

The Sony Theatre Management System

Following visits to see the Arts Alliance and Unique / Odeon Theatre Management Systems, Jim Slater visited Sony's Basingstoke HQ and looked at their approach to this increasingly important area of the digital cinema business



Theatre Management System (TMS) Workstation

We have seen hard evidence in recent issues of Cinema Technology magazine that whatever your views of the way in which digital cinema systems are likely to affect the future of our business in cinemas great and small, the one certainty is that all modern cinema businesses are going to be controlled and monitored by some form of Theatre Management System. We have seen how Arts Alliance maintains control of a whole raft of European cinemas, and how Unique achieves similar ends, including the ability to monitor and control Odeon Cinemas in the UK from its Norwegian HQ.

Although the recent Sony contracts to equip Apollo, Showcase and Vue cinemas mean that the company will soon have a significant share of the UK market, up to now that share has been small, and it is often forgotten that Sony digital cinema operates on a very different scale in the US, where some 47% of all 3D projectors installed are Sony 4K. There is, therefore, already a sizeable Sony Network Operations Centre in the US.

I confess to having expected to find something similar at Basingstoke - perhaps a huge control room full of people watching monitoring screens, but was soon told that that isn't how

the Sony system works. Sony's TMS turns out to be a comprehensive IP network-based series of 'software solutions' that allows the state



of cinemas all over the UK to be monitored from virtually any PC. Longer term, if it should prove necessary, the few hundred UK cinemas powered by Sony could easily be attached to the US NOC network - if Odeon can have their cinemas monitored from Norway then there wouldn't be a problem monitoring the Sony based chains from the US.

Digital Cinema specialist Chris Mullins (below) took me to a modest room with a couple of equipment racks and showed me how he could access data from any cinema in real time using a PC or laptop - a truly 'virtual' NOC.

Chris led me through the Sony TMS System in considerable detail, explaining that as cinemas are migrating from the operation of multiplexes with a mixture of film and digital projectors to installing digital projection across the entire complex this creates the opportunity to adopt Theatre Management Systems which enable central management of projection systems and content which can lead to improved workflow efficiency.

The Sony Theatre Management System (TMS) is designed to provide efficient management of a cinema complex's entire projection operations from a single point. The TMS application software and associated CHIPS hardware (Central Hub for Integrated Program Storage) provides centralised ingest and storage of cinema content and efficient workflow management through the creation of the overall schedule and show programmes for individual auditoriums as well as system monitoring to ensure smooth and continuous operation.

CHIPS is the hardware platform on which

the TMS software is installed. It is built into a standard rack containing the application server, library server and optional CineWatch server. A dedicated keyboard, monitor and mouse drawer is built into the rack to control the TMS. DCPs can be accepted from hard drives, USB interfaces, or a high speed CRU dataport.

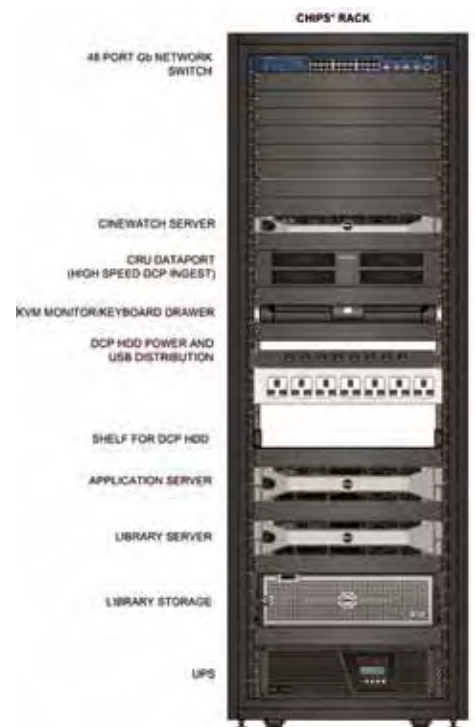
The rack includes an uninterruptible power supply (UPS) to protect the Library Storage drives in the event of a power failure and to enable the system to be shut down correctly. A separate client PC is used for daily operation of the TMS, usually housed with the Cinema Bookings person or Chief Projectionist. Additional PCs on the theatre's IT system can access the TMS, and installation and maintenance contractors can be permitted remote access.

