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A good year for cinema

Looking back over 2011, it has been an interesting time and a good year for cinema. The business depends totally on a continuous supply of new and interesting movies of all genres, and this year there were numerous international movies that people really wanted to watch, and British films did well too, with more to come. 3D at first proved a tremendous success at the box office, but some poor productions later in the year led to a significant fall off, with the public often choosing to watch in 2D, leading the media to question whether 3D cinema would prove to be just a passing phase, as so often before. But it only takes one new good 3D movie to rekindle interest, and the big difference this time is that the projection equipment in the cinemas is always ready and waiting, capable of providing superb 3D images on demand, so 3D is just another option, to be used or not as the particular movie demands.

Cinema is digital

The cinema exhibition business has successfully made the move to digital at a remarkable rate, with major chains being completely digital by the time you read this issue. The seemingly insoluble problem of how small cinema operators could ever afford to go digital was also sorted out this year, thanks to brilliant work by the Cinema Exhibitors Association, The Digital Funding Partnership, XDC, and the established cinema installation companies. Working in partnership they developed a mechanism to allow even the smallest cinemas to avoid being isolated as the world moves away from 35mm film, but there is no doubt that the cost of their involvement includes a ‘mortgage’ that will need the small cinema to keep up the payments for many years to come. But at least small cinemas now have a future, which couldn’t have been at all certain just a year ago, and I am also interested to hear that projector manufacturers, having sold their existing equipment to all of the ‘big boys’, are now giving serious thought to smaller, perhaps cheaper, new generations of projectors to suit smaller cinemas.

Moving forward

I wrote some time ago that opening the Pandora’s Box of digital cinema would mean that things would never be the same in the cinema business, and, for better or for worse, those predictions are already coming true. It won’t ever be a case of ‘I have bought my digital kit, so that’s it’, as the manufacturers will constantly try to persuade us to buy new things – projection equipment that will show movies at higher frame rates and projectors that will use ‘everlasting’ laser light sources are just some of the ideas on the near horizon. Alternative Content is regularly providing many cinemas with whole new audiences, and movies are already being sent from distributors to the larger cinema chains by satellite and digital internet links, which is likely to become the norm as the cost benefits gradually become manifest. So it is great to be working with a business that is moving forward, adapting to the new technologies whilst always remembering that ‘it’s the movies that count’. Cinema Technology magazine enjoys guiding its readers through the changes that the business is encountering, and we look forward, with our readers and advertisers, to being a continuing part of an even more successful cinema business in 2012.
The Editor’s Pick - Jim Slater highlights some of the more interesting and important recent happenings in the global cinema business.

**DOREMI CINEMA TO SUPPLY SERVERS AND IMBS TO ODEON UK**

Doremi Cinema, manufacturer and developer of Digital Cinema server technology, has reached agreement with Odeon UK, the country’s largest cinema chain, for the exclusive supply of digital cinema servers and integrated media blocks (IMB). This involves the full implementation of Doremi’s products as an integral part of the Odeon UK’s Digital Cinema Programme. This agreement is a continuation of business between the two companies as Odeon UK has already widely adopted Doremi Cinema servers. This latest phase will take the chain’s total to over 900 digital screens.

Gerald Buckle, Digital Development Manager, Odeon UK, said that Doremi has an established track record of compliance with DCI standards which have recently expanded to include the new CTP (Compliance Test Plan), showing continued commitment to meeting industry standards. Beyond the servers, Doremi technologies allow the Odeon chain access to the full spectrum of opportunities that become available with digital cinema.

The CTP, established in May 2009 by the Digital Cinema Initiatives, LLC (DCI) provides a uniform test procedure for the DCI standards. These were produced by DCI to maintain specific criteria for the digital cinema industry, such as the high quality of images, interoperability and content security. Compliance with these standards is essential for the operation of the virtual print fee (VPF) agreements that are widely used to help finance digital cinemas.

**CINE EUROPE MOVES TO BARCELONA FOR 2012**

CineEurope, the official convention of the Union Internationale des Cinémas/International Union of Cinemas (UNIC), has announced that after 15 years in Amsterdam it will move to Barcelona, Spain. CineEurope 2012 will be held June 18-21, 2012 at El Centro de Convenciones Internacional de Barcelona. Robert Sunshine, MD of CineEurope, said that the move to Barcelona will better serve the European cinema exhibition and distribution communities. CineEurope management and UNIC consulted with constituents and the overwhelming feedback received was that a move to Spain would be a beneficial change.

El Centro de Convenciones Internacional de Barcelona is located in the Diagonal Mar area, in close proximity to one of the most beautiful beaches of Barcelona. The conference centre is approximately 10-15 minutes from city centre via the Metro.

**NEW HOME FOR REPAIR SPECIALISTS REAL ELECTRONICS**

REAL Electronics, who provide a much-appreciated rapid-turnaround service for the repair of all types of cinema electronic equipment for some of the UK’s largest cinema chains, as featured in our December 2009 issue, moved to new premises earlier this year. The new building, on a main road in Sheffield’s Gateway Business Centre, is much bigger than their old premises nearby, and much more visible to passing trade.

The extra space allows the team to organise their work better. I was interested to learn that the building, which was converted some years ago, used to be an old swimming baths, complete with the little changing cabins they used to have around the edge of the pool, and Business Development Manager Ray Oldfield says that he learned to swim there 50 years ago. I did try hard to resist the pun, but Ray says that they are hoping to make a bit of a splash in their new home!

**AND ... CINEMACON 2012 DATES ANNOUNCED**

CinemaCon, the Official Convention of The National Association of Theatre Owners will be returning to Caesars Palace, Las Vegas April 23-26 2012 and will have The Coca-Cola Company on board as its Official Presenting Sponsor for the second straight year and to have the International Cinema Technology Association (ICTA) and National Association of Concessionaires (NAC) as its trade show partners.

**SOUND ASSOCIATES**

Keeble House
81 Island Farm Rd
West Molesey
Surrey KT8 2SA
Tel: +44(0)20 8939 5900
Fax: +44(0)20 8939 5901
www.soundassociates.co.uk

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- Standard 35mm lamps
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CHRISTIE INTRODUCE HIGH FRAME RATE UPGRADE...

To support exhibitors wanting to future-proof their investments in anticipation of showing high frame rate (HFR) movies, which are currently being developed by Hollywood, Christie® has announced a powerful software upgrade for its Christie Solaria™ Series of digital cinema projectors. Christie’s Solaria V2.2 software application includes Christie Previsto™ High Frame Rate (HFR) technology, among other firmware upgrades, which will allow Christie Solaria Series 2 projectors to accept video content at frame rates as high as 48 and 60 frames per second (FPS), compared with the current industry standard of 24 FPS. HFR technology renders fast-moving objects in exceptional detail, boosting the clarity and smoothness of the image.

In support of the transition, Christie also recently announced a historic, five-year agreement with James Cameron’s Lightstorm Entertainment, Inc., to drive research, testing, and development of HFR technology. The two companies will do this by sharing expertise, equipment, and intellectual capitals. Christie will also equip Cameron’s new production facilities that include screening rooms for the next two installments of Avatar. In welcoming the agreement, Cameron praised Christie engineers who “share the same passion for perfection, for continuously raising the standard of excellence that I do.”

... AND PREVIEW AN IMB

At ShowEast Christie previewed a fully integrated media block (IMB) solution with 4K and HFR capabilities, designed to meet DCI specs. Designed and manufactured by Christie, the IMB works with all of Christie’s Solaria™ Series 2 projectors to provide an integrated solution from a single supplier. A key feature of the Christie IMB is that it utilises industry-standard, off-the-shelf storage devices, unlike other media blocks that typically require expensive, proprietary storage solutions. Featuring complete MPEG2 and H.264 support, the Christie IMB allows exhibitors to display a larger variety of alternative and advertising content, fully streamed from the same storage device that holds the packaged cinema content. The complete, all-in-one projection system that results will provide unparalleled value, will be more reliable than third party solutions, and will give exhibitors ultimate confidence in their long-term investment decision. Many current digital projector installations use a media block in an external server that is linked by cables to the projector. This creates bandwidth limitations that impact picture quality and inhibit the overall system’s ability to maintain and display video at higher frame rates and increased pixel resolution. The Christie IMB overcomes this by physically operating within the projector. It becomes an integral part of the display device, creating a secure connection that can manage the high bandwidth required for HFR and 4K content without compromising image quality. It reduces complexity by eliminating the need for an exhibitor to support varied servers and IMBs currently on the market from different manufacturers. The Christie IMB is designed to work with all Christie Solaria Series 2K and 4K projectors and to work perfectly with Christie Previsto™ HFR technology.

For more information on higher frame rates, visit:

www.higherframerates.com
www.christiedigital.eu

‘ME TOO’ CLAIMS FOR HIGH FRAME RATES

After Christie’s suggestions that it is ahead of the game with HFR projection, each of the other digital cinema projector manufacturers has made a point of claiming that they too are ready for HFR, and Barco and Dolby teamed up to give HDR demos at ShowEast.

Sony say that their systems are already equipped for HFR display, requiring only a firmware upgrade, and point out that the Integrated Media Block which is necessary to cope with the required bandwidth for HFR, is already incorporated in the design of their SARD 4K projectors. Although the current Sony 4K projection systems are evidently capable of projecting HFR movies already, the required firmware upgrade will only be made available once a full specification for the necessary HFR DCP has been agreed by the industry (DCI). Otherwise there is a risk that distributors would have to provide different DCPs for the different projection systems.

The series II projectors from Barco and NEC, as for those from Christie, will require a software / firmware upgrade and generally the installation of an Integrated Media Block to cope with the increased bandwidth required. It certainly seems that all four digital cinema projector manufacturers will soon be offering the necessary upgrades, once the DCI specs can be revised to take account of the higher frame rates. The current DCI spec provides for a maximum bit-rate of 250Mbps, but that might need to more than double to cope with 48 and 60 fps. Doremi claim that their servers are ready for HFR, needing just a firmware upgrade.

ARTS ALLIANCE LAUNCH NEW CIRCUIT MANAGEMENT SYSTEM

Arts Alliance Media (AAM) has introduced an innovative new software product for cinema operators to manage their entire circuit from one location. This circuit management system, called Director, interacts with playout equipment at multiple sites and directs all digital cinema operations from a central location. The technology behind Director enables an entire organisation to securely manage their business areas, from content delivery to programming, scheduling and operations - all from a single point, with a few mouse clicks.

Director combines content management, pre-show, scheduling and playback, providing circuit-wide real-time control and reporting. From a single application, the user can automatically manage transfers for playlist and schedule creation, ensuring that the right content is on the right server.

Schedules can be managed across an entire circuit, synchronized in real time, and playback can be monitored across individual complexes and the circuit as a whole. Director also simplifies advertising and pre-show creation, with dynamic playlist updating and integration of point of sale data. Building on the capabilities of digital cinema technology, Director enables long term return on investment, integrated management of a digital circuit, operational efficiencies through centralised and automated processes, and full visibility.

As usual with AAM, the system is equipment agnostic and not only works with AAM’s own Theater Management System (TMS), but also with other TMS products in the market, and with a wide variety of digital cinema equipment from multiple vendors.

www.artsalliancemedia.com

IMAX® WORK WITH KODAK ON LASER PROJECTION

IMAX has licensed from Kodak certain exclusive rights in the digital cinema field to a portfolio of more than 50 patent families covering fundamental laser projection technology as well as certain exclusive rights in the digital cinema field to a broader
range of Kodak patents covering complementary technologies useful for laser projection products. The relationship should broaden the application of these technologies and enable IMAX to deliver the highest-quality digital content available to IMAX® screens larger than 80 feet and to dome theatres. The technology also will allow IMAX to distribute content with greater efficiency to the company’s global theatre network. IMAX expects to introduce the new laser-projection technology by the second half of 2013 and that it will provide the company’s largest screen and dome customers - which have previously only had access to film - with a full array of digital content, including Hollywood’s biggest IMAX DMR® titles. Kodak engineers will work closely with IMAX engineers over the next 18 months to assist with the implementation of the technology into the IMAX product family. The announcement follows IMAX’s investment in Laser Light Engines (LLE), an initiative centered around developing technology to illuminate existing digital screens to IMAX standards. The Kodak technology is expected to extend these efforts and allow the illumination of IMAX 80-to-100-foot screens and domes with a brightness and clarity not currently attainable in these formats as well as consuming less power, lasting longer and having a wider color gamut when compared with existing technology.

**AND ...**

**IMAX® SIGN FIRST JOINT REVENUE SHARING AGREEMENT IN MALAYSIA**

IMAX Corporation have signed a joint revenue sharing agreement with Malaysia’s TGV Cinemas to install a new digital Imax® theatre system at the Sunway Pyramid Shopping Centre, TGV’s highest-grossing multiplex. Expected to open by mid-December this year this agreement brings to 294 the total number of Imax theatres contracted to open in the Asia region, 95 of which are currently in operation.

**BARCO TEAMS UP WITH DATASAT & THX® FOR COMMERCIAL AURO-3D ROLL-OUT**

Barco is partnering with THX® and Datasat Digital Entertainment to bring Auro-3D® sound technology to commercial cinemas. Datasat is Barco’s partner for the manufacturing of the audio processor and THX collaborates with Barco on enhancements to optimize performance of the Auro-3D® system for commercial cinemas. Together, they apply vast experience and proficiency in digital cinema sound to an amazing level of auditory acuity, enabling movie-goers to hear sounds from their relative origination point in the theater, and it does so in a simple and cost-effective way. To achieve this truly enveloping experience, the system incorporates additional speakers deployed in the upper portions of the auditorium that add an extra dimension to the sound experience. The solution is 100 percent backwards and forwards compatible with existing sound systems, requiring minimal hardware investment and installation time. By qualifying Auro-3D® technology from a design and technology perspective, THX recognizes Barco as developing a premium quality audio offering whilst already being a superior brand in digital cinema projection.
AND ... FIRST AURO-3D USA INSTALLATIONS
Barco has successfully completed the first Auro-3D® installations in the United States at commercial theaters for the world’s largest movie exhibitors: Cinemark (Dallas), Regal Entertainment Group (Los Angeles) and AMC Entertainment (Miami). These latest Auro-3D installations follow on the heels of deployments in Russia and China, now elevating the sensory experience at movie theaters on three continents.

Read the Auro-3D technical paper on page 26.

KINOTON’S NEW ONLINE SERVICE TOOL TO MONITOR PROJECTION BOOTHS
Kinoton GmbH has once again added to its already extensive D-Cinema service and support. If cinema operators have chosen to use the Kinoton Remote Service (KRS), they can now view the status of the connected digital cinema devices in their projection rooms online. The new “MyCinemas” monitoring tool lets authorized users monitor the most important parameters of their units over the Internet, such as lamp operating hours, the temperature of critical components of the D-Cinema projector, and the status of the D-Cinema server’s hard drives. Even basic device information such as the latest firmware and software versions of the devices is displayed.

To get their personal password for accessing this information data online, all that cinema owners have to do is register at the “MyKinoton” online portal to obtain their personal password. The KRS boxes at the respective theatres also have to be reconfigured once by a Kinoton service engineer. The users can then decide which of their auditoriums they want to be displayed online and who should have access privileges for this status information. The customers can change these access rights for projectionists or the theatre’s technical staff whenever they like.

“MyCinemas” supports projectors of the DCP and DP series, as well as many established D-Cinema server models such as those from Dolby and Doremi. Kinoton is constantly extending the range of devices that can be checked via the online monitoring tool. On request, the new service can even be adapted to include client-specific devices in the projection booth. Kinoton is also planning to launch an automatic warning message service that reports possible problems to a technical service contact.

www.kinoton.com

NEC’S NC3240S PROJECTOR EARNs DCl COMPLIANCE
NEC Display Solutions of America announced that its NC3240S digital cinema projector has reached full Digital Cinema Initiatives (DCI) Compliance for usage with 2K legacy third party servers. The new projector offers 31,000 lumens of brightness with precise 4K (4096 x 2160) resolution and 3D capabilities for the largest cinema screen sizes of up to 105-feet wide.

The test was completed by the Research Institute for Digital Media and Content at Keio University (hereafter, DMC) in Japan, which is one of two entities licensed by Digital Cinema Initiatives, LLC to perform the Compliance Test Plan (CTP) tests. NEC’s digital cinema projectors were certified in:

•(*2) DCSS CTP Version 1.1 as of May 8, 2009

www.nec-display-solutions.com

ARCLIGHT CHOOSE GDC SERVER SOLUTION
GDC Technology has reached a server supply agreement with the innovative ArcLight Cinemas (“ArcLight”). GDC Tech’s SX-2000A Digital Cinema Servers with Integrated Media Block (IMB) will be installed throughout ArcLight’s cinemas, launching the advanced digital capabilities of each unique site. To date 48 systems have been installed in four different locations. Under the new server agreement, ACS Enterprises Inc. (“ACS”) will supply and install GDC digital cinema servers.

Created and opened by Pacific Theatres in the spring of 2002, ArcLight operates 61 screens at four locations in Southern California, with Hollywood boasting the historic and unique Cinerama Dome — one of only three such theaters in the world today.

D-Cinema Open System Alliance Collaboration Initiative
Dolby Laboratories, Inc. (NYSE: DLB), MikroM GmbH, USL Inc., and XDC together have announced an alliance to promote greater interoperability within the digital cinema market. The companies joining in this collaborative effort, referred to as the Digital Cinema Open System Alliance (DCOSA), are working to establish open interface standards for core system components.

Initial goals of the DCOSA are to develop common interface specifications between digital cinema servers and integrated media block (IMB) products and to promote these specifications for use across the cinema market. By introducing these open standards, the DCOSA hopes to drive down the cost of development, to increase flexibility, and to provide a platform for innovation.

FOR DCP SERIES II DIGITAL CINEMA PROJECTORS PRODUCED BY Kinoton

Omnex Pro Film, Unit 6, Avondale Ind Estate, Avondale Road, Edgeley, Stockport SK3 0UD, UK
T: 0161 477 7633 F: 0161 474 1735
The DCOSA plans to make its server and IMB interface specifications available as an open standard for use by the digital cinema industry. The specifications are expected to be completed and available in the first half of 2011. Information regarding specific product availability can be obtained directly from the member companies.

**XDC CONCLUDE VPF DEAL WITH BULGARIA’S ARENA CINEMAS**

XDC has concluded a VPF agreement with Arena Cinemas, the major cinema circuit in Bulgaria. Having implemented DCI-compliant digital projection systems in Poland, Hungary, the Czech Republic and Slovakia, Bulgaria is the next country in Eastern Europe in which XDC is exporting its popular VPF financing scheme. Under the terms of this agreement, Arena Cinemas, the dominant player in Bulgaria’s cinema market, will equip a total of 70 screens at 9 locations with state-of-the-art digital projection systems. Arena Cinemas, which opened its first multiplex back in April 2003, will equip its cinemas with a satellite delivery solution which will allow distributors to deliver films directly to the cinemas, and which provides the opportunity to receive live 2D or 3D transmissions.

