

# GLL file

## Precise Modelling of Sound Sources

Working on the simulation of sound systems and room acoustics since the early 1980's, the founders of AFMG have always been convinced that accurate modeling of loudspeakers is the key to precise acoustic simulation results. – The fast adoption of the first EASE versions throughout the pro-audio industry proved them right: the advancements made in loudspeaker technology were accompanied by the rapid growth of the open EASE loudspeaker database!

The technical expertise and scientific approach of AFMG, along with the friendly, trustworthy attitude shown towards all customers, has led to many ongoing, close cooperations with the pro-audio industry. AFMG has provided consultations and support for professional loudspeaker measurements and, in return, benefited from the experience of manufacturers and their demand for new software features to support the functionality of innovative products.

A GLL file describes the full performance of a loudspeaker, including:

- Mechanical Data:** Dimensions and physical characteristics of the loudspeaker cabinet.
- Electronic Data:** Information about the loudspeaker's internal electronics, like DSP and crossover filters.
- Acoustic Data:** Detailed performance measurements, such as sensitivity, maximum SPL, and complex polar data for individual drivers.

# GLL file

A GLL file is a Generic Loudspeaker Library file, a standard data format containing precise mechanical, electronic, and acoustic properties of loudspeakers, used by the EASE family of acoustic simulation software to model sound system performance.

These files describe everything from the loudspeaker cabinet's physical dimensions to its electrical and complex acoustic characteristics, enabling detailed simulations of room acoustics and sound system design. GLL files are created using [EASE SpeakerLab](#) software from [AFMG](#) (Ahnert Feistel Media Group) and can be viewed with the free GLL Viewer or imported into EASE for system design.

## Software

EASE represents the established standard in electro- and room acoustic simulation worldwide. The modern platform of EASE 5 combines a highly precise and proven calculation engine with an intuitive user interface and new tools enabling effective workflows adapted to different usage scenarios.

EASE 5 is the ideal solution for acousticians, consultants, specifying engineers, and installation companies to realize their projects efficiently and present them to their clients in a clear and scientifically based manner and from an acoustic professional's perspective.

# GLL file creation

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Measured speakers are:

- Loud of Sweden S2
- Spottune Omni
- NewTec Cono Canto

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Loud of Sweden invited both Spottune and NewTec to participate in the tests, but both declined.

The measurements were commissioned by Loud of Sweden AB and performed independently by IFAA – Institut für Akustik und Audiotechnik.

# Conditions

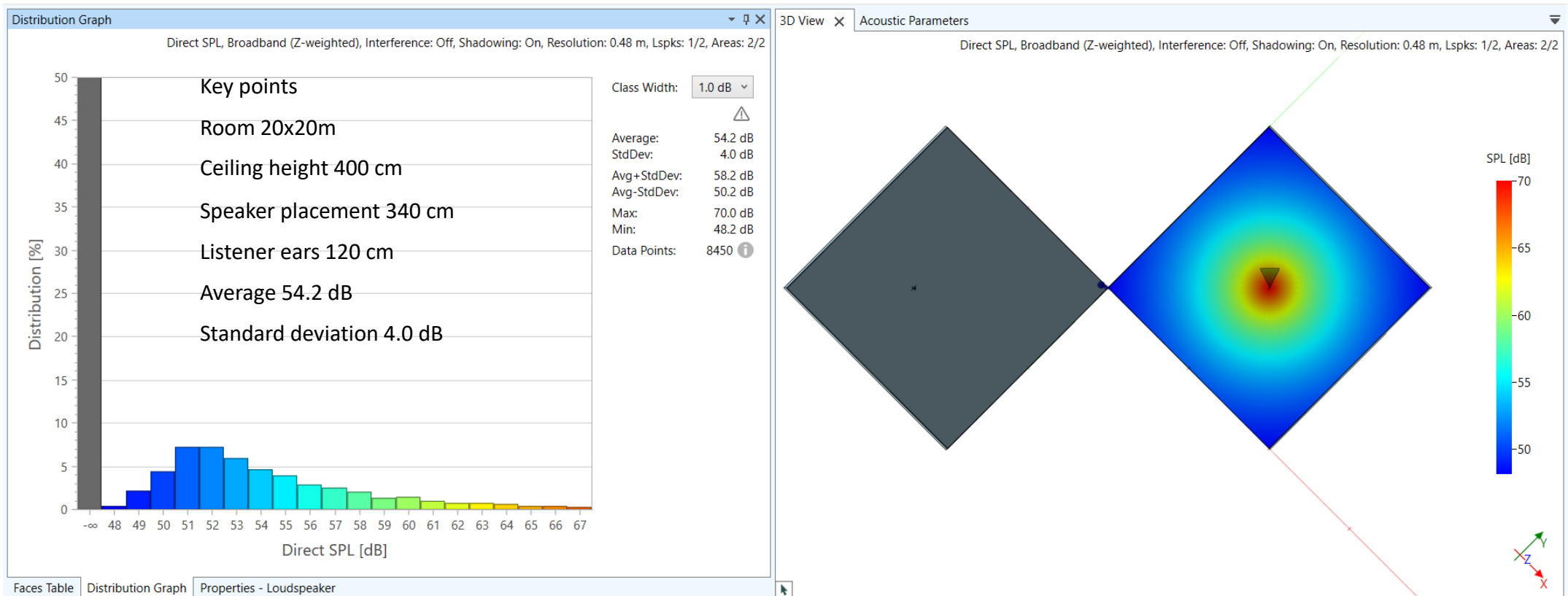
All sound measurements were conducted in the same controlled acoustic environment using identical setup parameters and positioning to ensure fair and consistent comparison between all loudspeakers.

All simulation parameters in EASE 5 were identical for every loudspeaker.

- Crest factor Pink Noise, broadband 20 Hz – 20 KHz
- dBZ (provides a more technical measure of efficiency and shows the entire energy distribution)
- No limiter or EQ
- Target normalization (max 70 dB, all systems were normalized towards the same maximum level at the listening plane)  
A 70 dB maximum was chosen to represent typical retail background-music levels.
- All SPL values are based on a full-coverage grid simulation covering the entire listening area. Every point of the defined room surface within the listener height range was included in the calculation, ensuring complete spatial averaging rather than discrete sample points. Average SPL and standard deviation represent the logarithmic, (energy-based) mean across the entire area.

