PRACTICAL 3D AUDIO RECORDING

SHOWCASE OF A FLEXIBLE WORKFLOW

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WHERE TO START ...

- we always hear in 3D (but mostly, we dont experience 3D)
- 3D-Audio can (re)create realistic audioscenes
- one gets used really quick to those audioscenes and recognizes the 3D mainly, when switched back to Surround or Stereo

- Why are we satisfied with a small Stereo-angle when we really want to listen to audio or even want to experience?
- Why are we meanwhile listening mainly with headphones to audio, which was never produced for this and when binaural mixes are so easy to create?

REASONS FOR TOO FEW 3D-MUSIC RECORDINGS

- too complicated
- no need
- not useful for music, only for cinema
- no described (easy) workflow
- missing tools
- no monitoring during recording
- too expensive
- no respectively too small market
- not compatible with my workflow, or is it?

OUR THESIS

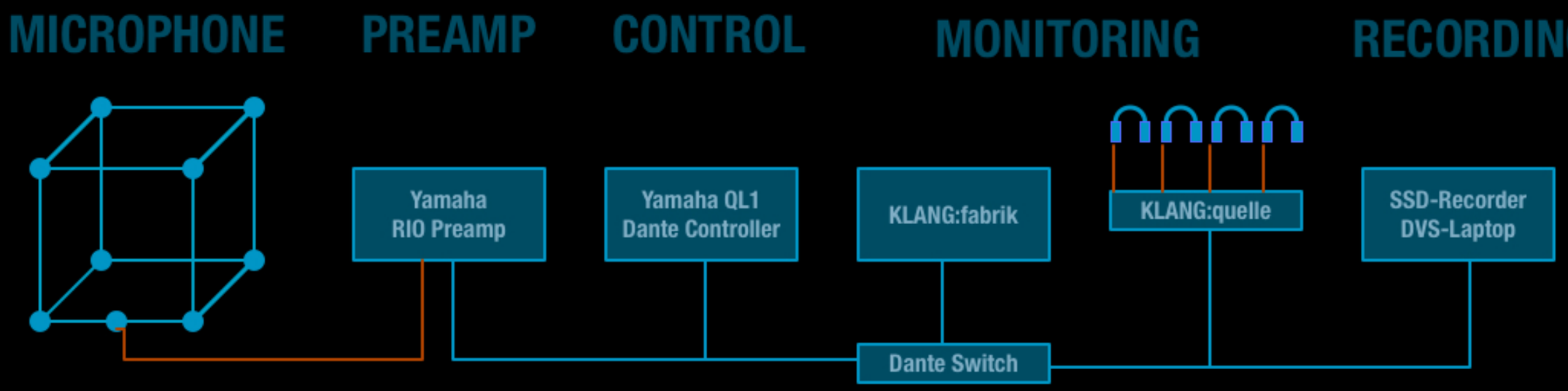
- not complicated
- some standards and basics meanwhile
- great for music and for cinema
- established tools and techniques can further be used
- workarounds for missing tools
- worth the costs and effort
- good monitoring is essentially
- too small market yet, but maybe in the future
- compatible with most workflows
- 3D- or immersive audio is a perfect format for archiving audio

REQUIREMENTS FOR A 3D-RECORDINGWORKFLOW

- focused on the spatial recreation of the room, not so much on the localisation of the sources
- 3D-Microphone must be adjustable to the actual recording and mainly the -room
- additional spotmics are highly recommended
- binaural monitoring of the 3D-audiosignals
- recording files must be compatible to every DAW
- recordings should be usable in all 3D workflows (channel-, object- and soundfield-based)

OUR WORKFLOW

- (modified) Omni-Cube with MTG microphones
- signalflow, -routing and -management via Dante
- Yamaha Rio preamp / QL1 mxingconsole
- binaural monitoring via KLANG:fabrik
- Tascam Dante recorder or recording via DVS
- recording of the 3D-mainmicrophone and the spotmics



THE MICROPHONE

- Omni Cube
- inspired by the recording-setup of Morten Lindberg
- lower layer - 1“capsules for higher directivity (MK102)
- upper layer - 1/2“capsules for more diffusion (MK221)
- variable dimensions