All the systems will be connected to XDC’s NOC (Network Operations Centre) which will perform the hotline support and the preventive remote maintenance. XDC’s local partners will directly manage the frontline support of the digital systems. Furthermore, they will take care of the installations and maintenance supported by XDC’s NOC services.

Service of the equipment was one crucial point for entering into an agreement with XDC as Bojidar Iliev, Managing Director of Arena Cinemas, confirmed: “Converting all our cinemas to digital entails that we will need a service partner that meets our requirements to the fullest - XDC has a proven track record as far as NOC and on-site services are concerned.”

**CHRISTIE SPONSORS FOURTH ANNUAL BKSTS STUDENT FILM SHOW**

Students on courses accredited or associated with the BKSTS, and currently graduating, had the opportunity of screening their work at the National Film Theatre on London’s South Bank. Students from Brighton Film School, Greenwich, Sheffield Hallam and Staffordshire Universities, as well as from University College for the Creative Arts, Farnham, showcased their work to an invited audience which included Sir Sydney Samuelson CBE, patron of the BKSTS. Some readers may not be fully aware of Sir Sydney’s career so please see our report of his ‘All Industry Tribute Lunch’ on page 66. Students were delighted that a veteran stalwart of the British film industry attended their event.

In a brief address to the students Sir Sydney Samuelson praised the very high creative, technical and professional standards that the students had achieved in their work. The screening was sponsored by Christie, and was made possible thanks to the close support of the BFI Technical Operations Team. Ironically one of the student films shown was entitled “The Death of the Cinema Projectionist” which featured interviews with the projection team at The Ambassadors Cinema, Woking. The film beautifully evoked a team of projectionists’ fondness for traditional film projection during this current fast changing era when everything is going digital.

To learn more about the BKSTS course accreditation/approval scheme contact Mark Trompeteler email: mtromp@blueyonder.co.uk.
MasterImage 3D, which claims to be the fastest growing 3D solutions provider in the world, made two important announcements in the US, and their effects will roll out to the Europe and the rest of the world during 2012.

Cinema Technology readers are familiar with the current MI-2100 3D cinema system which has been adopted successfully by thousands of cinemas, worldwide, and which will continue to provide a cost-effective and flexible solution for cinema owners wishing to convert to 3D or to change their 3D system - I was surprised to learn that some 22% of MI3D sales this year went to cinemas who had tried another system and, at the end of their contract period, had decided that MI3D would provide them with a better business model.

The well-loved MI-2100 will continue to be available, but the introduction of a new MI-CLARITY3D digital cinema system points the way to the company’s future plans for 3D. As you would expect, MI-CLARITY3D provides premium 3D image quality with improved lighting efficiency, precise colour accuracy and fidelity, with full system automation.

A major difference from the MI-2100 is that the new system is available in three different models to meet the specific projection needs of different cinemas. And, taking account of all the recent news on higher frame rates, MI3D say that their kit will be fully compatible.

• MI-CLARITY3D SA (Stand Alone) - Smaller, lighter, and more versatile than the existing model. Easy to install and operational in 30 minutes.
• MI-CLARITY3D MX (Mezzanine-Free) - For boothless projection, the filter head mounts onto a rack with the control console, which can be rack- or wall-mounted within 5 metres of the rotating filter assembly.
• MI-CLARITY3D RH (Remote Sliding Head) - the filter disc can fit into tight spaces for smaller projection booths. A free-mounting frame allows the filter head to move in-and-out of position of the projection beam for 3D/2D projection in horizontal and vertical directions.

All the models feature MasterImage 3D’s unique and well-proven Circular Polarized Filter Disc, which provides a balance of clarity and brightness, and we are hoping to be able to provide full technical details and diagrams of the various Mi-Clarity options in the next issue of Cinema Technology magazine.

Financing ownership program

In what represents an industry first, MasterImage 3D is also introducing a financing ownership program for theatre owners worldwide to help drive expansion of high quality 3D digital cinema experience.

One of the major reasons MI3D has found such ready acceptance in the existing cinema marketplace is its ownership-based pricing model which means that cinema owners know exactly what they are going to be paying, with none of the uncertainties that ‘seat-tax’ based systems can bring.

Small cinema businesses are still, however, left with the problem of raising or borrowing the capital to buy the equipment in the first place - although the list prices of around $25K compare well enough with other systems, if you are a small guy with half a dozen screens it is still a large sun to find.

MI3D were able to take advantage of being part of a large world-wide corporation, listened to customers and have come up with a unique and affordable financing system. After only a minimum of financial checks on your cinema business, MI can provide an immediate long-term loan on favourable terms, with little money down, to allow you to purchase their 3D equipment.

The company is financing the deals itself, with no outside bankers involved - must be worth investigating if you are thinking of moving into 3D.
4K is just the beginning

While others claim to be 4K ready, Sony is already there. We continue to drive the industry with thousands of projection systems installed worldwide, delivering stunning 4K imagery and captivating, lifelike 3D. But that is just the beginning. Sony is also a leader in the deployment of turnkey international VPF programs with flexible financing.

Added to which, we provide digital signage solutions for concessions, box office and lobbies, plus exciting alternative content, digital surveillance and a sophisticated NOC to monitor your systems. All of which is backed with global support.

When it comes to investing in the future of exhibition, all eyes are on Sony 4K.

www.pro.sony.eu/dcinema4K
The first 3D films were launched in cinemas decades ago with patents by Edwin Land, the founder of Polaroid, appearing as early as 1937 and films like Jaws 3D in the 1970s. However, just a few years ago, 3D technology caught up with modern expectations and rather than being a gimmick it became a more immersive experience, with the crowds flocking to see it for themselves. Cinema is in fact very often the frontrunner to a new experience everywhere. It happened all those years ago with surround sound, then HD. 3D is no exception, the cinema has led the way and now 3DTV is following the example. Eva Dudek, Marketing Project Manager, Polaroid Eyewear, believes that far from being a passing phase, once consumers get used to a 3D experience at home, there really will be no going back for cinemas.

**Investing In The Future**

That said, one of the main stumbling blocks for the initial adoption of 3D cinema has been the sheer volume of investment needed by everyone involved in the process of delivering it. For the cinemas, it means installing new expensive equipment, for the studios, creating yet another version of the film, and for the consumers that leads to a higher cost to view a 3D film. And we are not talking about insignificant amounts of course. Each system also needs glasses, with many cinemas choosing to giveaway cheaper glasses with each film, and meaning even more so that they need to charge consumers extra to watch in 3D. That said, for the cinema, once the initial investment has been made, the outlay to continue showing 3D films is relatively insignificant, especially as there is now a proven interest in 3D films and consumers are often happy to pay the additional cost for the immersive experience afforded by the technology.

Many cinemas have already invested in 3D cinema systems, but those who have not are finding more and more the need to do so in order to remain competitive. This trend will continue as more and more films are made available in 3D and will lead to many of the smaller independent cinemas beginning to look to make the switch. We may also see many of the bigger cinemas and chains adding additional screens to manage the demand.

**Active vs Passive**

Those cinemas, which have not yet invested are of course faced with a minefield in terms
of available technology, although with the benefit of a certain amount of hindsight from those who have gone before. As with any investment on this scale, ensuring you have the right technology in place to be future-proof is vital but with so much talk of active and passive technologies in the home cinema world, what is the right choice for cinemas?

The discussion in the world of home cinema is in actual fact very similar to that of the cinema world. Active technology doesn't require a special screen so at the outset seems to be the best choice for cinemas wanting to install a system as cheaply as possible. However, in the long-term it isn't as cost-effective as it would seem, due to the investment required for the glasses. Active systems work by synchronizing with active shutter 3D glasses, which consequently means the glasses need to be battery-powered and bursting with technology, making them heavy, uncomfortable, and above all expensive.

On the other hand, passive sets don't require the screen to synchronise with the glasses, meaning the passive glasses are much more affordable and cinemas are generally happy to give them away. The real investment for passive 3D cinema comes with the need for a brand new specialised silver screen. Passive technology works through a process of polarization therefore the screen needs to be able to preserve the polarized light projected by the 3D projector onto it. This is achieved by coating the screen with a metallic layer. That said, once the initial investment has been made, ongoing costs, such as replacing glasses, are minimal.

The major concern in a cinema environment is that the cinema owner can expect people to walk out of the cinema with the glasses they have worn for the film. For active shutter systems, this will mean a significant dent in finances, even if you only lose 10% per film, and in reality it is likely to be significantly higher. Whereas with passive systems, the glasses are made cheaply and subsequently the cinemas bundle the cost in with the additional cost of a 3D film.

Content and Consumer Demand

As with any new or emerging technology, you can very often end up with a chicken and egg situation. Cinemas don't want to invest too heavily in 3D technology until there is enough content readily available to make it worthwhile. The studios however have been reluctant to invest in making 3D versions until there are enough outlets for those versions.

The situation has been changing steadily over recent years and we are now at a point whereby there are enough cinemas and enough available films to make it worthwhile and as more content becomes available, it will increase the incentive for more cinemas to introduce or add 3D screens.

There is still a certain amount of lack of content for 3D cinemas. It has increased dramatically but we are by no means seeing every film released with a 3D version and cinemas are still working to recoup the initial investment. It doesn't seem to echo consumer demand, as consumers are very much attracted by 3D films, and the 3D versions are more often that not far outstripping their counterparts, despite the increased cost to view them.

And now we are seeing the early stages of 3D TV adoption. It is absolutely still early stages and it will be while before 3DTV is a mainstream reality, that said US analyst firm, In-Stat believes that the market for 3DTV sets will grow by almost 500% in 2011. By 2015, In-Stat expects there to be more than 300 million 3DTV sets worldwide. The cinema will always offer a unique experience, but with more and more consumers trying to replicate a tiny part of that in their homes, the cinema world needs to stay one step ahead and anticipate the rise in demand for 3D films that 3DTV will bring. If you can get 3D in your home, but not at your local cinema, what is the point in going to the cinema?

Maximising Return

For the studios, to make one film available in 3D involves a significant investment, but they can also recoup a lot of their costs using a combination of ticket sales and merchandise. However, for the cinema, whose investment in 3D technology is considerable, it takes an average cinema much longer to recoup the cost. Most 3D films are charged at a slightly higher cost and as I've mentioned, consumers are generally happy to pay that, but it is still a slow process and cinemas need to look at other ways to use 3D as a profit generation tool. Naturally the more films available in 3D, the better return the cinema can achieve and as content becomes more widely available, that will lead to a decrease in time taken to turn the investment into profit.

It is possibly worth also considering the negative effect on revenue of not having 3D screens. As more and more cinemas are able to show 3D and more and more films being made with 3D versions, those cinemas not capable of showing them in 3D will lose out.

We work with a number of passive 3D cinemas, selling our passive 3D glasses on site. For the cinemas, it means an extra revenue stream and for the consumer, they can invest in stylish looking 3D glasses, helping them to stand out in an audience of untrendy glasses, and of course once they have a passive 3D set at home, they can also use them there.

Just a Passing Phase?

Given the huge investment required to install 3D equipment, this simply cannot be a passing phase. Also, as 3DTV gets more and more popular, consumers will get used to 3D in the home and simply won't expect anything less than that for their cinema experience.

3D cinema is here to stay and although it will require more investment from everyone in the cinema industry, the whole industry should also benefit from the rewards. The more content and outlets available, the quicker that process will be.

Eva Dudek
The National Media Museum has upgraded its big Pictureville auditorium from 2K to 4K digital, continuing to keep this superb cinema in the top rank of cinemas, with probably the most diverse range of projection format capabilities in the world. The existing Christie CP2000S 2K projector has been replaced by the flagship of the current Christie Digital D-Cinema range of projectors, the CP4230.

Current major formats catered for include:
- 35mm (All Digital sound formats plus analogue including 4 Track magnetic)
- 70mm (All Ratios and sound formats including DTS70 on both the Flat and Curved Screen)
- 3 Strip Cinerama
- 4K Digital projection
- Digital 3D (Xpand) on the Curve or Flat Screen

The Pictureville cinema is equipped with two screens, the large deeply curved Cinerama Louvered screen, and a matt white roll down flat screen.

The installation of the 4K Christie was performed over 2 days by Darren Briggs and Nigel Priest of Arts Alliance Media.
We started by removing the 2K Christie CP2000S. This was put into storage for a couple of weeks (See later).

The new 4K was supplied with a lens which catered for projection on both the flat screen and curved Cinerama screen. Digital 3D on the Cinerama curved screen gives a whole new dimension to immersive 3D when sat on the front row!

For 4K to be screened the later type servers with external 4K capable Media Blocks have to be used. Here a Doremi IMB (media block) is installed within the projector, the content and operation of the server content is performed by the Doremi Show Vault. This is then linked to the IMB housed within the projector by a single PCIe cable.

The picture on top left shows the new AAM design universal pedestal: Note that the system is on a movable base (red) to allow it to be moved for service of the Vic 8 Cinerama Projector.

**So what happened to the 2K CP2000S?**

This projector was installed into the museum’s IMAX® cinema.

We removed the Cinemecanica Victoria 8 35/70 and the CP2000S was installed in its place. We also removed the aging Dolby CP200 cinema sound processor and added a Dolby CP750 at the same time, to provide the latest in digital sound. This is fed into the IMAX sound system.

Thanks to Duncan McGregor, Dick Vaughan, John Cahill, Symon Culpan and all the museum staff who assisted in various aspects of the works undertaken.

*Darren Briggs*
The Annual Projectionists’ Christmas Party will take place on Monday 19th December 2011 at the Odeon Leicester Square from 12-4 pm. The BKSTS Awards for the Projection Team of the Year and the Frank Littlejohns Award will be presented. Invitations will be sent out from the beginning of December, but if you don’t receive one and would like to come, please contact Dion Hanson by emailing to cinematech@btinternet.com. The Cinema Technology Committee would especially like to welcome the many projectionists who have lost their jobs this year - please come along and meet your old friends.

At the Annual Projectionists’ Christmas Party on Monday 19th December 2011 the BKSTS awards for the Projection Team of the Year and the Frank Littlejohns Award will be presented.

Each year members of the Cinema Technology Committee suggest candidates for the Projection Team of the Year award, and this year, after some very good cinema teams had been considered, the CTC voted to present the Award to the team from The Ambassadors Cinema at Woking, west of London. Prior to the decision the cinema had been visited by several members of the CTC, and Cinema Technology magazine carried an article about the Woking team in the December 2010 issue.

The BKSTS Frank Littlejohns Award is given to recognise outstanding work in the Art and craft of Cinema Projection, and for 2011 the CTC decided that the award should go to Mark Wooffinden, who has been in the projection business since he was a lad, and who retired from Showcase Cinemas in June, after 58 years in the business.
Christmas Quiz

This year the theme is ‘Times gone by’. Below are six film related images and you have to list the items that have now become obsolete. In some of the pictures you may see several items ... list them all and the winner will be the one with the largest correct list.

To see larger images or to download a pdf version go to www.bkstsctc.org and follow the ‘Quiz’ link.

ANSWERS TO DION HANSON AT: cinematec@btinternet.com

...and win a prize hamper!

Once again Jack Roe are kindly offering a prize of a hamper to the winner of the Christmas Quiz to be presented in the New Year.

HARKNESS D CINEMA SCREEN CHECKER

Harkness Screens previewed a brand new Digital Screen Checker at Show East, a low-cost hand-held digital cinema device for accurately measuring screen brightness in foot lamberts. Described as ‘An ideal tool for projection managers / projectionists or service engineers to monitor screen brightness and lamp life’, the Digital Screen Checker helps exhibitors to ensure that their presentations remain at optimum levels and ensure DCI-compliancy. The battery powered unit is calibrated from 0-30 ft/L and provides instant readings for both 2D and 3D screens. It is calibrated to be highly accurate even in the lower ranges used in 3D projection. The Screen Checker is designed and manufactured by TLS UK who are responsible for UK sales, while Harkness Screens is promoting outside of the UK. It promises to be a much simpler and lower cost device than existing brightness measuring equipment, and I am hoping that Cinema Technology magazine will be able to carry a full technical article about the unit in a forthcoming issue.

The new Digital Screen Checker ships complete with a mounting tripod and 3D glasses holder.

www.harkness-screens.com
www.tlsuk.com
A new dimension in cinema sound

Auro-3D

INTRODUCTION

The introduction of digital projection in cinema theatres has spurred a revival in 3D movies. The first was ‘Chicken Little’ in 2005, and now – according to box office returns – they’re here to stay. The image quality provided by digital cinema systems provides the immersive 3D experience that moviegoers have been missing for decades. But in contrast to this revolution of the visual experience, cinema audio has been evolving very slowly. In fact, other than adding a few more speakers to surround the audience with sound, the past 20 years have brought forth no significant innovations that have been able to make the aural experience as life-like and immersive as 3D imagery - until now.

3D audio is the next logical step required to usher in the ultimate motion picture experience. When experiencing 3D Sound, one realizes that an immersive sound field creates more of an emotional response in the audience than image alone. Sound is related to emotion. Even when environmental sounds are heard unconsciously, they can have an impact on our emotional attitude and behaviour.

The importance of sound - for business applications as well as for private individuals - has been greatly underestimated. People feel connected with the environment through sound - and the more natural the sound, the closer the connection. Furthermore, neurologists and sound engineers have long proven that sound can strongly influence the brain and the body. As George Lucas put it: sound is 50% of the movie experience.

Still, the industry remains uncertain as to how to properly implement and use a new 3D sound experience. Auro-3D is the ideal, state-of-the-art solution because it integrates the full 3D experience into existing technology and standards with a flexibility and quality never achieved before. This new format was first showcased at the AES Conventions in Paris and San Francisco in 2006 - and it has carried on improving since.

Providing 3D listening formats that are compatible with current standards is just one of the contributions that Auro-3D has made. But what about the technology that will permit this new 3D format to be placed within the market’s existing distribution architectures and make it compatible with all forms of multimedia?

In this article we’ll explore the nature of human hearing, the shortcomings of current sound systems, and how Auro-3D addresses these shortcomings and the opportunities it can offer to your production pipelines and to commercial movie theatres.

