



STUDIO
SOUND
SERVICE

Dolby Atmos Demo Room

Progettazione della sala Dolby Atmos per
Milk Audio Store con PMC Speakers

Who we are



Studio Sound Service is a well-established design and consultancy company that specialises in every aspect of acoustics and sound systems.

Founded in 1983

SSS has built an enviable reputation for the production of world class performance and recording spaces, from personal studios to large scale film, broadcast and corporate facilities.

By combining aesthetic and technical skills with decades for experience SSS strives to make every project successful, both sonically and visually.



Donato Masci
Physicist & Acoustic Designer - CEO



Cecilia Torracchi
Acoustic & Civil Engineer - Partner



Giulia Bondielli
Acoustic & Building Engineer – Partner



Elena Rossi
Acoustic & Building – Architectural Engineer



Niccolò Pizzamano
Architect & Acoustic Designer



Chantal Valdambrini
Communication Manager

ADR, Post & Broadcast. Cinema Mixing studios. Gaming Studios.

- Iyuno (ex SDI Media) Acoustic Designers (more than 15 countries)
- Cinecittà Studios (Postproduction Facility 2020 Renewal) @ Rome
- Dubbing Brothers (Italy, USA)
- 3Cycle postproduction Facility @ Rome
- FOX Dolby Atmos Studios @ Rome (IT), München (DE), London (UK)
- Netflix Facility @ Rome
- Disney Facility @ Warsaw (PO), Milan
- inHouse (Oscar winner Sorrentino) @ Roma

Music Studios (400+)

- Cicalto Recording – Francesco Ponticelli @ Arezzo
- Aemme Recording Studio – Salvatore Addeo @ Lecco
- D:POT Recording Arts @ Prato – Fabrizio Simoncioni
- Mulinetti Studio @ Genova – Alberto Parodi
Resolution Award 2015 Best Audio Facility
- The Garage @ Civitella v.d.C. (AR)
Resolution Award 2014 Best Audio Facility
- House of Glass @ Viareggio (LU) – Gianni Bini
Resolution Award 2013 Best Audio Facility
- SonicFab Studio @ Pioltello (MI)
- Waves Music @ Genova
- Marco Borsatti Studio @ Bologna
- Pop Fiction – Janie Price @ Firenze
- Sugarmusic @ Milano
- Experimental Studios @ Torino

Dolby Atmos Music Studios: 50+ rooms

Dolby Atmos Home Entertainment Studios: 80+ rooms

Dolby Atmos Theatrical Studios: 10+ Theatres

Personal Studios:

- Andrea Bocelli, Asaf Avidan, Biagio Antonacci, Daniele Silvestri, Damian Lazarus, Diego Calvetti, Enrico Cremonesi (Fiorello), Enrico Melozzi, Fabio Rovazzi, Federica Vincenti (Michele Placido), Gabry Ponte, Giorgia Angiuli, Irko (Kanye West sound engineer), Luca Agnelli, Marco Masini, Marco Messina (99 Posse), Merk & Kremont, Nari&Milani, Paolo Sandrini, Petra Magoni, Piero Pelù, Pino Iodice, Renato Zero, Vinai.

- Barys Arena (ice hockey) @ Astana, Kazakhstan
- Chorus Life (arena e cittadella) @ Bergamo
- Stadio Tardini @ Parma

- Hospitals: Nuovo Ruggi @ Salerno, Cesena

- George Lucas Home Theater, Italy
- Cinema Barberini @ Roma

- Chiesa Santa Maria Nuova (Arch. M. Botta) @ Terranuova B. (AR)
- Duomo di Siena new audio system

- Prada Auditorium and Conference Room via Orobia @ Milano
- Presentation room Ferrari HQ @ Maranello (MO)
- Siemens HQ @ Milano
- Heineken HQ @ Milano
- Leonardo Elicotteri @ Milano

- Four Seasons Hotel @ Firenze
- Portrait Milano – Ferragamo @ Milano
- Caffè dell'Oro – Ferragamo @ Firenze
- Hotel Veronesi (Calzedonia) @ Verona

- EVAC Dubai Metro
- EVAC Bahrain and Islamabad airport (THALES)
- EVAC Scuola di Magistratura Castelpulci @ Scandicci Firenze

- Teatro del Popolo @ Castelfiorentino (FI)
- Teatro del Popolo @ Colle di Val d'Elsa
- Teatro del Popolo @ Poggibonsi
- Teatro il Ferruccio @ Empoli
- Teatro Marconi @ Pistoia
- Teatro Nazionale @ Firenze

Studio Sound Service
is the only Italian
Dolby CSP.

We can provide
design,
commissioning and
consultancy services
worldwide with
Dolby's certified
quality standards.



Certified service partner



What is Dolby Atmos?



Encompassing
Sound

Precise
Placement

Lifelike
Nuance

Breathtaking
Sound
Quality

24 bit
48/96 KHz

Objects + Beds

Mentre l'uso di oggetti audio fornisce il controllo desiderato per effetti discreti, altri aspetti della colonna sonora di un film funzionano in modo efficace in un ambiente basato sui canali.

- A. i “beds” sono submix o stems basati sui canali (5.1, 7.1 o 9.1)
- B. gli effetti ambientali e i riverberi traggono effettivamente vantaggio dall'essere inviati a matrici di altoparlanti -> canali invece che oggetti.

