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contact: Pierre-Olivier Boulant po.boulant@free.fr

= = = DEPENDENCIES = = =

Cycling74 Max 7 (developed on 7.3.\*/8.\*.\*)

Java (64bit if Max-64bit / 32bit if Max-32bit)

= = = FEATURES = = =

- client (interface only) & processor (no interface) to off-load interface to a second computer or all-in-one system
- automatic reconfiguration of system up to 64 inputs, 64 outputs and 16 reverb feeds and return, no licence needed for permanent storage of IO configuration
- automatic detection of client and processor IP addresses on the network
- configurable multithreaded processing
- fullscreen interface with locking audio processing switch
- audio engine adapts to Max7 or Max8

Interface:

- system settings (I/O channels, temperature/speed of sound, Haas effect, global system delay)
- venue/stage settings (size, stage origin)
- output channel interface (specific latency, attenuation, position, direction, HF damping, minimal latency enable, live source attenuation enable, distance attenuation factor, eq and filter)
- reverb feed channel interface (specific latency, attenuation, position, direction, HF damping, minimal latency enable, distance attenuation factor)
- input channel interface (specific latency, attenuation, position, height factor, maximum speed, distance attenuation, directional HF shelving, maps, live source attenuation)
- reverb return channel interface (specific latency, attenuation, position, height factor, distance attenuation, directional HF shelving)
- input, output and reverb selector
- input, output and reverb naming
- manual save and autosave systems, output (including reverb feeds) and input settings (including reverb returns)
- autosave can be disabled if it creates glitches
- reloading system, output (including reverb feeds) and input settings (including reverb returns)
- create, recall and update snapshots of input (including reverb returns) settings from interface or OSC
- auto-update of files with default new features' parameters

For inputs only (not available for reverb returns):

- option to restrict input position to stage dimensions (X Y Z)
- mirror position of input relative to stage origin (X Y Z)
- limit movement speed of inputs
- offset source position (X Y Z)
- LFO on source position (X Y Z) or direction (Gyrophone: Leslie effect)
- jitter on source position (X Y Z)
- source position movement (X Y Z) with constant or progressive start and curvature
- global stop, pause and joystick to slow down or speed up movements

Controls:

- Lemur control of input position (not available for reverb returns)
- Lemur markers can be assigned individually to a single input or several

(multi)

- external OSC control (config, names, outputs, inputs // set, get, stream) with TCP and UDP
- change OSC remote IP and port with confirmation from the remote
- keyboard selection of current channel ("i" for input, "o" for output or "r" for reverb feed and return - then type number and return / Space bar to select next input Shift+Space bar to select previous input)
- keyboard shortcuts for Lemur tracker selection (1 ~ 0), deselection or reselection
- keyboard shortcuts for positioning (arrows X & Y; page up/down: Z) with modifiers (no modifiers: 0.1m, shift: 1m, ctrl: 0.01m)
- keyboard shortcuts follow X/Y/Z mirroring for selected channel
- update input position when selecting a used tracker
- update Lemur when selecting an unused tracker
- update Lemur tracker position following keyboard arrows
- output HF damping, minimal latency enable, live source attenuation enable, distance attenuation factor, eq and filter can be adjusted for a whole group at the same time
- output latency, attenuation and parallax correction settings remote controlled through groups with the Lemur interface

Position processing:

- delay calculation/position
- calculation of distances with a weighting of height (0~100%) and with parallax compensation that takes into account the position of the speakers regarding the position of their respective "1st listener"
- minimal delay option, only curvature and no Hass effect: acoustic vs. amplification precedence
- minimal delay can be enabled or not for each output or reverb feed and will only take into account active speakers (unmuted)
- level calculation/position
- full bandwidth attenuation with distance (input & reverb return parameters)
- HF shelving depending on directivity of source and relative angle to output (input & reverb return parameters)
- live source attenuation with proximity of an input to an output (radius, level, curve) (does not affect reverb feed or return channels)
- live source attenuation can be enabled or not for each output (always disabled on reverb feeds)
- air damping of high frequency with distance (output & reverb feed parameter)
- input and reverb return mutes/output and reverb feeds (only for inputs) & macros
- reverb return channels cannot send to a reverb feed channel
- speaker & reverb feed direction and muting of sources in front of the output. possibility to surround the audience with speakers
- level, height, HF damping maps for inputs/position (not available for reverb return channels)