THE PERCEPTION OF SOUND

Our brains perceive pictures very consciously, whereas sound is perceived rather unconsciously. Therefore, sound is sometimes considered to be less important, although film producers assert that sound creates at least as much emotional response as images do. True 3D Sound reproductions require a speaker layout with three spatial axes (X = width, Y = depth, Z = height) to produce true “dimensional sound in space”. This means that simply the addition of height speakers will ensure the reproduction of real 3-dimensional sound. Consumers, industry leaders and experts clearly see the evolution in audio entertainment: from a source point reproduction system (Mono), to a 1-dimen-

sional sound reproduction format (Stereo,
speakers on 1 axis) and later a 2-dimensional format (Surround, speakers located in a horizontal plane using x,y axes) and finally to the ultimate 3-dimensional format using the missing dimension (the z-axis) to create a Full 3D Audio Format of which Auro-3D is compatible with downstream multimedia markets.

Previous generations listened to mono systems, whereas the post-WWII generation grew up with technologies like stereo sound (which was spurred on by the invention of the television). The current generation is growing up in a digital ‘surround sound’ environment. Today’s digital surround sound can be produced by two different systems that play back this ‘ambient sound’: the “Real” 5.1 System, which uses one speaker per channel, and the “Virtual” Surround System, which uses fewer speakers and fewer cables. The Virtual Surround System uses psychoacoustic methods that only work well when one is sitting in the sweet spot. The result does not sound natural and is far from a real surround impression, although a real surround impression was meant to be the primary focus and deliverable of surround sound.

The speaker layout of 5.1 Surround Sound, which is placed in a 2-dimensional plane (x= width, y = depth), was sold to the consumer as the solution for an immersive sound environment, but it did not fully deliver that experience. Furthermore, 6.1 and 7.1 surround releases still fail to fulfil this expectation, as they merely expand the depth of the horizontal plane around the listener. So, the current Surround Sound concept still has many shortcomings and is not able to immerse the listener in a “True Sound environment” (especially when you consider all that the new 3D digital technology could deliver). Whether that listener is gaming, watching a movie at a local cinema, listening to music, or watching a sports event, the expectation of a more immersive sound field remains unfulfilled. Full True 3D Sound must be a unique experience that places the listener as the main observer in a virtual (close to reality) world. The listener must be positioned in the “middle” of the action and feel as if he or she is part of it.

3D Sound reproduction, which simulates the natural ambient sound experience much more closely than current surround systems do, also promotes greater acceptance of an immersive experience, since our brains are designed to experience enveloping sound rather than the 2-dimensional point-source sound reproduction today’s systems provide. Due to the technical limitations of current (2-dimensional) sound systems, and the fact that recently proposed solutions are incompatible with existing standards, no commercially viable solution for providing 3D sound has appeared on the market … yet.

The multimedia world is moving fast and is preparing a giant step to allow consumers to experience a higher level of entertainment by integrating 3D technology into gaming, broadcasting, cars, home cinema, cinemas, music, mobile phones, streaming, PC, and other content. However, as history has shown, revolutions in entertainment technology always begin at the theater. 3D audio will be no exception.

INTRODUCING THE AURO-3D FORMAT

The reproduction of ‘sound in space’ via x,y and z axes requires at least 8 speakers, positioned at the 8 corners of a cube. By adding a centre and LFE (Low Frequency Effects) channel, the smallest full 3D sound speaker layout compatible with 5.1 surround is the 9.1 configuration as defined by the Auro-3D Format. Therefore the Auro-3D 9.1 format as illustrated above is ideal for a home cinema system.
of a 5.1 surround setup. This results in a two-quadriphonic layer system, with the addition of a Centre Speaker and a LFE (Subwoofer) channel to be compatible with the 5.1 standard. It uses the smallest number of speakers to reproduce Full True 3D Sound, while remaining compatible with today’s main standards: Stereo and 5.1 Surround.

The full Auro-3D speaker layout is defined for up to 13.1 channels, with 11.1 being the ideal solution for environments such as a commercial cinema. Each sub-layout has its own fixed setup. It is important that we do not confuse the market with different layouts for a certain number of channels. While offering various configurations (each one is appropriate for a specific environment), they all offer the same basic layout.

The Auro-3D speaker layouts 9.1 up to 11.1 are based on the 5.1 Standard:
- **9.1 Auro-3D**: + 4 height channels (one above each corner speaker / array)
- **10.1 Auro-3D**: + 5 height channels (+TS = “Voice of God” channel)
- **11.1 Auro-3D**: + 6 height channels (+ Height Centre)

The Auro-3D speaker layouts 12.1 and 13.1 are based on the 6.1 or 7.1 Standard:
- **12.1 Auro-3D** = 11.1 Auro-3D + Rear Centre (6.1)
- **13.1 Auro-3D** = 12.1 Auro-3D + Height Rear Centre

**NOTE**: Using the Auro-3D Codec, the 11.1 mix can be encoded into a 5.1 mix. There will also be an upgrade path to allow a 12.1 Auro-3D master to be encoded in a 5.1 mix.

With standard surround sound or wave field synthesis based systems, the speakers are located only in the horizontal plane (= 2D), so this does not create the height effects that lead to a psychoacoustic sensation of being in a virtual environment. By applying real 3D Sound – the most natural reproduction of sound – you create more than just a new listening experience: this is a truly immersive experience that encapsulates the listener within the action. Direct (objects) and indirect (ambient) sounds coming from around and above the listener are created by using acoustical reflections in 3D, allowing the mind to correctly position the sources of the sounds. This makes 3D Sound the perfect match for the digital 3D visual experience.

**THE ADDED VALUE OF AURO-3D IN CINEMA**

The sound ecosystem in cinema has a number of players. The studios want to create the strongest possible story. The creative professionals on-set and in post-production want to add their unique contributions to that story by using the latest and most effective production technologies available. And finally, the exhibitors want to bring this story to the largest possible audience by creating the most immersive experience. Auro-3D helps each of these players achieve their goals.

**STUDIOS**

Of course, every movie is a story that is a meaningful artistic journey for those who create it, but it is also a business venture for the studios. It has a schedule, a certain level of quality, and a budget. Through its unique compatibility with existing formats and standards, Auro-3D can empower the story without compromising the budget. Adding 3D sound through Auro-3D raises a movie’s total sound budget by around 0.1%. While 3D audio technology may be regarded as a revolutionary disruptive technology, the tools available with Auro-3D allow for easy integration into existing post-production processes. Just like distribution today, only one print master is required, and that single distribution DCP supports all formats including all downstream release formats. 3D with a 2D budget! This also applies to DVD and BluRay releases, since the Auro-3D stream can fit into existing 5.1 streams.

Auro-3D provides truly immersive 3D sound while being backwards compatible with existing standards. There is no “chicken & egg” problem, which has blocked the introduction of new technologies in the past. The master mix is first artistically created in 11.1 for the main release into theaters. Next, the 11.1 mix is folded into a 5.1 release mix in a quick, but artistically supervised, mix-down session. Then, this 5.1 master is encoded with the Auro-3D (11.1) channel information to create the final 5.1 PCM (uncompressed audio) master used in distribution and, potentially, in all other downstream formats.

This upstream and downstream compatibility with current standards and production practices makes Auro-3D the best solution for next generation audio and the only viable solution for the marketplace. What’s more, Auro-3D also introduces new creative opportunities. Studios can now re-release their classic titles in artistically created 3D sound up-conversions, a function that the Auro-3D codec can also provide. Something to be considered seriously as the idea of re-releasing classic films in 3D visual gains momentum.

While presentation technology has progressed to digital and then to Digital 3D, sound technology has not evolved very much in nearly 20 years. Auro-3D allows sound technology to “catch up” to the current visual presentation systems – bringing a total immersive experience to the movie-going public.

**CREATIVE PROFESSIONALS**

Creative professionals – such as the director, composer, sound designer, production sound mixer, recording engineer and re-recording engineer – bring their unique expertise and skills to a motion picture production. Their talents converge to take the story to a higher level. Being creative, they look for more degrees of freedom to help tell a better story. Being professional, they do this without compromising quality or performance. Auro-3D helps achieve these specific goals.

The artistic mix of the Auro-3D codecs gives creative professionals access to the greater freedom they are looking for, especially when creating a unique 3D visual experience. Having the capability to add 3D sound effects to support or enhance the visuals opens up a new level of creativity. Furthermore, this can be done without sacrificing the dynamic range of the original PCM, ensuring that quality and control are maintained. Even when they apply some of the available automated mixing tools, they have the guarantee that the balance and sound colour of their material are maintained.

**EXHIBITORS**

Exhibitors not only need to manage a multitude of movies coming onto their screens every couple of weeks, they must also manage and meet the increasingly sophisticated expectations of the thousands of patrons coming to their cinemas expecting to enjoy themselves and escape the world for a little...
while. It’s understandable that exhibitors will hesitate to re-invest in new equipment and re-design their auditorium layouts. But this is exactly where Auro-3D was designed to their requirements: upgrading from surround sound to true 3D sound is perfectly easy – you simply add height speakers to the existing footprint. Furthermore, Auro-3D sound processing is similar to, and compatible with, existing setups. Another important consideration for exhibitors is the impact of this new technology. Yes, the effect is stronger, more immersive and more natural than surround sound – but will content be available to enjoy this on? And what about alternative content that was not made for 3D reproduction? All of these things were taken into consideration when Auro-3D was designed by Wilfried Van Baelen. As mentioned above, the standard is fully backwards compatible with existing standards, guaranteeing full support of all content. This guarantees compatibility with your pre-show and alternative content. There is also the capability to up-mix content: either in an artistic up-mix (as mentioned above in the production process) or in a more “Auro-Matic” manner, while still maintaining the balance and color of the original content. Let’s not forget the new opportunities Auro-3D could bring to exhibitors. With theaters investing in 3D, digital projection and 4K technology as ways to differentiate from the competition, imagine standing out in the crowd by pioneering “sound in 3D”! Not only will this help you differentiate from other exhibitors, it will also pull people away from their homes to dive into this new experience that’s only available at their favourite movie house! With the 3D visual experience already one step ahead, this is the opportunity for exhibitors to update their sound installation and create the most complete motion picture experience for their patrons.

**THE AURO-3D CODECS**

Up to now, the only way to achieve the reproduction of multi-channel formats has been by means of so-called “Data Compression”. But the market is evolving, and the current trend is to move back to the original digital uncompressed audio format – called PCM (Pulse Code Modulation) – which avoids the use of Data Compression codecs. This is evident in evolving broadcast and BluRay specifications and even the DCI spec, which specifically calls for the use of uncompressed audio. This trend is occurring as the various “lossy” data compression systems for audio (Dolby, DTS, MP3, etc.) prove to be incompatible and extremely difficult to use while maintaining a philosophy of single format distribution. Moreover, compression formats can create sound distortion, causing a loss of fidelity and mental fatigue in the listeners.

Due to these shortcomings and the upcoming new trends and needs in the market, a highly intelligent new invention, called the Auro-3D Codec, has been developed over a number of years. With many advantages compared to other data compression based codecs, it is also easy to adopt because it relies on the uncompressed digital audio standard (PCM) that is integrated in every audio-related device.

To add a 3rd dimension to a sound-scape, a solution is needed to fit the artistic mix in the available channels. For this reason, people think they must continue with data compressed formats. However, these suffer from too many compatibility issues, latency, distortion, and a loss of fidelity created by perceptual masking. So, for many reasons, everybody would like to move back to the uncompressed quality of PCM, but they worry about limitations in bandwidth.

All these issues are solved due to the way the Auro-3D codec allows mixers to create
an artistic and dynamically controlled PCM signal that contains two or three other PCM signals without any audible loss. The master of that mixed information is still a standard PCM signal with the same sample rate as the original mixed tracks. This means that, in the PCM domain, we can create multiple distributions in just one 5.1 master. This 5.1 PCM master carries these formats as unperceivable metadata and can be played back on every audio device that supports 5.1 PCM.

Using the Auro-3D codec, all audio standards (Stereo, 5.1 and AURO-3D) can be integrated into just one standard 5.1 PCM stream, which will play back on every 5.1 Surround System. Moreover, one standard 5.1 PCM stream is able to include all past, new and future audio standards: Stereo, Surround 5.1 and AURO-3D (18 channels in total) integrated in the 5.1 Standard PCM stream, which plays back the original 5.1 mix without using a codec. This means that, when a movie is mastered with the Auro-3D codec, anybody who doesn’t have an Auro-3D System will still hear the 5.1 tracks in exactly the same quality as they normally would have had in standard 5.1 Surround.

But if they have the Auro-3D decoding system, the engine will extract all of the hidden information from that PCM signal and put it back in its original 3D audio format without any audible compromise!

How does it work? Everybody agrees that the dynamic range of a final mix master for end-users does not have to be more than 20-bit (= a dynamic range of about 120 dB). No soundtrack has such an unrealistically high dynamic range – that is, the difference between the loudest and the softest parts of the audio is 120 dB. Classical music is known to have a much higher dynamic range than pop music (which has an average of max. 20 - 30 dB), but the dynamic range of classical music will not be more than the dynamic range of an orchestra, which is never more than 120 dB between the softest and loudest parts of the composition. In fact, the dynamic range of mastered sound (re-) production will rarely exceed 96 dB (slightly more than the dynamic range of a 16-bit compact disc).

In many cases, the dynamic range is compressed during real-time distributions to avoid the dramatic differences in audio level. This form of compression is used in almost every television and radio broadcast facility today.

This is not the case during the workflow (before the final master is made), where it is still important to have 24 bits providing enough headroom for mixing without any compromise. But as soon as the final mix is made, 20-bit PCM masters do have uncompromised perfect audio quality. In fact, during a speech at an ICTA seminar in January 2011, industry veteran Tomlinson Holman explained to the public that 24-bit resolution distribution masters are “overkill”, and he explained why lower bit resolutions (like 16-20 bit) provide an adequate dynamic range to reproduce a film soundtrack accurately.

In summary, the Auro-3D system turns all kinds of incoming sources into a Fully Immersed 3D Sound Experience. Without an Auro-3D system, the 5.1 Surround standard applies, without any noticeable difference in quality. Auro-3D is the only audio technology that is the logical choice for next-generation sound production, distribution and reproduction.

CONCLUSION

From a technical perspective, Auro-3D has many advantages over other new audio technologies. Auro-3D enables single inventory distribution and uses no “lossy” compression system – it simply embeds extra channel information in unused bits in a 24-bit audio stream. This innovative and unique approach allows Auro-3D content to be transported using the market’s current standards. Furthermore, it enables mix stage quality with less bandwidth than other lossless data compression techniques. Plus, it does all this with ultra-low latency (Decoder < 0.1 ms), enabling real-time performance – making it the fastest audio decoding technology on the planet. Advanced mixing and mastering tools are already available: e.g. plug-ins for AMS/Neve consoles and Digidesign / ProTools systems.

Compatibility with location / production sound has also been considered: new recorders and microphones for 3D sound are readily available and can be implemented using existing gear. Regarding the in-cinema setup: Auro-3D is compatible with today’s
The patented Auro-3D Octopus codec is unique in its capability to mix different audio channels into one channel and unmix the original separate channels in the decoder at their original audio quality with 100% channel separation. This means that the codec can take up to 3 playback formats and mix/encode them into a PCM-stream with a lower number of channels and un-mix/decode the correct playback format for the playback system, without the use of the dematrixing techniques that most other codecs require.

Equally important is that this mix can be artistically controlled by the producer/mastering engineer, giving the highest artistic freedom to produce different mixes for e.g. the stereo-, surround sound and Aurophonic versions of the same material, while using only one carrier format in one PCM-stream, which can be listened to as a (controlled) mix of the different source formats.

**Mathematical magic?**

The Auro-3D Octopus mixing and unmixing capabilities are at the heart of the codec, and if we regard a digital audio-signal as a long series of numbers (sample values), where each number represents the value of the audio signal at regular intervals, mixing two digital audio signals is achieved by the mathematical addition of the numbers corresponding to each original signal, creating a new signal with the summed values in the process. Before the mixing/addition, it is even possible to apply a gain to one or both signals to create an artistic downmix by multiplication of the sample values.

Normally, it would be impossible to know that the output signal is actually the result of a sum, let alone what numbers this sum was made up of, but the Auro-3D Octopus codec stores some extra information within the lower bits of the PCM-stream that enables the decoder to reconstruct the original values with high precision. The codec can even perform this same process with three original signals and with the same audio quality, albeit with a slightly higher noise floor.

**Advantages**

An important feature of the Auro-3D Octopus codec is that the encoded file can still be listened to, just as regular audio, without any audible compromise. This is possible since the remaining bits in each sample after encoding, still represent regular audio data as linear PCM, without any compromise to its original audio quality. So, anyone that does not have a decoder can still listen to the audio, as a controlled mix of the encoded channels at the same quality as uncompressed PCM-audio. If a decoder is available, it will automatically detect the presence of the Auro-3D encoded material, and output the original signals.

The Auro-3D Octopus codec stays completely within the PCM-domain, giving the highest compatibility and audio quality. It is not based on psycho-acoustical principles working on the digital data, much like lossless coding algorithms.

It cannot produce bit-identical copies of the original samples after decoding, but the differences between the original waveforms and their decoded counterparts (the artifacts) are extremely small and the designers say that they are next to inaudible for the human ear, making the audio quality of the Auro-3D Octopus codec the same as true lossless codecs, and exceeding the quality of lossy codecs based on perceptual coding.

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Having recently visited the Dolby HQ for some stunning demonstrations of their various multi-channel audio systems, Jim Slater talked with Julian Pinn of Dolby about Barco’s Auro 11.1 audio format and asked...

“But what do the established competition think?”

Julian Pinn (below) was good enough to provide a ‘diplomatic’, perhaps even ‘political’ response, but one which highlights some of the really important issues that in the end will determine whether any new system will find a place in the highly-competitive cinema industry:

Dolby welcomes all audio innovations that could give audiences a better experience in the cinema, whether or not these technologies have come from our own R&D department or from other organisations. However, any such innovation must be at least ‘acceptable’ to all the stakeholders in the chain, from content-creation through to exhibition. And, ideally, value must be added to each part, while also respecting the fragile technical, artistic and economic links of this chain.

Bang-for-the-buck must be maintained; the expense of adding extra equipment in the cinema, or extra equipment or processes further back in the chain, must show a significant improvement to justify the cost—and this is the difficult part. The industry will see many claims on new x.1 sound formats and some innovators will have some good ideas on how to carry these extra channels to the cinema, but ultimately, the cinema-goer has to be impressed, and understanding how this is achieved from creation through to the cinema experience is becoming ever-more challenging.

Any new audio technology will certainly include more speakers being installed in cinemas—particularly overhead. Such an investment is easy to justify for premium cinemas, but the successful long-term solution must be applicable to all cinemas of all shapes and sizes. For example, stadium seating improves the viewing experience but actually reduces the effect of height channels for those patrons sitting nearer to the back of the auditorium. Similarly, some of the most beautiful venues have balconies that can have a significant impact on the audio experience. The next generation audio solution simply must be something that can provide that bang-for-the-buck; it must add legitimate value yet still be affordable for all cinemas.