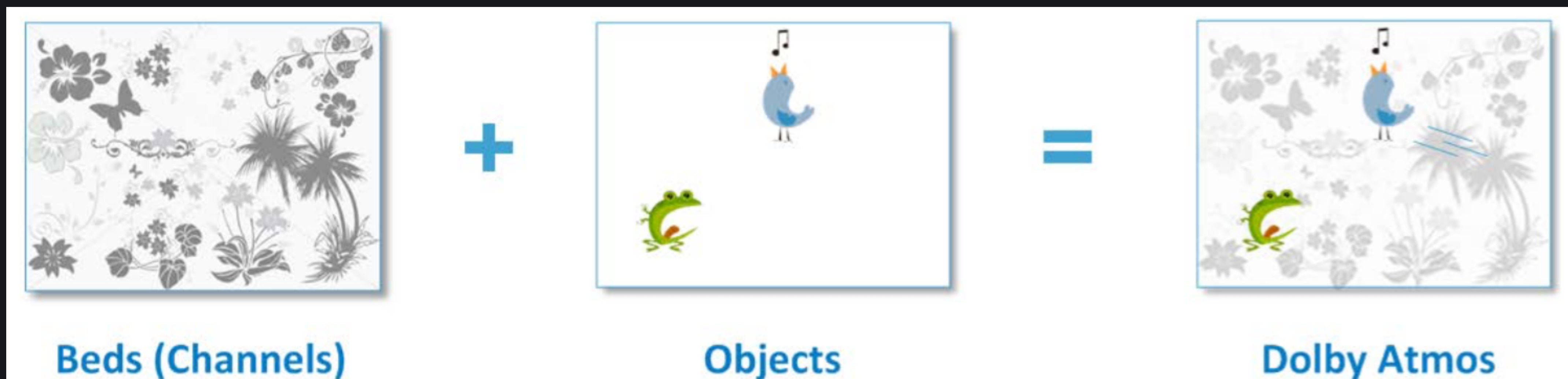


Figure 2.2 Object and Bed Combination

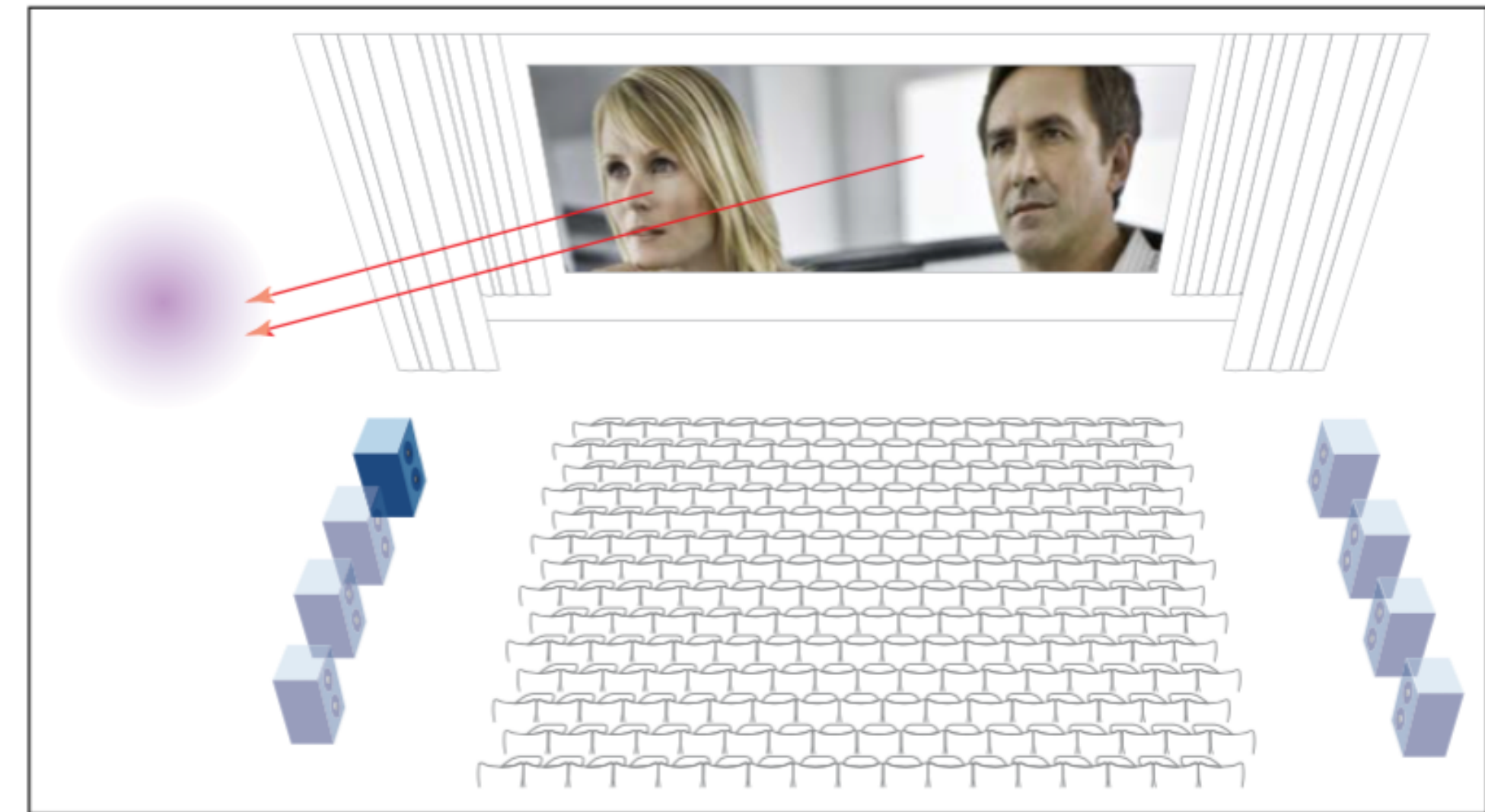
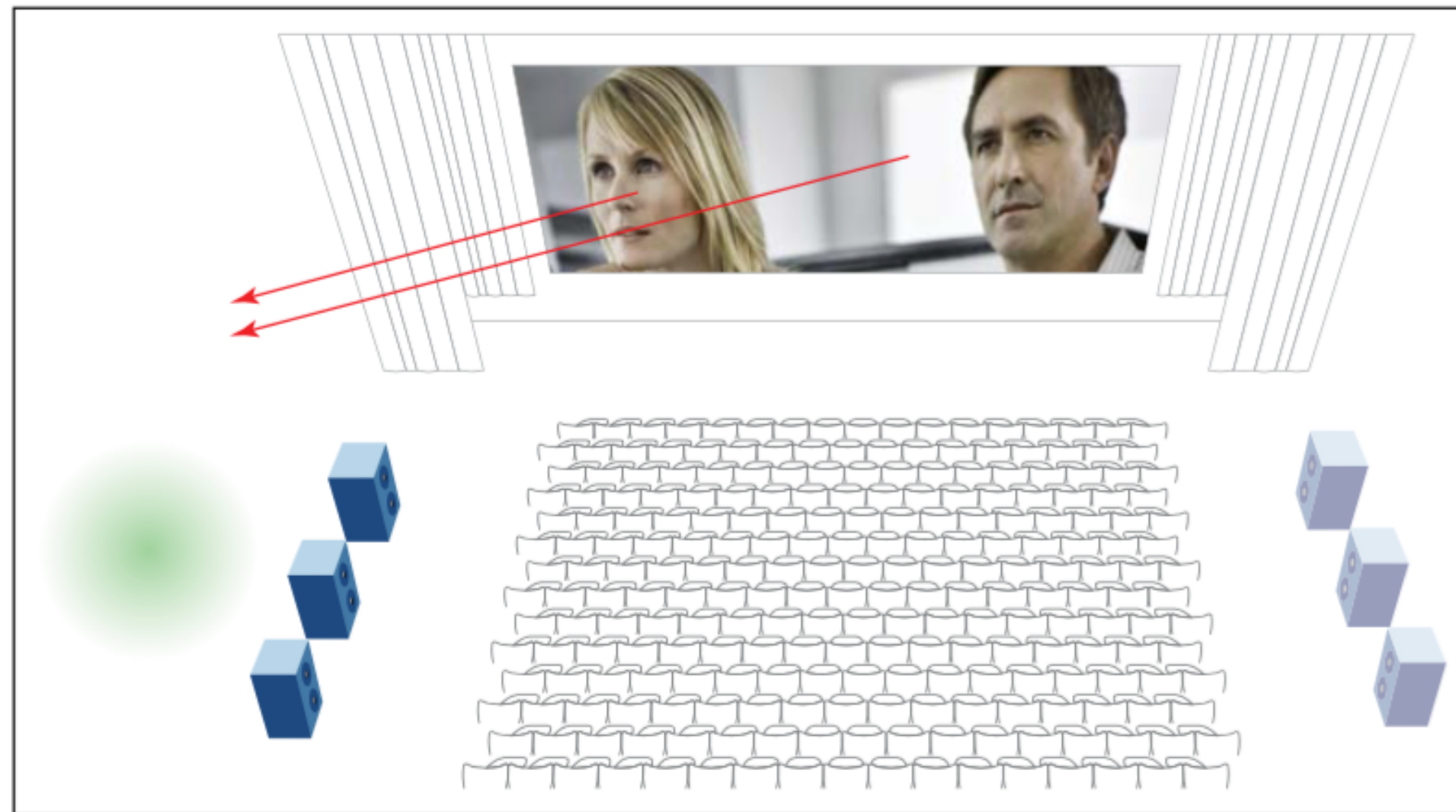
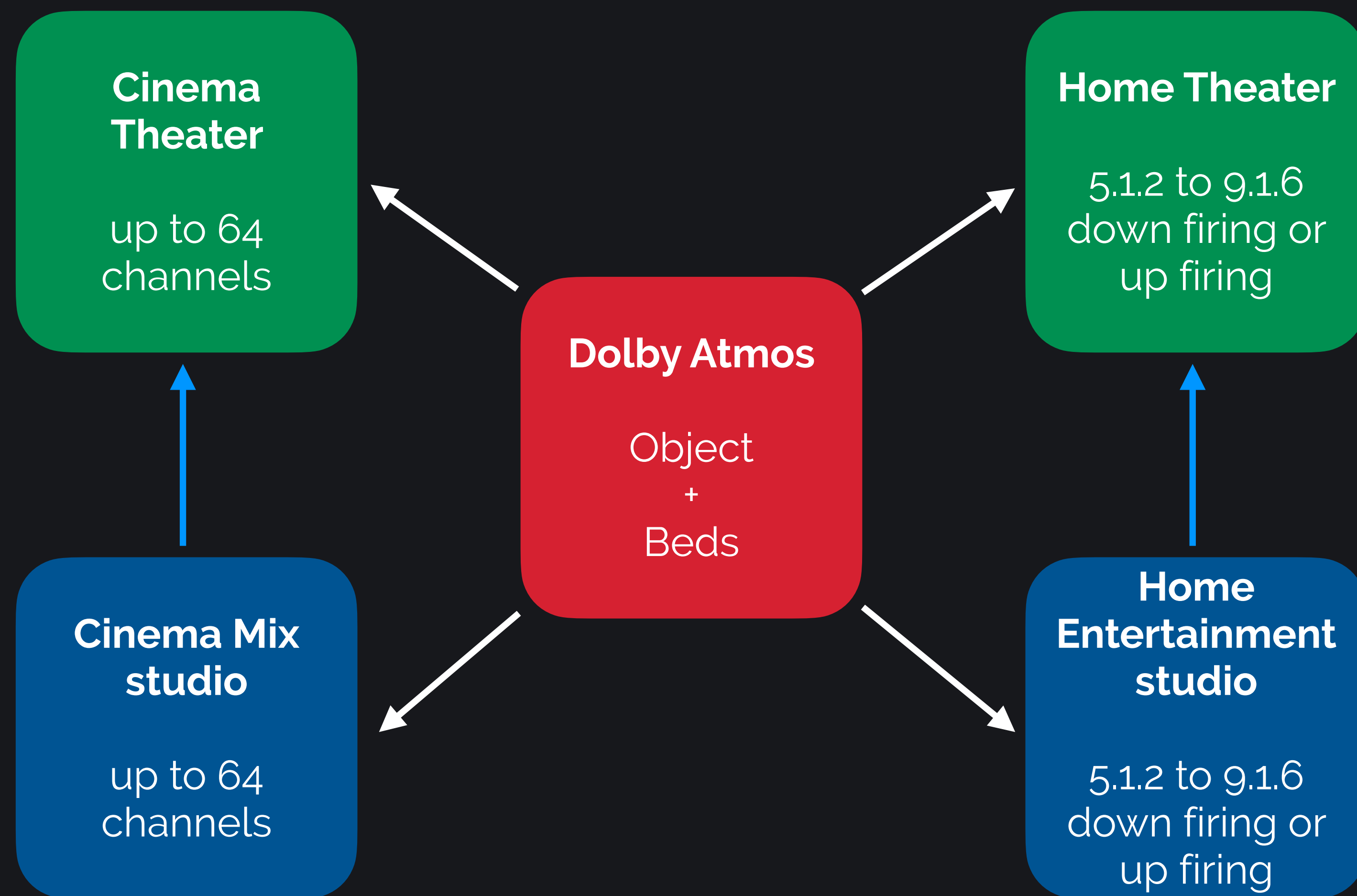


Figure 2.1 Benefits of Increased Surround Resolution for Audio/Visual Coherence

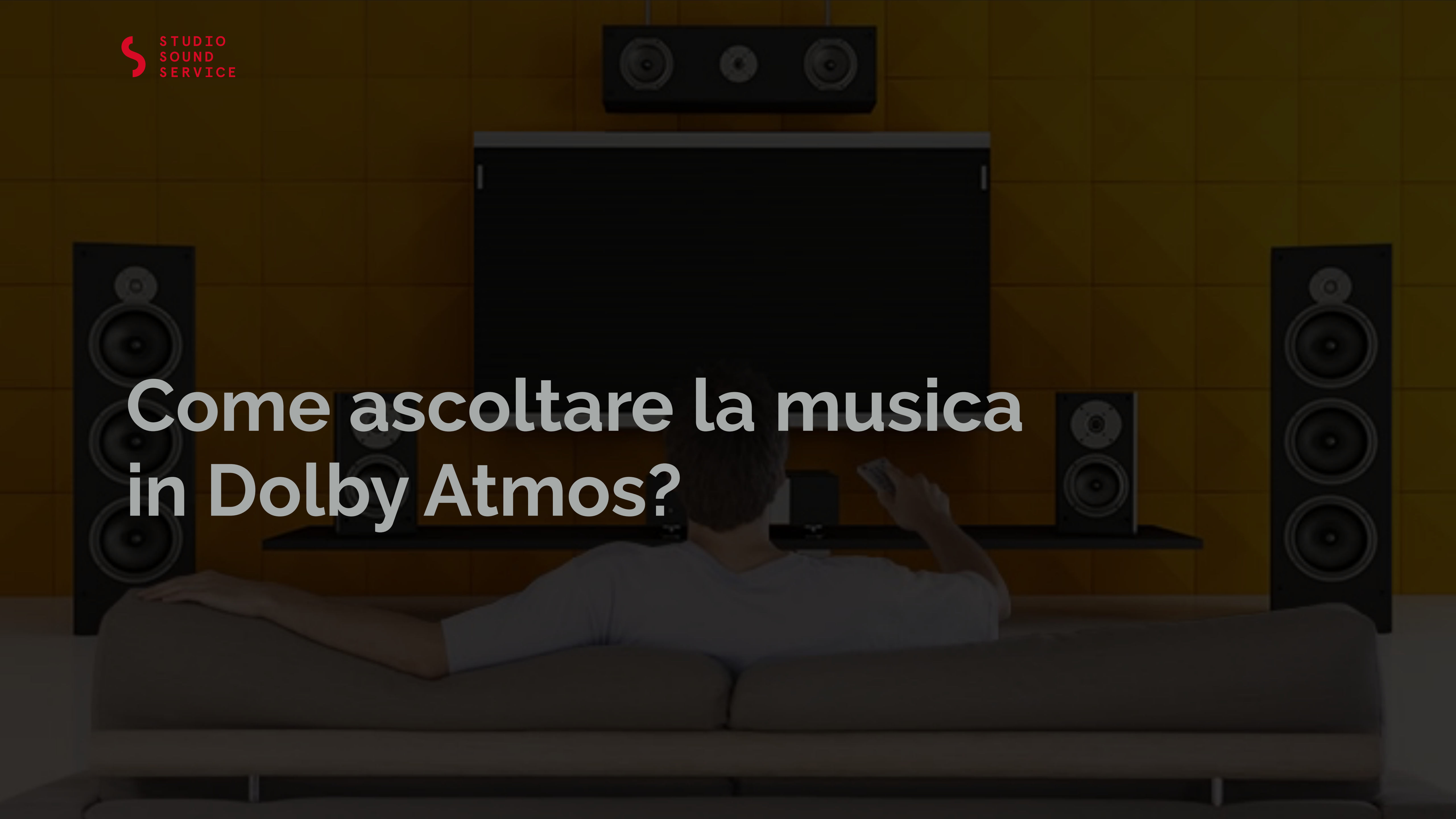
Audio Objects:
elementi sonori (singoli o gruppi) che
condividono la stessa posizione fisica
nell'auditorium

- A. Possono essere statici o in movimento.
- B. Controllati da metadati che dettagliano la posizione del suono in un dato momento.
- C. Quando gli oggetti vengono monitorati o riprodotti in una sala, vengono renderizzati in base ai metadati posizionali utilizzando gli altoparlanti presenti, anziché essere necessariamente emessi su un canale fisico.



- A. Different speaker locations can differ in effectiveness depending on the theatre design.
- B. Dolby Atmos is adaptable and able to playback accurately in a variety of auditoria *(highly flexible configurations)*.
- C. The speakers layout remains compatible with previous cinema systems.
- D. In contrast to using all 64 output channels available, the Dolby Atmos format can be accurately rendered in the cinema to other speaker configurations such as 7.1, allowing the format to be used in existing theatres with no change to amplifiers or speakers.

