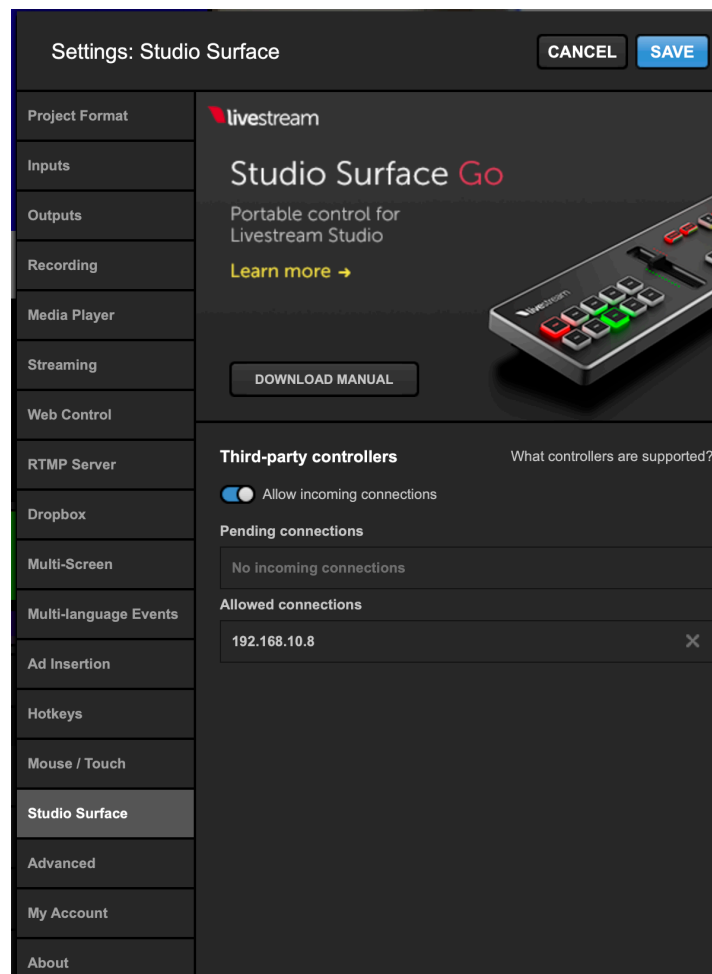# Device: Vimeo Livestream Studio

Introduction

A large number of parameters in the software based video switcher application Livestream Studio can be controlled from a SKAARHOJ control panel. The integration have been done in collaboration with Vimeo. This document gives you an overview of possible control parameters.

The implementation have been done on version 6.3.13 Beta. The official version with API support for SKAARHOJ controllers is version 6.5.2, we are not compatible with earlier versions.

Setting up Livestream Studio for Mac

On the Version 6.3.162 Beta version of Livestream Studio for Mac the "Allow incoming connections" in the Third-party controllers section needs to be enabled. When a SKAARHOJ controller tries to connect it will appear in the "Pending connection". Allow the connection for a SKAARHOJ controller to connect. On the version 6.3.13 Beta for Windows this procedure is not necessary.

Connection

Connection status to Livestream Studio is shown in the serial monitor.

This is a overview of the actions implemented in the Device Core

```
    LiveStream: Program Src
    LiveStream: Preview Src
    LiveStream: Prv/Prg Src
 ✓ LiveStream: Graphics
    LiveStream: Media
    LiveStream: Cut
    LiveStream: Auto
    LiveStream: FTB
    LiveStream: Transition Pos
    LiveStream: Audio Volume
    LiveStream: Audio Gain
    LiveStream: Audio Mute
    LiveStream: Audio On Program
    LiveStream: Audio HeadPhone
    LiveStream: Record
    LiveStream: Stream
```

This is a table of actions for the Livestream Studio Device Core

Program Source

#1	
	1

Home
LiveStream: Program Src ▾ | Source: 1 ▾ ✓ | INS CP - ≡
+
Hold Down
Toggle

Sets Program Source

Binary triggers: Sets the selected source on Program. If Hold Down is selected, the source will fall back to the previous source whenever the trigger is released. Toggle will select the source, but on a subsequent trigger, it will fall back to the previous value.

Pulse inputs: Will cycle through and set the possible sources for Program limited by the selected source

Binary outputs: On when actual Program Src matches selected source

Button colors: Will be red when Program Src matches selected source, otherwise dim.

Displays: Pgm Src/Source name taking from Livestream Studio

Preview Source

#1	
	1

Home
LiveStream: Preview Src ▾ | Source: 1 ▾ ✓ | INS CP - ≡
+
Hold Down
Toggle

Sets Preview Source

Binary triggers: Sets the selected source on Preview. If Hold Down is selected, the source will fall back to the previous source whenever the trigger is released. Toggle will select the source, but on a subsequent trigger, it will fall back to the previous value.

Pulse inputs: Will cycle through and set the possible sources for Preview limited by the selected source

Binary outputs: On when actual Preview Src matches selected source

Button colors: Will be green when Preview Src matches selected source, otherwise dim.