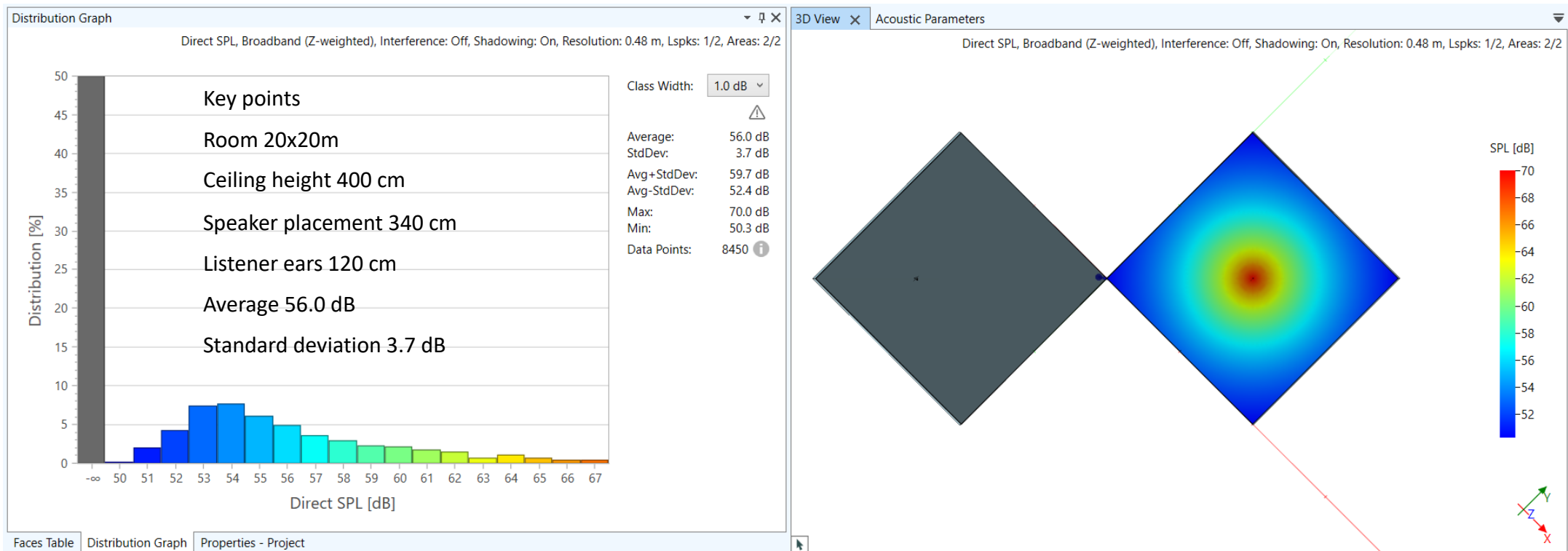
# Empty room simulation

Simulation of empty room NewTec



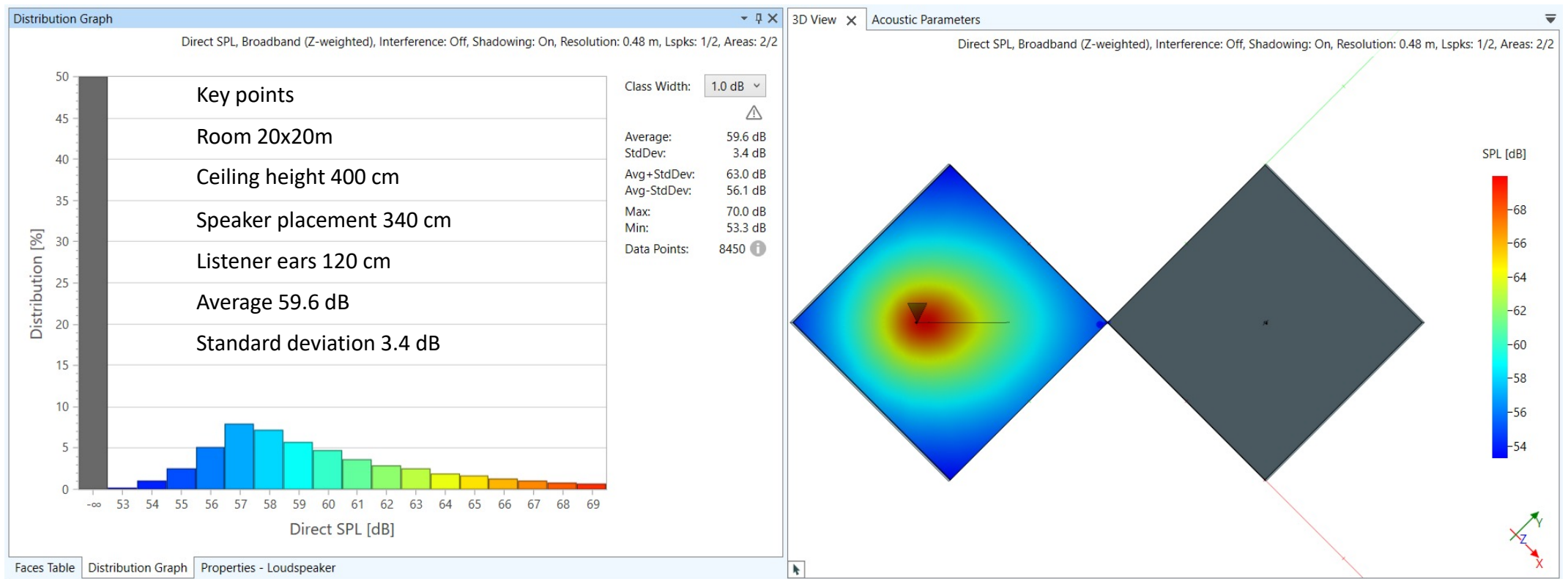
# Empty room simulation

Simulation of empty room Spottune



# Empty room simulation

Simulation of empty room Loud of Sweden