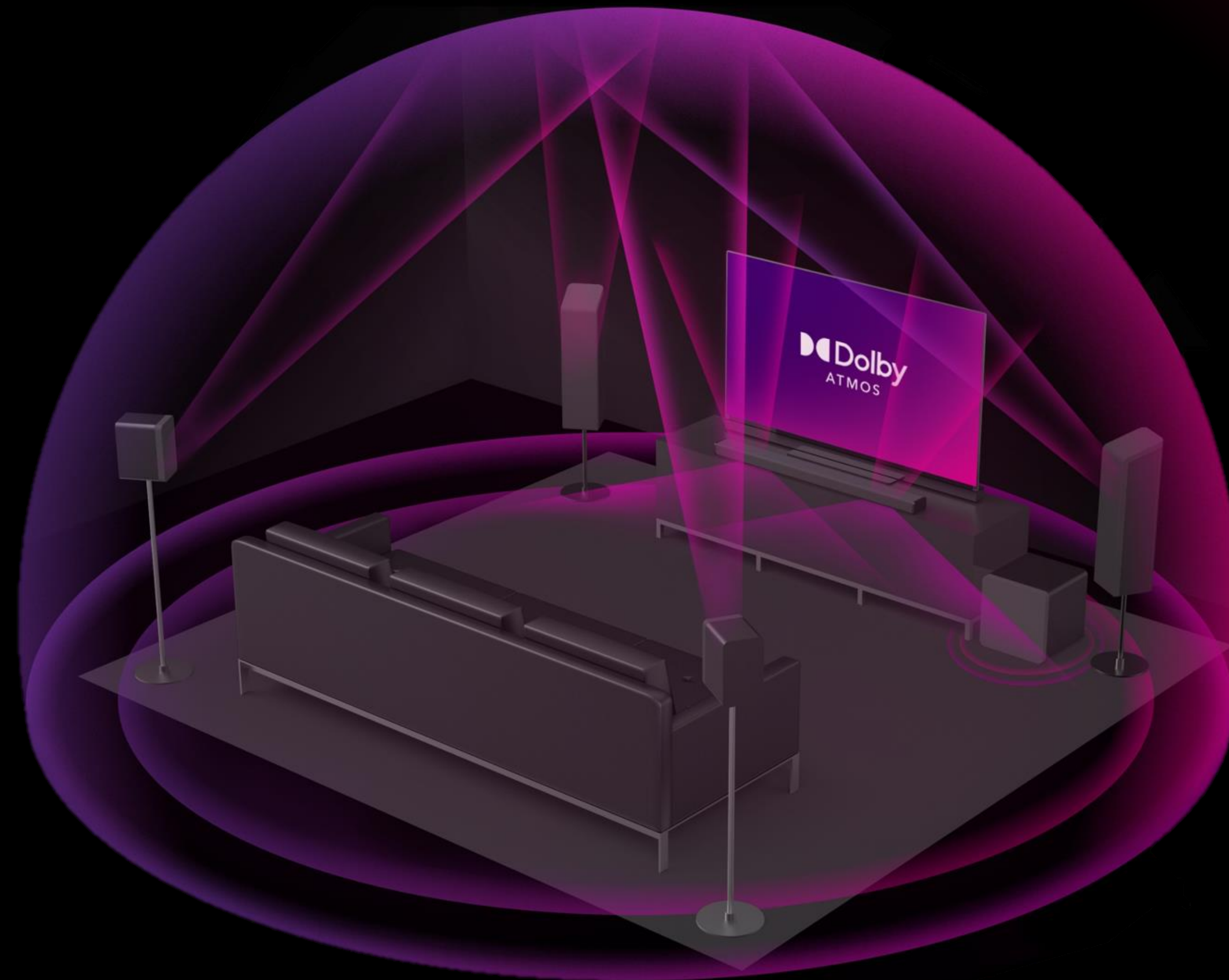
Come ascoltare la musica in Dolby Atmos?



