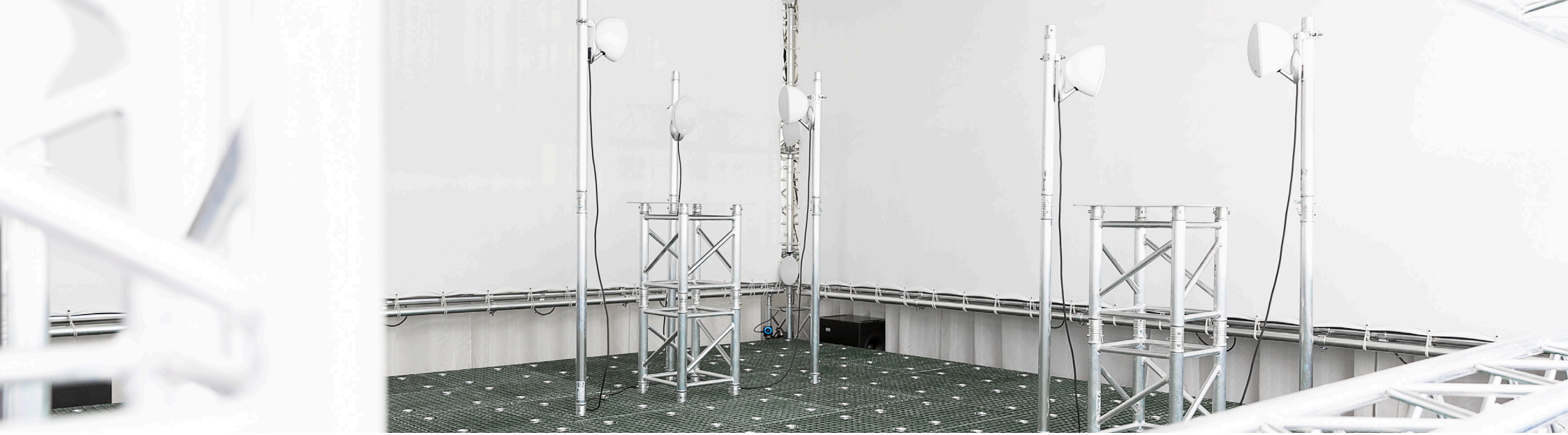


SONOVA HEADQUARTERS

REAL LIFE LAB

Sonova, a **leading provider of innovative hearing care solutions**, has begun testing and developing hearing aids at their new Real Life Lab. Sonova consulted sonible regarding the **audio set-up and technical implementations** of the research facility. Furthermore, **six sonible d:24 amplifiers** are in use at the lab.

PROJECT INFORMATION

Location: **Stäfa, Switzerland**

Venue: **Sonova Headquarters**

Participants: **Sonova Group, sonible GmbH**

Date: **03/2019**

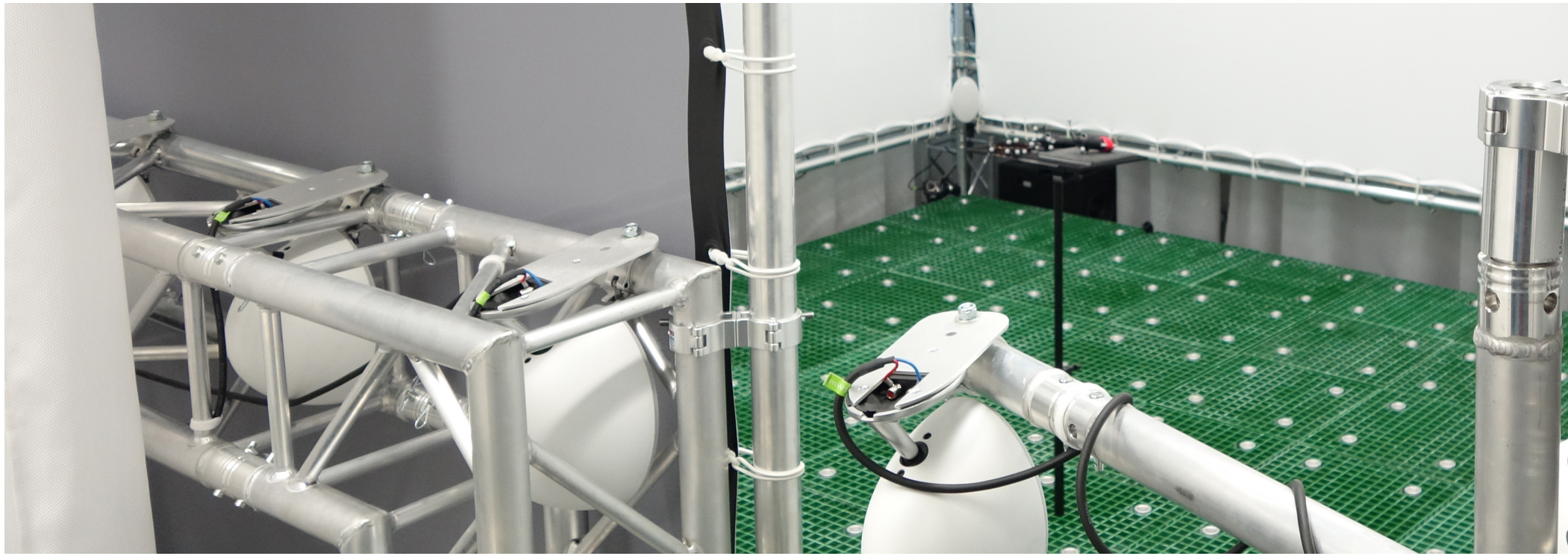
Since March 2019, **Sonova's Real Life Lab** has significantly supported research in Sonova's hearing aid brands such as Phonak and Unitron. Sonova consulted sonible in choosing the audio set-up of the Real Life Lab and in creating solutions for the technical implementations of their ideas. Today, **six sonible d:24 amplifiers** are in use at the new research facility.