# Small store simulation

Simulation of existing 48 sqm store

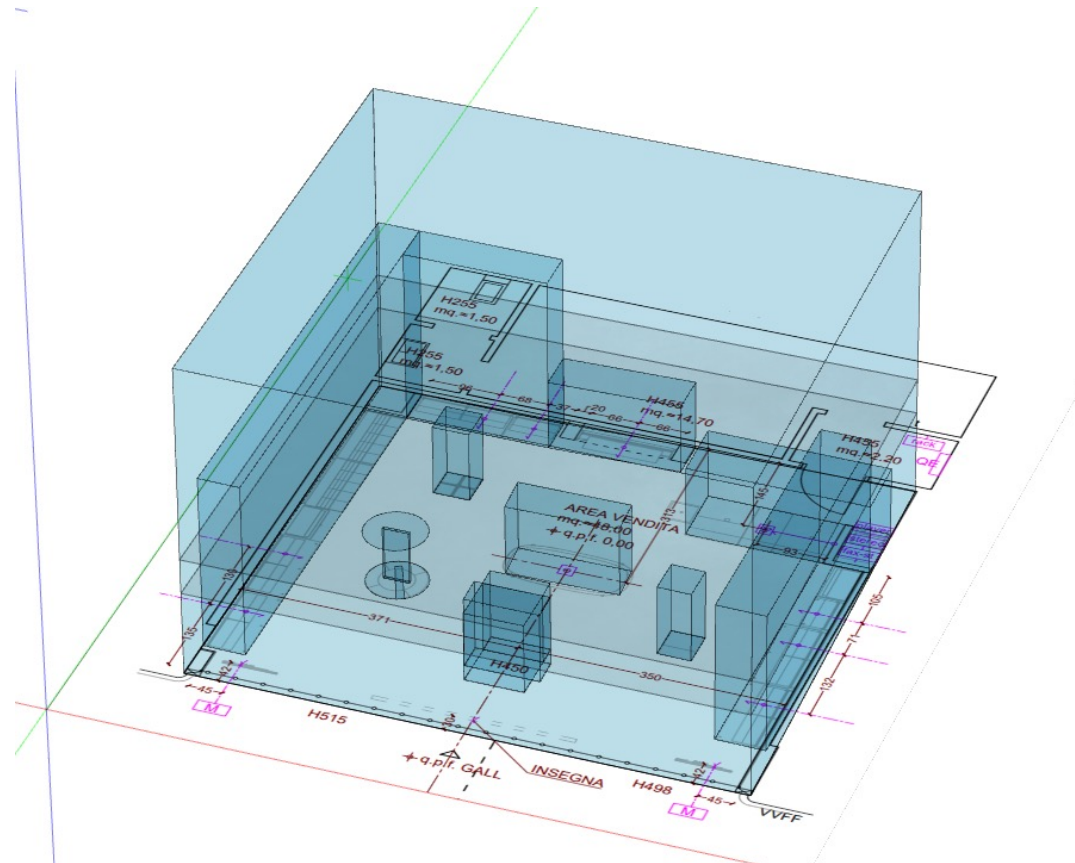
Key points

Ceiling height 450 cm

Speaker placement 340 cm

Interior 100-250 cm

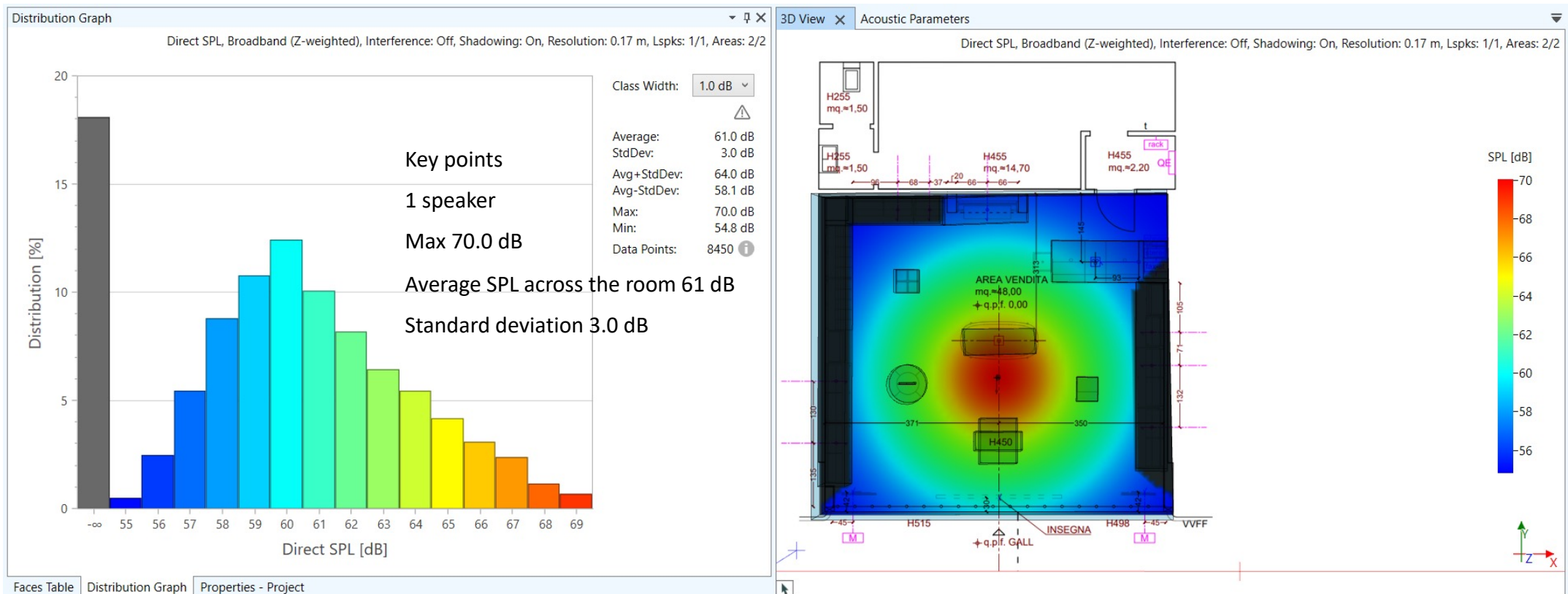
