

Close Encounters

Demand for new technology to offer an advantage over the competition has made movie theatres a major target for pro audio companies. **Phil Ward** surveys the business opportunities in cinema audio

THERE'S WAY MORE TO CINEMA sound than loudspeakers. The digital cinema infrastructure demands and encourages some pretty hi-tech audio manipulation, almost on a par with the sophisticated processing that goes on in the studio before the soundtrack leaves its place of birth to make its way in the world. For the savvy audio company, the business opportunities are there: even in recession, cinema-going has seldom declined in the way that many have predicted, and the escapism of the silver screen appears to be among the last things consumers want to forego when times are hard.

Accordingly many leading manufacturers are investing heavily in advanced reproduction systems, from processing to the speaker itself. Some, like California-based Datasat Digital Entertainment, were there at the beginning. 'Digital cinema installations have been growing at an expedited rate and moviegoers worldwide are seeing the improvements in the video presentation,' says Datasat COO Robert McKinley. 'The audio portion of the presentation, however, has not significantly improved over the last 18 years. With digital cinema there's no ongoing need for the encode/decode technology specifically used with film presentations but the audio processing technology, both in sonic quality and flexibility, has also not changed,' he continues. 'With the full bandwidth of digital cinema the need for advanced, future proof audio technology is clear.'

'In order for cinemas to take advantage of alternative content presentations, the audio processors need to be both flexible and customisable solutions with advancements in room optimisation,



CGV Chungdam Cinecity Korea with Iosono 2

automation control, memory presets and complete audiophile EQ profiles,' says Mr McKinley. 'Datasat's opportunities are every screen, in every cinema worldwide. We're offering this advanced solution today and regardless of what audio processor is currently used, these cinemas are an opportunity for Datasat.'

New dimensions

The installation of flexible 3D sound systems for cinemas is the business raison d'être of Germany's Iosono, whose Katja Lehmann reports that the Asian market in particular has a lot of potential. 'There are big companies that are not afraid to implement new technologies,' she says. 'For example, CJ CGV, the largest cinema operating chain in Korea, has become an important partner for us. We've just equipped

two CGV cinemas in Seoul – CGV Cheongdam Cinecity and CGV Yeondeungpo – with Iosono's 3D sound systems, one of them even being a 4D theatre. Another cinema in China will open soon.

'Our Spatial Audio Processor IPC 100 is upward and downward compatible with all audio formats and we also offer an enhanced playback of 5.1 surround content,' says Ms Lehmann. 'But another promising and important path is the creation of actual 3D sound movies. We just created the first 3D sound mix for a Hollywood movie, Tarsem Singh's *Immortals*, that was mixed in Iosono's content format,' she explains. 'Another new movie mixed in our 3D audio format is *My Way*, a Korean movie to be released in December/January that was mixed by Suk Won Kim, who is a pioneer for 3D sound in Korea and the Asia movie market.'

'Not only seeing, but hearing, a

movie in 3D is incredible,' says Ms Lehmann. '*Immortals* was mixed using our Spatial Audio Workstation at Wildfire Studios in Los Angeles. Leslie Shatz, the sound designer who also did the 7.1 mix, said afterwards that "Iosono offers what I consider the real purpose of sound in movies, which is to actually put you in that space that you are looking at".'

Naturally, loudspeaker manufacturers are benefitting from this bonanza of immersion too. Tom Back of Dutch company Alcons Audio is in no doubt where the action is. 'The technical, commercial and even marketing developments of today's cinema industry are hugely important for cinema sound reproduction,' he explains. 'Obviously digital cinema has become the next big thing, and we now do have a digital cinema audio standard: a new platform with 24-bit resolution, non-compressed audio over up to 99 channels. This

offers tremendous opportunities,' says Mr Back.

'Digital cinema rebuilds the infrastructure of the movie theatre from the ground up,' adds Brian Long, cinema and live sound design manager at Meyer Sound and part of a new team dedicated to leading the California-based loudspeaker pioneer into a new era of cinema sound. 'For us it means a move away from compressed audio. You now have the dynamic range and the frequency response from start to finish, and the ability to reproduce literally what was last heard on the dub stage,' he continues. 'It used to be that when the director approved the print master that was the last time anybody heard it like that. Then it was mastered, compressed, crunched and striped onto a piece of film and out into the marketplace. Now the chain from studio to theatre preserves the audio integrity, and that's why we've got involved,' says Mr Long. 'Now we have to make the theatres sound like the dub stage!'

Theatre trends

For Ms Lehmann, sound is becoming so important in the cinema market that what is possible beyond the current standards are already on Iosono's radar. '3D picture has changed the way people perceive movies, and sound plays an important part. So it's natural that cinema operators are looking for new and more immersive sound solutions when they try to build additional value for their customers,' she says. 'Iosono has been equipping cinemas with sound systems for several years now, but we can see how the demand is growing and cinema operators really want to offer moviegoers a better



Cedar Audio's DNS3000

GARBAGE IN, GARBAGE OUT (ONLY LOUDER)

THOSE INVOLVED in cinema sound reinforcement are increasingly conscious of the quality of audio delivered from the dub stage, not least because the gap is closing between studio and theatre.