THE MONITORING

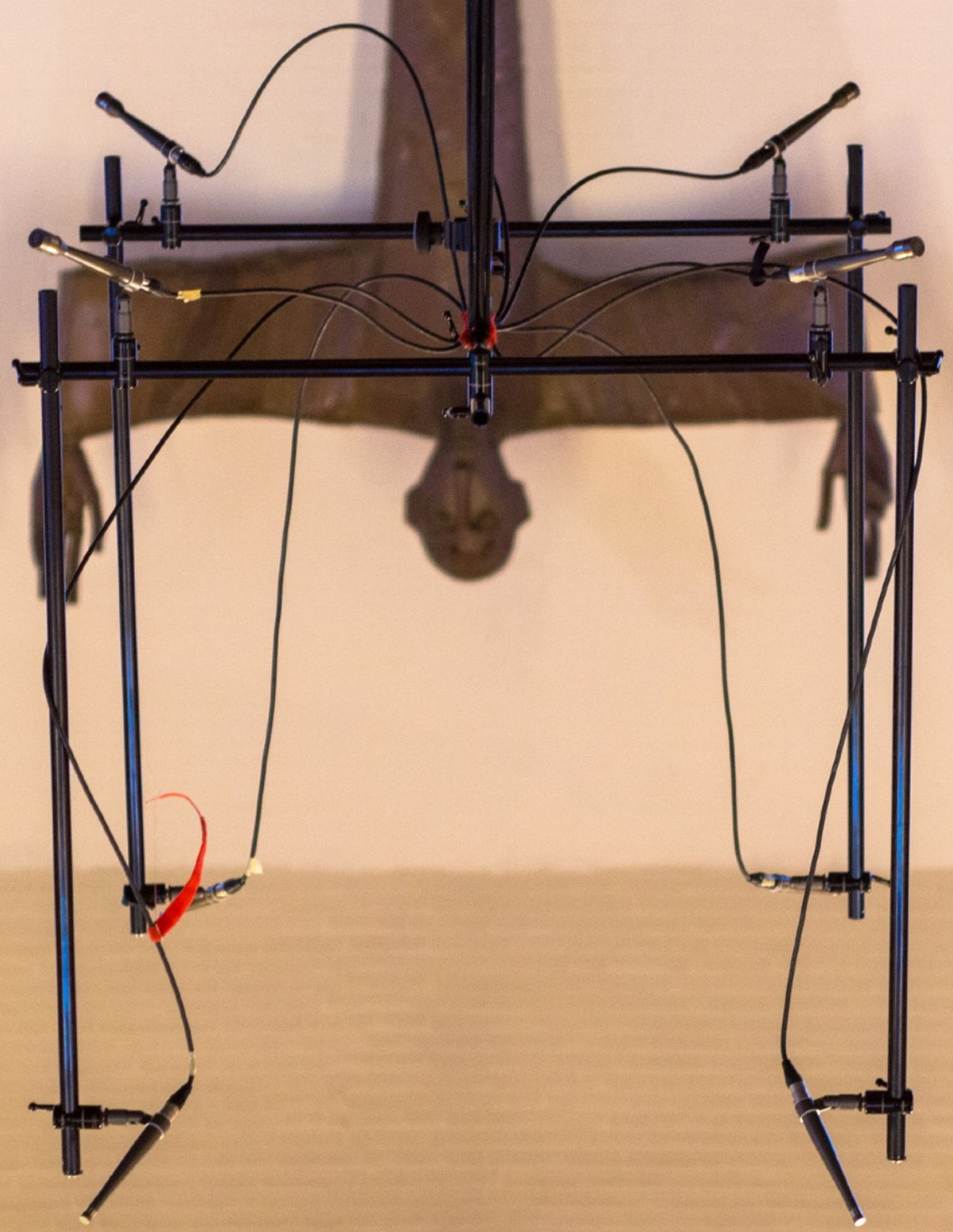
- left / right channelpair (as AB system) can be monitored directly with headphones (with more experience all other channelpairs too)
- complete 3D-scenes need a HRTF-convolution for binaural monitoring
- KLANG:fabrik - Realtime HRTF-processor with ITU based 9.1-Preset
- Dante Interface enables easy integration in signalflow
- spotmics can be mixed with the mainmicrophone for monitoring