Listener ears 170 cm





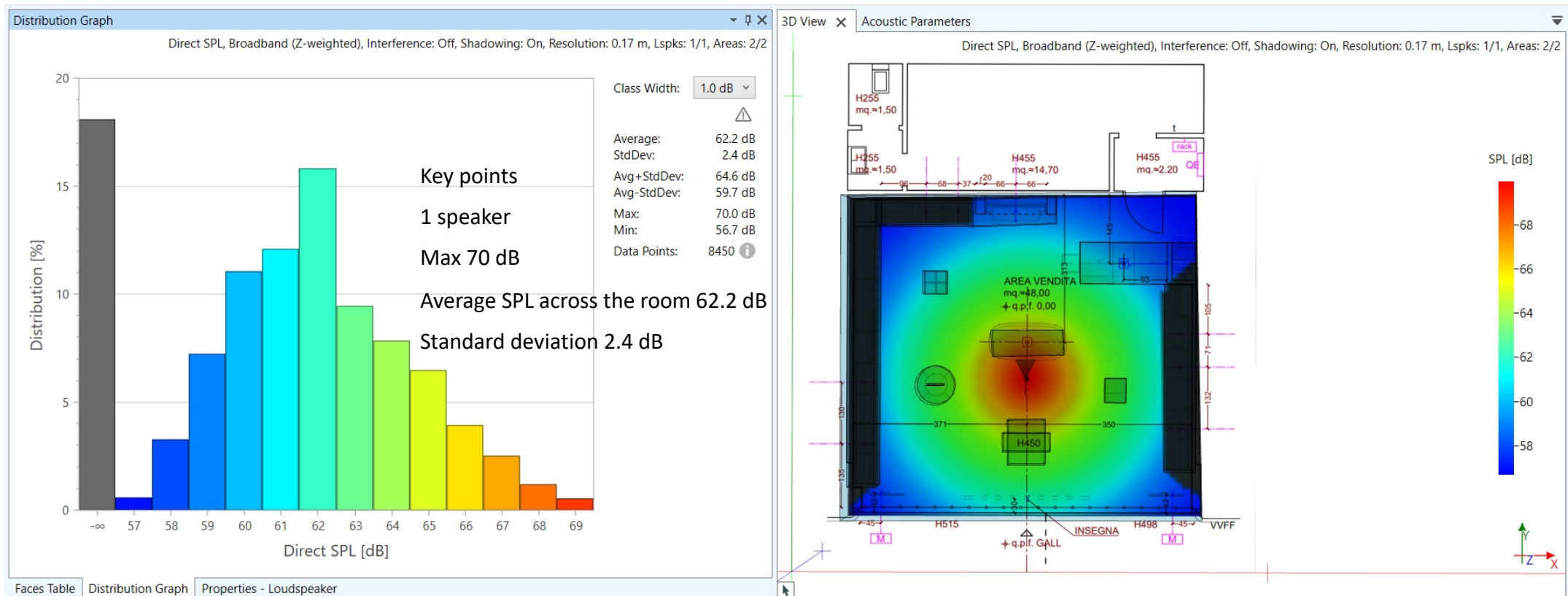
# Small store simulation

Simulation of existing store using NewTec



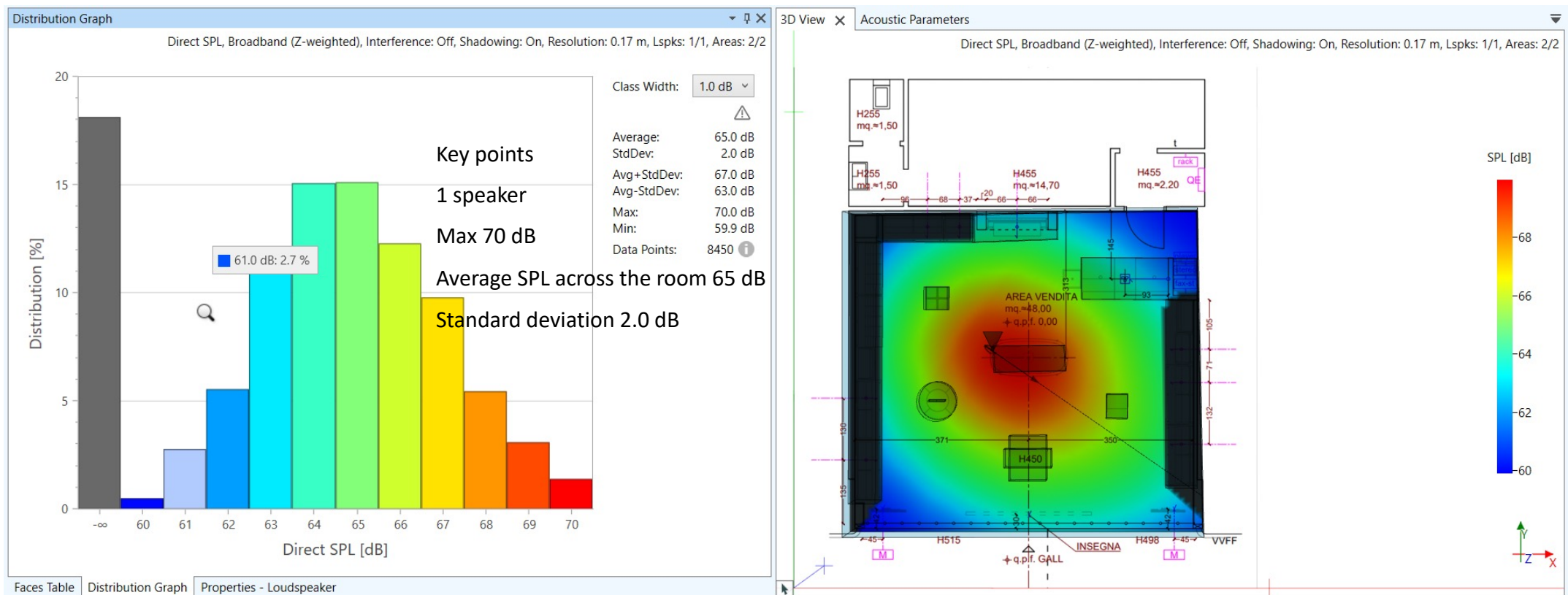
# Small store simulation

### Simulation of existing store using Spottune



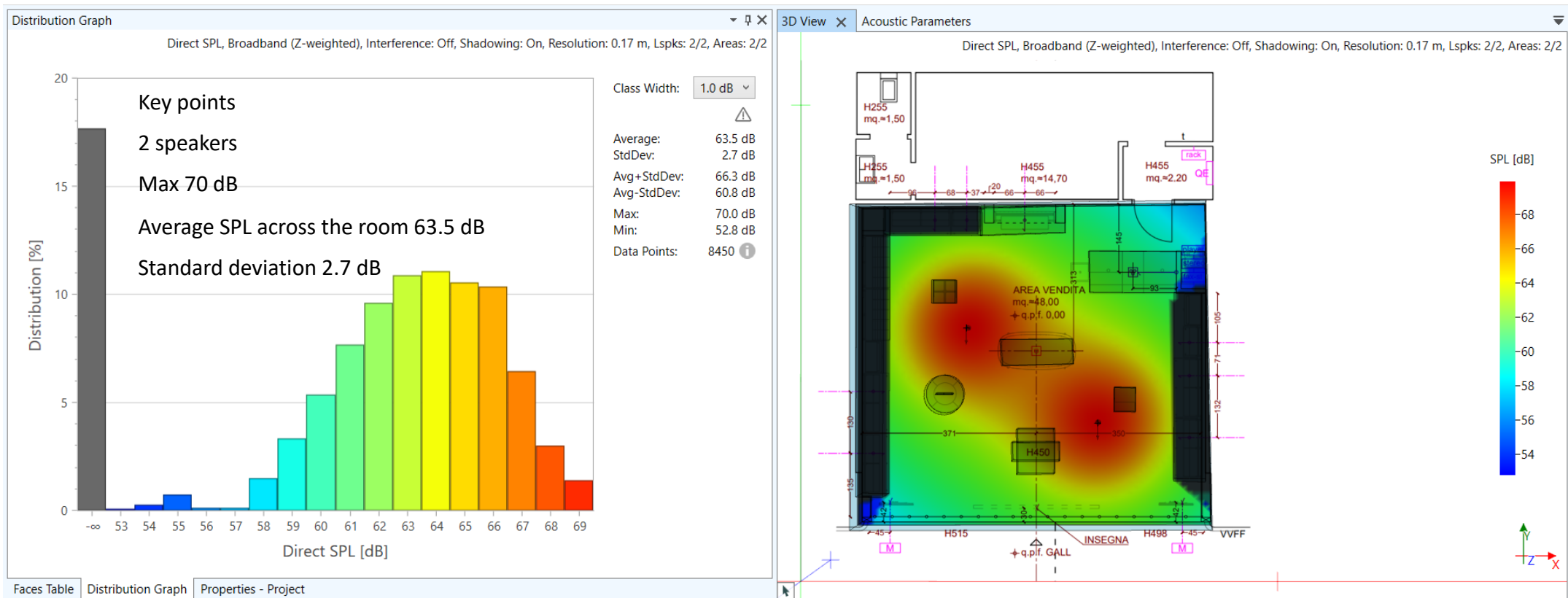