The TMS System includes the following applications:

- Theatre Management System – TMS Software
- CineWatch – SNMP Monitoring Software
- Log Collection System – VPF reporting tool
- Screen Management System – Single Projector Operation Tool

The primary functions of the TMS include:

- Control and monitoring the entire digital projection network within a single complex
- Asset management of content (movies, trailers, advertisements) within central content storage
- Creation of individual SPLs (Show Playlist) to build the cinema complex's projection schedule



Up to 32 projection systems can be controlled by the TMS, which supports Sony, Dolby and Doremi digital cinema servers. The TMS also allows for the control and showing of alternative content, including both live events via satellite and replay from VTRs, games consoles or Blu-ray. These are considered as just another source by the system, and are input directly to the alternative content inputs of the projector.

System overview

The main functional areas of the Sony TMS are Content Management for ingest and managing the library of content on the system, individual SPL creation, schedule creation, operational monitoring of the system and system configuration. The TMS runs on a hardware platform based on an application server running the STM-100 Theatre Management System software connected to a central content library server running on a network connected to each projection room system.

The Library storage is scalable dependant on the exhibitor needs. An additional, optional, server may be added to run Sony's CineWatch application for remote monitoring the health of the system.

Chris gave me details of some of the key features:

Centralised Ingest and Storage

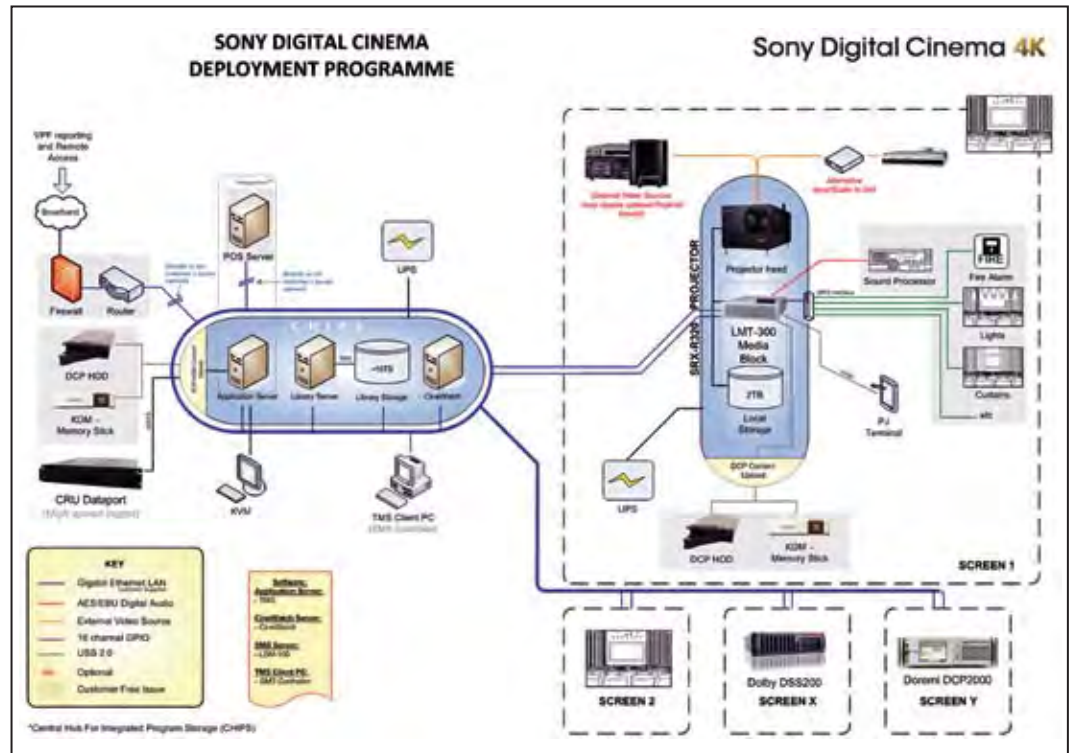
Allows for the ingest of movies, trailers, ads and KDMs into the central library storage for transfer to any auditorium's projection system under the control of the schedule. The standard system utilises 15TB of storage, but this can be scaled as required.