With its 40+ years in the industry, Dolby Laboratories understands the chain from content creation through to exhibition like no other and time and time again is recognised as a trusted innovator and industry expert that knows how to give the world’s audiences that important bit of movie-magic, both practically and affordably.

It is good to know that whatever technologies do turn out to be the future of cinema, Dolby will be at the forefront of making them practical.

Jim Slater
Cinema sound
Over the years there have been significant advances in cinema technology for audio and picture. Since 1993 when DTS and Dolby changed the audio landscape with the introduction of 5.1 Digital sound there have been minor audio improvements but it is arguable if they have been significant. Digital Cinema has provided a vast improvement in overall quality of the projection picture and created a new visual experience with 3D but the audio, even with digital’s full bandwidth and the addition of two channels for 7.1, has been limited to the same processing technology used for years.

Moving forward
Even with the best tuned rooms there is a need for advancements in audio technology to not only meet the current market requirements but to offer a platform that is flexible, fully configurable, and future proof, in addition to providing all the clarity and audio performance that creates the optimum listening experience in not only the high end cinemas but in every cinema possible. Quite simply, audio processors need to do more and sound better.

New tuning techniques and advancements in clarity and punch are required to emphasize the impact of the soundtracks and restore the sound stage. Too many cinemas are dry or flat sounding and there is a need for specialized tuning for alternative content such as concerts and sporting events. There is also a need to provide baseline room tunes that reduce listening fatigue. Often times many customers experience cinemas to be too loud. In many of these instances it is not a matter of volume but a matter of misaligned rooms where there are peaks in a fatiguing area of the spectrum.

This emphasizes the need for improved tuning and audio capabilities. Room optimization is a key advancement over existing technologies offering up to 512 bands of equalization, time alignment, impulse response optimization, magnitude response correction, mixed phase technology and the reduction of early reflections. As a result the overall audio is improved, dialog clarity is improved, and audio placement is improved making any room sound better.

Room optimisation
Expanding the sweet spot in the theater is also a key element in providing an improved listening experience. The solution is to take multiple readings inside the room to average the optimization for the widest sweet spot available. Including room optimization technology of this type in a standard product offering, in addition to the historical approach of 1/3 octave EQs along with parametric, shelving, hi and lo pass offers the most flex-
The ability to quickly and accurately tune a room in new and existing installations is a key time and cost saver to the end users when installing equipment. Wireless communication to the processor is a key element. For traditional tuning including a built in RTA (Real Time Analyser) and Microphone input with phantom power is another key solution. This saves cinemas money and time on the initial install, but it is also a key saver in any potential retunes down the road.

Over the years, as processors are moved or adjustments are made changing the baseline room tune there can be a costly retune required. If there is a failure it can be even more costly. The ability to save complete configurations, baseline room tunes or EQ/input/output profiles on a memory stick or similar device quickly enables a cinema to replace or get back the room tune without the need for a costly tech visit (sorry techs). In addition, cinemas in new construction where auditoriums are duplicate in construction can do one room tune, copy the setting to a stick and then simply load the tuning into the next processor.

Channel limitation is also an issue. Digital Cinema has 16 channels of audio output possible but many of the existing products only offer 8 channels of processing and output. The consumer space quickly advanced with 7.1, 9.1 and 11.1 AV receivers. Today consumer technologies are offering algorithms that take the 5.1 or 7.1 stream into 11.1 and soon to be 12.4 and 12.2.2. Cinemas which had offered the most advanced audio experience for years were no longer leading the way. 16 and even 24 channel Audio Processors are the way forward to offer the most flexible routing and channel availability possible not only now but in the future.

**New formats**

New cinema formats are becoming available. 3D sound is on the cusp of exploding onto the marketplace. This advancement in cinema audio will not only allow for the existing 5.1 and 7.1 content, but also for 11.1 content. As it is currently designed, the 11.1 content would be down mixed at the mixing stage to allow for one distribution DCP that will play on any 5.1, 7.1 or an 11.1 3D system. The introduction of 3D audio allows the listener to expand upon the current 2D listening plane that most if not all cinemas currently offer. The addition of height speakers adds a dimensionality not previously available. Having the additional channel count detailed above will allow for these systems to not only be a reality but also an easy upgrade path.

**New demands**

With the increasing availability of alternative content and delivery methods the need for additional input availability and consumer decoding such as Dolby and DTS via HDMI 1.3 and HDMI 1.4a is clear. This technology needs to be built in and selectable as an input source in the processor eliminating the need for additional boxes in the audio chain. With the various input sources available to cinemas today processor solutions must have the inputs to cover them. Analog, multiple types of Digital, HDMI, Automation all need to be available along with the ability to add more as audio advances.

Many audio processors are not geared towards the future. In order to meet the ongoing and changing requirements of cinema, solutions need to be available that allow you to add to the platform when needed. Cards to allow access for film inputs, additional audio inputs / channels / outputs or additional active crossover outputs for channel routing should be available for product upgrades. This is a part of a future proof solution. Expansion slots must be available. Simple software and channel upgrades from 8 to 16 and 16 to 24 are essential to better serve the current market while still taking into account the future. Audio Processors should not be built as temporary products to be discarded when the next great thing comes along. This technology should have longevity.

Many new installs or digital upgrades will require additional electronic crossovers external to the audio processors. These should be available in the processor and completely configurable as to which output is selected. The increased channel count and expansion card options can provide this solution without the added expense of an external unit. It also keeps the signal path cleaner with the need for additional cabling.

**Routing solutions**

The ability to route inputs at a given point to outputs through a matrix is a must have in difficult installations. In some setups surround or back speakers may sound different due to placement or room construction. Balconies certainly influence this and surround or back speakers under a balcony or in the balcony require different EQs and independent delay settings. Having the addi-
tional channel count plus the ability to route an input channel through two completely separate EQ chains solves this problem. The one input source or “channel” can be tuned dependant on the output assignment and physical location of the speaker. The surround channel input as an example would be sent to two channels and have two independent EQ’s and outputs.

Alternative content
Not all content is created equal. Most feature presentations have outstanding audio quality directly off of the DCP or digital track and sound great in a well tuned room. What does not always transfer well is the alternative content whether it’s a live satellite feed of a concert, opera, sporting event, presentation or other source. Providing the input solutions (as detailed above) addresses how to get it and decode it, but it is playing back over the room tuned done largely for feature presentation.

Sounding right?
Granted there is an argument that says that if the room is tuned to the best it can be all content should sound great. But it doesn’t always sound great. For years we have heard that some alternative content presentations do not sound like what they should. While a concert or sporting event may sound okay they do not sound like an actual concert or sporting event. The solution - offer memory profile settings that not only store input and output settings but complete EQ profiles. Creating memory profile settings or formats in the software allows for the best room tuning possible using the room optimization to be stored in memory profile one. Then, depending on content, it is possible to overlay additional EQ settings for the 31 band, parametric and shelving to improve upon any content audio deficiencies by an enhancement or surgical approach in the additional memory profiles. This is savable as to input, EQ filters, delays, levels and outputs. In essence the audio processor would be able to store multiple EQs and output assignments, if needed, for the same input selection on two separate memory profile settings. With this flexible solution a more customized experience is possible.

Automation and control
Remote Control, using a laptop iPhone, iPad or smart phone, of all parameters via wireless or internet is a must. Automation integration within the booth for the control of ancillary equipment such as projectors, D-Cinema servers, lighting etc. should be as flexible and easy as possible and it should be bi directional. A modern audio processor should offer multiple methods of automation I/O either via Ethernet, GPIO or RS-232 and the use of a touchscreen within the audio processor will make the operation and setup of the automation more intuitive and very user friendly.

We’ve addressed many of the issues that face cinemas with audio today and have detailed the solutions for a path forward. To reiterate there is a need for a processor platform that is flexible, fully configurable, and future proof all with a clarity and audio performance that creates the optimum listening experience in not only the high end cinemas but in every cinema possible.

Each issue or problem has its own independent solution and path forward as outlined. The key is to provide all the solutions in one package and this is not where we ended up, it’s where we started.

The future of audio is here now.
The six tracks on the 70 mm film were known as L, Le, C, Re, R and S (Left, Left extra, Centre, Right extra, Right and Surround). Whilst the original intent of the 70mm system was for the 5 screen channels to be full range, Dolby engineers had found that many cinemas’ Le and Re loudspeaker systems had missing or damaged horn systems and could only be depended upon for low frequency extension (LFE).

This was the crux of his idea: to use all but the low frequencies of the Le and Re tracks on the 70mm release prints as Ls and Rs (Left Surround and Right Surround).

Max, assisted by David Watts, built the necessary crossover circuitry for encoding the soundtrack in this new sound format in the studios and also the pre-production boards for reproducing it in the cinemas. The encoding map (right) explains the process with the aid of the layout diagram left.

Prints prepared in this new way were compatible with cinemas that had the new format and they were also compatible with cinemas that did not. This permitted a single inventory of release prints; good news for the distributors!

For cinemas that did have split surrounds, the 6 tracks of the print were reproduced to: L, C, R, Ls, Rs, LFE – an early 5.1!

The decoding map right explains the process - in particular the trick to regain the full bandwidth of the Ls and Rs channels.

For cinemas that did not have split surrounds, the 6 tracks of the print were reproduced to: L, C, R, S, LFE. The S track was a mono version of the split surrounds and the Le and Re were limited on the prints to low frequencies only.

The SMPTE honour Max Bell

The purpose of the award is “to honour the individual by recognising outstanding contributions in the design and development of new and improved methods and/or apparatus for motion picture sound, including any step in the process.”

Max has been given the 2011 award “for his long career seeking excellence in Cinema Audio.”

The citation continued: “Since 1976, when he was first hired by Dolby Laboratories in London, Bell has been deeply involved with improving motion picture sound.

One of his first assignments was supervising the original dialog recording for Star Wars.

TECHNICAL NOTE

For those Cinema Technology magazine readers wanting more detail, Julian Pinn explained Max’s invention of the split surround (5.1) system used on Superman and Apocalypse Now.

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In 1979 he was instrumental in the development of a stereo surround system for 70mm prints of Superman and Apocalypse Now, arguably the first ever 5.1 releases.

Throughout his career Bell has worked in the US and around the world, facilitating and improving first Dolby Stereo-Optical and then Dolby Digital mastering, recording and distribution.

In 1988 Bell started Bell Theatre Services, retrofitting screens throughout the UK and Europe with Dolby SR-D and the production of a new 35mm optical sound recording camera system for Dolby Digital and DTS.”
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Visitors to CinemaCon and CineEurope were given a glimpse at the future of digital exhibition with the new Qube Xi 4K Integrated Media Block. As we reported in the previous issue, Qube Cinema designed the new Qube Xi 4K as a high-speed redundant Gigabit Ethernet-based system, which will allow exhibitors to place their storage servers anywhere within, or even outside, the theater complex.

Besides saving valuable square footage, Qube’s new system will allow for whole new cinema designs, making boothless projection a practical reality.

The Qube Xi 4K is designed to work with any digital projection systems that support an IMB. The Qube Xi 4K uses redundant Gigabit Ethernet to connect to the server, decrypting and decoding content in real time. With this system, all of the exhibitor’s server storage can be located in a secured central room.

“Instead of loading up projection rooms with more and more complicated electronics, we are streamlining and simplifying the setup,” said Rajesh Ramachandran, CTO of Qube Cinema. “Exhibitors have much more flexibility in how they use their space and how they manage their operations. The Qube Xi 4K is the smart way to do Digital Cinema.”

The Qube Xi 4K technology overcomes the significant restrictions of PCI Express-based IMBs, so there are no practical limitations of distance and no potential shielding issues.

“Instead of loading up projection rooms with more and more complicated electronics, we are streamlining and simplifying the setup,” said Rajesh Ramachandran, CTO of Qube Cinema. “Exhibitors have much more flexibility in how they use their space and how they manage their operations. The Qube Xi 4K is the smart way to do Digital Cinema.”

The Qube Xi 4K system also opens the door to powerful centralized storage options.

“This is where cinema owners can start realizing the benefits of Digital Cinema instead of just the hassles,” explained Ramachandran. “With a QubeShare central cinema storage solution, exhibitors will be able to change content on the fly, such as adding a new screen when ticket sales for a film exceed expectations, or moving a showing to a different screen.”

The Qube Xi 4K supports HD, 2K, 4K, and stereoscopic 3D content in a wide variety of DCI-compliant formats.

Escape Cinemas (left) recently launched a luxurious new 8-screen booth-less multiplex in Chennai, India and placed an order for the Qube Xi IMB to upgrade their screens to 4K. Numerous chains planning new construction or renovations have also committed to boothless designs thanks to the flexibility and space efficiencies this offers.

“Escape Cinemas promises a premiere experience to its customers and our philosophy has always been to spare no expense in making sure they get that,” said Kiran Reddy, managing director at Escape Cinemas. “The Qube Xi Integrated Media Block excites us greatly because of its support for 4K and high frame-rate 3D. All of our screens will shortly be upgraded to 4K and we will adopt high frame-rate 3D as soon as that is available.”

Growth in Europe

Qube technologies continues to garner interest in European markets, with Qube Cinema and Arts Alliance Media recently agreeing to work as partners in the UK and Ireland. Rich Phillips, VP of engineering for AAM said: “We have been following Qube’s progress closely and testing their technology for some time. Qube is an industry innovator and we are excited about their next generation technologies and the benefits that they can bring to our clients.”

“The Qube Xi 4K opens up a whole new world of possibilities for theater design,” said Nigel Dennis, director of sales and marketing for Qube Cinema in Europe. Attractive, space-saving boothless projection is now a practical possibility, as is the option of using secure centralized storage locations.”

www.qubecinema.com
As I travelled to the opening evening of the new cinema in Widnes with a colleague technician, Ross Lewis, we discussed the many different opening events we had both attended. This one was going to be different. A trip to the unknown as we had never visited a REEL cinema, and especially as this opening also marked 10 years since Reel Cinemas were formed.

Widnes itself had been without a cinema since the Empire closed in 1984, so it became clear to me that this event was going to be well anticipated and appreciated by all cinema goers in Widnes, and the Halton district, and an important event for the town.

The area where we were heading was reclaimed land near the river Mersey where chemical plants had once operated. As we approached the modern retail parks area, the cinema was clearly visible from the busy main road. Immediately we could see valuable customer points being scored, including a large, free car park with restaurants and various retail outlets as neighbours. The cinema’s brand image was bright & colourful, with tasteful soft furnishings, and together with warm and genuine smiles from all the staff and Reel management, we knew that this was going to be an enjoyable evening as soon as we walked in to the bright and spacious main entrance foyer.

An impressive team
Being in projection for 50 years, I was eager to be taken on a tour of the projection room first. Despite the flurry of activity that you would expect on such an important and demanding evening, General Manager, Frahan Aziz, and Senior Projectionist/Supervisor Adam Roberts took considerable time and trouble to conduct a detailed tour of this impressive operation, introducing us to Rob, one of two other projectionists, and to John Wild, the Programming Manager, who was busy with the final tweaks of the installation. It was apparent to me that Reel had a good projection structure in place, including the all important technical training for their team, certainly recognising that technical ability is still a key element to a successful operation. As I discussed the in depth spec with Frahan, Adam and Rob, I was amazed at the level of their equipment knowledge as they took me through this second to none projection layout.

Top quality projection kit
Omnex Pro Film installed all the digital projection and sound equipment within a 5 week window from order to handover and worked with Cheshire architects NBDA to finalize the audio and visual design. Swadlincote Reel, located in Derbyshire, has a very similar line up with the exception that NEC projectors have been employed.

Barco C12 & C20 projectors are the chosen units for all screens here, with up to 4K lamps delivering fabulous results, even with 3D! The selection of projector models had
been down to the throw, screen size, and the 3D factor. Doremi 2000 servers, controlled by an XDC Theatre Management System with a boast of 18 terabytes capacity with programme delivery and full equipment system monitoring, etc, via intranet connection.

**Superb sound**

Sound was certainly not on the back burner either. All screens have Dolby 7.1 sound, Crown XLS 2000 amps with Dolby CP750 processors and JBL speakers, which gives you an idea as to the high quality of sound that I heard. The level of technical thought and planning that has been lavished onto this cinema is outstanding. Adam played a short clip of feature material and I was truly impressed with the screen image that was astounding in clarity and brilliance, certainly proving the importance that in this day and age such quality could not be achieved at home, and in turn determining return visits to the cinema.

**Every comfort**

We toured each of the well proportioned cinemas. All with excellent picture sizes in all ratios. No cut backs in decorative lighting either, as recessed blue LED lighting and colour matching Tivoli step LEDs, with separate house lighting added to the luxurious ambience of each screen. Obviously, customer comfort is a Reel priority, with comfortable seating, and quality corporate carpeting.

**Widnes or West-End?**

As we returned to the foyer we wondered if this was Widnes or the West End, as the black tie opening reception was in full flow with REEL Cinemas MD KC Suri (below) being the perfect and attentive host. As the champagne flowed, Halton councillors lined up to pay tribute to the vision that KC had shared with them to establish the cinema after several challenging years of negotiations. The mutual respect that was demonstrated in the opening speeches between the council and K C Suri was clearly a key element to this venture being successful and providing a much needed cinema in Widnes.

**Cutting the ribbon**

The opening ceremony was performed by the Mayor cutting the ironic stretch of film across the cinemas doorway. The opening film, aptly named Real Steel, was preceded by a well received performance by X Factor’s Andy Abraham. While KC Suri, being the perfect showman, took to the dance floor, the Mayor took to the mike and joined Andy Abraham in a duet version of “Me and Mrs Jones”.

KC then started the first performance by pressing the button on a lap top - to the delight of the appreciative audience who by now were standing and applauding.

What a fabulous evening and opening, and what a first class cinema, a credit to K C Suri and his hard working team.

Peter Davies
KSTS Patron Sir Sydney Samuelson has worked with and generally supported the Muscular Dystrophy Campaign for years, originally having been introduced to them by Richard Attenborough. Muscular Dystrophy affects children from a very early age, not entirely but generally boys, and those afflicted often do not survive into their 20s. He asked if Cinema Technology magazine could highlight a recent report and a documentary piece by ‘Trailblazers’, a nationwide group of young people who campaign and raise awareness on issues that affect people living with muscle-wasting disease and related neuromuscular conditions.

The short documentary trailer that can be seen at http://www.youtube.com/user/MuscularDystrophy makes some hard-hitting points about how difficult it can be for some disabled people to watch movies in comfort, but the more extensive Trailblazers’ Cinema Report ‘The Big Picture’ really does uncover some uncomfortable facts about how, despite many examples of ever-improving practice at independent and some major chain cinemas, there are many exhibitors who are a long way from offering their disabled clientele what they want and need. In 2010, people in the UK visited cinema nearly 170 million times and spent almost £990 million watching movies on the big screen. Cinemas are popular places for young people to spend their leisure time and disabled people make up 12 percent of the cinema-going audience, but the experience they get isn’t always the same as their able-bodied peers.