# Small store simulation

Simulation of existing store using Loud of Sweden



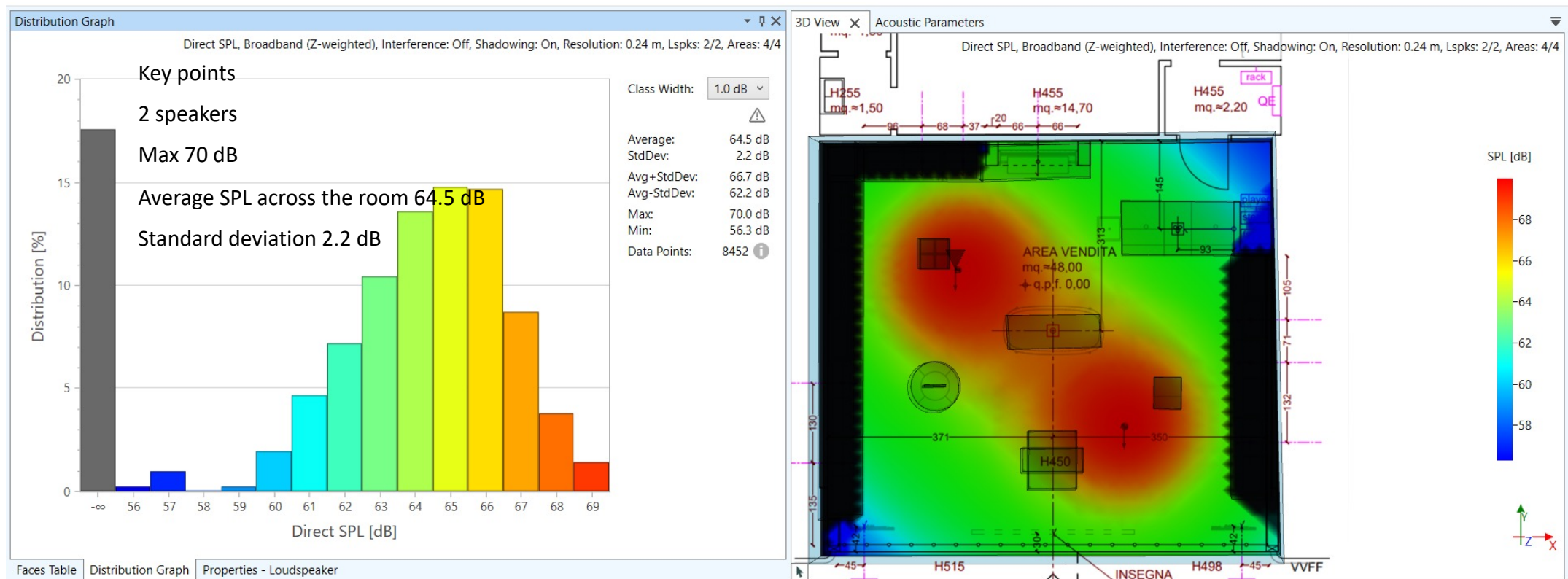
# Small store simulation

Simulation of existing store using NewTec



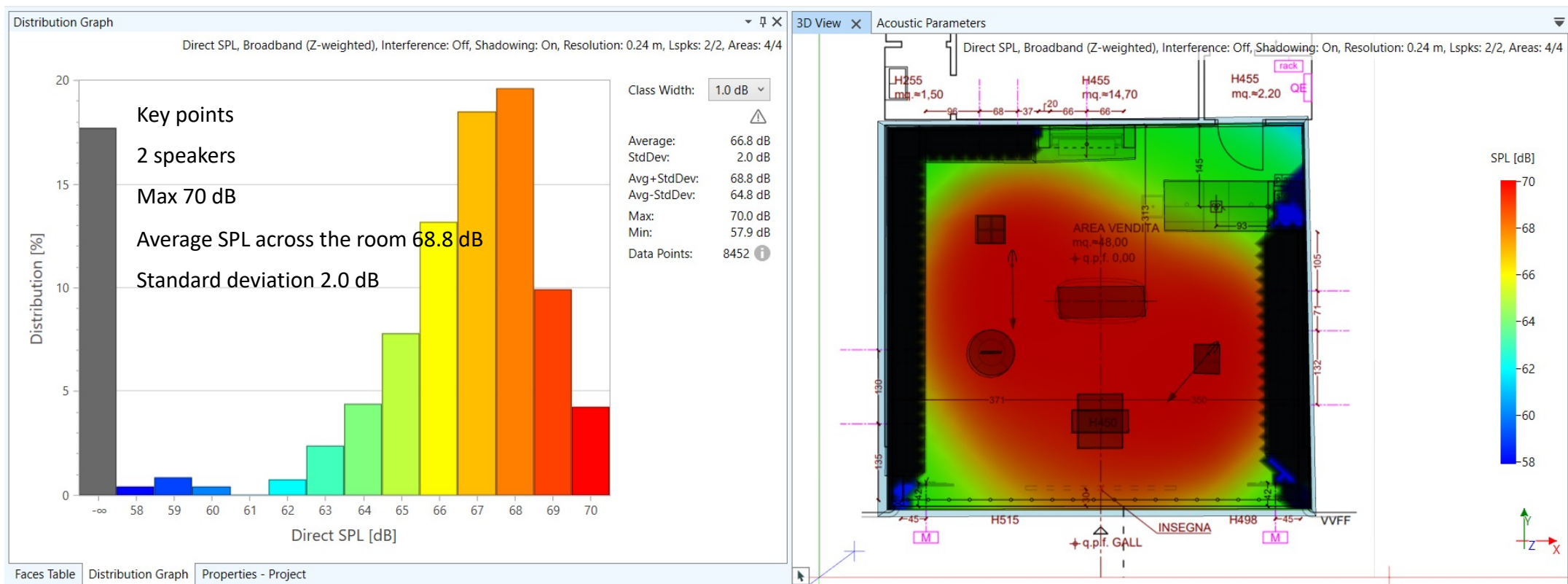