RECORDING „VEREIN FREUNDE“ @ MDR KLANGKÖRPER LEIPZIG

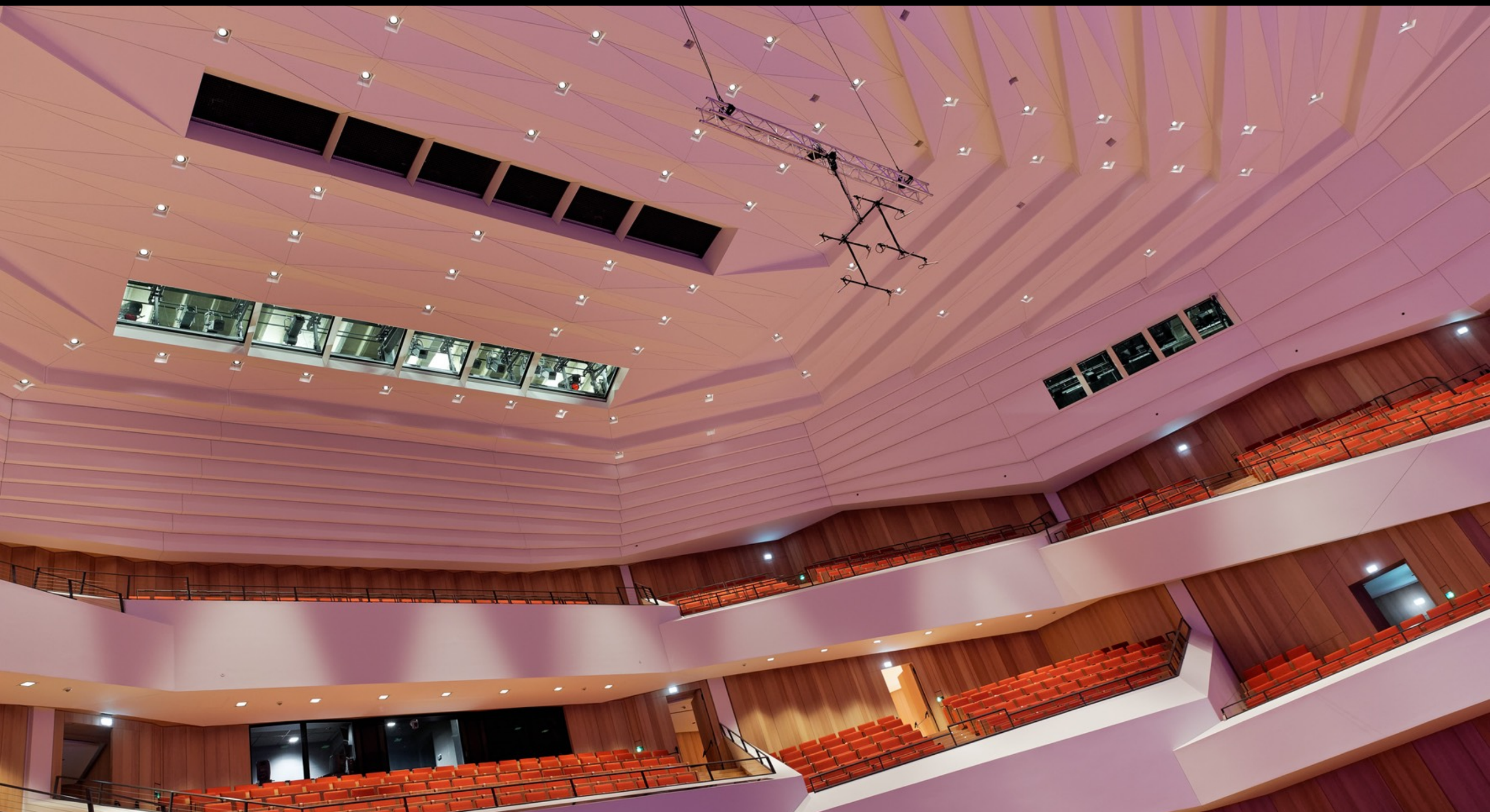
KLANG
KLANG:fabrik
YAMAHA

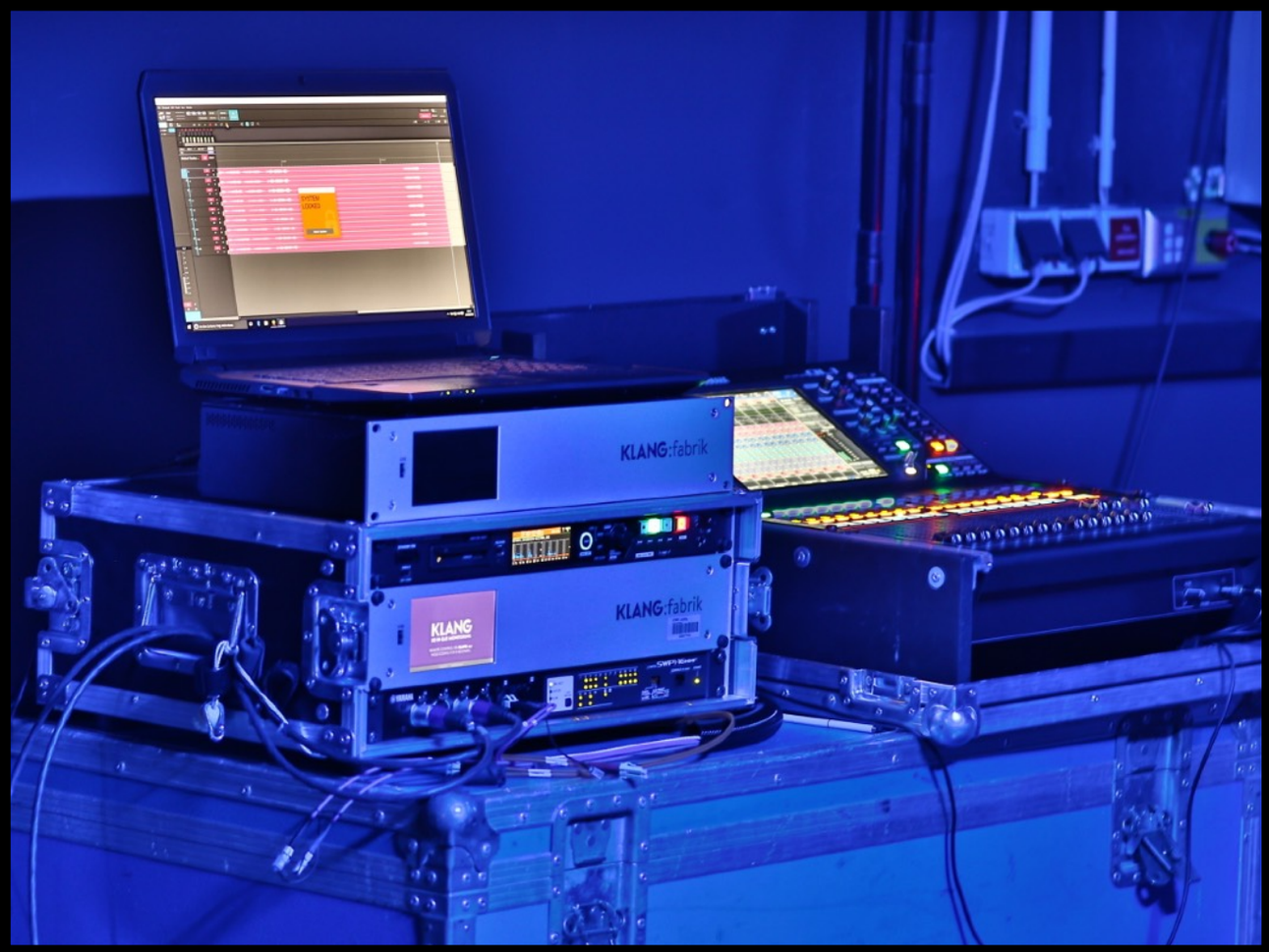
RECORDING
„CURLEW RIVER“
@ PETERSKIRCHE LEIPZIG

RECORDING THE „LANDESJUGEND-ORCHESTER“
@ AUFERSTEHUNGSKIRCHE HAMBURG-BERGEDORF



RECORDING „DEINE LAKAIEN“ @ KULTURPALAST DRESDEN




KLANG:fabrik
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THANK YOU