After a number of unpleasant incidents affecting some Trailblazers, who were branded “fire-risks” by cinema staff and were forced to sit in wheelchair seating areas that only had bad views of the screen, the network decided that the cinema industry needed investigation.

Over the winter and spring of 2011, more than 100 Trailblazers went out into their local communities and visited and rated over 125 cinemas, including major chain and independent cinemas. The worst experience for disabled people was often at the major UK cinema chains, with the best practice mostly found at the small independent cinemas. This came as a surprise, since you would think that big business was more likely to be able to fund adjustments and adaptations and to provide good disability awareness training for their staff, but it seems to be the smaller exhibitors who take the time to work with, listen to and invest in the adjustments needed by disabled people.

Poor disability awareness among staff members was highlighted as a major problem. It isn’t sufficient to confine people to uncomfortable viewing areas with poor visibility, and since going to the cinema is meant to be a social occasion, it isn’t reasonable to insist that a customer in a wheelchair should sit separately from her friends. It was when people wanted to sit in wheelchairs in aisles next to their friends that the ‘fire-hazard’ allegations were made.

Inaccessible auditoriums and refreshments areas, broken lifts, heavy doors, poorly maintained toilets, poor lighting, and many stairways without banisters resulted in young disabled people feeling like second-class customers.

Trailblazers developed the campaign further and worked with Herd Communications, a digital communications agency, to make a film, called Lights, Camera, Access, on the subject of access and the cinema industry, which could reach a larger audience and make a different impact.

The film included interviews with with independent cinema exhibitors, young disabled cinema-goers, movie stars, architects, health and safety experts. They also received evidence from the Cinema Exhibitors’ Association but it is sad to read that two of the largest UK cinema chains turned down requests to meet with them.

The Trailblazers have designed a Charter of Best Practice for cinema operators to strive towards, committing cinemas to the improvement of access and inclusion of disabled people at cinemas across the UK.

For more information and to download a pdf of The Big Picture report: www.muscular-dystrophy.org/trailblazers

Jim Slater
Silver Service for the projection room from A changing industry

For generations past the servicing of technical equipment in cinemas in the UK has been carried out by a handful of traditional companies who have become ‘household names’ in the business, well-known for their competence and experience both in cinema installation and servicing. It was therefore something of a surprise at CineEurope time to come across a press release with the heading ‘Sony choose Veritek for Europe-wide cinema servicing’, and I therefore investigated further, talking with both Sony and with Veritek, to find out more about this interesting and perhaps ground-breaking development.

The basic details of the arrangement are straightforward - Sony have signed a ten-year service agreement with Veritek Global Ltd. to deliver service support to cinema exhibitors across Europe. Veritek, although previously unknown in the cinema industry, is a sizeable company, formed in 1985, which achieved 12th place in the 2011 Sunday Times International Track 100. It has more than 250 service engineers all around the UK and in Europe and has many years expertise in the installation and servicing of complex photo-processing, healthcare and ophthalmic systems.

Serving Vue’s Sony installations

Sony are currently rolling out their 4K projection systems to the complete Vue Cinemas network, and as part of that overall agreement, Sony sought out a qualified third party support company. Veritek, which has already provided Sony with pan-European support in other industries, met their requirements, and worked with Sony and Vue to obtain full accreditation to deliver field engineering support for the ongoing maintenance of their cinema systems, once they are installed.

Since the 18th of July, Veritek have been providing 364 day per year coverage between the hours of 9.00am and midnight, guaranteeing a same day response for priority calls logged before 4pm. Missing from the press release was the fact that Sony have actually chosen to split their cinema servicing work between Veritek and Sound Associates - it is a geographic split, with Veritek taking on responsibility for some of the remoter parts of the UK. This is an interesting move, since it will obviously allow Sony to compare the working methods and performance of new and traditional service suppliers.

Visiting Veritek

I was delighted to be given the chance to visit Veritek’s Eastbourne Headquarters and its nearby Park View site - there are currently three UK sites - on what turned out to be a wet and stormy day in September. I was welcomed by Managing Director Jim Edgar, who has been with the company since 2007, and he gave me some of the background to the company. Jim was also keen to ask about the cinema industry and how it has been changing and developing in recent years.

I was given a conducted tour of the factory and of the nearby offices, and took the chance to talk with staff from a wide range of areas, before embarking on some in-depth discussions with James Salamon, Head of Business Development and Roland Brooks, Digital Cinema Specialist.

Why move into cinema?

I began by asking how and why Veritek had decided to get into the area of servicing cinema equipment. James began by explaining about the company background and how it has developed in recent years. Veritek was founded in 1985 by the current Chairman Adrian Teulon. Veritek Global Ltd is the parent name for the international group of companies formerly trading under
the CMS and machinehealers brands. With its headquarters in Eastbourne, East Sussex, the company operates from three other sites in the UK and nine centres in mainland Europe, plus the USA and Australia. Veritek had a £25 million turnover last year, with some £11 million gross profit, so is certainly much larger than any of our current cinema service companies, and it was interesting to see a small part of its nationwide fleet of vans and cars, all bearing the distinctive yellow cyan and magenta logos.

Although it still has a small company philosophy of looking after its customers individually, Veritek has in recent years taken its international stature seriously, and has become ISO 9001-2008 Quality Management accredited – I visited the small department that looks after standardisation and documentation and the staff there are fully up to date with all the relevant regulations and best practice. They are proud to have been listed number twelve in the ‘Times International Track 100 Companies’. I also noticed in another department that the company was taking full account of its WEEE waste recycling responsibilities, as old equipment was being stripped down to individual components, each of which would be disposed of appropriately.

I was interested to learn that Veritek has a long history of delivering high-quality engineering service solutions to a wide range of industries including Photo-Imaging, Healthcare, Ophthalmic and Industrial X-Ray. The company employs more than 250 engineers across Europe, including some 140 field-based staff in the UK. We discussed some of the current areas in which Veritek is providing service facilities, and it soon became apparent that their existing engineers already have many flexible skills that could, with appropriate training, be applied to the digital cinema business, providing a new and ongoing stream of work for the engineering team.

- In the Healthcare sector Veritek has contracts with major health service providers to provide ‘whole of life’ product support for a broad range of systems and equipment, including conventional photographic X-ray machinery, scanning equipment, and digital radiography systems. Such equipment is these days connected to networks so that medical professionals in different locations can easily access the digital images, and Veritek takes responsibility for all the ancillary network and computing equipment. At a time when many of us struggle to get equipment fixed by manufacturers I was fascinated to learn that one of Veritek’s health service contracts commits them to completing any repair within 3 hours 40 minutes of the fault being notified, and that applies 24/7, 366 days per year, with stiff financial penalties for any failure.

- Photo Imaging is a major area for the company, and I was interested to learn that they are the market leader for independent service and support in the sector, providing engineering solutions for both digital and traditional Mini-lab photo systems. In the major photographic stores, chemists, and supermarkets, this extends to the printing systems that are part of modern mini-labs, photo kiosks and their IT related equipment. The company are keen to emphasise that their only product is ‘service’, but it was notable that some of the photographic equipment companies have effectively handed over most of their equipment related functions to Veritek, who take delivery of the kit from the suppliers around the world, assemble and prepare it on site at James Salamon, Head of Business Development and Roland Brooks, Digital Cinema Specialist

Vertek is involved in providing service to a wide range of industries. The photographs show (clockwise from top left) the extensive repair centre workshop area; an Engineer working on complex optical test beds checking repaired units; part of the pre-staging area; R&D department developing tailored IT solutions for retailers.
ice, as well as making regular preventative practices with a next day break to fix server entire ophthalmic equipment, covering 550 leading national multiple in respect of their interested to learn that Veritek supports a showing the condition of the retina. I was that produces an instant on-screen picture the digital retinal photography equipment help to determine the lens prescription and to the autorefractor and retinoscope that a puff of air to measure intraocular pressure an easier and more accurate eye test and of hi-tech equipment that is used to ensure being able to look at the increasing amount physicians have been made more interesting by like and works like new when it is returned is brought in and completely refurbished, including a re-spray so that everything looks new when it is returned to the stores.

• Opticians
In recent years my regular visits to the opticians have been made more interesting by being able to look at the increasing amount of hi-tech equipment that is used to ensure an easier and more accurate eye test and health check, from the tonometer that uses a puff of air to measure intraocular pressure to the autorefractor and retinoscope that help to determine the lens prescription and the digital retinal photography equipment that produces an instant on-screen picture showing the condition of the retina. I was interested to learn that Veritek supports a leading national multiple in respect of their entire ophthalmic equipment, covering 550 practices with a next day break to fix service, as well as making regular preventative maintenance visits.

• Industrial Testing
In the wider world of Industrial Testing, Veritek work alongside one of the world’s leading manufacturing companies to provide engineering services in the field of Non Destructive Testing, utilising X-Ray equipment.

• Shops and supermarkets
In retail premises throughout Europe, Veritek provide roll-out, repair and maintenance services for kiosks and Point of Sale systems, and our discussions relating to retail stores led to an interesting story of how the company’s obsession with service can benefit all concerned. One major store group had been having regular troubles with its receipt printers, and the printer supply company had been incurring large ‘fines’ for not meeting its service level agreement with the supermarket. When Veritek took over responsibility for the printer service and maintenance they more than achieved the wanted targets and saved the printer suppliers from the considerable penalty sums previously payable, whilst also making a profit for Veritek – a truly ‘win-win’ situation that provided a good example of how having servicing under control can benefit all involved.

Digital Cinema
So how does all this experience in other areas relate to Digital Cinema? Roland Brooks, who has a long history in the audio-visual industry, with seven years as a key account manager at Barco, was taken on by Veritek at the beginning of 2011 as their Digital Cinema Specialist, and he explained how Sony, having signed their contract to provide and maintain 4K Digital Cinema projection systems throughout the Vue cinema chain, but not wishing to set up a separate service division for this, began discussions with Veritek, with whom Sony already had a successful partnership to service other items of equipment. There was a great deal to discuss, including how staff would be trained on the Sony 4K digital equipment, how spares would be provided, and that all important Service Level Agreement. I asked James and Roland the pertinent question as to why they thought that a cinema chain or projector manufacturer would choose to use them rather than one of the traditional cinema service companies, and the answer came back as quick as a flash – “It is all about service and the Service Level Agreement. Whereas existing suppliers have generally had various degrees of formal agreement as to what work they will carry out and within what timescale, Veritek have an SLA with Sony which promises same day service and fixing of problems anywhere in the UK and Ireland for 364 days per year, between 9.00am and midnight, provided that the problem is reported before 4pm, and there are hefty penalties if the terms of the SLA aren’t met.” I expressed surprise at the 4pm cut-off time when most cinemas do their peak business in the evenings, but Roland explained that this was what Sony had requested for this first agreement and that details could be modified in the future if required.

He also told me, when we later discussed remote monitoring, that in fact he can monitor what is happening at any cinema on his laptop, and gave a recent instance of being able to sort out an evening problem when a Veritek engineer happened to be nearby, so the system is actually very flexible.

Veritek are contracted to provide preventative maintenance and reactive engineering support to the Sony 4K projection equipment and ancillaries in the Vue cinemas under their control. Interestingly, Sony preferred, for this first period at least, to be responsible for the supply and delivery of their own projector spares, so part of the Veritek servicing agreement involves liaising with the appropriate people at Sony to ensure that spare parts and replacement assemblies are delivered to site in a timely manner so as to be available for the Veritek engineer to fit. Talk about ‘just in time’!

Service organisation
Looking at the map of where Veritek engineers are currently located (150 of the 250 staff in the UK are engineers) I wondered how they allocated tasks to the various engineers, and was rather surprised by the response. The whole of the service operation is controlled via an in-house designed and built service management system, ‘Unicorn’. Rather than simply allocating service jobs to the nearest engineer, the jobs are ‘advertised’ to the engineers via a hand-held device (Blackberry).
These messages are originated by the Eastbourne help-desk which will have received the request for help from the customer, and then, the surprising bit for me, engineers choose their own jobs based on enforced priority or by proximity and work type. James told me that this unique approach to service - self allocation, combined with multi-level and multi skilled engineers, enables Veritek to meet very tight SLAs with minimal travel time, which drives efficiency and uptime. Customers can also have direct web access to Unicom allowing them to monitor the service being delivered and run their own live reports, and many appreciate the openness and ‘real time’ visibility of service activity that the system provides. Unicom can be accessed on any internet connected computer device, subject to the appropriate security precautions. The team of help-desk operatives are all multi-skilled so as to be able to call up the most appropriate response for any customer, but in the same area there are numerous technical specialists in areas like digital cinema or orthamalogy, and these are provided with state of the art remote diagnostic systems to ensure that the customer always receives the most appropriate help.

Training questions
Cinema Technology readers are well aware of the need for technical training in our business, so I was fascinated to learn how Veritek go about training their engineers in areas as diverse as Photo-Imaging, Healthcare, Ophthalmic equipment and Industrial X-Ray machinery, not to mention their latest digital cinema assignment. The answer turned out to be straightforward – wherever possible Veritek like to make use of manufacturer training, believing that you generally cannot do better than go to the people who know most about their product. I wondered, though, how staff could cope with learning about completely new areas when Veritek took on new technologies. Yet again the answer made perfect sense - the growth of Veritek in recent years has generally taken place by the acquisition of specialist companies in each technical area, and they have almost always absorbed and integrated most of the specialist staff of those companies, along with their essential skills and expertise. As Veritek have embraced new technologies, entered new markets and new geographic regions, they have also recruited new engineers with the required skills, and continuous training and development programmes demonstrate a real investment in staff. Veritek tailor their engineers skills by operating at 10 differing skill levels, which provides a range of capabilities and aptitudes at an affordable cost. This multi-level approach to engineer skills allows engineers to improve their knowledge, training and experience and develop their careers, and the result is that they can ensure that the right engineer, with the right skills attends the right job, every time.

Sony 4K training
So which company had Veritek taken over to ensure that they gained expertise in the digital cinema market? Which engineers had they ‘poached’ from the existing service companies? My provocative questions fell rather flat as I was assured that their staff already included people with many of the optical and electronic and computing skills that digital cinema projection equipment requires. Several Veritek staff had attended the four day Sony digital projection training courses in Basingstoke, and, working with Sony training staff, these people had put together their own training materials, in both written and interactive computer package form. So far some 21 Veritek engineers have been trained to service Sony 4K digital projectors, and this number will
grow as the need occurs. I guess that it says something good about the reliability of the Sony equipment that in the first three months of the service contract Veritek have actually been called out very few times, and the engineers I spoke with were actually a little disappointed at the lack of ‘hands-on’ fault-finding and servicing that they had so far been called upon to do. Their managers at Veritek and those from Sony and Vue would probably not share the same feelings!

A new opportunity
Veritek see this contract to service Sony 4K Digital Cinema equipment as a great opportunity to transfer its reputation for providing unparalleled levels of expertise and customer support into a new and exciting market, working in partnership with one of the world’s best known technology brands. We know that Sony are committed to delivering high end solutions to their exhibitors, including first class after sales service, and from what I learned on my visit it seems certain that Veritek will be able to meet their expectations. Vue Cinemas are aiming to provide improved customer experiences throughout Vue cinemas nationwide, and they have announced that they are confident that Veritek will be at the heart of maintaining the technical delivery of these experiences. As I took another look at the original press release I was reminded that it spoke of Sony choosing Veritek for Europe-wide cinema servicing’, and so although I have only described what is happening in the UK and Ireland, there is obviously more to come.

Service is the key
Throughout our discussions the same theme prevailed - Veritek are a service company and service is their business. They have systems in place to provide the very best of service to all their customers, and when it comes to their new business dealing with the cinema exhibition industry they are determined to pull out all the stops, aiming to providing something better than cinemas have become used to so far. Cinemas have always expected and received a fair deal from their traditional service suppliers, but James says that he and the Veritek team are determined to go that step further - they will be providing a ‘silver service’ for the projection box. And from what I could determine, they certainly won’t be content with providing such a service to Vue and to Sony - several other cinema chains are in their sights!

Jim Slater

The management office suite at Veritek’s Eastbourne HQ

Veritek engineers are trained to carry out a wide range of repairs and adjustments on Sony 4K Digital Cinema projectors
Sound Associates are delighted to be working with Vue Cinemas and Sony Digital Cinema on the rollout of 4K projectors across the whole of the Vue estate.

Following the signing of a formal agreement between the two parties, Vue Entertainment will become the largest European cinema chain to be equipped with Sony’s 4K digital cinema projection technology. All of the 657 screens across the 68 sites will have Sony projectors, with approximately 30% of the screens being 3D enabled. Sony’s CHIPS theatre management system will be installed across the estate.

Sound Associates have successfully worked with both Vue Entertainment and Sony Digital Cinema in the past, equipping the Vue new build sites with sound and projection equipment and supporting Sony to deliver other digital rollouts. This Vue project encompasses the supply of some of the equipment requirements, the installation and commissioning of the projectors and theatre management systems, and the post installation support, including a large share of the planned maintenance and servicing.

Sound Associates are well known to Cinema Technology magazine readers as one of the traditional installation companies in the cinema industry, with a history of more than 50 years as a family business, stretching from the late Peter Lodge, who founded the business, and whose obituary, coincidentally, appears in this issue, to the current owner and MD, Peter’s son Graham Lodge, who has long experience of the mechanics and electronics of cinema, and is very much ‘hands-on’ when needed.

The company has over 20 employees, all long-term, described by Graham as ‘part of the family’, with nine being based at the Surrey HQ. Many of the SA staff are well-known throughout our business and respected for their immense knowledge and experience built up over many years.

Andrew Robertshaw is Projects Director. After a career with Odeon, where he became ‘Head of Sound and Projection’, he project manages cinema installations, provides consultancy services, and is responsible for the team of experienced installation and service engineers.

Jerry Murdoch, the Sales and Marketing Director, has eleven years in the cinema business. He looks after all the sales activities and the corporate activities, and tries to ensure that Sound Associates is a nice company to do business with.

Derek Soden, following a successful career in the music business as a professional musician and recording studio director, joined Sound Associates in 1984 as a cinema installation engineer. He is now Projects Manager, and currently manages the Vue / Sony rollout.

John Stephens, Engineering Supervisor, has been with the company for over 35 years in various roles.