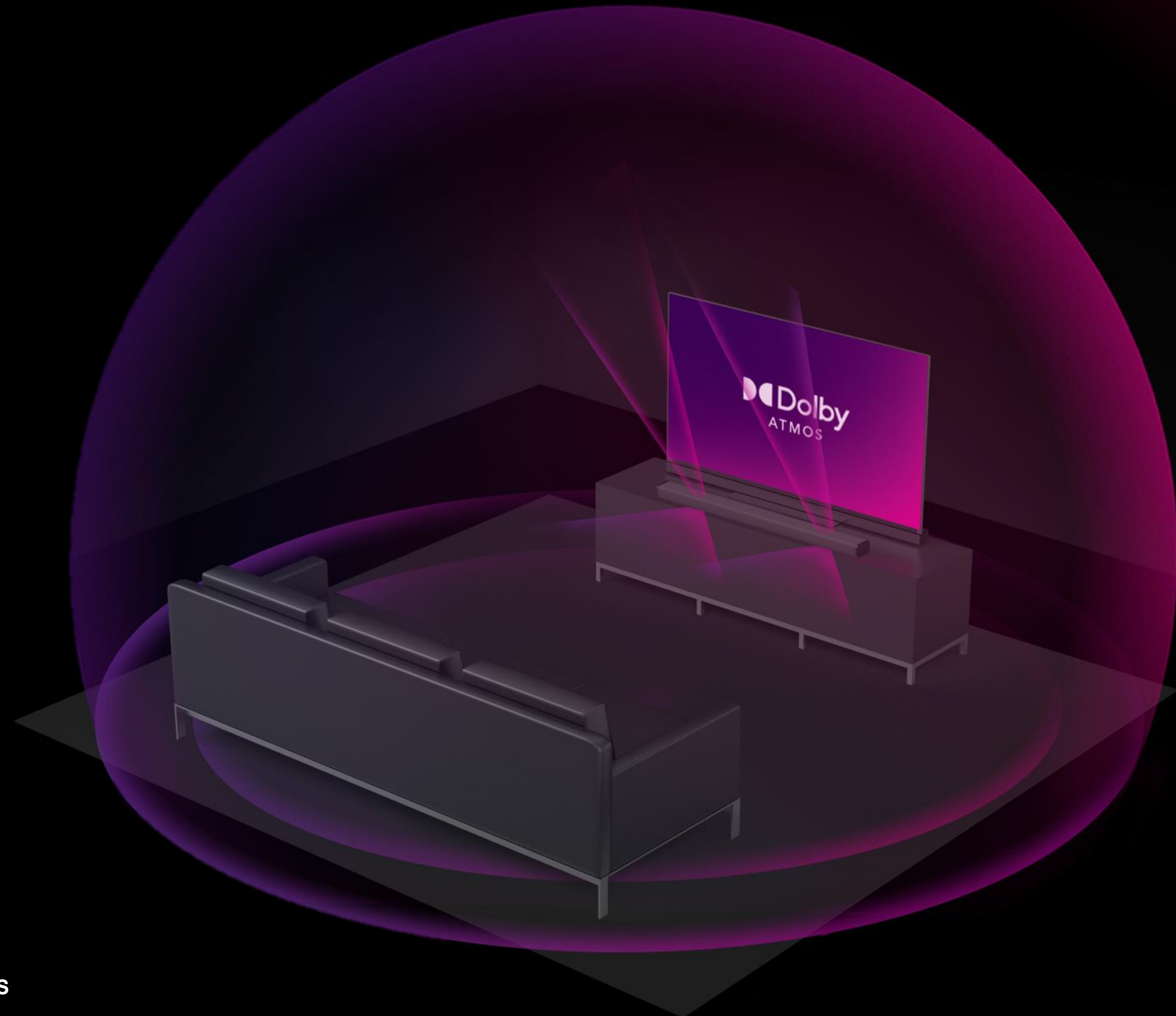
Dolby Atmos at Home



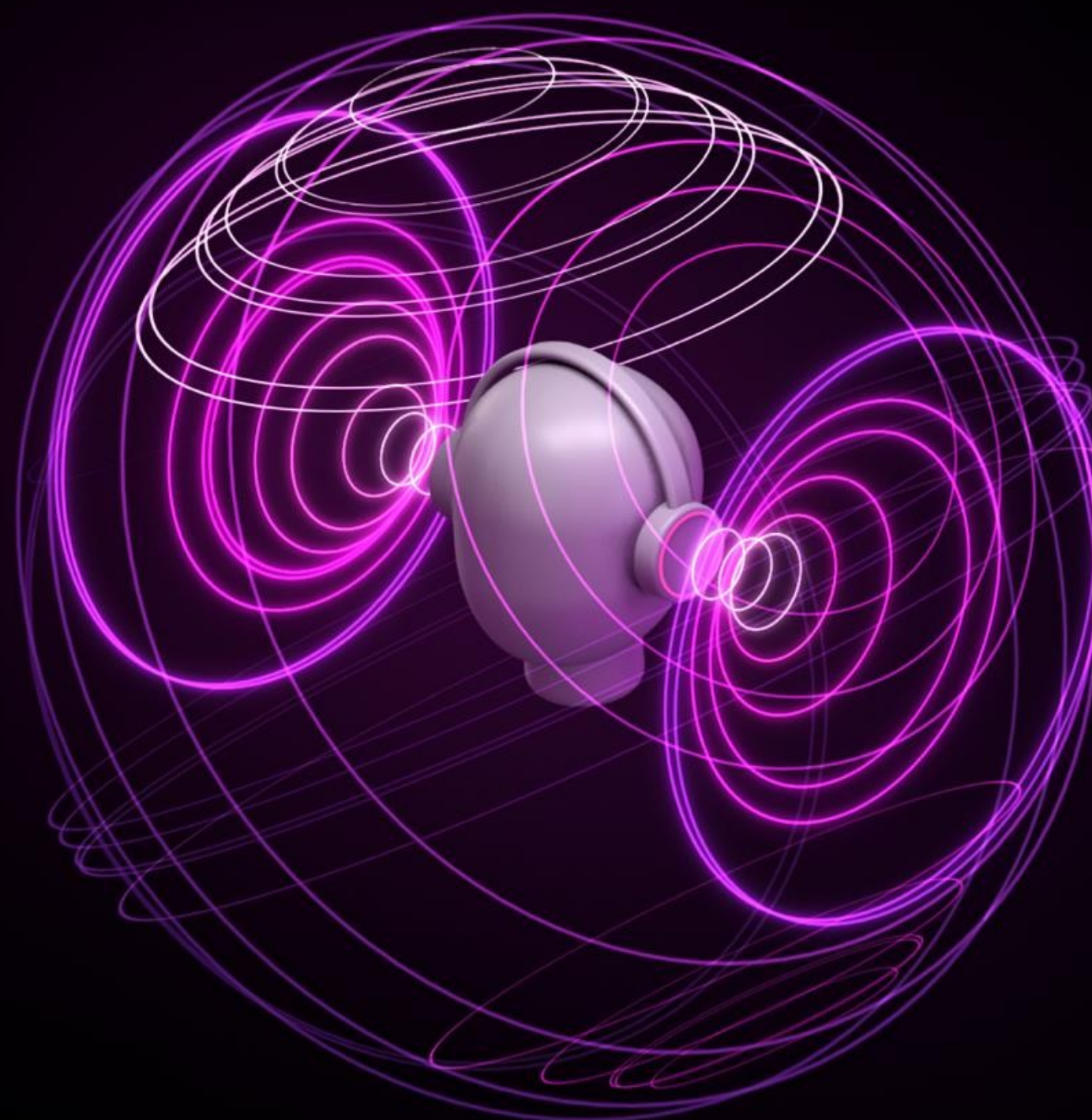
Dolby Atmos at Home



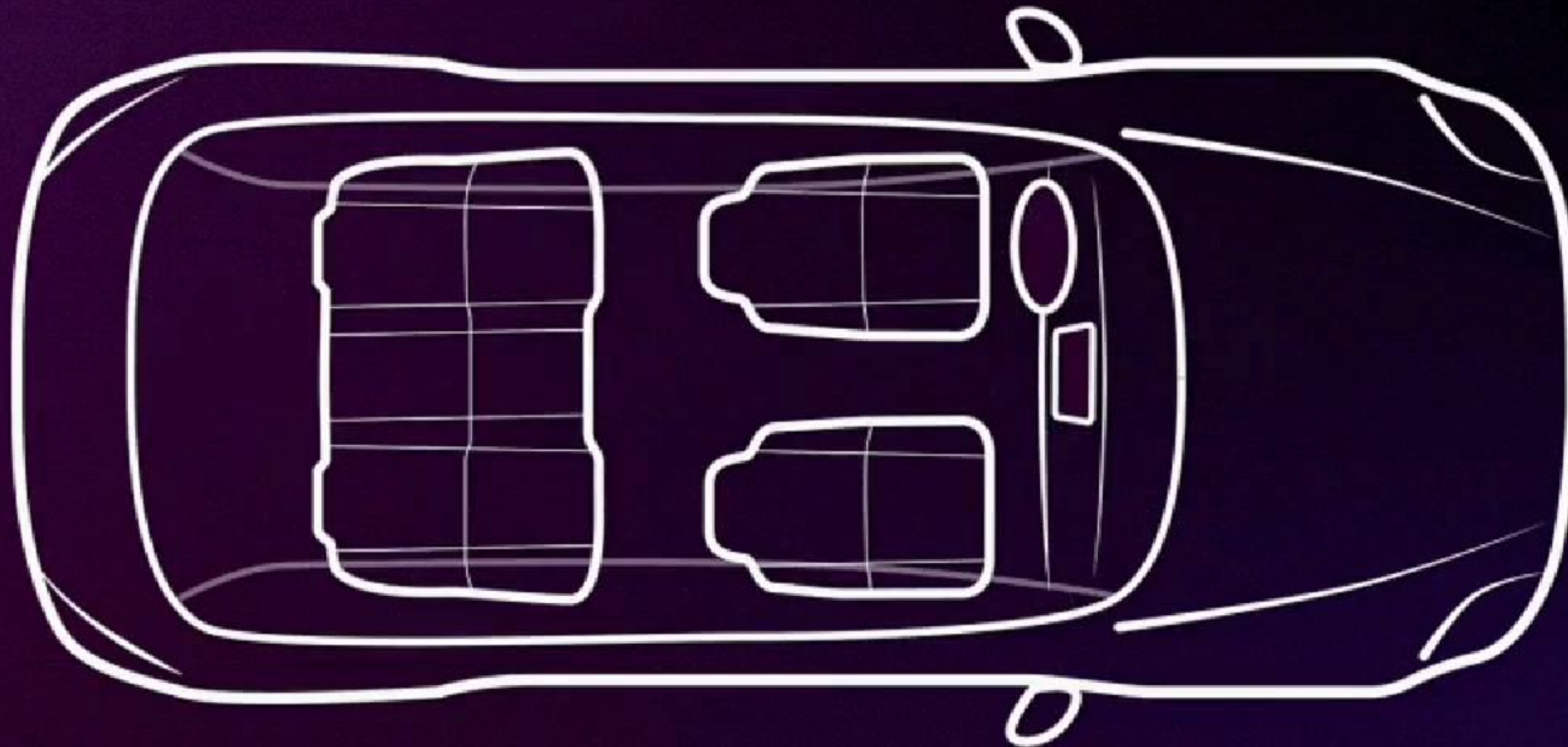
Dolby Atmos at Home



Dolby Atmos for Headphones



...and in Cars



Dolby Atmos Content Categories

Cinema



Home Entertainment



Live-Broadcast



Games



Music



Podcast

Dolby Atmos Music

92% of Billboard's Top 100 artists
have been released in Dolby Atmos



Taylor Swift



New Jeans



SZA



Doja Cat



Bad Bunny



The Weeknd



Rihanna



Post Malone



Miley Cyrus



Harry Styles

84% of Billboard's Hot 100 songs
have been released in Dolby
Atmos



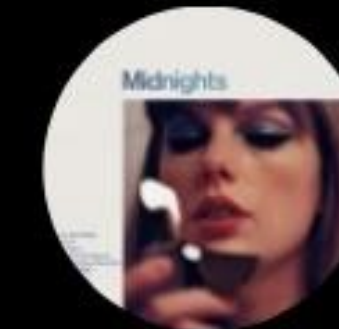
Morgan Wallen
Last Night



Miley Cyrus
Flowers



SZA
Kill Bill



Taylor Swift
Anti-Hero



Metro Boomin
Creepin'



Rema
Calm Down



The Weeknd
Die For You



Luke Combs
Fast Car

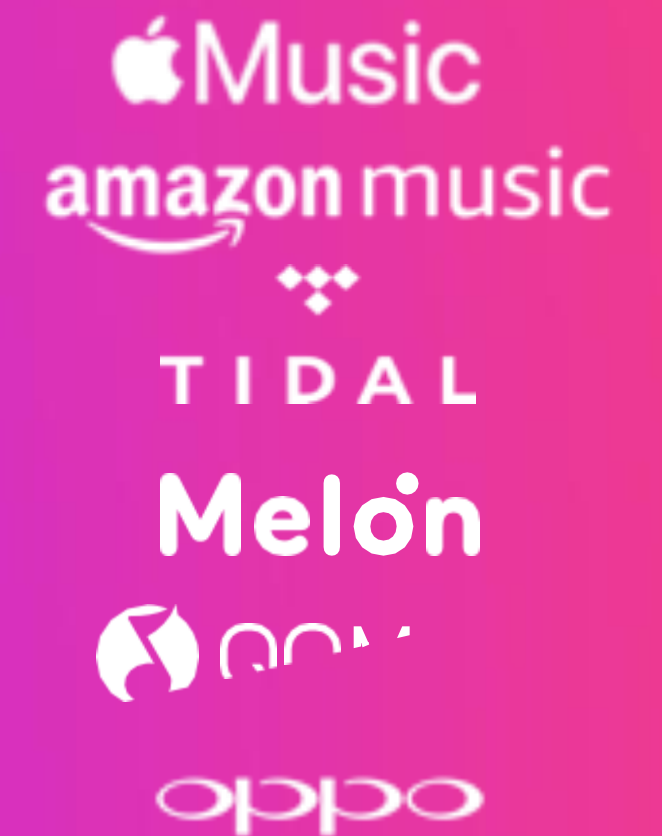
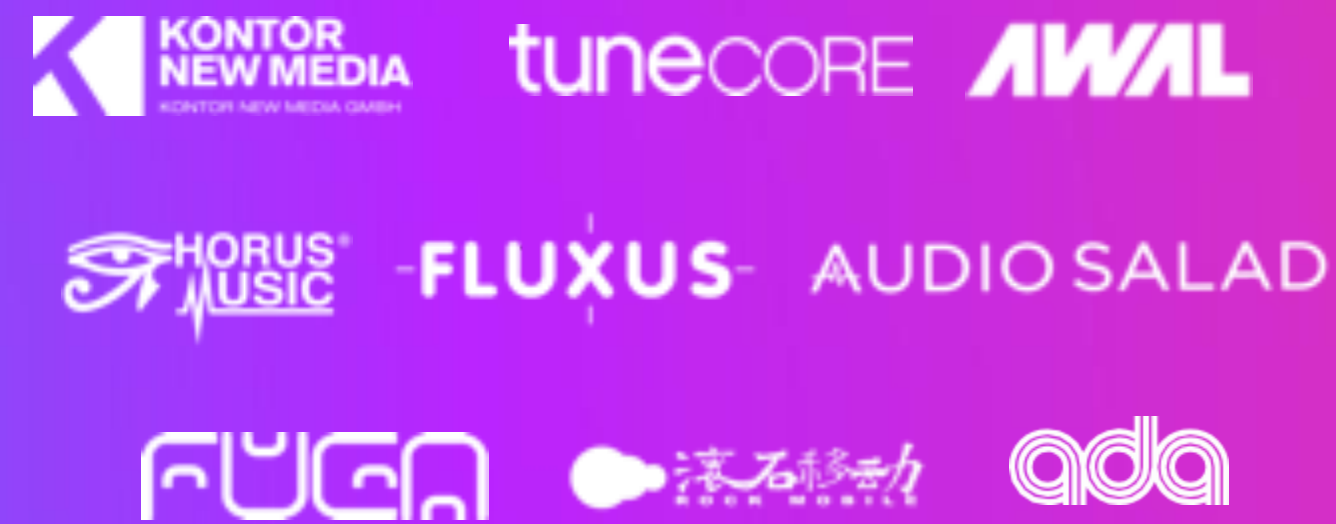


SZA
Snooze

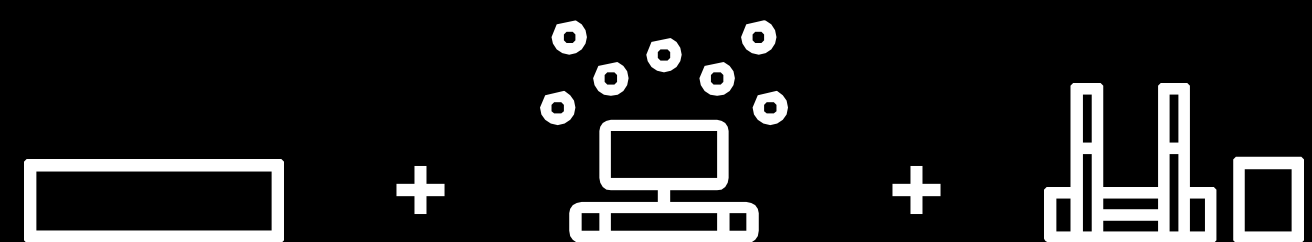


David Guetta
I'm Good

2024 Dolby Atmos Music content ecosystem



Over 3B Dolby Atmos products are in the market



Home
Sound Bar, TV, Gaming, Home Theater, DMA



PC



Mobile



Smart Speaker



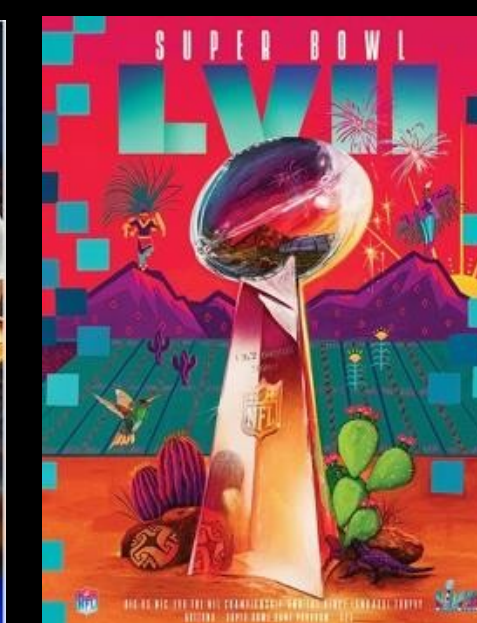
Automotive

Welcome to the next frontier of automotive audio. With Dolby Atmos Music, we're transforming how music is experienced in cars, offering a richer, more immersive soundscape that envelops you in every note.

