



simpleVIS user guide

simpleVIS is a **lightweight real-time lighting visualiser**. Import an MVR, take live levels over Art-Net, sACN, USB DMX or CITP, fly a camera around the rig, and see your programming in volumetric haze.

It is for seeing what a rig will do before you are in the room with it — checking looks and coverage against a real patch, without a visualiser licence and without modelling the venue by hand.

Before you rely on this: the import chain, DMX evaluation and protocol parsers are tested against real files and real packet layouts. The full 119-fixture MA Demostage renders at 60–70 fps, and the receive path is verified over real sockets.

No real console and no DMX interface has driven it yet — every packet so far has come from a test that wrote it, or from the built-in demo source. CITP has had first contact with a real peer (Capture 2026), but Capture is a DMX *consumer* like simpleVIS, so **levels and patch from a real console remain unverified**.

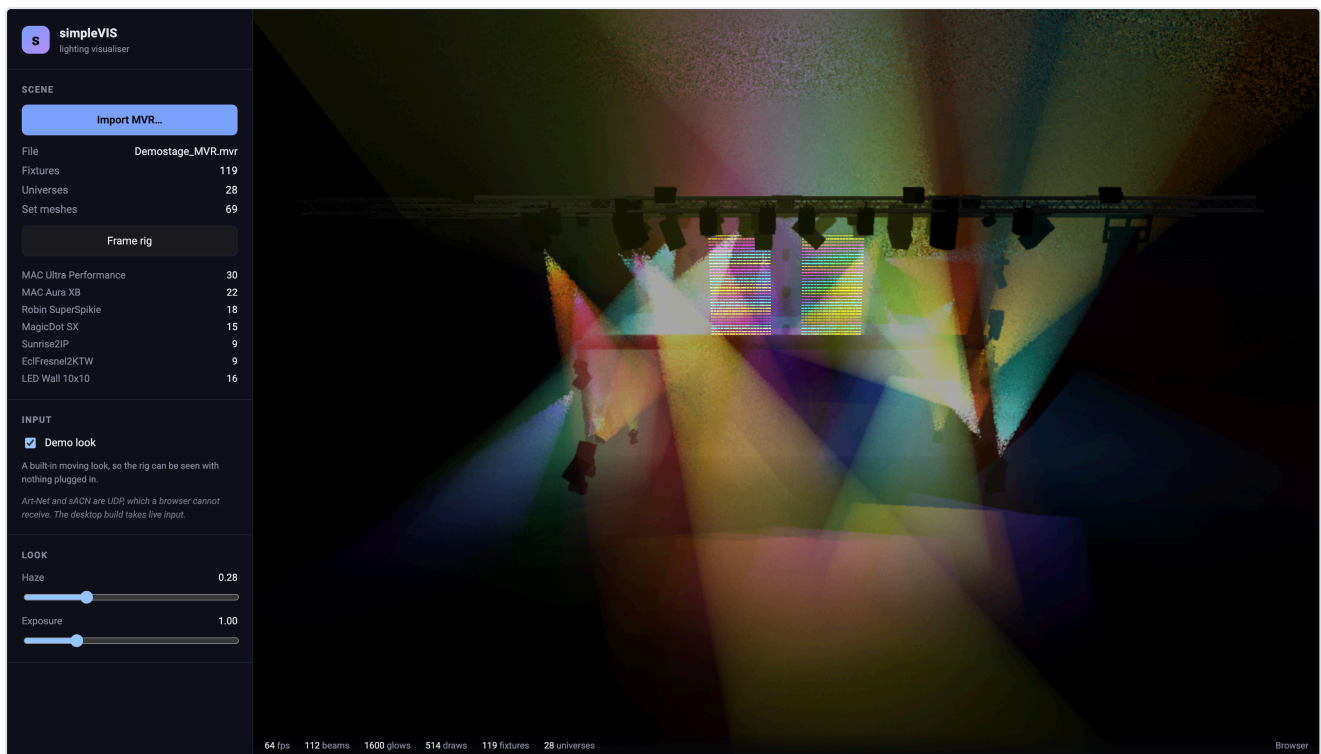
This project was built with AI assistance.

Two builds, and why

Art-Net and sACN are UDP, and a browser cannot receive UDP — there is no flag, polyfill or workaround. So simpleVIS ships two targets from one codebase:

Build	What it is	Live input
Desktop (Tauri v2)	the real tool	Art-Net, sACN, USB DMX, CITP
Hosted	offline previz and plot viewer in a tab	none — built-in demo look

The shared code is identical; only the transport differs. **The hosted build hides what it cannot do** rather than offering controls that fail.



Importing a rig

MVR (`.mvr`), including the GDTF fixture definitions embedded inside it — geometry tree, DMX modes, beam angles, colour mixing.

Import only. simpleVIS never writes MVR. Nothing you do here can damage the file the desk gave you.

Pixel-mapped fixtures work properly. An MVR whose LED wall declares four template channels across a hundred `GeometryReference`s is resolved to its real **300-channel footprint, one DMX slot per pixel** — rather than being taken at face value as four channels.

Live input

Protocol	What's covered
sACN (E1.31)	Priority arbitration, CID source identity, multicast group joins per patched universe
Art-Net 4	ArtDmx, and ArtPoll replies so consoles list simpleVIS as a node
USB DMX	Enttec DMX USB Pro only. An <i>Open</i> DMX USB has no receive path and cannot be an input at all
CITP	Peer discovery (PINF), levels (SDMX), and fixture patch from the console (FPTC)

Two sources per universe are merged HTP or LTP with a 4-second timeout. A third is refused and reported rather than silently dropped — so a mystery universe is a message, not a guess.

What CITP does and doesn't cover

Three layers are implemented:

- **PINF** — peer discovery.
- **SDMX** — levels. It *does* carry them, as channel blocks; a common misconception says otherwise.
- **FPTC** — fixture patch, **so the patch can follow the desk without re-importing an MVR.**

SXSr is honoured, so a console that says "take my levels from Art-Net" is not *also* counted as a CITP source and double-merged.

MSEX and CAEX — thumbnails and viewport streaming — are not implemented. simpleVIS will not stream its viewport back to the desk.

Troubleshooting

Symptom	Cause
No live input options in the browser	Correct — a browser cannot receive UDP. Use the desktop build.
USB DMX interface not receiving	An <i>Open</i> DMX USB has no receive path at all. Only the Enttec DMX USB Pro can be an input.
A universe won't take a third source	By design — two sources merge, a third is refused and reported.
Levels stopped after a source disappeared	The merge has a 4-second timeout before it drops a stale source.
LED wall renders as four channels, not per pixel	Shouldn't happen — <code>GeometryReference</code> expansion is tested. Worth reporting with the MVR.
Console doesn't list simpleVIS as a node	Art-Net discovery is ArtPoll/ArtPollReply; check the desk is polling the right subnet.
CITP peer found but no levels	The peer may be a consumer rather than a console — a visualiser sends neither levels nor patch.
Desk can't see simpleVIS's viewport	Not implemented. MSEX/CAEX viewport streaming is out of scope for now.
Fixture renders but doesn't move	Check the DMX mode the MVR declared matches what the desk is patched to — a mode is a template, not a footprint.

See also

- [AGENTS.md](#) — design notes, load-bearing invariants, and **the several ways an MVR will quietly render wrong**
- [README](#) — the two builds, protocol coverage and downloads

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<https://github.com/stoatworks-labs/simpleVIS>