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Public address solution for the impressive architecture of China's largest airport

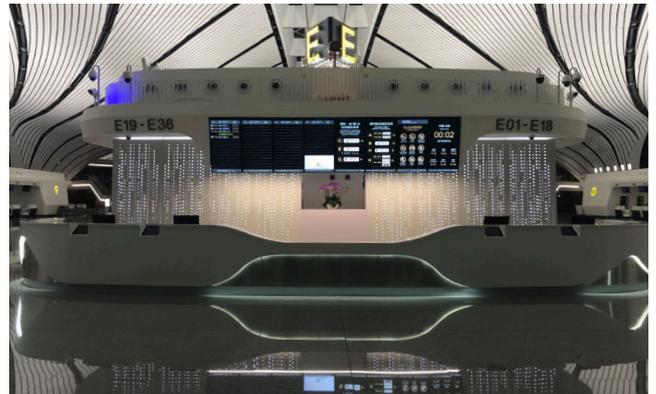
Customer story

Clear announcements even at different ceiling heights

Designed by star architect Zaha Hadid, the new Beijing Daxing International Airport includes the largest single-structure terminal in the world. But the building's complex and futuristic interior architecture also creates a challenging acoustic environment. Airport operators trusted Bosch experts to install loudspeakers for clearly audible flight announcements throughout.

A new Chinese landmark

Built over the course of five years at a cost of over \$17 billion, Beijing Daxing International Airport is a new landmark and symbol of progress for China. The state-of-the-art airport includes the world's largest terminal and can handle up to 72 million passengers per year. The interior architecture welcomes guests with vast, open spaces extending over 1 million square meters on several levels under a curved steel roof reminiscent of a Phoenix spreading its wings. But when it came to ensure clearly audible flight announcements throughout the terminal, the futuristic architecture also created challenging sound conditions.



Clear sound in every corner

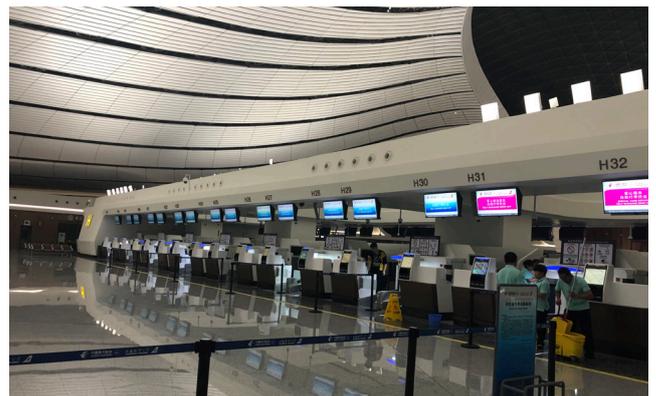
In order to solve these acoustic challenges, the airport operators enlisted Bosch on the strength of a long list of reference projects at international airports and broad portfolio of loudspeaker solutions. Considering the complex acoustic environment – marked by different ceiling heights and surface materials ranging from steel to glass – the Bosch experts conducted acoustic assessments at key locations throughout the terminal. According to these scientific readings, the team calculated the required density and performance levels of loudspeakers to ensure consistent, clear sound in every corner of the terminal.





Meeting another key customer requirement, the loudspeakers needed to deliver more than just acoustic performance: The physical form of the speakers also had to match the premium aesthetics of the architectural showpiece and blend into the interior style of the gates, passenger areas, and concourses. With these criteria in mind, Bosch provided more than 13,000 public address speakers, carefully chosen to match the steel beams, walls, and ceilings throughout the terminal.

The installation includes high-quality ceiling loudspeakers, column loudspeakers, directional loudspeakers, music horn loudspeakers as well as over 200 active variable directional array loudspeakers. Aside from acoustic parameters, the terminal's high ceilings also posed physical challenges.



Technicians needed to mount speakers on pillars, support beams, and lamp posts at high altitude. In the final step, the team optimized sound levels in all newly installed speakers according to extensive 3D-acoustic tests to ensure that voice broadcasts can be heard in every corner.

Since the new terminal's festive opening by the Chinese government in September 2019, the speaker system has made sure that passengers never miss crucial flight announcements and the Bosch team remains in close contact with airport operators to provide ongoing support. Successfully providing quality sound for such a high-profile project provides an important reference for Bosch in this rapidly growing market, as China is expected to overtake the United States as the world's largest air travel market as soon as 2022.