Sonova, a leading provider of innovative hearing care solutions, **tests hearing aids and their signal processing algorithms** at their new Real Life Lab in more realistic situations and environments than has been the norm in audiological research up until now. Additionally, they investigate the behavior of hearing aids in complex and difficult acoustic surroundings. Test subjects can move around within the controlled settings and interact with acoustic sources. These movements and interactions are then recorded and analyzed in order to **get a clear understanding of physical activity and listening intent**.

CONCEPT

Challenge

Since there was **no prototype for the lab set-up that Sonova envisioned**, its planning proved to be a challenge. Although all its components are commercially available, the combination of them that fulfilled the purpose of Sonova's Real Life Lab hadn't previously been tested.



Solution

Long-term planning, a systematic process and elimination of ambiguity through selective testing on smaller scales were valuable in mastering the challenges that being in unchartered waters brings. Furthermore, **expert advice** regarding individual elements proved to be indispensable.

> Working with sonible was a very positive experience. They are professional and creative.

Stefan Klockgether
Acoustic Performance Engineer
Sonova Group

SYSTEM DESIGN

Specifications

- Room 8.4 m x 6.6 m x 3.4 m
- 6 x sonible d:24 (MADI DSP interface)
- 4 x subwoofers custom-made by sonible
- 136 speakers
- 144 channels
- 36 stage boxes custom-made by sonible

In order to allow test subjects to move around within the **realistic acoustic scenes**, the Sonova Real Life Lab uses **real sound sources and simple amplitude panning**. Ambisonics and WFS are also possible and will be implemented in the future.

The speaker array measures 6.2 m x 6.2 m x 3.4 m and in its standard set-up contains **105 KEF 301 speakers** on five levels: one above, one below and three at ear level. An additional 31 speakers can be freely positioned around the lab. To increase the credibility of the audiological scenarios, visual media is projected onto **screens that surround the room in 360°**.

The Sonova Real Life Lab is versatile and its **robust implementation reduces possible sources of error**. Its primarily modular set-up allows for a variety of experiments and maximum **flexibility** regarding the development and playback of acoustic settings.

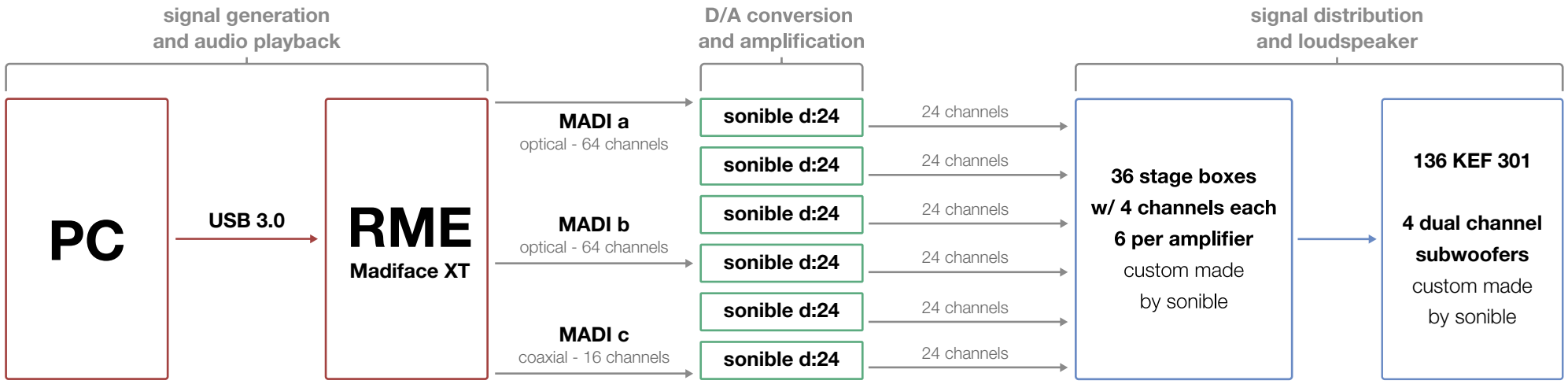
Each of **sonible's six d:24s** combines an analog to digital converter and an amplifier. This makes **additional devices** in the signal chain **unnecessary**.

Built-in DSPs for loudspeaker control and manipulation as well as remote control via Ethernet and a web interface, make the d:24 a **flexible and compact solution** that meets the needs of the Sonova Real Life Lab.

> sonible's d:24 provides a lot of power and many channels in a small space. 24 x 250 Watts using only 3U.

Stefan Klockgether
Acoustic Performance Engineer
Sonova Group

SIGNAL FLOW CHART



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