Schedule Management

Enables efficient centralised scheduling of SPLs across the multiplex's entire projector network. The schedule is built up of events with defined start and end times and labelled with the movie title. For increased efficiency, the system can import schedule data directly from a ticketing/POS system. Once an SPL is scheduled the related DCP content and KDMs will be automatically transferred to the desired projector media block.

SPL creation

Show Playlists consist of the pre-show content, such as ads and trailers, and the main feature, with automation cues relating to the projector, such as 'Power on' or 'Lamp off', and cues relating to house automation, such as house lighting or masking. Both content and cues can be applied to the SPL using a simple graphical user interface. Automation cues can be assigned/triggered relating to content, via offset times or both. The TMS simplifies the creation



of SPLs by allowing the user to use the 'Style' or 'template' of another SPL, without the actual DCP content. Chris showed me how creating a new show can be as simple as drag-and-drop the movie, trailers and advertisements onto the show timeline.

Centralised content management

The TMS ensures that all DCP content and KDMs required to exhibit the schedule are ingested into the system and transferred to the relevant projector's local storage in good time for the first screening. The system also manages transfer of copies to additional projectors ready for auditorium change-over. The TMS automatically generates a 'To Do List' for the operator to ensure relevant content is ingested and will provide early warning of missing content for an auditorium.

Centralised monitoring

The TMS displays the real-time operational status of all auditoriums on the network in a simple format so that the condition of each projector and the overall system can be monitored. Up to 32 screens in a complex can be monitored.

Integration with Sony CineWatch

TMS configuration includes the CineWatch remote monitoring and maintenance service, which continuously monitors the state of the TMS system and the projection systems on the network. Alert messages (such as email/sms alerts) are generated as elements of the system approach their routine maintenance intervals and when unexpected errors and failures occur. Issues are resolved either through remote intervention or site visits. CineWatch can also be used to remotely upgrade the projection and TMS systems. The system was piloted successfully in the UK at Vue Fulham, and is working well.

Support for Doremi and Dolby digital cinema servers

The TMS supports Doremi DCP2000 v1.2.1+ and Dolby DSS200 v4.1.3+ with full Sony TMS functionality, the TMS operation being the same whichever server is used.

Features Description

The 5 main functional categories of the STM-100 Theatre Management System software are accessed by clicking the appropriate main-tabs on the screen - Status, Schedule, SPL/Pack, Library and Configuration. (Diagram next page)

Centralised Status Monitoring

The Status tab overview screen (next page middle) is divided into areas of information accessed by clicking on the sub-tabs. The main view is the Auditorium main-tab which displays the current operational status of all projection systems in the multiplex in an "at a glance" format. Up to 32 systems can be viewed. The "Error" tab view displays a list of all errors and warnings, even those that have been resolved. Resolved errors are not deleted automatically and must be deleted manually.