Displays: Prv Src/Source name taking from Livestream Studio

Preview/Program Source

#1	
	1

Home
LiveStream: Prv/Prg Src ▾ | Source: 1 ▾ ✓ | INS CP - ≡
+
Cycle

Set Preview Source and if the trigger is held down for more than 1 second, it will perform a Cut action too.

Binary inputs: Sets the select source on Preview. If Cycle mode is selected, a trigger will set the next source on Preview (corresponds to a single pulse input) when released unless the button is held until a Cut is performed in which case no new Preview source is selected.

Pulse inputs: Will cycle through and set the possible sources for Preview limited by the selected source

Binary outputs: On when actual Preview source or Program source matches the selected source

Button colors: Will be red or green when Program or Preview Src matches selected source, otherwise dim. In Cycle mode color will be highlighted when button is held down.

Displays: Pg/Pv Src/Source name taking from Livestream Studio

Graphics

#1 [1]

Home [INS] [CP] [-]
LiveStream: Graphics ▼   GFX: 1▼   Output ▼   ✓ Toggle   ☰
[+]   Show
                                            Hide
                                            Hold Down

Controls GFX 1-3 to either Preview or Output (Program)

Binary triggers:
For Preview: Toggle will put the selected GFX directly on preview (similar to PRV in Livestream Studio). A subsequent push till turn it off - similar to pressing PRV again. Show will only put the selected GFX on Preview. Hide will only remove the GFX from Preview. Hold Down will enable the selected GFX to Preview as long as a button is held down.

For Output: Toggle will put the selected GFX directly on program - similar to PUSH. A subsequent push till turn it off - similar to PULL. Show will put the selected GFX on Program (PUSH) and mimic the PUSH behaviour from Livestream Studio (flashing yellow). Hide will take it off program (PULL). Hold Down will enable the selected GFX to Program as long as a button is held down.

Pulse inputs: Not implemented.

Binary outputs: Not implemented.

Button colors: Will be red/green when enabled. For Show option for Output the button mimics the PUSH behaviour from Livestream Studio (flashing yellow)

Displays:
For Output
Toggle: GFX Prg T/GFX Number
Show: GFX Prg Ps/GFX Number
Hide: GFX Prg Pl/GFX Number
Hold Down: GFX Prg H/GFX Number
For Preview
Toggle: GFX Prv T/GFX Number
Show: GFX Prv Ps/GFX Number
Hide: GFX Prv Pl/GFX Number
Hold Down: GFX Prv H/GFX Number

Media

#1 [1]

Home [INS] [CP] [-]
LiveStream: Media ▼   Source: 1 ▼   ✓ Play Selection   ☰
[+]   Play Full
                                     Pause

Controls layout of the Media tabs. The "Source" selection equals the MEDIA tabs in Livestream Studio and not the actually source list.

Binary triggers:
Play Selection will engage "Play/pause video inside "in" and "out" points" and a subsequent trigger will pause. Play Full will engage "Play/pause any part of video" and a subsequent trigger will pause. Pause will pause the video regardless on how the clip play have been initiated.

Pulse inputs: Not implemented.

Binary outputs: Not implemented.

Button colors: In "Play Selection" mode highlighted yellow when clip is playing otherwise dim. In "Play Full" highlighted green when clip is playing, otherwise dim. For "Pause" yellow/green highlighted when clip is playing.

Displays:
Play Selection: Play In Out/Media Number
Play Full: Play Full/Media Number
Pause: Pause/Media Number

Cut

#1 [1]

Home [INS] [CP] [-]
LiveStream: Cut ▼   ☰
[+]

Executes CUT transition

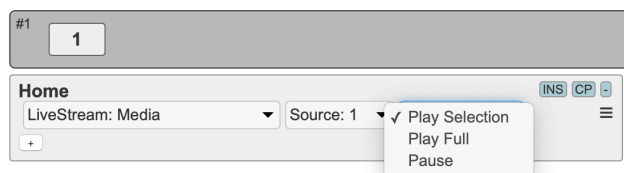*Binary triggers:* Transition source in preview to program and program to preview.

Pulse inputs: Triggers a CUT
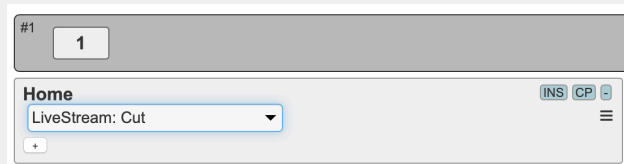
Binary outputs: Not implemented.

Button colors: Dimmed but highlighted when activated

Displays: "Cut/Trig"

Auto

```
#1
   1

Home                    INS  CP  -
LiveStream: Auto    ▼        ≡
   +
```

Executes assigned transition via AUTO

Binary triggers: Transition source in preview to program and program to preview using the transition type selected

Pulse inputs: Triggers a AUTO

Binary outputs: Not implemented.

Button colors: Dimmed but highlighted red when activated

Displays: "Auto/Trig"

Fade to Black (FTB)

```
#1
   1

Home                    INS  CP  -
LiveStream: FTB     ▼        ≡
   +
```

Fade Program Output to Black

Binary triggers: Pressed once, fades program output to black, subsequent trigger fades program up from back.