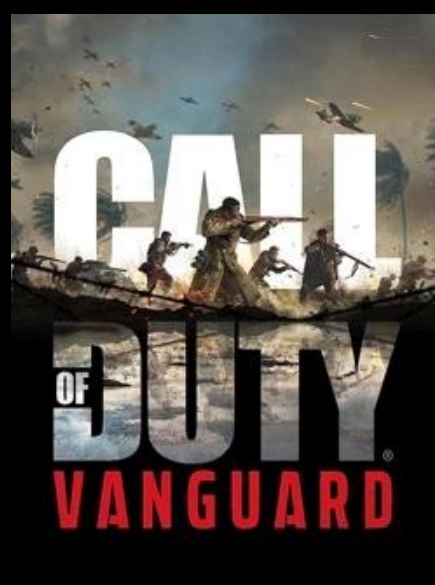


Dolby enhances content across myriad categories and genres, with more emerging all the time

TV + 17,300 | + 7,000 Movies + 3,000 | + 1,900

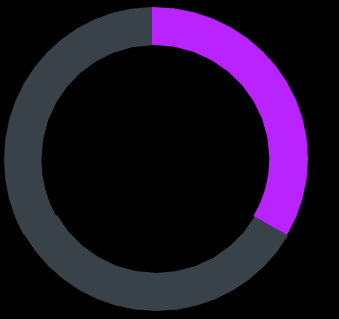


Game + 160 | + 100 Music



■ Dolby Vision ■ Dolby Atmos

... and is distributed by leading global and regional streaming services



Distribute





Il programma
Dolby Atmos Music
È una certificazione?

NO!!!



Il programma

Dolby Atmos Music

prevede solo un “listing”, ovvero se si seguono tutte le linee guida e il commissioning si può essere facoltativamente iscritti alla lista ufficiale degli studi Dolby



Dolby Atmos Music Technical Guidelines

Dolby Atmos Music Studio

Requirement generali

1. Dimensioni studio
2. Caratteristiche acustiche dello studio
3. Sistema audio (7.1.4 +)
(con angolazioni precise)
4. SPL impianto audio > 85 dB(C)
(+20 dB headroom!!!)
5. Dolby software authoring tools
DAR
6. Sistema di Calibrazione per commissioning

per assicurare una compatibilit  d'ascolto fra studi diversi, e' opportuno calibrare gli studio Atmos Music seguendo un approccio specifico in termini di SPL e curva di risposta – che dar  comunque flessibilit  operativa.

DARDT Dolby Atmos Room Design Tool

È il file excel con macro sviluppato da Dolby per configurare una sala in Dolby Atmos, ce ne sono di diversi tipi (theatrical Home Entertainment e Music)

- A. Configurazione layout monitor, dimensioni, angoli e delay rappresenta velocemente il layout
- B. Configurazione e verifica SPL
- C. Configurazione equipment
- D. Analisi e linea guida per il tempo di riverberazione ottimale
- E. Strumento di analisi acustica (room modes, boundary induced cancellation Analysis, Room dimensions ratio analysis)

Dolby Atmos Studio | Music - Advanced Features

Units

metric

Working Space Dimensions (m)

Length

5

Width

4,07

Height

2,85

Mix Position

1,96

DARDT Help Guides

- click cell and scroll list to see guides -

Monitoring Level

85 dB

Speaker Layout

7.1.4

Center

Left/Right

LFE

Subwoofers clustered

Left/Right Surround

Left/Right Rear Surround

Left/Right Top Front

Left/Right Top Rear

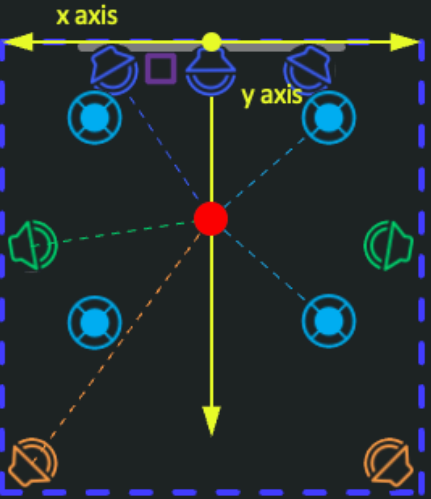
BM Sub

2 units

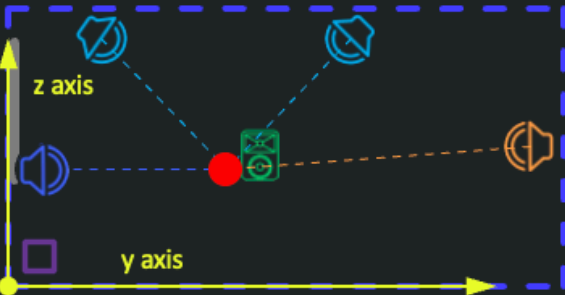
Speaker Positions							Speaker Model						Amplifier Model				
Switch to x-y-z entry				Reset		To select speakers, open dropdown lists below								Reset			
x (m) Distance left/right from center line	y (m) Distance from front of working space	z (m) Height from floor	Angles from Mix Position to Speakers			Manufacturer Filtering		Watts	Sensitivity	Active Speaker	Max Peak SPL Required	Headroom above Target SPL	Amplifier Model	Watts available	Amplifier Headroom	Delay	
			Horizontal	Up Forwards/ Backwards	Up Left/ Right		- All -									Visualize	
							Uncheck below checkboxes for passive speakers										
0,00	0,30	1,20	0°	0°		☒	PMC 6-2					118,0 dB	4,6 dB			4,6 ms	
0,96	0,30	1,20	30°	0°		☒	PMC 6-2					118,0 dB	3,3 dB			3,9 ms	
0,48	0,30	0,30				☒	PMC 8-2 SUB					124,0 dB	3,2 dB			3,8 ms	
1,74	2,27	1,35	100°		5°	☐	PMC Ci65	150 W	84,0 dB	4	125 W	0,8 dB		individual		4,3 ms	
1,74	4,70	1,44	148°	5°		☐	PMC Ci65	150 W	84,0 dB	4	422 W	-4,5 dB		individual		0,0 ms	
1,13	0,83	2,55	45°	50°	50°	☐	PMC Ci45	110 W	84,0 dB	8	175 W	-2,0 dB		individual		3,4 ms	
1,13	3,09	2,55	135°	50°	50°	☐	PMC Ci45	110 W	84,0 dB	8	175 W	-2,0 dB		individual		3,4 ms	

Resulting Distances between Speakers

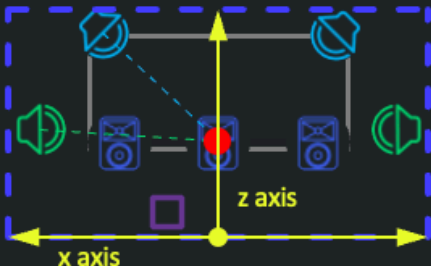
C to Lrs/Rrs line distance (baffle to baffle) 4,4 m
Ls to Rs distance (baffle to baffle) 3,48 m
Floor to overhead distance (floor to baffle) 2,55 m
mix position ratio 0,38



Floor Plan



Side Elevation View



Screen Elevation View

View Options

☐ Check to switch off hover over images

☒ Enable Extra Equipment Entry sheet

☒ Enable Acoustic Analysis sheet

☒ Enable Commissioning sheet

☒ Enable Design Review sheet

Go to Design Printout sheet

Design Feedback Messages:

All

See Help Guide dropdown for instructions on how to make suggested changes, and hover over images to understand the required entry for each Speaker Position cell.
Note, where design feedback messages refer to left side only, they equally apply to the right side.

Left/Right Rear Surround

- Using the manufacturer's data, the chosen speaker is not suitable for the chosen monitoring level. Consider lowering the monitoring level or selecting a more powerful speaker.

Left/Right Top Front

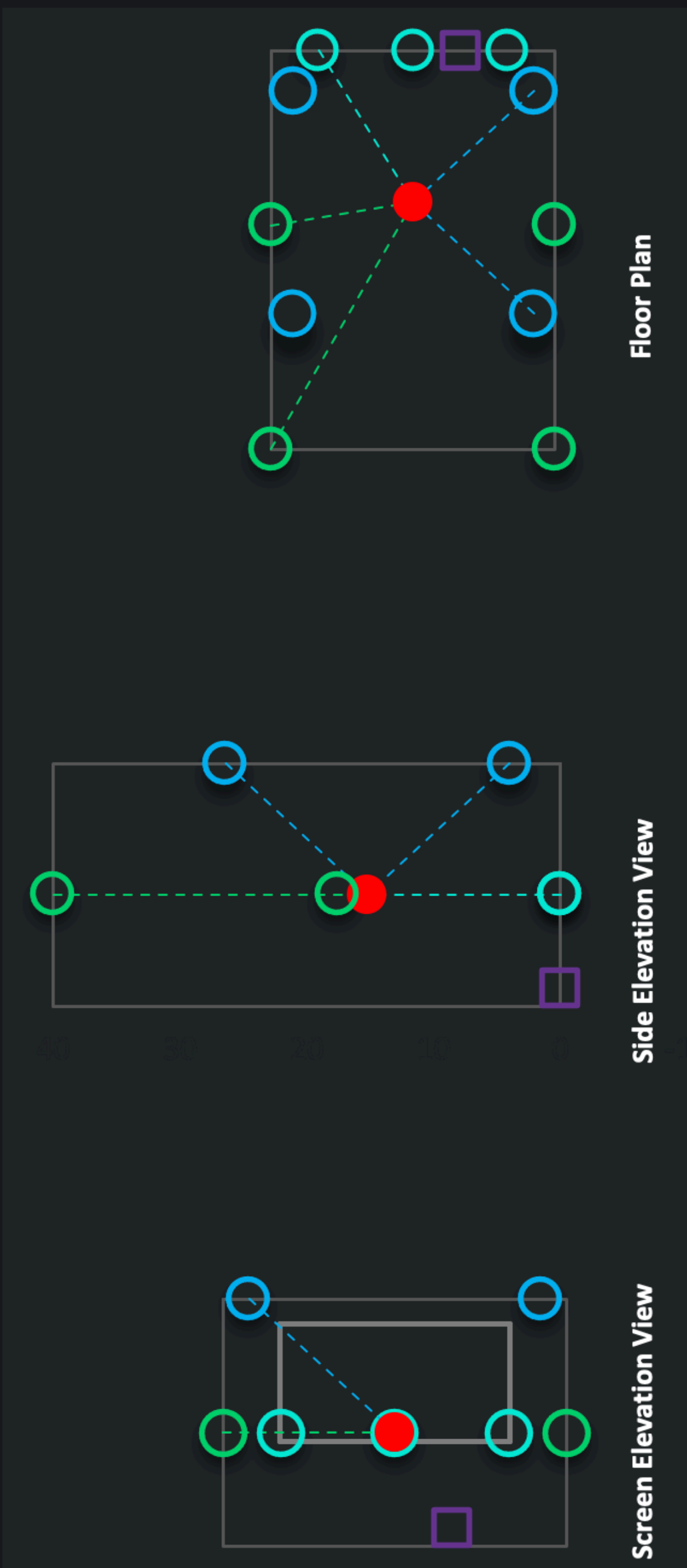
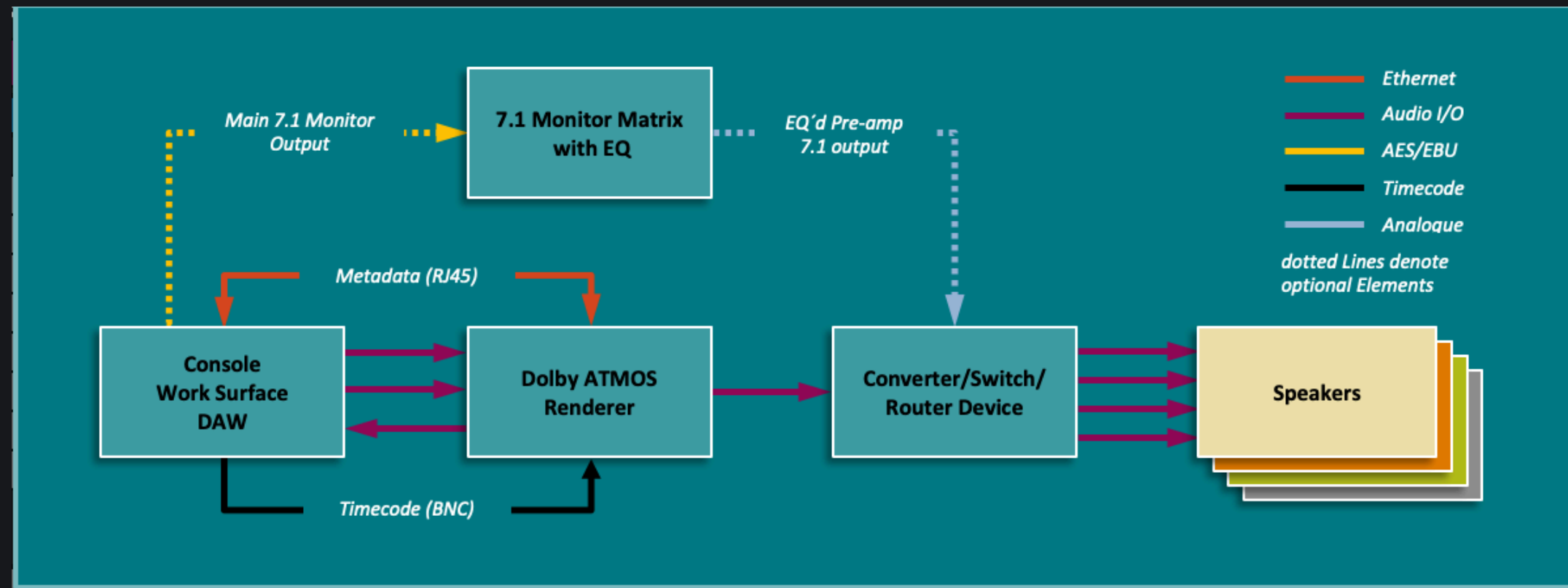
- Speaker headroom is less than the recommended value. A more powerful speaker model may be beneficial.