# Small store simulation

Simulation of existing store using Spottune Omni



# Small store simulation

Simulation of existing store using Loud of Sweden S2





# Big store simulation

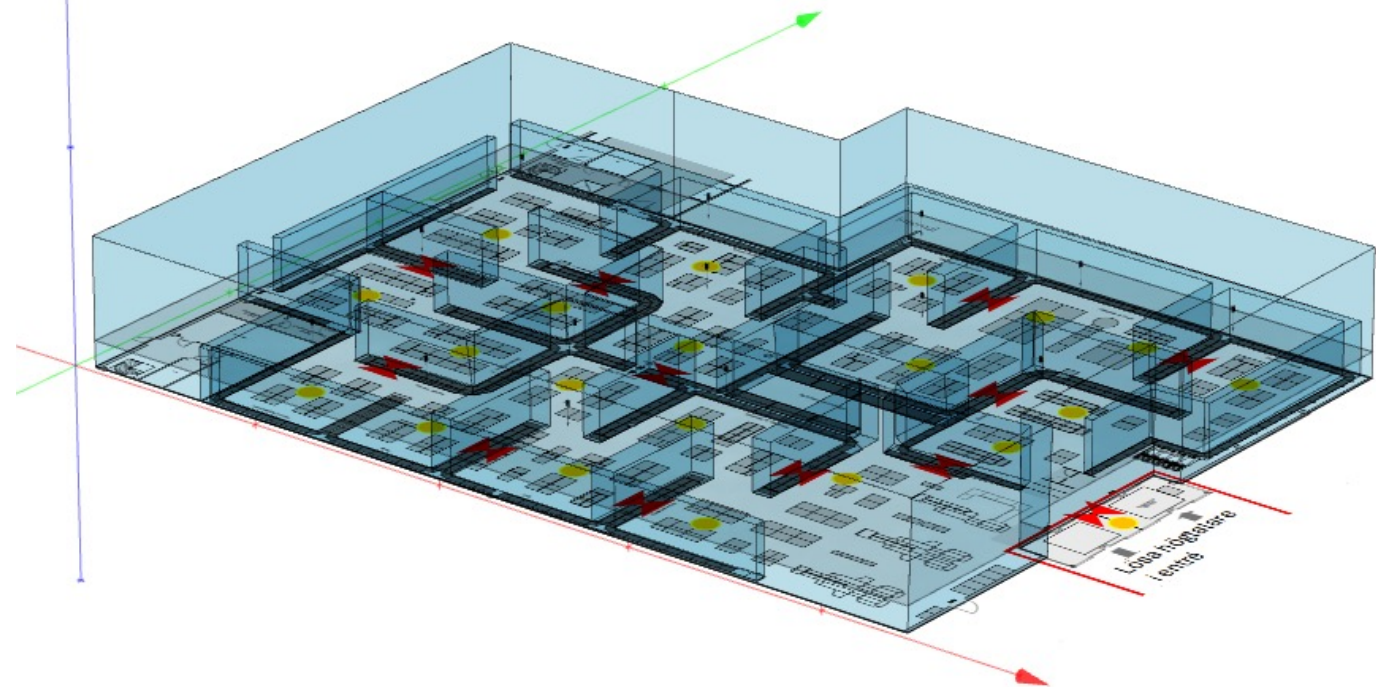