Pulse inputs: Triggers a FTB

Binary outputs: On when FTB engaged.

Button colors: Dimmed but blinking red when activated.

Displays: "FTB/Trig"

Transition Position

```
#1
   1

Home                         INS  CP  -
LiveStream: Transition Pos  ▼      ≡
   +
```

Controls Transition Position via analog component (slider, fader, T-bar)

Binary trigger: Not implemented.

Pulse input: Not implemented.

Analog input: Sets transition position

Binary output: Not implemented.

Button color:

Note: If action assigned directly on a transition LED bar the LED bar will always light up from the same side. However if on the transition LED bar the system action "Tie to HWC#" is used and tied to the slider/fader/T-bar the order of the LEDs will be correct.

Audio Volume

```
#1
   1

Home                              INS  CP  -
LiveStream: Audio Volume  ▼  Source: 1  ▼    ≡
   +
```

```
Mem J
Mem K
Mem L
Source on Program
Source on Preview
Stream
Record
```

Controls the audio volume of the selected channel. Alternative select Source on Program/Preview to control or Stream/Record

Binary triggers: Not implemented.

Pulse inputs: Left/Right adjust the volume linearly but does not cycle around. Push down toggles between coarse/fine mode. Push down for 1 second resets to 0dB.

Binary outputs: Not implemented.

Button colors:

Displays: "Volume Src X/value dB"

Audio Gain

Controls the audio gain of the selected channel. Alternative select source on Program/Preview directly.

Binary triggers: Not implemented.

Pulse inputs: Left/Right adjust the volume linearly but does not cycle around. Push down toggles between coarse/fine mode. Push down for 1 second resets to 0dB.

Binary outputs: Not implemented.

Button colors:

Displays: "Gain Src X/value dB"

Audio Mute

Mute or un-mute selected audio source. Alternative select Source on Program/Preview to control or Stream/Record

Binary triggers: Mute selected source, subsequent trigger till un-mute. For Hold Down mute is enabled as long as the button is held down.

Pulse inputs: Cycle though mute and un-mute.

Binary outputs: On when source is muted.

Button colors: Dim, but red when source is muted

Displays: "Mute/source name"

Audio On Program

Controls "Lock or unlock audio source to program" for selected source. Alternative select source on Program/Preview directly.

Binary triggers: Lock audio source to program, subsequent trigger will unlock. For Hold Down lock enabled as long as the button is held down.

Pulse inputs: Cycle though lock/unlock.

Binary outputs: Not implemented.

Button colors: Red when locked, dim when unlocked. Yellow when unlocked but source is on program. Follows logic from Livestream Studio.

Displays: "Output/source name"

Audio Head Phone

Toggles headphone monitoring to on or off for selected source. Alternative select Source on Program/Preview to control or Stream/Record

Binary triggers: Turn on headphone monitoring on, subsequent trigger will turn it off. For Hold Down monitoring is enabled as long as the button is held down.

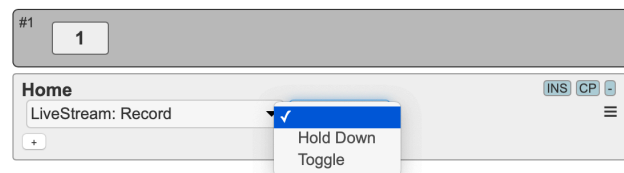*Pulse inputs:* Cycle though monitoring on/off.

Binary outputs: On when monitoring on for selected source.

Button colors: Red when monitoring on, otherwise dim.

Displays: "PFL/source name"

Record

#1
1

Home   INS CP -
LiveStream: Record   ▼ ✓ ≡
+   Hold Down
Toggle

Start/Stop recording in Livestream Studio

Binary triggers: Start recording, subsequent trigger will stop recording. For Hold Down recording is enabled as long as the button is held down.
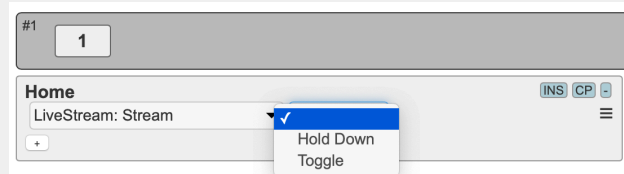
Pulse inputs: Start/stop recording

Binary outputs: Not implemented.

Button colors: Red when recording, otherwise dim.

Displays: "Rec/Start" & "Rec/Stop"

Stream

#1
1

Home   INS CP -
LiveStream: Stream   ▼ ✓ ≡
+   Hold Down
Toggle

Start/Stop streaming in Livestream Studio

Binary triggers: Start streaming, subsequent trigger will stop streaming. For Hold Down streaming is enabled as long as the button is held down.

Pulse inputs: Start/stop streaming

Binary outputs: Not implemented.

Button colors: Red when streaming, otherwise dim. Blinking red when starting/stopping streaming

Displays: "Strm/Start" & "Strm/Stop"