Jerry Murdoch (L) and Graham Lodge

**Proud to be Cinema Engineers**

Most of the engineering staff work remotely, only rarely visiting head office, and all the engineers have been fully trained on all the equipment that they work on, having been on many manufacturers’ training courses. The company was one of the first to embrace digital cinema technology, seeing it as a major long-term investment, getting involved in many digital installations and ensuring that its staff are kept up to the minute with the latest technical developments. Their technical guys are proud to be called ‘cinema engineers’, and their experience and training has equipped them to understand and deal with the mechanics and electronics of projection and sound systems. They are also experienced with video equipment, foyer displays and cinema signage as well as computer networks.

Cinema exhibition is at the forefront of SA’s activities - they are still the UK’s largest supplier and installer of digital cinema systems, and maintain long-term relationships with other traditional cinema and new cinema industry suppliers.

Whatever the future brings, Sound Associates has the knowledge, the experience and the expertise to maintain and service virtually anything related to cinema. ‘Incomers’ to the cinema servicing and installation business will certainly need to be on their toes to compete in the long term!

Jim Slater
Alternative Content

The coming of digital projection opened up new possibilities for cinemas to offer Alternative Content, and although many cinemas have dipped a toe into the water and experimented, with some events being very successful and some not so good, in general most of the events have taken place on an ad-hoc experimental basis without any really detailed business plan behind them. Cinema Technology has previously reported on the technical aspects of carrying Alternative Content, and the DTG publication ‘Broadcasting Live Events to Cinema’ provides much useful technical and organisational information, but until now there has been little concrete data on the business case for cinemas to adopt Alternative Content.

A new report from Dodona Research, a research and consulting firm specialising in the cinema industry, focusing on distribution and exhibition issues, has gathered together a comprehensive collection of information on all aspects of Alternative Content, and there is a great deal of useful information about the business opportunities that AC could provide.

After definitions of AC and a history of early AC events back to 2008, the report describes how AC is so far being distributed by specialist companies rather than the traditional movie distributors, and it discusses the relevance of the word “live” in such events.

Those involved in the AC business include companies that film events for rights owners and operators of delivery networks as well as cinemas, and the current lack of a complete structure leads to most events being ad-hoc and ‘deal-driven’, a very different situation to that in film distribution. 2011 may be the year in which this starts to change, with deals between Cinedigm and Technicolor combining AC businesses perhaps marking the first steps to large firms considering AC as a long-term specialist business. The report suggests that the long-term structure of alternative content will increasingly resemble that of the film business.

Prior to this report, data about the AC market has been hard to find, partly because it is such a small part of the cinema business, representing around 1% of box office, and the report acknowledges the work of Screen Digest in compiling such figures. Dodona has reviewed various trade estimates and re-worked the data in the light of other raw data sources, and come up with various interesting conclusions, providing figures for USA, Europe, and the Rest of the World, highlighting the major players in each area. The UK market for AC is the second largest worldwide after the United States and over 50 AC events a year have been put on over the last two years, bringing revenues approaching £8 million in 2010. An analysis of the different types of event shows the wide range, from Opera to Sport to Education, and that revenues per event are growing. Similar analyses are provided for other areas of the world. The relative success of the different event genres in different areas of the world is discussed, including the prospects for gaming and business events, and even church services.

Important lessons about marketing the different type of event are discussed, and questions are asked about whether the traditional role of cinema managers in local publicity should be revised or whether the AC content distributor’s role is similar to that of the film distributor. Marketing, pricing, and market positioning are discussed in detail and various business models are considered, including revenues from entry charges and concessions sales, theatre hire, advertising and sponsorship, and even sales of DVDs, merchandise and television rights. Profiles are given of many of the companies around the world who are currently involved with AC, with some interesting comparisons.

There is a useful explanation of the pros and cons of the various ‘enabling technologies’ that make AC possible, and a discussion of the place of 3D in AC at a time when over 20% of all screens can carry 3D. Different business models enabling cinemas to receive and pay for satellite transmissions are explained, and the offers from the different companies involved are compared.

The report ends with forecasts highlighting some very positive factors supporting the short term future of alternative content, but points out that the long term success and survival of AC will ultimately depend on how far it is able to slot itself into the existing structures and business models of the cinema industry. Dodona’s top estimate from a range of probability outcomes is that AC might eventually account for 5% of cinema box office, which putting this into context, would mean AC events being within the top 20 of a typical year’s box office, certainly not a market to be ignored.

At £695 for an electronic copy with site licence, Dodona’s 30 page ‘Alternative Content’ report might at first sight seem expensive, but it represents the distillation of many months of research and questioning, and gathers together an immense amount of hard, practical data and current industry opinion about a subject that is of increasing importance to many in our business. If you are a cinema decision maker charged with determining how your company, large or small, can best get involved with Alternative Content, then this report is essential reading and may well pay for itself by ensuring that the decisions you make are the right ones for your cinemas.

ALTERNATIVE CONTENT, October 2011
Melissa Keeping and Karsten Grummitt © 2011 Dodona Research.
To order: www.dodona.co.uk/alternative-content.htm
Dodona Research, PO Box 450, Leicester LE2 2YE, United Kingdom
Telephone +44 116 285 4550
Fax +44 116 285 4575
customer.service@dodona.co.uk
www.dodona.co.uk
There was much controversy, tinged with admiration, when this film was premiered in the West End of London. Such comments were not aimed at the film's content, panned by one critic as “Twice as long as most, the shots of boats and trains seemed endless,” but the manner in which this film, through a loophole in the law, circumvented the “Quota Act”, which was still on the statute book at that time.

My involvement with this epic 35mm, Cine-mascope, four track magnetic, stereophonic film came later, when it went out on general release. One particular print, dispatched to the Odeon Bristol, was sent out without the 12kHz switching signal on the effects track. This signal was necessary in order to activate a “gating” amplifier whenever sound was present on this narrow gauge track, so that the very poor signal to noise ratio was masked by the sound effects. Without the 12kHz switching, this narrow gauge magnetic track would have to be played at normal fader level for the entire duration of the film (178 mins), thus creating a disturbing level of background noise from the surround speakers in the auditorium.

Since a replacement print was not available, the BTH London office was asked if anything could be done to reduce this background noise level before the film began its two week run the following Monday. As I was on standby duty that weekend I was duly nominated for this assignment. I travelled from London to Bristol on Sunday evening and arrived at the Odeon theatre at 9.30 pm, with the intention of working overnight, after the show.

No faults were reported with the SUPA projection equipment, so I travelled light, apart from my normal tool kit and a few ideas. However, when I arrived at the theatre and studied the wiring layout, I discovered that the “clean” ducting, which carried the input cables to the magnetic preamps, had become contaminated with extra wiring, which had been added since the stereo installation. I decided, therefore, to re-route the mag input cables, but I needed 30 feet of co-axial cable in order to do this. But where, in Bristol, on a cold wet, Sunday, December night, would I find such cable? On the other side of the road, however, the window of an electrical goods shop was crammed with television sets, all of them working and showing BBC and ITV programmes.

A lone person, whom I assumed to be a member of staff working overtime, was busy dressing the window with fairy lights, baubles, tinsel and goodwill messages for the coming Christmas season. After he unlocked the door I explained to him the problem at the Odeon and why I urgently needed 30 feet of co-axial cable. He said that he was very sorry but the only co-axial cable in the shop was the main aerial feeder cable which supplied all the television sets in the window. But just when I thought my situation was hopeless he surprised me by grabbing hold of one end of this cable and ripped it from around three walls of the shop. All televisions went blank and bits of plaster and staples littered the floor. As he handed me the cable he made me promise to see his manager first thing next morning in order to explain the reason for his goodwill gesture and the resulting mayhem.

The rewiring of the input circuits at the Odeon was a complete success and I was back in London and in bed by 5.30 am on the Monday morning. It was only then, as I lay there collecting my thoughts, that I suddenly realised with great dismay, that I wouldn’t be there in person to meet the shop manager, in order to explain why a very helpful employee had gone beyond the call of duty to help a stranger in need.

I tried, repeatedly, during the day to contact the shop manager, but the phone line was dead. It then occurred to me that the kind person in the window might have been seized with yet another fit of enthusiasm and had pulled out the telephone cable as an encore!

I am always reminded of these events whenever “Around the World in 80 Days” appears in the television listings, or when I hear the film’s popular title music, and I hope, in particular, that the exceptionally kind hearted person in the window was able to find himself another job in time for Christmas of that year.

Billy Bell

Notes from a Movie Engineer’s Diary

By Billy Bell
Formerly with BTH and Westrex Co.

Around the world in 80 days (1956)
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You can’t beat experience if you are providing

The Cinema Experience

It is experience that counts in cinema
It has recently become apparent that things are changing in the way that cinema exhibition equipment installation and servicing works. In the September 2011 issue we highlighted how a major cinema chain had chosen to roll out its nationwide digital cinema conversion using J Brand, a company well known for supplying network, data and electrical services, with experience of installing everything from computer networks in major offices to point of sales terminals in the UK’s largest superstores, but with no previous knowledge of cinemas. In this issue we look at how another major cinema chain has chosen to use a different nationwide equipment servicing company (Veritek), again one with no previous cinema experience, in conjunction with a traditional cinema supplier (Sound Associates), to maintain part of its estate of digital projectors 364 days of the year. In our next issue I will be talking with yet another ‘non-cinema’ company that has become involved in the installation of a multi-million pound cinema.

A balanced view
As in the last issue I have been trying to get a balanced view of how and why these cinema chains have made the decisions to eschew the ‘traditional’ cinema installation companies and, from talking to some of the decision-makers, it seems that although cost must have been an influence, it wasn’t only the price that mattered, but rather the capability of these ‘outside’ companies to offer efficiencies and service level agreements of a higher level than has been traditional in the cinema exhibition business. One solemn truth is that the cinema exhibition business has been able to get away with so little servicing because the electro-mechanical 35mm projection equipment has generally proved sturdy and reliable, but also because these projectors have been handled by traditional projectionists who were able to carry out most servicing tasks themselves.

Service History
I remember when the first DSN projectors were installed, being amused that some cinemas were protesting strongly at having to pay £3000 per year for servicing and lamp replacement. This didn’t at first seem too unreasonable to me, as one who had grown up in the broadcasting industry, and I tried to find out the typical maintenance costs for the existing 35mm equipment. Only after a good deal of arm-twisting I did get one of the traditional companies to tell me that it might cost around £450 for an annual service contract for a 35mm screen, but it was stressed that hardly anyone actually took out such contracts – the average cinema just waited until a rare breakdown occurred that the projectionist couldn’t cope with, and then called out the service engineer only when all else had failed!

All change, but for the better...?
All this has changed as digital projection equipment has been installed, and it is notable that all the early digital equipment was installed by the traditional cinema service companies, who made good use of their long experience of the cinema business to plan and install digital equipment in a wide range of different cinema projection rooms, many of them less than ideal for the task, requiring a good deal of thought and expertise to ensure that the digital equipment could give of its best, usually side by side with existing 35mm projection kit. In general, the digital kit works reliably and well, but if it goes wrong there is little that the projectionist can do except to call for outside help, and this situation has been compounded by the fact that cinema managements have taken advantage of the changeover from film to digital, and the fact that there is no longer the need to manually handle film, to remove trained projectionists from the ‘booth’ and to replace these with various forms of ‘multi-skilled operator’ who are quite capable of operating the ‘push button’ equipment under normal conditions, but
who lack any suitable knowledge of what to do if things really go wrong.

A taste of things to come was experienced at a large cinema recently when it was found that there was absolutely nobody on site who was qualified to change a Xenon, so the show was lost. If they had had even one experienced projectionist it would have been a routine task to change the lamp, and get the show back on the road with the minimum delay. Another major chain is seriously considering contracting out lamp changes, and it is a measure of the seriousness with which the Cinema Technology Committee is considering this development that we have been having major discussions and even arguments as to whether a digital projectionist might be awarded a BKSTS/CTC certificate of competence even though he cannot change a lamp, since lamp-changing may soon become a task outside the day to day work of the ‘multiskilled’ operator in the projection room. This would have been unthinkable in the days of film projection, but may become inevitable before very long – a clear example of the effects of de-skilling a profession.

**Can the newcomers cope?**

Having spent a good deal of time with the installers of the Odeon digital kit, I admit to having come to respect what they are doing, and I wrote that although they had initially been capable of only doing a basic installation, leaving the alignment and adjustment of the projectors to the Odeon engineers, as the months had progressed the installers had learned fast, and were now able to do a competent installation from start to finish, leaving the cinema with correctly adjusted images on screen. I was, however, reminded somewhat of my own limited capabilities in the area of digital cinema installation. Last year I attended the excellent week-long Barco digital projection installation course and, after a good deal of hard work and a lot of nervousness, actually managed to pass the course and emerge with a ‘qualified installer’ ticket. Yes, I can install a digital projector, but no one is more conscious than I am that I wouldn’t be a patch on any of the guys working for the traditional installation companies, who have gained truly in-depth experience of all the things that can happen to a digital projection system both during the installation and afterwards. This led me to think about the companies who are about to take on maintenance for some of the big cinema groups. Most of the people working for them are trained technicians, and in the case of Veritek, who will be servicing Sony projection equipment for Vue, they have long experience of installing and servicing equipment for a range of industries including Photo-Imaging, Healthcare, Optometry and Industrial X-Ray machinery. They haven’t, until recently, been involved with the cinema industry, but it doesn’t seem too unreasonable to believe that they could, within months, become trained to a level sufficient to carry out most cinema maintenance and service tasks. Add to that the fact that such companies are well used to meeting agreed targets and to working closely with customers to ensure that their needs are satisfied, and it is perhaps no surprise that some cinema companies are showing that they are prepared to give the newcomers a chance. The unanswered question at the moment is whether such companies and their staffs could cope with the unexpected, difficult problems that can sometimes crop up in cinemas, and which only those with a lifetime in the business might be capable of recognising and dealing with.

**So why did the smaller groups chose the traditional route?**

We reported in the September issue that some 120 independent exhibitors operating about 400 screens in the UK had, with the support of the Cinema Exhibitors’ Association (CEA), formed a Digital Funding Partnership (DFP) to help independent cinemas to convert to digital under the best possible financial terms and conditions. It was notable that this important group, who really did consider all the options before making their decisions, deliberately chose to work with the traditional cinema installation and integration companies, in conjunction with the main partner XDC. Bell Theatre Services, Future Projections, Omnex and Sound Associates are already busy with these new installations, and when I asked some of the smaller cinema operators why they chose to use the traditional installers it became clear that this was because they knew and trusted the people involved and knew that whatever problems might arise they could rely on the companies with whom they had
been working for many years to sort them out, and they were also confident that these companies would still be around long after the installations had been completed.

**But what about when real problems occur?**

I indicated before that cinema companies believe that they are heading for a time when most of the projection equipment is automated, requiring little input from staff, and that for high percentage of the time this will result in reasonably satisfied customers at the minimum cost to the cinema operator. But what when things go wrong? What happens when a fault occurs that only the most experienced of cinema technical people will know caused it and what to do to put it right?

I thought it might be an idea to look at some examples of this type of ‘exotic’ problem that have been identified by our traditional installers, and see just what expertise these guys could offer as a result of their long experience of all aspects of cinema exhibition. I confess that I had in mind such things as problems with ghosting on 3D images that turned out to be because of unwanted polarisation effects within the standard porthole glass - how would anyone who hasn’t been in the business for years know how to even start sorting out such a problem? But in fact our experienced companies didn’t want to merely list such problems and solutions, but wanted to make the point that recently we did an installation abroad where the theatre stopped each show for an intermission, and during this interval they ran a different set of slides and a stand alone DVD show - effectively a totally different show.

Similarly we have had clients with mechanically operated dimmers, “clearance” requirements (permission needed from the box office before the film is to be started) and of course many cases where there are special physical installation needs or restrictions in the control room. For our client with the slides we devised a special cue for their server to lower the house lights, show the slides and return to the main programme. For our client with the mechanical dimmer we installed a custom built PLC and timer circuit.

On another site we picked up the pieces when a larger installation company failed to take into account the rake of the theatre and ended up with a theatre with permanent focus drift. A Digital Cinema install, or indeed any installation from our point of view, isn’t just about sticking a box in a room and wiring the power up – a successful installation takes into account the client’s requirement and effectively caters for these.

Digital cinema offers so much in the way of automation, integration and flexibility – it sometimes breaks our heart to see “one size fits all” packages crowbarred into venues where a custom solution is required, leaving the customer getting only a fraction of the benefits that the kit could offer.

Sound Associates also agree that the traditional installation and service companies can and do offer so much more than the newcomers, who are only addressing a part of the overall needs of the cinemas rather than the whole job that the traditional guys have offered in the past and continue to provide. They point out, for example, that our articles on the new companies have missed the importance of sound and of the automation systems which play such an important role in the smooth operation of a modern cinema.

Other examples of tasks that are a regular part of the traditional companies’ work but not of the newcomers’ include:

- **Decommissioning** 35mm projection equipment and taking responsibility for its scrappage or refurbishment.
- **Design and consultancy** – the traditional companies work with the cinema operator from well before the cinema opens and develop a continuing relationship after that.
- **Special screenings and hires** - the traditional companies have the skills and experience to provide equipment for cinema shows in all sorts of venues, inside and out.

In this issue of **Cinema Technology** magazine we describe how BTS coped magnificently with the remarkable demands for variable frame-rate projection that a special showing of the classic Napoleon 35mm movie called for, and in other issues we have described how traditional cinema companies have put on magnificent shows in outdoor venues throughout the country.

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“Cinemas know that whatever problems might arise over the years they will be able to rely on their traditional and trusted suppliers...”
• Sound Installation and Sound Service - the traditional companies work with cinema owners and operators to provide the best possible sound system for each screen and each budget, and they have learned over the years how to cope with new developments in cinema sound as they come along and how to install them with the minimum.

• Projector Installation – the traditional companies have experience of all makes of projector and have learned about their special requirements if optimum pictures and sound are to be obtained. The newcomers have only a limited knowledge of the make of projector that they have been contracted to install for their customer.

• Projector service – traditional companies can service all makes. It is interesting that newcomer Veritek shares the servicing of Vue’s Sony projectors with Sound Associates, but Sound Associates continues to service all the Barcos on the Vue estate, regardless of location.

• Alternative Content is a growing part of the cinema business, and the traditional companies have the experience to know how to make the best of the various different sources, from BluRay players to professional digital video machines.

Final thoughts
Unsurprisingly, the general view amongst the traditional companies was that the new companies have come in, looked at the “easy” element of cinema and ignored the rest. The truth is that a couple of the bigger contracts have been “cherry picked” by the newcomers whilst the exhibition industry has trusted and expected the traditional guys to carry on doing pretty much what they have built their businesses on – offering a wide range of services to what remains a niche market.

This led me to think about what has happened in the car servicing business. If my smart motor needs a new exhaust then I might take it to one of the ‘quick-fit’ exhaust centres, and similarly for replacement tyres, but if there is a problem with the engine management system I want the specialist with the in-depth knowledge of the overall car system to fix it, and it will be the main dealer’s service department every time.

