

                    /**
                     * Connection to WCS server is closed with method Session.disconnect().
                     */
                    session.disconnect();
                }
```

7. Receiving from the server and event confirming successful unpublishing of the stream.

ConnectionStatusEvent DISCONNECTEDcode

```
@Override
public void onDisconnection(final Connection connection) {
    runOnUiThread(new Runnable() {
        @Override
        public void run() {
            mStartButton.setText(R.string.action_start);
            mStartButton.setTag(R.string.action_start);
            mStartButton.setEnabled(true);
            mStatusView.setText(connection.getStatus());
        }
    });
}
```