Left/Right Top Rear

- Speaker headroom is less than the recommended value. A more powerful speaker model may be beneficial.

32

Reset	Speaker Model	Reset				
lateral	☒ Select Mounting Condition		Mounting Condition	Watts	Sensitivity	Ω
Elevation	☐ Theatrical bi-amped speakers					Watts required
Angle	untick checkbox for passive speakers					
	☒	Genelec 8351B 80Hz BM	Against/in Wall			
	☒	ATC SCM300ASL Pro				
	☒	ATC SCM100ASL Pro				
	☒	ATC SCM110ASL Pro				
	☒	ATC SCM150ASL Pro				
0°	☒	ATC SCM200ASL Pro				
	☒	ATC SCM300ASL Pro				
	☒	Dynaudio BM 5 mkIII				
	☒	Dynaudio BM 6A				
45°	☒	Dynaudio BM12 mkIII				
45°	☒	Dynaudio BM 15A				
	☒	Dynaudio Core 7				
	☒	Dynaudio Core 47				
	☒	Dynaudio Core 59				



Theoretical Room Modes

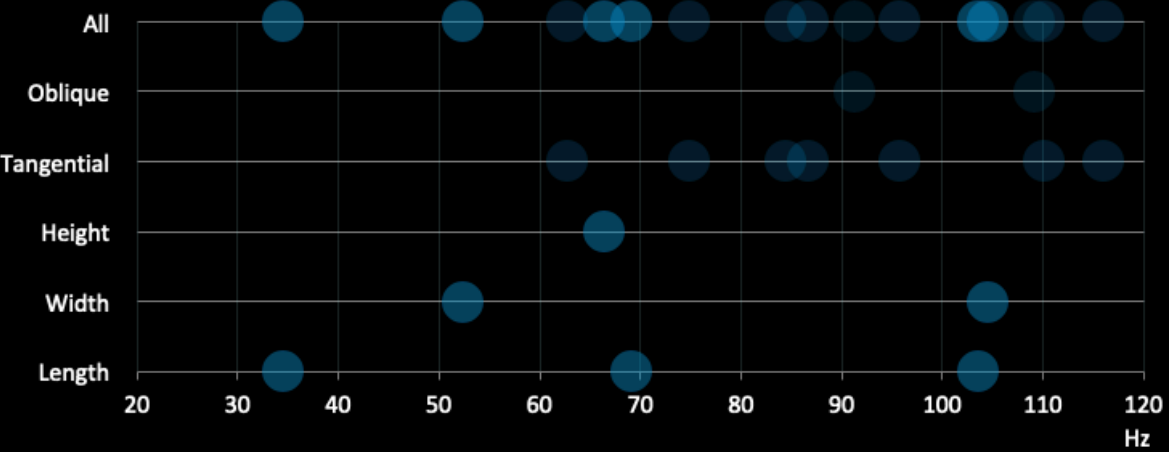
Help

Plot of quantity, density and frequency points.

Theoretical room modes along each of the highlighted room dimensions.

Plot refers to the room dimensions entered and the subsequent room ratios.

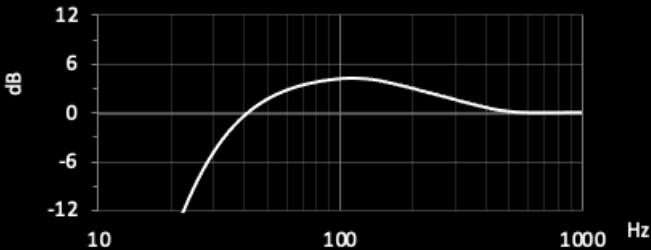
Rectangular shaped box assumed.



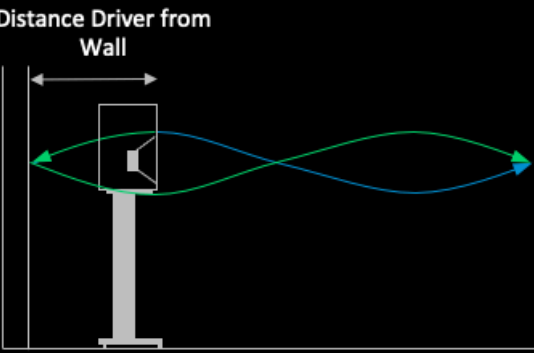
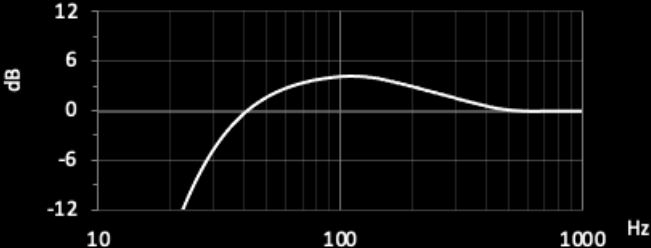
Boundary Induced Cancellation Calculation Analysis and Discussion

Help

Speaker Label	
Speaker LF Cut-Off/Bass Management Frequency	40 Hz
Distance Speaker Driver from Wall (m)	



Speaker Label	
Speaker LF Cut-Off/Bass Management Frequency	40 Hz
Distance Speaker Driver from Wall (m)	



Axial Modes along Room Length

Help

Please ensure bass management subwoofers, client and mix position are positioned away from dominant room mode positions

Distance	
Mix Position - Front Wall (m)	1,9

1st Mode	35 Hz
2nd Mode	69 Hz
3rd Mode	104 Hz
4th Mode	138 Hz



Axial Modes along Room Width	
1st Mode	52 Hz
2nd Mode	105 Hz
3rd Mode	157 Hz
4th Mode	209 Hz

Room Dimension Ratio Analysis

Help

The size and shape of a room determines its modal behaviour. In the case of rectangular rooms certain sets of room dimension ratios have been found to give smoother low frequency response than others. The shaded diagram shows best (light green) and second best (dark green) room ratios for a room of 50 cbm (actual room volume is 43 cbm).

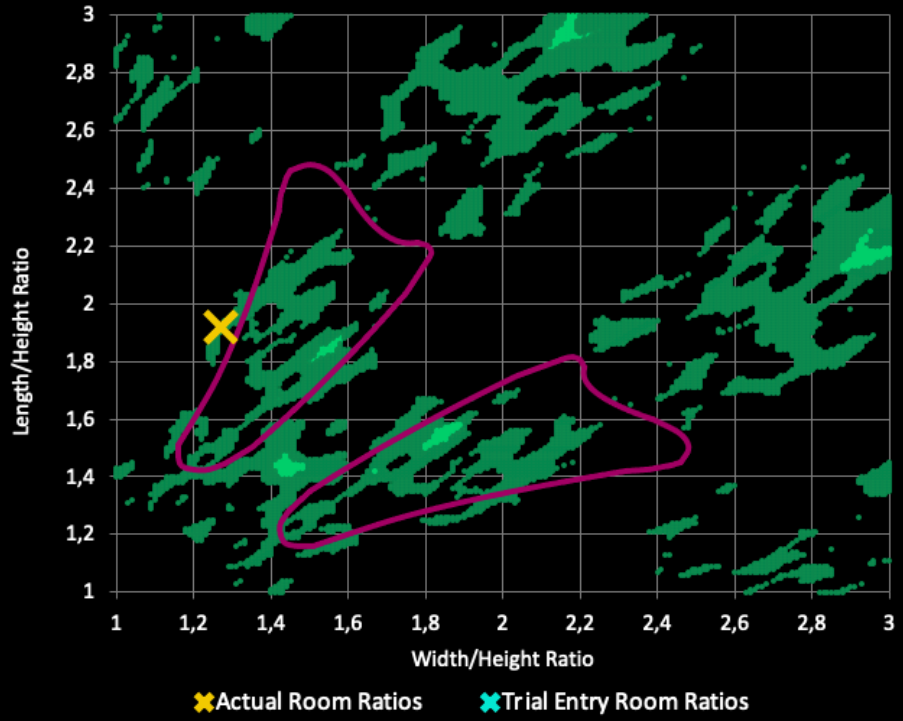
Please use the 'Trial Entry' cells and flip the length and width if the room width exceeds the room length such that the room ratios are off chart.