Simulation of existing 1300 sqm store

Key points

Ceiling height 6m

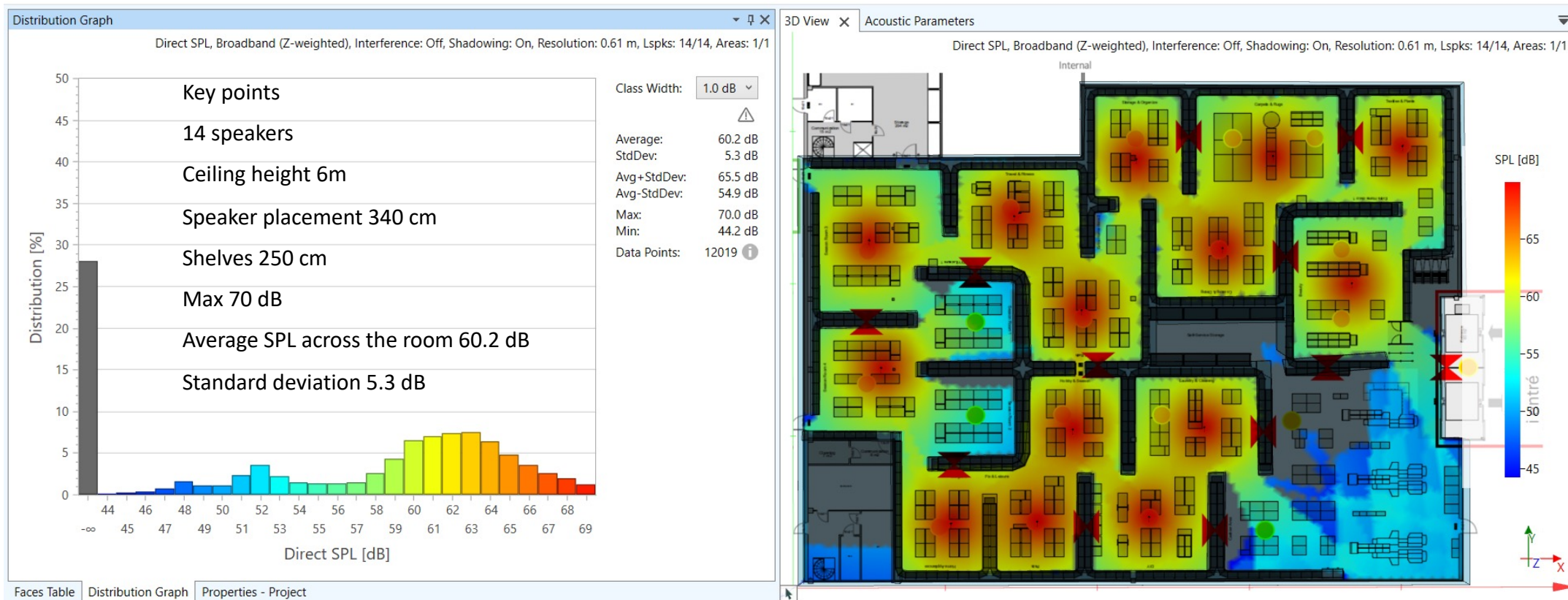
Speaker placement 340 cm

Shelves 250 cm



# Big store simulation

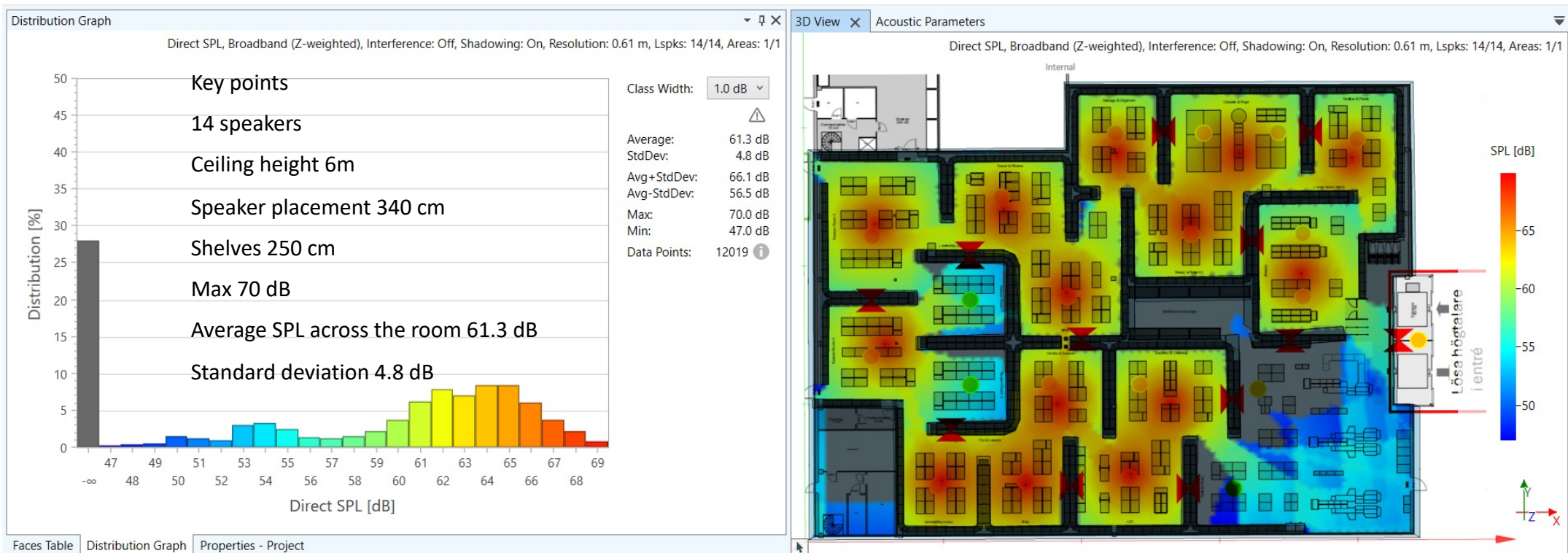
Simulation of existing store using NewTec





