

# PRESS RELEASE

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## Cingo brings cinematic experiences to the car through headphones

**Leaning back in a comfortable seat, following an exciting story on the screen, letting the enveloping sound draw you into the action – that's cinema! Now, what if you could transport this exact feeling into your car without disturbing the driver? Well, you can: The new BMW 7 Series can be ordered with the "BMW Theatre Screen" and Fraunhofer Cingo technology for realistic headphone playback, turning the car into your very personal rolling cinema.**

With 31.3 inches, the 8K BMW Theatre Screen in the rear of the BMW 7 Series is the largest display in a serial car today and delivers a truly cinematic experience. The enveloping sound is delivered by the car's integrated surround sound system or through headphones. In this case, the innovative Fraunhofer Cingo technology ensures uncompromisingly perfect sound for the BMW Rear Seat Entertainment Experience.

Conventional headphone playback can only partially represent the spatial dimension of an acoustic scene. This means that you usually perceive sounds in your head only, and not as if they were positioned around you like in real life. Fraunhofer Cingo simulates a natural sound field in which virtual sound sources can be freely positioned. This adds a new spatiality to audio content while keeping it free from any unwanted sound coloring. Passengers can enjoy a sound image through their headphones that is as spatial as the one from the premium speaker system.

Cingo has been integrated into the built in Fire TV operating system of the Rear Seat Entertainment Experience, which is now available across all models of the BMW 7 Series. The Fraunhofer technology provides headphone playback of stereo and 5.1 surround sound for streamed content on apps like Amazon Prime, Hulu, Netflix, and YouTube.

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## About Fraunhofer Cingo

An interdisciplinary team of audio engineers, sound engineers and audio DSP experts from Fraunhofer IIS is continuously working on Cingo. The proven technology has already provided immersive sound playback for Google Nexus devices and Samsung Gear VR glasses.

In addition to stereo and surround content, Fraunhofer Cingo can also play back 3D audio content. The sound image is expanded by a third dimension – height. In addition, dynamic head tracking, meaning the mapping of a virtual scene to the listener's head movement, is supported with low latency.

Fraunhofer Cingo is available as a ready-to-use software implementation, for example for manufacturers of mobile devices and smart headphones, chip manufacturers, and providers of multimedia streaming services. Cingo can be integrated into audio DSPs in embedded systems thanks to its low complexity, for example as an AudioWeaver module.

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## About Fraunhofer IIS

For over 30 years, the institute's Audio and Media Technologies division has been shaping the globally deployed standards and technologies in the fields of audio and moving picture production. Starting with the creation of mp3 and continuing with the co-development of AAC and the Digital Cinema Initiative test plan, almost all consumer electronic devices, computers and mobile phones are equipped with systems and technologies from Erlangen today. Meanwhile, a new generation of best-in-class media technologies – such as MPEG-H Audio, xHE-AAC, EVS, LC3/LC3plus, Symphoria, Sonamic and upHear – is elevating the user experience to new heights. Always taking into account the demands of the market, Fraunhofer IIS develops technology that makes memorable moments.

Detailed information on: [www.iis.fraunhofer.de/en](http://www.iis.fraunhofer.de/en)