© Acoustics Research Centre, University of Salford

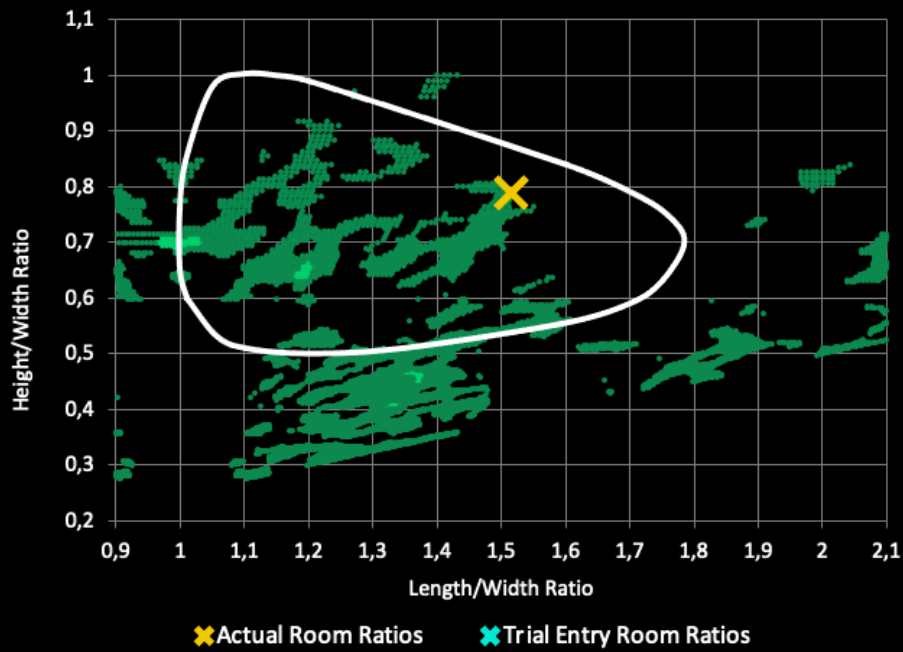
Dimensions copied from Main Section		Trial Entry
Room Length (m)	5,0	
Room Width (m)	3,3	
Room Height (m)	2,6	
Ratio Width/Height	1,27	
Ratio Length/Height	1,92	

☒ Show Bolt Area

Ratio Length/Width	1,52	
Ratio Height/Width	0,79	



Alternative view for hybrid, orthogonal rooms used for theatrical premixing with area of recommended room ratios



Commissioning

Commissioning	
Verify Room Dimensions	☐
Verify HE RMU is a qualified machine	☐
Set up Renderer	☐
Set Speaker Delays	☐
Confirm Speaker Routing	☐
Polarity Check	☐
Calibrate Speakers (see below)	☐
RTA traces for each loudspeaker as screenshots	☐
Impulse Responses as screenshots and wavs	☐
RT60 Measurements	☐
Noise Criteria Measurement (NC) with Screenshot	☐
Headroom Check with Subwoofer limiter on and off	☐
Play known Content	☐
Aspect Ratios 1.33:1/1.77:1/1.85:1/2.39:1 configured	☐
Monitoring Formats set up per studio requirements	☐
Backup Renderer file	☐
Get photos of the studio, documenting installation and problem areas	☐
Document any problems areas in various results (response measurements, photos, settings). Detail any solutions communicated to the client and any further ideas for problem resolution	☐
Train Staff on Use of Qualified Computer Hardware	☐
Train Staff on DAW Integration	☐

Diversi task e misure da fare:

1. Sistema di misura 8 canali:
 - allineamento temporale (delay) per ogni monitor e sub
 - risposta in frequenza in 1/3 d'ottava allineata con la target curve → EQ! *(da scegliere la curva che si preferisce)*
2. Misura del rumore di fondo (NC25)
3. Misura della risposta all'impulso per ogni singolo canale (riportare RT60 nel DARDT)
4. Completamento DARDT
5. Foto e report

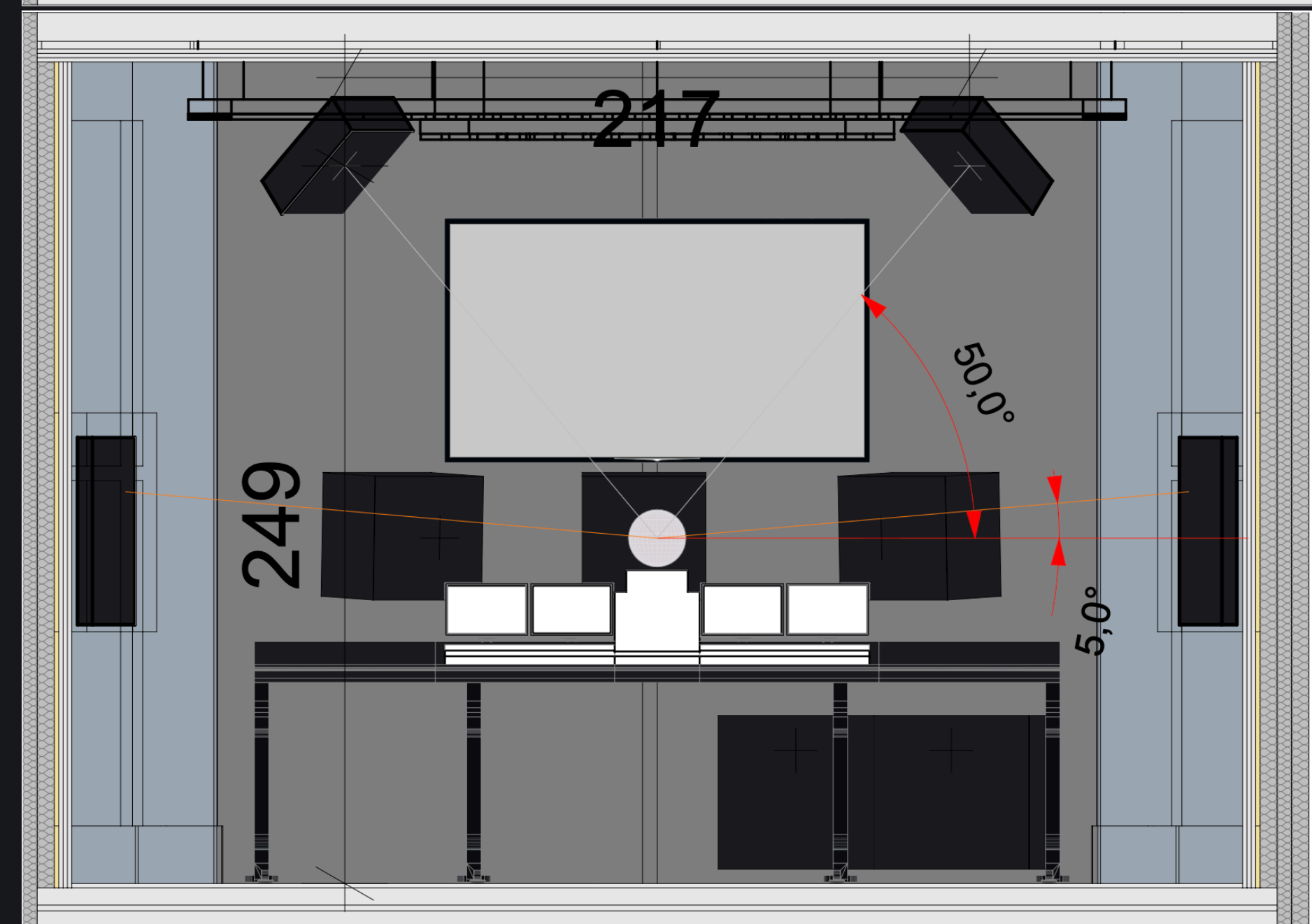
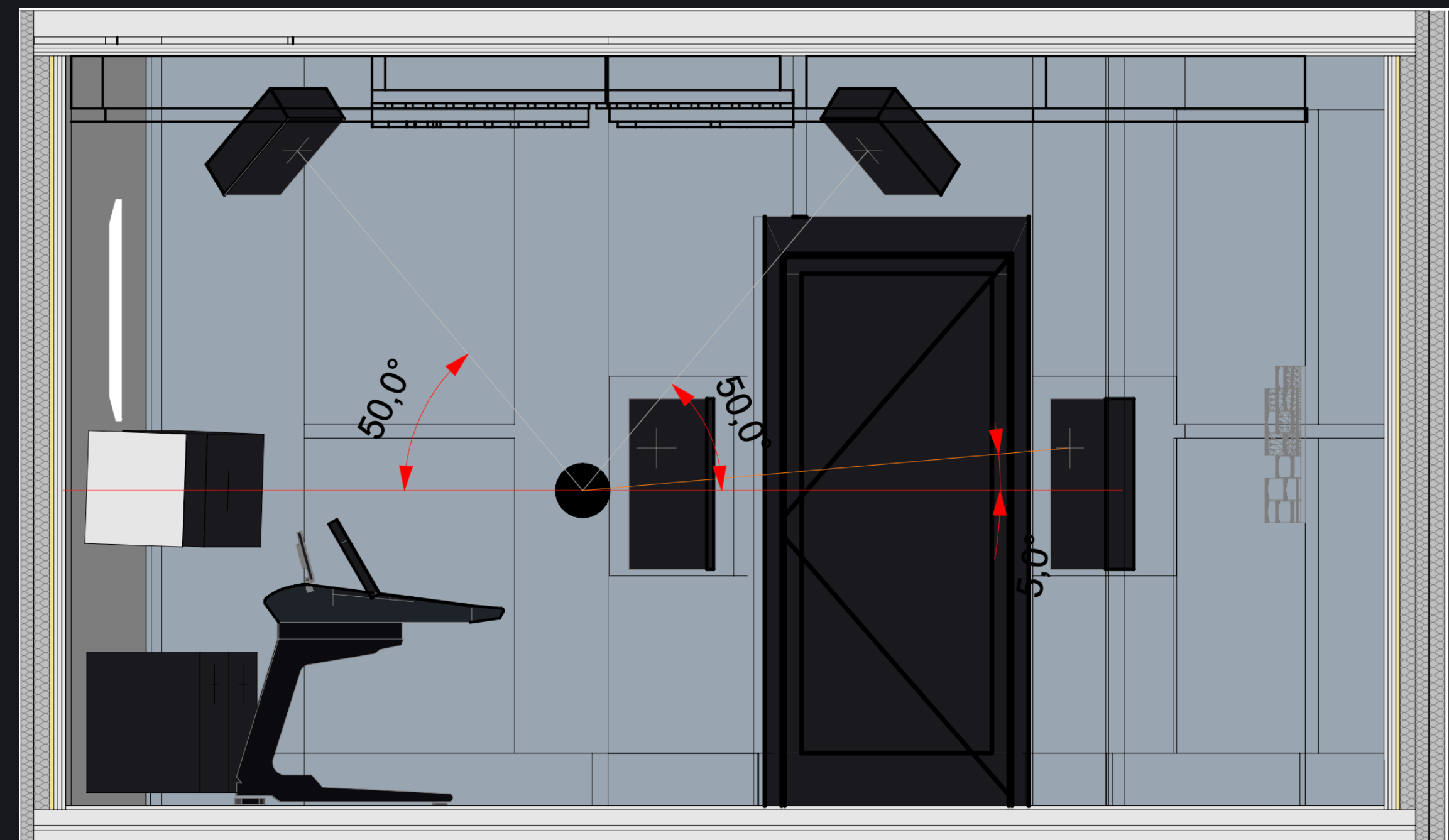
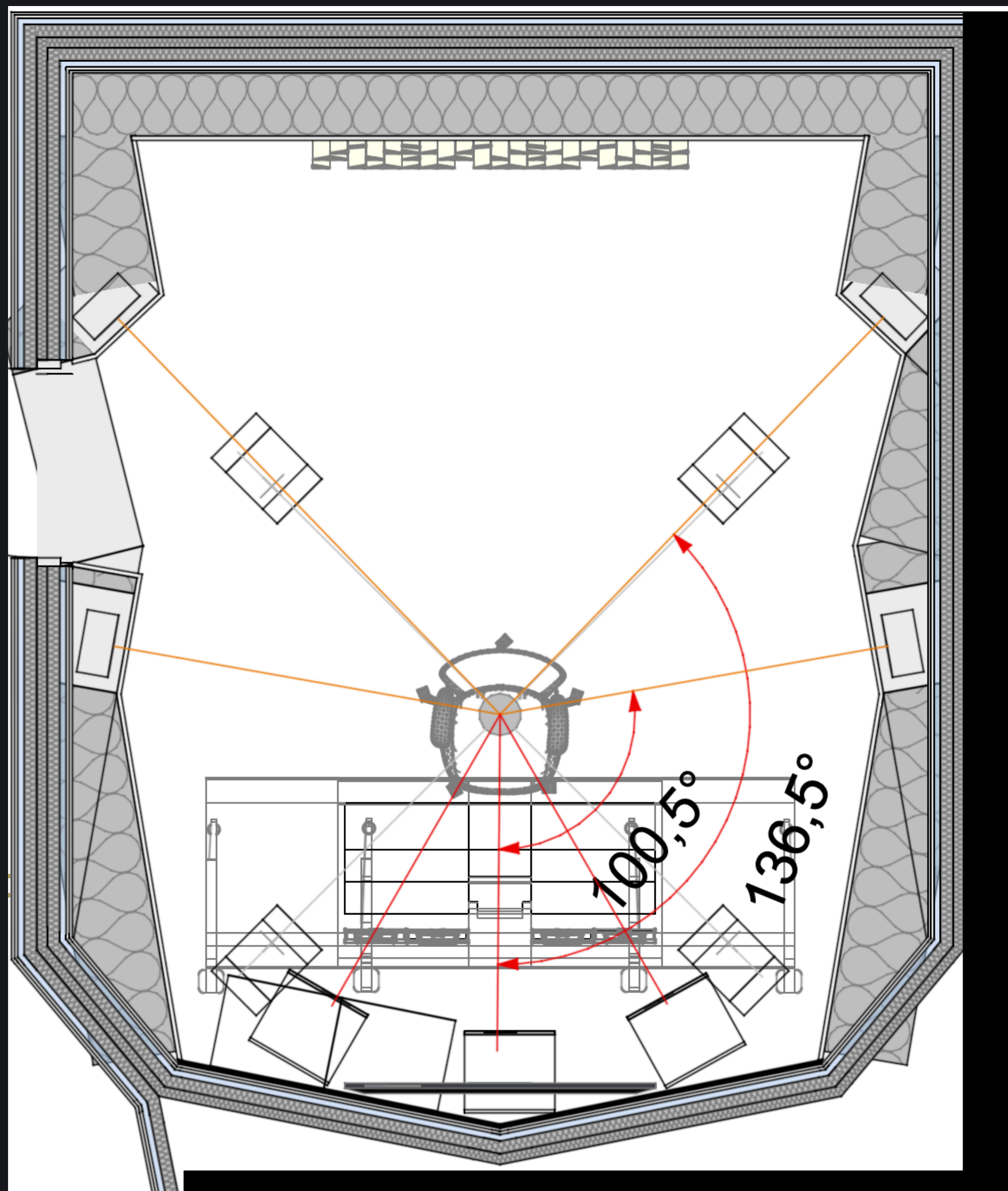
Case studies