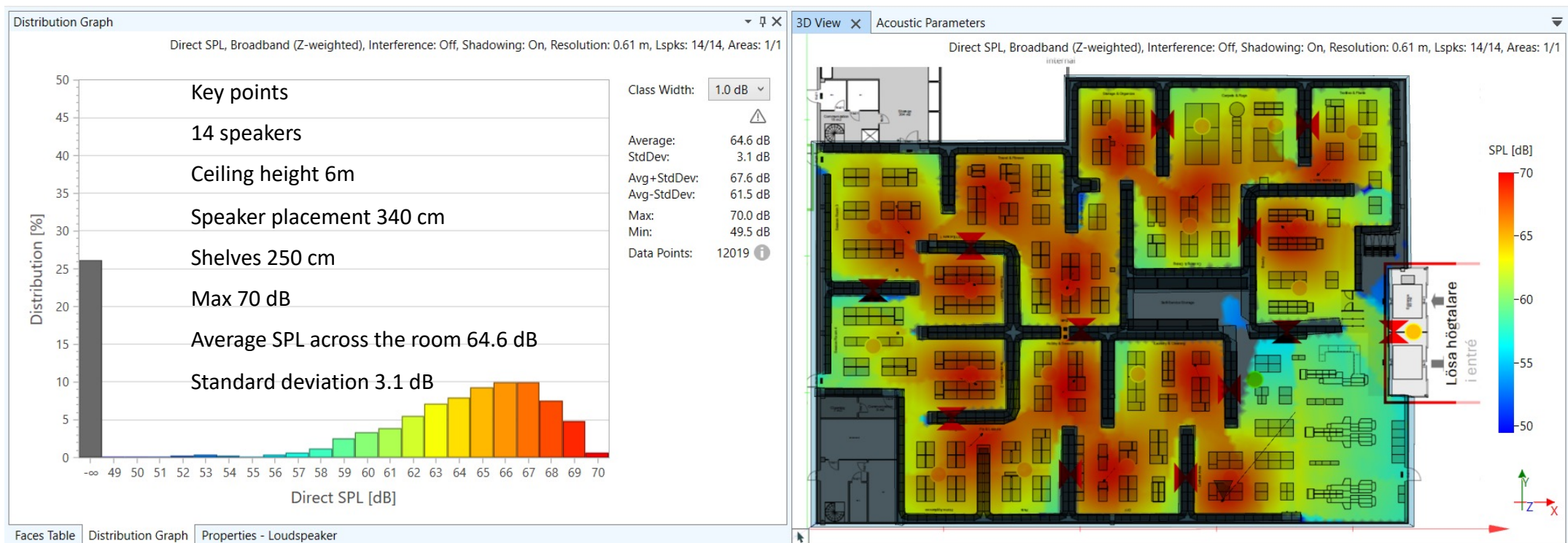
# Big store simulation

Simulation of existing store using Spottune



# Big store simulation

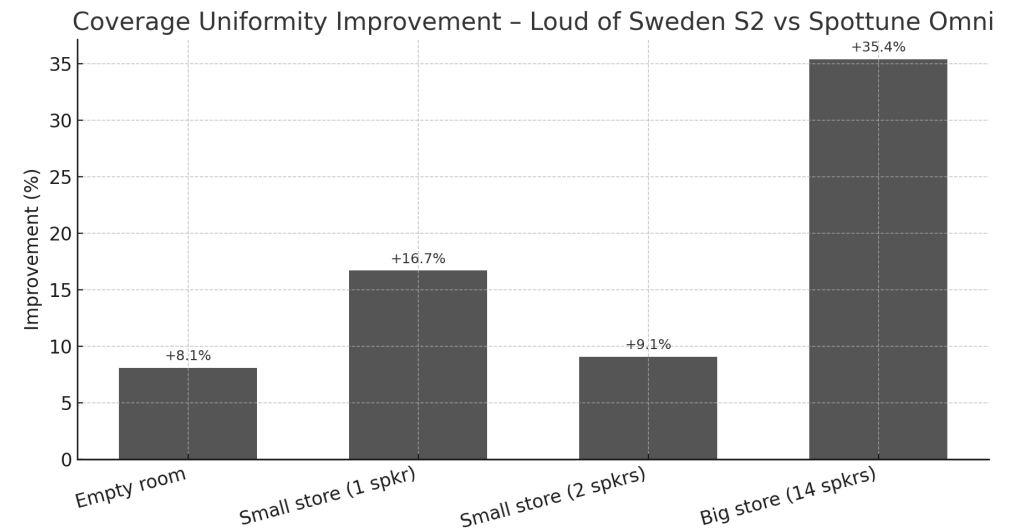
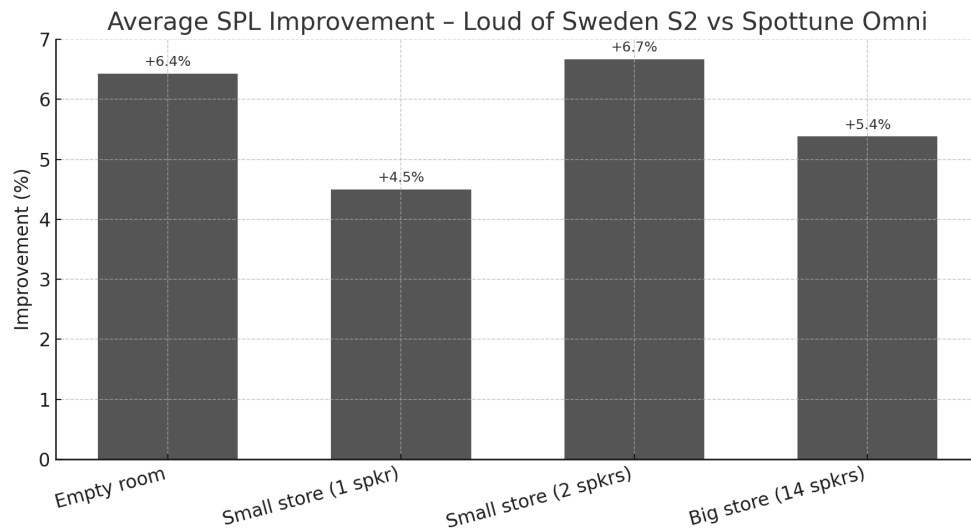
Simulation of existing store using Loud of Sweden S2



# Conclusion

Independent measurements by IFAA indicate that Loud of Sweden S2 provides higher coverage and more consistent sound dispersion than Spottune Omni in empty rooms, small shops, and large retail stores.

## Loud of Sweden S2 vs Spottune Omni



# Conclusion

Independent measurements by IFAA indicate that Loud of Sweden S2 provides higher coverage and more consistent sound dispersion than NewTec Cono Canto in empty rooms, small shops, and large retail stores.

## Loud of Sweden S2 vs NewTec Cono Canto