I guess that the cinema installation and servicing business will just have to get used to the fact that less-experienced newcomers, some of them quite substantial businesses in their own right, are going to attempt to ‘cream off’ some of the more straightforward work - it’s happening everywhere, with high-street lawyers threatened by Tesco moving into the legal services business. But in my mind there is absolutely no doubt that the cinema exhibition business will continue to require the in-depth knowledge and experience of our existing specialist cinema installation and service companies. I believe that they still have a great future ahead, and it may turn out that the increased competition may actually help them to realise that they can’t stand still or be complacent, and must push forward to find new market sectors for themselves.

The opportunities are certainly out there as digital cinema and ‘boothless’ technologies allow for a much wider range of venues than traditional cinemas to show both movies and all sorts of alternative content.
October 12th saw over forty keen projectionists of all ages plus ten members of the Cinema Technology Committee gather at Dolby Royal Wootton Bassett for the latest of the BKSTS CTC courses aimed at providing projectionists with a broad understanding of digital projection and related topics.

We were fortunate to be able to use Dolby’s excellent preview theatre and projection facilities, and CTC’s Peter Knight worked with Dolby’s Ashley Leiper to provide the projection and technical facilities throughout the day. Sandie Caffelle from Jack Roe kindly looked after the registration of the delegates, and it was interesting to see that all the attendees were from small and independent cinemas - none of the big chains had chosen to send their staff - leading to comments that only the independents may actually have dedicated projectionists in the near future.

The course broadly followed the lines of the first digital course described in the June 2011 issue of Cinema Technology magazine, with the addition of some extra audio demonstrations that took advantage of our being hosted at Dolby. The lights dimmed as we were given a ‘tabs and all’ presentation of superb digital images and sound from 2001: A Space Odyssey which provided a reminder of the immense technical changes that are taking place everywhere, followed by some wonderful digital clips in both 2D and 3D kindly provided by Warner Bros and Universal Studios. After a welcome from Dolby’s Julian Pinn, the first of the day’s training sessions was given by Rich Phillips of Arts Alliance, who provided a wide-ranging technical overview of most aspects of digital cinema, including 3D. EDCF had kindly provided copies of their Guide to 3D, which acted as a useful complement to Rich’s talk.

Julian Pinn then gave a fascinating presentation on the history of cinema sound, and we were treated to some excellent demonstrations of the superb sound that the company is famous for, including some examples of the latest Dolby Surround 7.1 which gave really convincing demonstrations of what the system is capable of.

Over the lunch period the delegates were divided into groups of five, who were given individual demonstrations of the Dolby digital cinema mastering processes and taken to Dolby’s Screen 2 experimental listening area, where they were able to learn something of the company’s work on future sound systems including listening to a demo of an 11.1 channel system that provides some interesting effects, including ‘height’ information.

Nigel Shore from NSS Imagineering then provided some really practical ‘nuts and bolts’ information to help projectionists use Alternative Content, explaining the use of different sound and vision sources and how these can best be connected to the digital projection equipment. He compared analogue and digital sources, described different interconnections such as DVI, HDMI, RGB etc, and generally told us what will work with what and what won’t, explaining the different permutations that are possible and desirable. He explained the use of scalers when connecting video equipment to digital projectors and explained how to get the best out of audio from external sources by connecting it appropriately to your existing cinema sound processor. It became obvious from the subsequent questions that this part of the course was exactly what many projectionists needed to give them the confidence to tackle some of the ‘theatre let’ tasks that they are increasingly confronted with.

Julian Pinn then presented a very interesting history of 3D, going right back to 1903, which surprised some of us. He explained much about 3D stereoscopic theory and provided many examples, as well as talking about the different 3D systems that are available.

The CTC team members then assembled at the front, and tackled a wide range of questions from the course delegates. This part of the day showed just how much interest there had been in the course, and it was significant that we didn’t get away until over an hour after the planned finishing time!

The CTC is planning a similar course for the Spring in the North of England, so keep a look out in Cinema Technology magazine and online at www.cinematotechnologymagazine.com for details.
MORE THAN JUST A PROJECTOR INSTALLER

J BRAND
“My Customer, My Responsibility”
Thursday 22nd September 2011 saw a gathering of around 450 people at London’s Grand Connaught rooms at a lunch organised by the British Cinema and Television Veterans and other bodies as a tribute to Sir Sydney Samuelson CBE.

Everybody in the industry seemed to be there on what turned out to be the grandest of occasions, held in the luxurious surroundings of the Balmoral Suite and the Grand Hall in the Connaught rooms, the magnificent chandeliers casting a golden light on the proceedings.

The occasion had taken some nine months from conception to delivery, during which time a hard working Tribute Planning Group had had to sort out all the details, including having to find a venue that could cope with the huge numbers of people who expressed an interest in attending at an early stage.

Tickets were £60 each (with no freebies!) and any profits to go to charity. Generous companies from all sides of the industry had sponsored everything from conception to delivery, during which time a hard working Tribute Planning Group had had to sort out all the details, including having to find a venue that could cope with the huge numbers of people who expressed an interest in attending at an early stage.

The lunch was preceded by an introduction from Anthony Williams, President of the British Cinema and Television Veterans, who said the grace before we ate. A specially prepared 40 page printed souvenir brochure biography of Sir Sydney, brilliantly edited by Veteran Jim Whittell, was provided at each table place, and it was fascinating to read about so many sides of Sir Sydney’s life - most knew something about some aspects, but few of us could have realised just how widely his influence had extended throughout our industry and the many charities which he has supported over the years. The brochure will be something to treasure.

There were 44 round tables of ten people each, with the BKSTS having a table for Council members and guests as well as a Cinema Technology Committee table, around which sat all the usual suspects. As well as the top people from all branches of the cinema business there were lots of well-known ‘celebs’ to be seen, and I spotted Zoe Wanamaker and Maureen Lipman, Sir Donald Sinden and Esther Rantzen, to name but a few of my favourites!

After an excellent meal, with so much talk that you wondered when it would ever stop, we were treated to a big-screen video tribute that included a 15 minute film, specially commissioned for the event by BAFTA. The film, which took several months to make, covered Sir Sydney’s 86 years and featured a series of personal recollections and praise from his three sons and numerous industry associates and colleagues. It is hoped to make this film, and some other video coverage of the day, available on DVD.

Then followed an on-screen tribute from BKSTS Honorary Fellow Oswald Morris, who had worked with the Samuelsons for decades, relating tales of how they had always been ready to come up with solutions to problems, citing the Louma crane and Joe Dunton’s video-assist as products that had made it possible to provide shots that had previously been unthinkable. Sir Sydney was described as ‘a very special person’, and, more interestingly, perhaps, as ‘someone you can always rely on to provide one of those quiet remarks from the back that cut through all the bullshit!’

The well-known and erudite Stephen Fry stepped up to the lectern, which had been dressed ready for the shooting of Goodbye Mr Chips, it appeared. As you would expect, Stephen provided an amusing, entertaining and interesting speech. Although...
he had obviously done his homework, I confess that I had been surprised when talking briefly with him beforehand to find that he is clearly something of a cinema buff, and up to date with the technologies as well, as became apparent when he casually dropped in references to 4K digital cinema and the advantages of projecting at 48fps - not what I would have expected!

Stephen gave us details of Sydney’s life story and revealed much about Sydney’s work that some of us hadn’t known about, as well as bringing out many of the stories of his life that we had been privileged to hear at BKSTS occasions over the years.

Sir Sydney then relished the chance to thank absolutely everyone who had played a part in organising the event - he had joked earlier in the day that he wasn’t supposed to have known it was happening, but he had turned up, hadn’t he! He spoke of his family and the support he had always received - “How lucky can you be to get it right first time?” he asked, referring to his long (62 year) and happy marriage to his wife, Doris, Lady Samuelson, who had played a major part in running the business with him.

Sir Sydney spoke of the earliest days of his starting in the camera rental business - more by accident than design, it seems, as he ended up renting out the Newman-Sinclair clockwork camera when he wasn’t using it, so as to be able to keep up the monthly payments on the camera, and it was good to see the actual camera on its tripod nearby. He took us on a tour of many of the most significant events in his career, with some notable tales of doing deals and working with filmmakers, and said that he was proud that he had been able to make a contribution to the British film industry.

It was great to see that Sir Sydney so obviously enjoyed the day - he was delighted to see all his old friends and was clearly having a really happy time. This feeling tied in most appropriately with some of his closing words relating to his life and career, but which could also have applied to the tribute lunch as well - “I have loved it!” he said. And we too loved being privileged to share just a little of the wonderful life that Sir Sydney has lived and is continuing to live - ‘living life to the full’. An amusing ‘last word’, overhead whilst leaving the event - “Can anybody tell me who was left to run the British Film industry during this afternoon?!!”

Jim Slater

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The Editor’s Summer meanderings

Somehow I find that I often don’t have to make a positive effort to find cinema related bits and pieces for the magazine - they just happen. Recent summer visits gave rise to the following bits, and I have resisted showing you the photos of the excellent Punch and Judy show on Weymouth beach - in 3D and with absolutely no brightness problems, which is more than I can say for my summer viewing of the latest Harry Potter!

ICCI 360 arena: Weymouth open weekend

A huge domed tent structure on Weymouth beach attracted my attention, and I was fascinated to find inside a five projector (Panasonic HD digital) installation that really did provide some exciting 360 degree moving images and sound. Plymouth University’s ICCI (Innovation for the Cultural and Creative Industries) initiative has been working closely with the London 2012 Organising Committee on what will be the 360 Arena, a result of extensive imaging research and audience engagement activities which will be on the Weymouth seafront for the six week period of the Olympic Games and the Paralympic Games next year, adjacent to the official broadcast and media centres and the media hub.

It turned out that the dome I saw was a smaller scale ‘trial’ version of next year’s 21 metre diameter geodesic dome structure, designed to highlight what will be happening then, as the final ICCI 360 arena, an exciting large scale multimedia platform with a 20 metre diameter (63m long and 6 metre high) multimedia screen, HD projectors and a 360 surround audio system will provide a large performance area and auditorium space capable of accommodating a standing audience of over 700 or 450 seated. The 2011 trial aimed to encourage collaborations with creative practioners and to seek ideas from the public about demonstrations and installations that might work well when shown on the 360 degree screen.

If any Cinema Technology magazine reader would like to discuss creative ideas with the ICCI organisers or if you have thoughts on ways that you might support this event, please contact: icci@plymouth.ac.uk

... and a planetarium in Winchester

I had a brilliant afternoon at the INTECH Science Centre and Planetarium on the outskirts of Winchester. With more than 100 interactive ‘hands-on’ science exhibits and experiments it provides strong competition for a day out at London’s Science Museum, and for just £2 extra you get to see a show in the adjacent Planetarium. The steeply reclining seats enable you to lie back and watch the enormous tilted dome screen that completely surrounds you with 360 degree images so you fell right at the centre of the action.

Planetarium projection technology has advanced beyond recognition in recent years, and the seven projector digital projection system can show not only the stars, but full-screen video. INTECH’s system, designed and installed by Global Immersion, relies on a bank of computers running the projectors that are spread out around the space. These projectors have been highly calibrated and blended to produce a seamless high-contrast image across the entire dome. The sound was also truly ‘surround’, adding to the feeling of total immersion. In addition to playing pre-rendered shows, UniViewTM software by SCISS allows real-time flight around a universe based on actual scientific data. This allows a seamless zoom from high-resolution Earth images to the whole visible universe.

www.intech-uk.com

Something different in Alton

I visited friends in Alton, Hampshire during the summer, and was interested to hear them say how much they enjoy visiting their local independent cinema, The Palace. They were keen to tell me how the cinema carries, from time to time, a range of interesting and ‘different’ movies, as well as the usual ‘blockbusters’. The cinema has a good reputation locally as a friendly, homely place with helpful staff and cheap ticket prices. From conversations with others I gather that the twin screens are served by a Westrex projector and a less familiar Meo 5 35mm projector.

www.palacecinema.co.uk
WIDNES – another successful opening for Reel

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For further information visit www.reelcinemas.co.uk or contact Chris Morgan-Giles on 0207 499 0010 or email chris@reelcinemas.co.uk
In a creative industry like ours we have come to expect that the products, especially the movies, will generally provide something special, something different, but if you think about it, it is not often that you are actually brought up short by a website, thinking ‘OMG - that’s great!’ The truth is that there so many websites out there, so many means of producing them, and so many people claiming to be the best at web design, that in general the sites we see are nothing particularly special. I know and understand from the experience of creating a few simple websites the difficulties of creating something with that little bit extra that makes all the difference, and you only have to browse through a few cinema-booking sites to come across examples of the bland and not particularly interesting kind.

I confess that it was therefore with some degree of scepticism that I agreed to talk with Peach Digital, who claim that their websites not only have that important special something that makes them interesting, but that they can also prove that they really do make more money for your cinema business. Before meeting with Malcolm MacMillan, Peach Digital’s Business Development Manager I looked at the website that they have created for Apollo Cinemas, and at the myvue site that Mark de Quervain of Vue Cinemas had spoken about at the Screen Forum described in the June issue of Cinema Technology magazine. Let me, for now, just say that I was impressed!

Cinemax around the world
Malcolm gave me some of the background to the Glasgow-based company, which has clients all over the world covering a range of industries, mainly leisure-based, with cinema clients including Vue, Sony, Apollo, Grand Cinemas in the UAE, Light Cinemas in Bucharest, Eye Cinemas in Ireland, and Galaxy Cinemas in California. The company was formed eleven years ago, in April 2000, and employs 36 people.

Peach Digital see their websites as part of the overall marketing strategy for a company, and are pleased to work in an integrated manner with other companies involved in the cinema industry, such as Vista and Radiant.

Cinema like never before - with more - more picture - more choice
This interesting marketing claim headlines the Apollo Cinemas website, a continuously changing kaleidoscope of on-screen words and images with background music that pushes forward the message that Apollo Cinemas and Sony 4K projection gives you more, before taking you seamlessly through the lists of ‘what’s on’ at each site and then providing a simple and straightforward booking process.

In a similar but totally different way the myvue website is bright and colourful, attracting the eye and succeeding in making you want to delve further into the site. It was interesting to hear how Vue Entertainment, now one of the UK’s leading cinema exhibitors with over 65 multiplex cinemas throughout the UK, had come to work with Peach Digital, going right back to 2004, when Spean Bridge Cinemas bought Warner Village and became Vue Entertainment. Peach Digital was tasked with creating a market-leading website for the new company that could grow with Vue as it added more cinemas to its portfolio.

Malcolm told me how Peach worked closely with Vue to develop a website that was easy to use and allowed customers to book
real-world example

The proof of the pudding - Apollo as a

your cinema

Websites really can make money for

the Vue website since it was launched.

15 million tickets having been sold through

and Vue is now one of the largest online

cinemas, through digital marketing channels,

and they have developed a number of initiatives

to promote the website in the locality of the

cinemas, edge of online cinema marketing has grown,

the capacity to manage bookings during the

caling part of the Apollo family. When I asked

A critical area for Apollo was on-line ticket

sales, and it soon became apparent that the

existing Apollo website solution was unsta-

ble and did not deliver a coherent customer

experience, so was failing to deliver the

potential of the medium in terms of online

sales.

As a leading website agency with an under-

standing of cinema websites gained over 10

years working with a number of different cli-

ents that included Vue Entertainment, Gulf

Film (UAE) and Everyman Cinemas, Peach

Digital was appointed to overhaul the web-

site and help develop the digital channel.

Making it easy to buy tickets

For those visitors who know what film they

want to see, an online buying process must

be made as simple as possible from start to

finish.

The film has been promoted by the distribu-

tor, so the awareness of event is already high

and, in many cases the visitor arrives at the

website having already decided to purchase,

so why make it difficult to buy tickets, as

some cinema chains do? Peach wanted

to ensure that there were no barriers to

purchase on the website, so introduced a

“Quick Book” mechanism that allows visi-

tors to choose cinema, film and show time
directly from home page of the website.

They also created a booking interface that

is all on one page, and which guides the

purchaser through the process in a

logical, user-friendly sequence. Payment

also takes place on the same page, and Sage-

Pay’s “3D Secure” payment mechanism

is used to ensure that credit card fraud is

kept to a minimum. Visitors simply pick up

their tickets from an

ATM at the cinema, avoiding the need to

queue.

Providing access to essential film

information

For visitors who are undecided about the

film they want to watch the site ensures that

they are rapidly given all the information

needed to make a decision, improving the

chances of converting an enquiry into a sale.

This required an ongoing content manage-

ment system to keep the film information

both accurate and up-to-date.

their tickets online through the Vue ticketing

system. Despite record numbers of visi-

tors to the site every year, the website has

remained online and has always maintained

the capacity to manage bookings during the

busiest periods. As the company’s knowl-
edge of online cinema marketing has grown,

they have developed a number of initiatives
to promote the website in the locality of the

cinemas, through digital marketing channels,

and Vue is now one of the largest online

seller of cinema tickets in the UK, with over

15 million tickets having been sold through

the Vue website since it was launched.

Websites really can make money for

your cinema

Malcolm gave me some of the background

information as to how Peach Digital work

with clients all over the world to provide

websites with a difference, and all the time

he was keen to say that their websites can

form part of any company’s business plan,

that they are not just an add-on extra, but a

key driver of revenue, and part of his mar-

keting pitch is that Peach are confident that

if you invest with them in developing digital

media, your cinema really will make money.

The proof of the pudding - Apollo as a

real-world example

I had noticed on the Peach website that

many of their customers had been happy

to provide testimonials, and that as just one

e xample, Apollo had been happy to say that

Peach, as their online partner, had become

a trusted member of their team, becom-

ing part of the Apollo family. When I asked

for some examples of how a new web site
could help cinemas financially, it was there-
fore no real surprise that Malcolm took me

through a case study, showing me how their

work with Apollo had delivered dramatic


During that time Apollo Cinemas and Peach

Digital worked in partnership to develop

a website that has delivered online ticket
growth of 90%, far exceeding any natural

growth, even though Apollo experienced an

increase in overall ticket sales of 18% during

the same period.

Malcolm said that the reasons for this

growth are rooted in developing a clear

understanding of the customer’s vision and

needs. As we have reported in previous

issues of Cinema Technology magazine,
in 2008 Apollo decided to reposition the

circuit to take advantage of the dramatic

changes taking place in cinema exhibition

sparked by the advent of digital projection

and all the implications that this held.