Milk

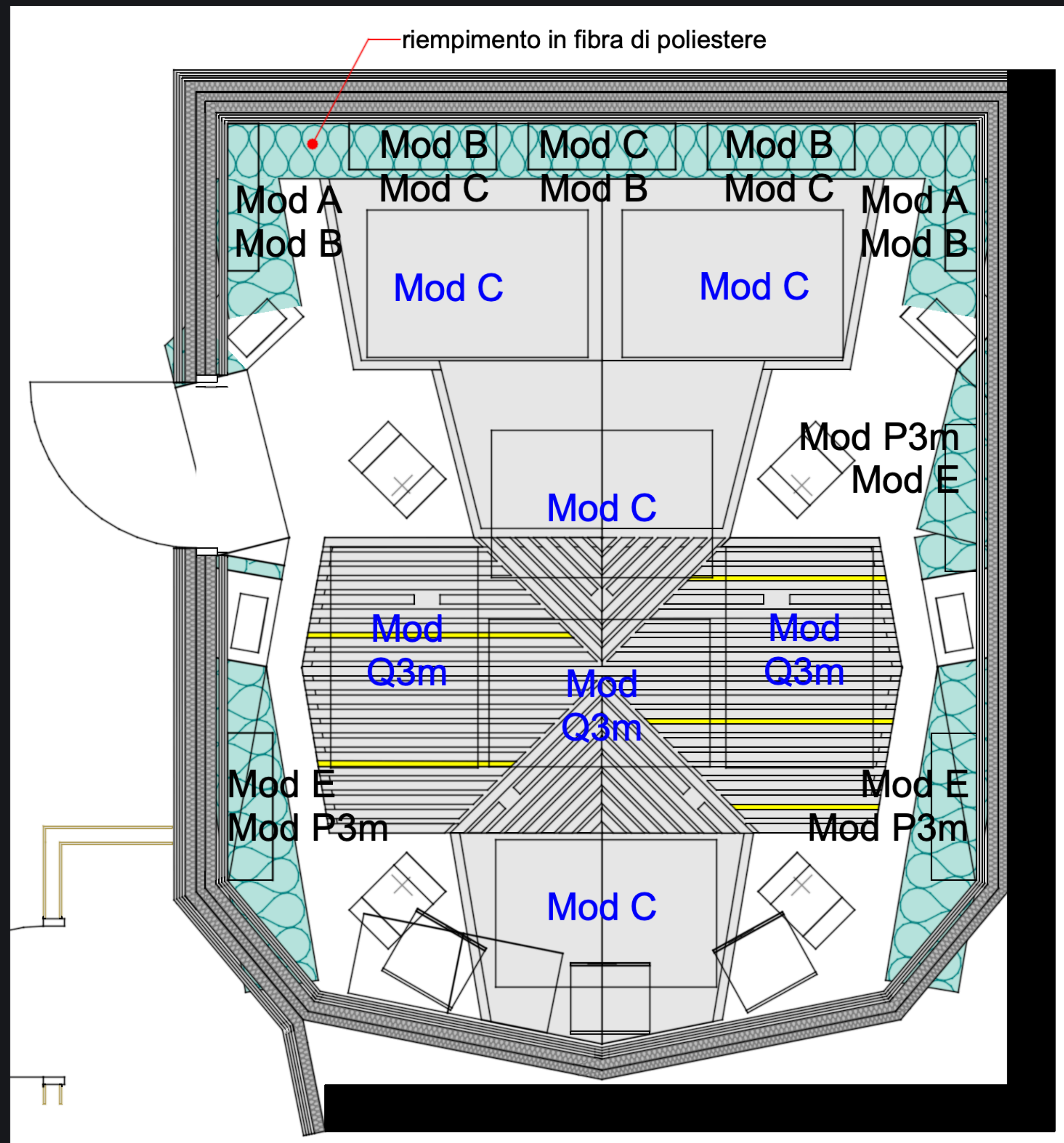
Alberto Rossetto

Roma





Risonatori a Membrana Broadband Absorbers Slat Absorbers



Costruzione a cura di Ge.Co Servizi di Simone Bartolomei



Milk

Alberto Rossetto

Roma



Milk Alberto Rossetto Roma



Milk

Alberto Rossetto

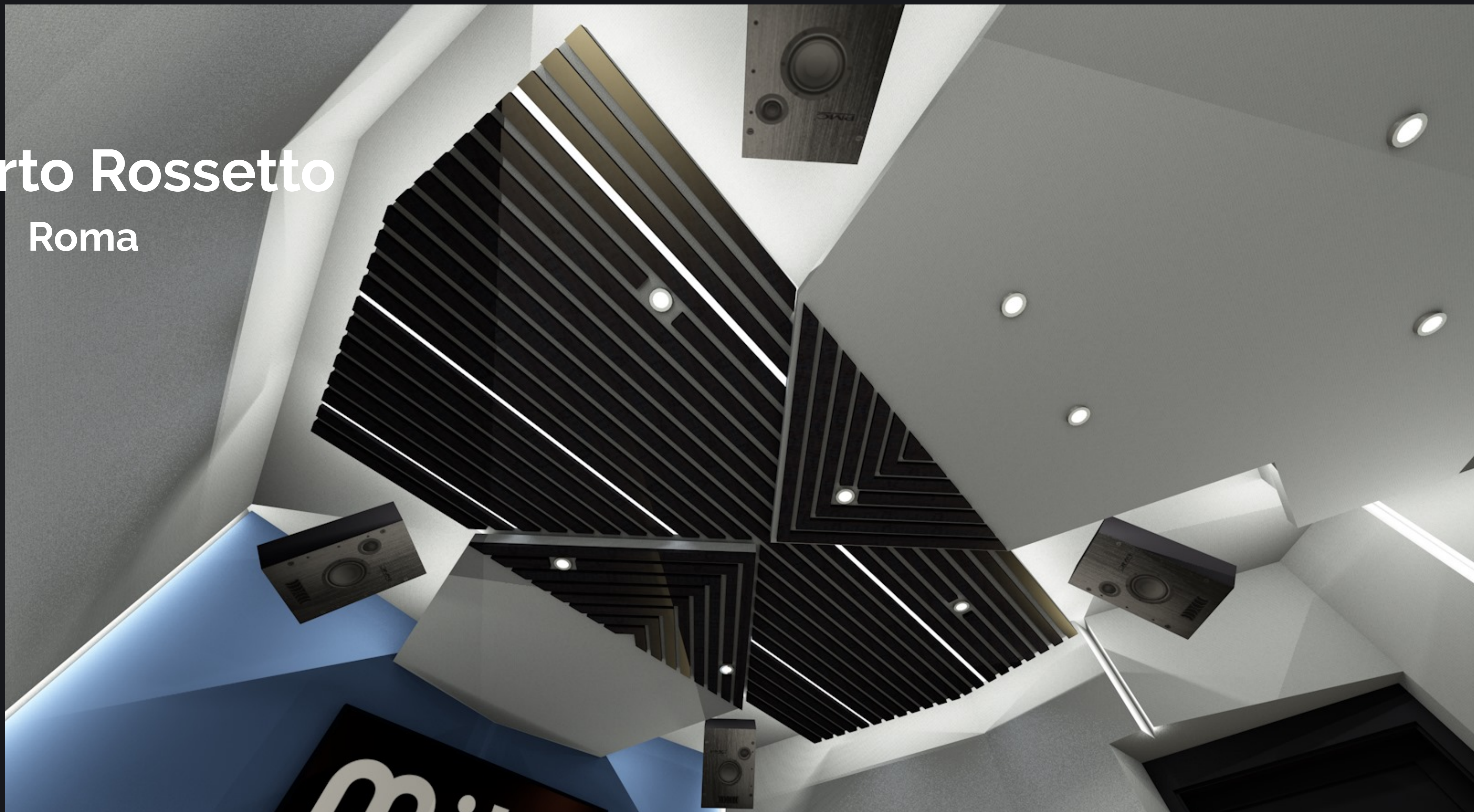
Roma



Milk

Alberto Rossetto

Roma



Q&A



Consigli per l'ascolto

1. Art Blakey – “Close your Eyes”
2. The Beatles – “Oh! Darling” (2019 mix)
3. The Doors – “Riders on the Storm”
4. Jacob Collier – “All I Need”
5. St Vincent – “Pay your Way in Pain”
6. Jack Harlow – “Way Out”
7. Kodak Black – “Feeling Peachy”
8. J. Brahms - Symphony #3 in F major
(conducted by Ben Gernon / w. London
Philharmonic Orchestra)
9. Jack Savoretti – “Too much History”
10. Sitrekin – “Open Chest”
11. Ariana Grande – “Dangerous Woman”
12. Kraftwerk – “Tour de France” + “Robots”
13. Rush – “Tom Sawyer”
14. Briston Maroney – “Rollercoaster”
15. Kanye West – “Black Skinhead” (forse non
ancora disponibile)
16. Gregory Porter – “Mona Lisa” (forse non
ancora disponibile)
17. Battiato – “La Voce del Padrone”
(mixed by Pino @ Pinaxa Studios)

Link per il training e per
conoscere meglio il discorso
Dolby Atmos e l'idea per la
musica

- A. Partire da qui:
<https://professional.dolby.com/music/support-faq/>
- B. Approfondire:
<https://learning.dolby.com/hc/en-us/sections/360010367372-Dolby-Atmos-Post-and-Music-Production-Learning>
- C. parte "creativa":
<https://professional.dolby.com/content-creation/dolby-atmos-tutorial-series/>
- D. raccolta di tutti i tutorial:
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