Communication protocol with Live
for an external application

First of all, in our software you have to
- check the option "Main menu > Preferences > Network > External App"
- re-start the program
- check the option "Live > Live Settings > External control > Enable"
- enter a password in "Live > Live Settings > External control > Password"

Then in the external application
Communication has to be established in TCP on the port 7348 by default. The IP address, the communication port and an access password should be configurable in the external application.

Just after connecting, the external application must send an "*HELLO*" message to log in to Live application. All the messages have to be sent in ascii (UTF-8 if necessary) **followed by a [CRLF] (carriage return + line feed)**. The messages have to be sent without the double-quotes shown below.

Network messages sent by the external application :

- "*HELLO|{application name}|{password}*" : Must be sent immediately after the TCP connection has established otherwise the response "*ERROR|NOT LOGGED*" will be returned. The password has to be sent in clear.
* Response of Live : "*HELLO*" if OK else "*ERROR|BAD PASSWORD*".

- "*BPM|{bpm}*" : Sent at each start of a song or at each "BPM" message from Live.
* This assigns the new BPM value in the "BPM" section of Live.

- "*BPM_TAP*" : Sent to manually set the BPM by tapping the sound beat. The BPM is calculated on the 3 last taps.
* This assigns a new BPM value in the "BPM" section of Live.

- "*BEAT*" : Sent at each beat after receiving a "BEAT_ON" message from Live and stopped after receiving a "BEAT_OFF" message from Live.
* This increments the beat in the "BEAT" section of Live.

- "*AUTO_BPM_ON*" : Sent to start the automatic beat detection of Live based on the operating system audio mixer.

- "*AUTO_BPM_OFF*" : Sent to stop the automatic beat detection of Live based on the operating system audio mixer.

- "**FREEZE_ON**" : Sent to start freezing DMX playing from Live.

- "**FREEZE_OFF**" : Sent to stop freezing DMX playing from Live.

- "**CUE|{cue_name}**" : Sent at each meeting of a cue point in the external application.
* This toggles the button with the name {cue_name} in Live.

- "**BUTTON_PRESS|{button_name}**" : Sent when a button is pressed in the external application.
* This presses the button with the name {button_name} in Live.

- "**BUTTON_RELEASE|{button_name}**" : Sent when a button is released in the external application.
* This releases the button with the name {button_name} in Live.

- "**FADER_CHANGE|{#fader}|{position}**" : Sent when a master fader position has changed in the external application.
* This changes the position of the master fader in Live.

- "**TIMELINE_PLAYFROM**" : Sent to trigger the "Play From" button in Live / TimeLine tab.

- "**TIMELINE_PLAY**" : Sent to trigger the "Play" button in Live / TimeLine tab.

- "**TIMELINE_STOP**" : Sent to trigger the "Stop" button in Live / TimeLine tab.

- "**SEQUENTIAL_GO**" : Sent to trigger the "Go" button in Live / Sequential list tab.

- "**SEQUENTIAL_PAUSE**" : Sent to trigger the "Pause" button in Live / Sequential list tab.

- "**SEQUENTIAL_STOP**" : Sent to trigger the "Stop" button in Live / Sequential list tab.

- "**BUTTON_LIST**" : Sent to ask Live for its button and master faders list
* Response of Live : "**BUTTON_LIST**|" followed by a XML feed with the following format :

```xml
<?xml version="1.0" encoding="UTF-8"?>
    <buttons>
        <page name="head" columns="2" colbuttons_1="2" colbuttons_2="2">
            <button index="0" flash="0" pressed="0" line="1" column="1" color="#80FFFF">
                Button name 1
            </button>
            <button index="1" flash="0" pressed="0" line="2" column="1" color="#80FFFF">
                Button name 2
            </button>
            .
            .
            .
        </page>
        .
        .
        .
        <fader value="0" index="0">
            Fader name 1
        </fader>
        <fader value="50" index="1">
```

                      Fader name 2
               </fader>
               .
               .
               .

<u><page> balise parameters :</u>
"name" : name of the page
"columns" : nb columns in page in Live application
"colbuttons_x" : nb of buttons in the column x in Live application

<u><button> balise parameters :</u>
"index" : numeric id of the button
"type" : type of the button (Steps, Generator, Pixels, ...)
"flash" : flash type button (monostable – push button)
"pressed" : state of the button : 0 = released, 1 = pressed
"line" : line of the button in Live application
"column" : column of the button in Live application
"color" : color of the button in Live application (HTML format)
"imgpath" : path of the button image if exists

<u><fader> balise parameters :</u>
"value" : numeric value of the fader position
"index" : index of the fader

(use only parameters you need)

Network messages sent by Live application :

- "***BPM***" : Sent to the external application to ask the current BPM.
* Response of the external application : "***BPM|{bpm}***".

- "***BEAT_ON***" / "***BEAT_OFF***" : Sent to start/stop the sending of the real time beats by the external application.
* Response of the external application : "***BEAT***" at each beat.

- "***BUTTON_PRESS|{button_name}***" : Sent when a button is pressed in Live application.
(use if you need)

- "***BUTTON_RELEASE|{button_name}***" : Sent when a button is released in Live application.
(use if you need)

- "***FADER_CHANGE|{#fader}|***" : Sent when a master fader position has changed in Live application.
(use if you need)

- "***INTERFACE_CHANGE***" : Sent to inform a change in Live interface (new button, button delete, button rename, nb of master faders,, and so on …).
(use if you need)