The resulting overhaul affected many key

parts of the business, from the installation

of digital projectors in every screen in every

venue to the introduction of the first Ha-
gen Dazs ice cream concession in a UK cin-

tema. Probably the most significant change

was in the underlying Apollo proposition,

moving from being an “exhibitor of films”
to providing an “entertainment venue” at
each site, with the change being summa-

vised in the strapline “Redefining the cinema

experience.” Importantly, this wasn’t seen as

a one-off change, affecting the way Apollo

hopes to be perceived, but a continuous

process of reviewing and refining the way it
goes about its business.

Together we’ve built a site that has
generated over 15 million ticket sales since
2004. Now how can we help you?
Introducing a booking fee
Buying a cinema ticket online is quick and easy, with your seat being securely reserved, so that there is no fear that the movie screening will be sold out and no need to queue or wait. I suggested that a booking fee would be unpopular with patrons, but Malcolm told me that experience and research had shown that a booking or credit card handling fee was quite acceptable to most customers who wanted to take advantage of the convenience of the online ticket purchase. This was introduced with the new website, and so far it has been impossible to determine any negative impact on sales, whereas the extra revenue provides the exhibitor with the means to re-invest in the website.

Creating new ways to pay
The core of the film-going audience is in the 15-34 age bracket, and I was surprised to learn from Malcolm that this group relies more on debit cards than credit cards. The old site hadn't allowed for this, so deterring part of that audience. The new site provides the ability to pay online through both debit and credit cards, including American Express, also previously omitted.

Continuous refinement
In partnership with Apollo, Peach Digital are continually refining the offering to meet the changing needs of the customer and the industry, and it was interesting to be given examples of things that have evolved in the last two years.

As new types of Alternative Content – e.g. opera and ballet have come to be shown in the cinema, it was necessary to find suitable space on the website, and the Peach solution was to create a space on the home page that encourages visitors to “Do something different”, promoting the many live and recorded events that are now regularly made available.

Explaining the benefits of digital projection to customers
As Apollo rolled out its new Sony 4K digital projection to the circuit in 2010, it was clear that the consumer benefits of this new technology had not been explained effectively to cinema audiences. Peach Digital therefore created the “More” campaign as a way to promote the difference that Sony 4K projection would make to the Apollo experience. This was summarised as:

- More picture – the quality of the picture would mean a dramatic improvement in the overall visual experience in both 2D and 3D.
- More choice – digital projection means that Apollo can show a wider range of content that appeals to different audience groups – from opera to live sporting events.

Buy 3D glasses online
The recent explosion in 3D film showings has created a demand for 3D glasses that can be bought online when booking a seat for a 3D showing. This saves time at the cinema and the glasses can be kept for re-use.

The secret of success?
Although Peach Digital have provided a range of things that have affected the cinema’s ability to generate sales revenue, it is difficult to pinpoint one particular aspect that can explain the dramatic increase in online sales in the last two years. But it is clear that success has come from having a clear initial vision from Apollo, from creating a robust marketing platform at the start, and then responding with effective digital solutions to changing circumstances as they arise. It is also clear that an excellent working partnership between Apollo and Peach Digital has been essential to the success of the project.

The next big thing
Malcolm told me that building upon the current success will be a challenge. The main opportunity for growth for Apollo and the broader cinema industry promises to be in the development of non-film strands – Alternative Content – brought on by the introduction of digital projection and satellite transmission. The showing of this type of content, in particular sports/music/opera/theatre, will help to broaden the customer-base of the cinema venue and make it more of an entertainment destination than just a place where feature films are watched. For the website, this represents an opportunity to target different audiences with different tastes in entertainment and to sell the venue rather than just the films within the cinema.

Results
The website sales results are way beyond initial expectations and demonstrate continuous improvement over each year, with web sales significantly outstripping overall ticket sales. Malcolm says that what Peach Digital have done for Apollo can be repeated in other cinema chains worldwide – and the company would be delighted to talk with any other cinemas.

Contact:
www.peachdigital.com
malcolm.macmillan@peachdigital.com
Tom Degg started as a projectionist when he was just 15 years of age, at the Broadway cinema in Meir, Stoke on Trent, in 1961, where he worked part time. He was so keen that he even worked some shifts when he should have been in lessons at secondary school.

It was during this time he got his passion for cinema, when in early 1962 he moved to the Odeon Trinity Street Hanley, where he stayed for 10 years. He loved every minute, and was especially delighted by the fact that it had the beloved Philips DP70s in the box. These, sadly for Tom were removed a few years later and sent to Queens Newcastle-upon-Tyne as Tom recalls, and the Hanley Odeon had shiny new Kalee 21s (nice!!!) - just 35mm, sadly no 70mm for a time. Following that, the cinema received Cinemecanica Vic 8s, so at least he could show 70mm again.

During his time at Trinity Street he even helped with stage shows for the likes of The Beatles, The Rolling Stones and The Shadows. While still at Trinity Street Tom also did periods of relief at Odeon’s Crewe, Chester and Sale sites. He later left Trinity Street and moved across the road to the Gaumont, Stoke, where he eventually became Chief Projectionist until its closure in 1989. The Gaumont later gained a grant and had a full refurbishment, with its name reverting to the original ‘The Regent’, which is now a theatre. During the grand opening of the Regent and the subsequent ceremony, Tom actually met The Queen, who paid tribute to his services to cinema.

In 1989 Festival Park, Stoke opened its doors to Odeon’s first multiplex cinema, where Tom had the accolade of becoming Odeon’s first Chief Projectionist at this type of cinema.

Tom has always been a highly valued member of the Stoke team. His knowledge, experience and friendly personality have always meant that his cinema was well run by a team of conscientious technicians. Whilst he’s just left the Industry officially, everyone is sure that he will want to keep in touch with all the latest developments at his beloved Stoke cinema.

Paul Schofield and the Odeon management team acknowledge that Odeon owe an immense amount of gratitude to Tom’s contribution over the years, and we all wish him a long and happy retirement.
Once upon a time the most important person in the cinema was the projectionist

Many of you may know Mark Kermode as BBC Radio 5 and The Culture Show’s film critic in residence or from his entertaining first book ‘It’s Only a Movie’. Mark’s latest book, ‘The Good, the Bad, and the Multiplex’, subtitled ‘What’s wrong with modern movies?’ does as the title suggests and tackles what he calls ‘the decline of modern cinema’.

Kermode is also a self-confessed ‘3D militant’ and is not afraid to rant in the book about not only why he hates ‘wearing the glasses and the darkness of the picture’, but why in his opinion today’s 3D cinema will fail, just as it did in its many previous incarnations. He also talks about the pitfalls of being a film critic and the decline of the blockbuster which would appear to land squarely at the feet of director and producer Michael Bay.

Of most interest to readers of this journal will be the first two chapters, in which he gives his views on digital projection and more importantly, the lack of Projectionists to deal with problems. Mark begins with a potted but concise history of film as a format, taking the reader from the nitrate days through the advent of safety film, and the introduction of platters and towers, which, as he perceptively points out, meant that ‘the Projectionist had time to start more screens’. He documents the rise of the multiplex and the introduction of digital projection, considering its impact on the industry as well as on the projectionist’s role in general.

Most entertaining is the chapter where Kermode has a ‘busman’s holiday’ and takes his daughter to his local (unnamed) multiplex. After spending an age trying unsuccessfully to retrieve two tickets from an automated ticket machine, he eventually has to purchase two more tickets from a human being on the popcorn stand, and they then enter the auditorium to watch ‘The Life and Death of Charlie St Cloud’.

Unfortunately, once the movie begins, the top half of Zac Efron’s head appears to be missing. Mark has unshakable faith that any second now the Projectionist will spot this and correct the problem. But after what seems like an age, nothing has happened, so Mark retreats to the foyer and spends the next twenty minutes trying to find a member of the floor staff to get them to inform the projectionist about the issue. After finding a supervisor/manager who was actually in possession of a radio which could communicate with the projectionist, Mark explained the issue and went back in to wait for the picture to be corrected, but of course that didn’t happen.

Sadly, for many people this story may sum up their cinema going experience as well as illustrating the general ignorance of the projectionist’s role both inside as well as outside the industry.

Eventually he explodes and goes back to the foyer and tells the supervisor to tell the Projectionist to rack up in screen 7, to which the supervisor replies ‘rack up? - He can’t do that while the film is running’. This staff member reluctantly agrees to go to the screen to check the picture and concludes that in spite of the top of the star’s head being missing, ‘the picture is fine’. Sadly, for many people this story may sum up their cinema going experience as well as illustrating the general ignorance of the projectionist’s role both inside as well as outside the industry.

The final chapter is called ‘The death of celluloid’ which sums up quite concisely the end of 35mm film projection and the rise of digital servers and projectors. He shows how this is inevitably leading to the loss of projectionists’ jobs.

Kermode’s conclusion is that there’s nothing wrong with digital projection as long as there are still projectionists around to fix the problems that can still arise. This may be preaching to the converted as far as many Cinema Technology magazine readers are concerned, but the book as well as Mark’s subsequent book tour has been instrumental in bringing the industry changes into the public eye, and that should be applauded.

A great and a times a very funny read, highly recommended.

Dave Norris
BKSTS Cinema Technology Committee

The Good, the Bad, and the Multiplex – What’s wrong with modern movies?
ISBN-10: 1847946038
By: Mark Kermode
Publisher: Random House Books
Paperback: 330 pages
Price: £11.99 - £6.83 on Amazon.
Also available as e-book and audio book.
JIM WINTERBON
Just as we were finishing putting this issue of Cinema Technology together I heard the sad news that James (Jim) Winterbon, well known to many of our readers for his expertise in film sound, had died on 8th September, after being ill for some time.

Jim worked for many years in the Sound Department at Technicolor, wrote numerous articles on sound and technical standards for the BKSTS journals, and was a regular contributor to the CTC ‘Sound for the Cinema’ training days.

His knowledge of Optical and Digital sound was second to none and this was backed up with a thorough knowledge of electronics.

I hope that we will be able to carry a fuller obituary in a future issue.  

Jim Slater

JIM WINTERBON
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Peter Lodge
1929-2011

Born in Yorkshire on 14th December 1929, Peter grew up and went to school in Yorkshire. After leaving school his first job was as a typographic compositor for the family printing firm in Dewsbury. Peter served his National Service in the Signals Division of the RAF, maybe this was where his interest in sound was inspired.

It was during his National Service that he met Michael Johns and they became firm and lifelong friends, with Peter often staying with Michael when he travelled to London looking for a job in television. In 1953 aged 23 he resigned from the printing job to take up a position as a Technical Assistant with the BBC. These were formative years for Peter. He had left the confines of the Post War North for the open-mindedness and tolerance of the London media world.

In 1954 Peter was asked to help record a trial commercial and it was during this project that Peter met his wife to be Angela. They married in October 1955 with the marriage resulting in the birth of Jane, John Paul (or JP) and Graham.

Peter was recruited by ATV and he saw rapid technical changes; including colour transmissions and the first satellite pictures across the Atlantic. During this time he also started with Michael to build his own small sound studio in the stables of the Coach House, Hampstead where he lived with his family. In 1966 he became dissatisfied with being employed and decided to set up his own company, using all the money the family had in order to build a larger version of his studio; thus Sound Associates was established in Bayswater. Over three floors it provided inexpensive film recording and dubbing, editing and post facilities for UK film companies. As sound engineer and mixer, Peter worked on films and documentaries with Eric Sykes, Pier Paolo Passolini, John Schlesinger, David Bellamy and Lord Snowdon.

On one occasion he had arranged to record a certain voice-over but the artiste did not show up, so Peter recorded the words himself as a temporary demonstration of level - the client was very pleased and actually used Peter’s voice for the project. Those of you who travelled to Bank or Waterloo station on the London underground would remember hearing Peter’s “MIND THE GAP”.

He worked long hours, sound was his hobby as well as his job and he found it hugely satisfying. As Peter’s birthday fell just before Christmas, it was also the excuse to hold a party, which he did with relish. These annual events became a fixture in the industry calendar.

In 1970 Peter bought a site in Tollesbury, an Essex village near Maldon, and built the family’s holiday home where they spent most weekends and holidays, often messing about in boats. In 1974 Brian, another boat owner, asked if Peter would like to supply and install equipment for a cinema 200 miles south of Khartoum, and this lead to six years work in Africa installing power generators and full 70mm film installations. Peter could relate many adventures, including being asked to film Idi Amin when he was in Khartoum - the story goes that Amin, armed with a six shooter, was boasting about being the Conqueror of the British Empire! Peter left quickly. However the project led to more cinema installations in Saudi Arabia, Qatar, Bahrain, Iraq and Israel.

In 1984 the company’s 35mm cinema projector supplier in Milan, Cinemeccanica, introduced him to what seemed a crazy project - equipping the first multiplex in Britain, with 10-screens, in Milton Keynes. This ‘crazy’ project led to the installation of 30 cinemas, which secured his family’s and the company’s future. In 1986 they ceased film production work and moved the cinema installation setup to near London Bridge.

Peter and Angela purchased their house in France in 1991, spent increasing time there, and made many friends, particularly after Peter retired – he recorded the choir in Toulouse Cathedral and took group photos on exotic holidays, processing them in his darkroom, while Angela continued her interest in textiles. Sadly she died in 1998, and without her support Peter’s world became more confined. Later he struggled with his memory but still took a keen interest in events around him.

Peter eventually died in June this year. Fittingly, his company still thrives in West Molesey in the capable hands of Graham, his son.

Michael Johns G.B.F.T.E
John Chittock OBE 1928 - 2011

It was with great sadness that I learned that John Chittock had died on 10th October 2011 at the age of 83. He had been ill for some time, but it still came as a shock, and his loss represents for me yet another industry figure with a lifetime of knowledge and experience who will be very much missed. John was always very supportive of Cinema Technology, and would ring me up to talk about the magazine and its future – he always believed it to have a unique place in the market, and as founder of the extremely successful Screen Digest he certainly should have known.

He remained fascinated by technologies throughout his life, was always enthusiastic about his latest scheme, and I remember conversations about concealing mobile phone masts and, only recently, about the viability of his (dare I say ‘madcap’ – it would have made John laugh?) scheme for making a small change to the transmitted TV signal that would ostensibly have enabled every TV in the land to display 3D! He took everything he did in his professional life seriously, and I was sworn to secrecy over the 3D idea as I introduced him to various people in TV engineering who might have been able to help.

John Chittock had a distinguished career. He started as an editor for Focal Press, and subsequently wrote, produced and directed tens of documentary films. As a columnist on the Financial Times from 1963 to 1987 he wrote about new technological developments and also reviewed documentary films relating to the social impacts that such developments were bringing. John’s connections with Focal Press resulted in his becoming the founding trustee of the Kraszna-Krausz Foundation which supports excellence in publications about photography, film and the moving image, and he oversaw the Kraszna-Krausz Book Awards, the UK’s leading prizes for books published in the fields of photography and the moving image.

John received many accolades in recognition of his contributions to the different areas of his life. He was a BKSTS Fellow, and Fellow of the Royal Television Society and the Royal Photographic Society. In 1982 was made an OBE for services to the film and television industries. He was chairman of the British Federation of Film Societies, a founder and deputy chairman of the British Screen Advisory Council, and founder and chairman of the Grierson Memorial Trust.

Always polite, always a gentleman, always good-humoured, John will be missed by all who knew him. His first wife Joy, who was his partner in everything, died in 2001, and John is survived by his second wife Marget, to whom we send our condolences.

John & Joy Chittock Research Room opened at East Anglian Film Archive

John had always been a keen supporter of the BKSTS and its journals, and was responsible for persuading the Kraszna-Krausz Foundation to provide substantial funding for a professional librarian to catalogue the BKSTS technical library, making its content widely accessible to members.

John donated a collection of personal papers and material reflecting his and Joy’s life and work to the University of East Anglia’s East Anglian Film Archive (EAFA), and some of the collection will be housed in a new research room for film and television scholars. The appropriately titled “John and Joy Chittock Research Room”, was opened in August by John Chittock OBE and UEA Vice-Chancellor Prof Edward Acton.

The John and Joy Chittock collection at EAFA, based at the Archive Centre in Norwich, contains published and unpublished material, films, surveys, research papers, correspondence, interviews and other information that provides an invaluable perspective on the way in which film, television and related media have developed over the last half century - from multiplex cinemas, video, cable and satellite television, to technologies such as HDTV and DVD.

Spanning John’s life and work as a journalist, producer and champion of moving image media since the early 1950s, the collection also includes some rare technology, such as the first commercial 3D stills camera, as well as periodicals and journals dating from the 1930s.

John said that he was delighted that the collection is now in the safe hands of the East Anglian Film Archive and will be accessible to future generations through the new Research Room.

For further information on the Archive contact Cat Bartman on +44 (0)1603 593007 c.bartman@uea.ac.uk
FOLLOWING OUR SUCCESSFUL COLLABORATION AS OFFICIAL MEDIA PARTNER TO CINEMA INDIA EXPO, WE ARE MOVING EVEN FURTHER EAST IN 2012 AND WORKING WITH THE CHINA THEATER AND CINEMA DEVELOPMENT FORUM TO SPREAD CT’S INFLUENCE IN THIS EVER EXPANDING MARKET.

Printed copies of Cinema Technology magazine have for many years been going to universities, libraries and cinema industry personnel in China, but in recent times we have been seeing a growing interest from China in our online e-version of the magazine which is freely available to everyone at our website www.cinematechnologymagazine.com.

In recent years China has experienced a renaissance in the cinema market, with attendances on a constantly increasing trend, having moved from 3.3 billion in 2007 to 10.172 billion in 2010.

The number of new cinemas is increasing year by year. At the end of 2010, there were 313 new theaters in total, while the number of new screens increased to 1533 at an average speed of 4.2 every day.

The total number of city theater screens in China has now exceeded 6200 and it estimated that some 12,500 multiplex screens will be converted to digital in the near future.

There is no doubt that there is a large and fast growing digital cinema market in China, and that many of the world’s digital cinema projectors and high percentages of the ancillary equipment are already manufactured there. Barco, Christie and NEC have digital cinema manufacturing plants there, and Barco alone claims to have installed some 5000 digital cinema projectors in China so far.

So it is an exciting market for any company wanting to enter the digital cinema market or to expand its influence, and there can be no better way to find out more than to attend ChinaTheater & Cinema2012 - the Number One Fair focusing on Theatre and Cinema equipment.

China Theater & Cinema2012 will be held in the China Import and Export Fair Pazhou Complex in Guangzhou, southern China, from March 9 to March 11, 2012. With 300 stands covering 6,000 sq. metres, the event aims to become the preferred platform for domestic and foreign cinema investors and cinema equipment suppliers, far exceeding last year’s totals of 99 exhibitors and over 8400 visitors from China and overseas.

For further details and information of how to book contact: Guangzhou Grandeur Exhibition Service Co.Ltd Tel: +86 20-28314758/68/78 Fax: +86 20-82579220 E-mail:marketing7@grandeurhk.com