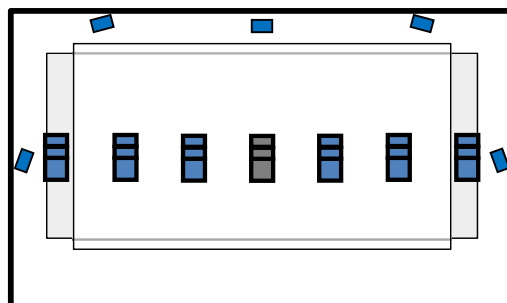


IOSONO

- Horizontal ring: The amount of speakers required for the horizontal ring is not directly depending on the dimension of the room. The criteria for spatial sound staging is the angular distance between adjacent speaker as seen from the center of the audience area, the reference point.
 - The distance between adjacent speakers will differ in different room sizes instead of having a different count of loudspeakers.
- Ceiling speaker: The loudspeaker arrangement consists of multiple rows of loudspeakers running parallel to the screen wall. The ceiling speaker array has to cover the whole ceiling to allow for smooth panning from the ring to the ceiling and vice versa. The number of speakers in every second row is one lower than the number of speakers in every odd row and all rows are horizontally centered. The resulting grid forms an arrangement of triangles.

IOSONO - Front view

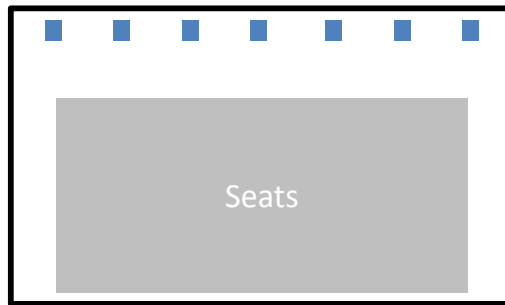
- Keeping an horizontal angle of smaller than 10° between the center speaker and the one next to it while looking from the reference point produces good spatialisation effects.



- Gray → Standard Cinema Speaker
- Blue → New speaker

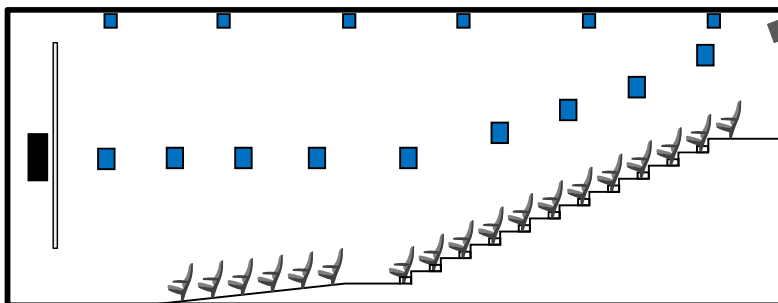
IOSONO - Rear view (rear speakers only)

- The rear wall uses the same number and general horizontal positioning of speakers as the screen.



IOSONO - Side view

- Choose a spacing for the side wall speakers based on the spacing of the screen speakers with a possible deviation of $\pm 10\%$ to fit the speakers to the side wall properly.
- The distance between two adjacent ceiling speakers of one row must not be greater than 75% of the distance between the listener's head in the center of the audience area and the ceiling speakers above its head.



IOSONO - Plan view (top and height speakers only)

- The resulting distance should be decreased to fit at least 3 speakers evenly and symmetrically distributed across the room's width to the ceiling.
- The relation between ceiling height and audience slope typically leads to arrangements like 4:3:4:.... or 3:2:3:....
- The distance between the rows should be similar to the distance of adjacent speakers of one row.