According to Cedar Audio MD Gordon Reid, this makes the delivery of a pristine soundtrack a bigger priority than ever.

'Modern soundtracks are notable for being loud,' says Mr Reid. 'The argument goes something like this: If cinematic impact can be generated by boosting the perceived loudness, more impact can be generated by

boosting it still further,' he explains. 'Unfortunately, if the signals being boosted contain even moderate amounts of noise (wind and rain, air conditioning, traffic and so on) the resulting soundtrack will contain lots of noise. Perhaps not such a problem in the past, but the quality of the acoustics within cinemas has improved considerably in recent years, as has the quality of delivery systems, so the noise may be far more obtrusive than would have been the case before.'

'To limit the risk of this, sound recordists take steps to minimise the noise entering the signal chain,

but there will still be times – such as when ADR fails to capture the spirit of a scene – when it may be unavoidable,' continues the MD. 'For these occasions, sound engineers have a variety of tools at their disposal, of which perhaps the most ubiquitous is the Cedar range of DNS dialogue noise suppressors. These reduce or even eliminate many forms of background noise and, in turn, allow the sound mixer to apply levels of gain and limiting that might otherwise have made the soundtrack unacceptable for general release.'

www.cedar-audio.com



The Iosono Spatial Audio Processor IPC100

sound experience,' continues Ms Lehmann. 'It's not just about adding a few extra speakers; our customers come to us because they want a solution that really offers true 3D sound in the best quality possible.'

'The main trends we're seeing are towards quality and flexibility,' continues Datasat's Robert McKinley. 'Moviegoers are smart consumers. While they're willing to spend their hard earned money in difficult financial times on entertainment, they want the most for their money. They want quality, entertaining movies and alternative content presented in the best possible auditoriums with a superior audio and visual experience,' he explains. 'Cinemas also need to compete for entertainment time with the portability of tablets, phones and on-demand, in-home offerings. Providing a superior experience and flexibility of content in cinemas is necessary. Moviegoers will choose

one theatre and screen over another based on what the feature or alternative content is presented in and played back on. There is a marketable difference.'

'Another commercial result of digital cinema is the change from just presenting films to some kind of 'alternative programming', including live broadcasts, video conferences, global business presentations, musical events and other ideas,' adds Tom Back. 'This increases the competition between cinema exhibitors, and they're finding that quality, not price, is essential for long-term profitability. They want more than the basic requirements, especially in sound, to distinguish themselves.'

New technology

Datasat's AP20 audio processor is, according to Mr McKinley, a glimpse of the future. Room optimisation is a

new technology to the cinema world, as is the idea of storable memory profiles. 'HDMI for alternative content input, bi-directional automation control and expansion slots for future development are also examples of new demands,' he says.

'You often heard the comment that cinema sound was too loud,' adds Meyer Sound's Brian Long, 'but we found that this was an issue of distortion, not just volume. If you control the distortion, you can tolerate quite a lot more level and experience the impact and nuances in the soundtrack,' he explains. 'Our EXP systems are designed to be free of the distortion commonly found in cinema speakers.'

Economic challenges

It's remarkable how rapidly this sector is developing in harsh financial

conditions. Explanations for this are difficult; in the meantime those in the know are happy to ride the wave that keeps cinema sound at the top of the pro audio agenda. 'The state of the economy always affects how resources and funds are allocated,' says Mr McKinley. 'That said, we've always put an emphasis on product quality. We have the finest audio, design and quality engineers as well as marketing staff in the industry and we're focusing on what we do best, which is audio.'

'We're continuously working on optimising our technology,' adds Ms Lehmann. 'We use a lot fewer speakers than when we started out, and still deliver the best sound quality. We're able to offer flexible systems that work with a speaker layout based on the requirements of each project, regarding venue size, budget and so on,' she continues. 'It's obvious

that 3D sound is something you have to hear. So it's important for us to have good references and satisfied customers to show that 3D sound is really something that makes a lot of difference.'

'The expectations of the average punter have risen to an unprecedented height,' reflects Alcons' Tom Back. 'Look at the so-called 'CD'-quality and crisp visuals of Blu-Ray, DVD and flat-panel television screens. If you combine these with very alluringly priced surround-sound systems for the home, basically the cinema is competing with the living room,' he states. 'The digital developments of the cinema market present new challenges, for existing equipment as well as the creation of new solutions. What the sound system has to deliver has changed dramatically: The dialogue, the background music and the sound effects all have to be recreated in fine detail and with full dynamics. With an audio standard that specifies non-compressed formats, we believe that compression-driver technology will be found wanting. We have our ribbon drivers, sure: but others will have to rise to the challenge.'



The Datasat AP20

- www.alconsaudio.com
- www.datasatdigital.com
- www.iosono-sound.com
- www.meyersound.com