Centralised SPL creation

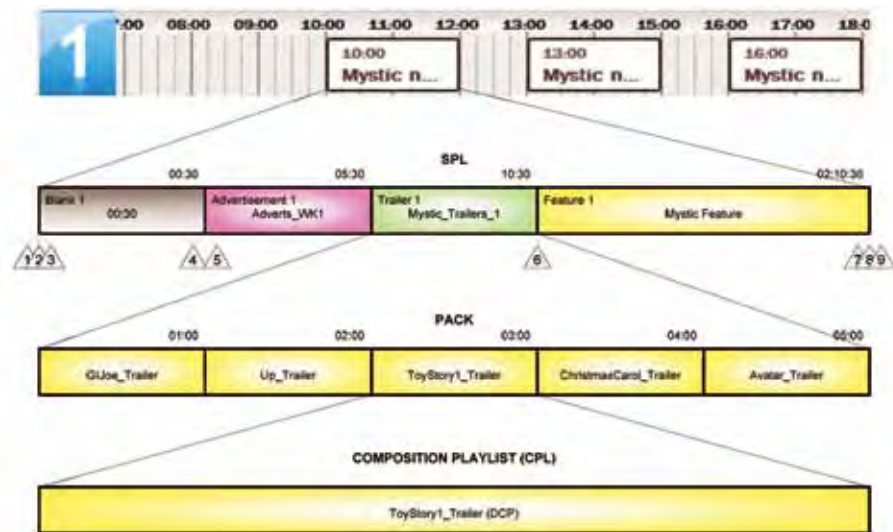
The SPL sub-tab is used to create individual Show Playlists. An SPL structure (next page) is typically made up of 'Packs' of content and individual CPLs (Composition Playlists). A pack is a collection of CPLs (clips) which can be seen and used as a single piece of content. Packs are typically used for ads or Trailers where multiple small DCPs are required to be screened, such as 'Advertisements Wk 28'. Using 'Packs' simplifies the creation of SPLs. The diagram illustrates the hierarchy of content; the Schedule is made up of SPLs which in turn are made up of Packs along with the movie feature. An SPL screen displays the list



TMS Tab overview



Status Tab overview



Structure of SPLs

of programs available and the SPL itself is created by dragging and dropping the relevant content types (advertising/trailers tiles) and movie features onto the time line, which also includes automation cues. Creating a pack is very similar to the creation to an SPL. Just give the pack a name, such as 'Trailers for late Night Screening', select the content type such as Advertisement, Trailer or Feature, drag and drop the desired content from the CPL list to the timeline and apply. The Sony TMS offers a SPL 'Style' facility. Where the cinema operations follow a set structure for shows - creating additional show from a Show Style is as simple

as drag-and-dropping the content on to the SPL timeline, greatly reducing the time creating new shows.

Schedule management

A Schedule screen is used to create the timetable of shows to be screened in each auditorium over the coming days and weeks. The Schedule timetable is built up with Show Playlists (SPLs) that have been created in the SPL/Pack Tab. The operator simply has to drag and drop the SPL from the 'SPL list' in the tool box to the timeline.

The Sony system can also import movie schedules from ticketing/POS systems

- currently Radiant Systems Version 5 and Allure are supported.

Library Management

Each movie, trailer, advertisement and KDM is a content asset used to build up SPLs and Packs, and the Library screen is used for the management of these. The main area of the screen is devoted to a list all assets on the system (DCPs and KDMs), showing where they are stored. Information such as DCP encryption and the status of KDM validity can be checked with a quick look at the screen. The Library screen is also used to ingest content onto Library Storage from external devices such as an HDD or USB stick. The TMS is also able to manage 'screen to screen' and 'screen back to library' DCP transfers.

Configuration

A Configuration screen is used to configure the TMS during the installation stage and occasionally make minor changes during the operation of the system. It is intended for access by engineers to set up standard parameters.

Alternative content

The Sony TMS system has been designed for straightforward operation with a range of alternative content sources. Satellite delivery of alternative content and DCP content is an important development for distributors, and the Sony TMS has been integrated with Arqiva and Smartjog delivery systems, with Apollo cinemas using Arqiva Satellite DCP delivery for more than a year now.

In use world-wide

The Sony TMS has been in use for nearly two years, with AMC and Regal in the USA, Toho Cinemas in Japan and several Korean cinemas.

In the UK the TMS has been in use for more than 18 months at the Apollo chain of 13 sites and more than 80 screens. Showcase Cinemas are currently using the TMS at over 50% of the planned 21 sites, with more than 270 screens, and the recently begun rollout to Vue cinemas will involve 68 Sites managing more than 650 screens within the next 18 months.

It is interesting to see just how quickly digital cinema is rolling out, and that this involves far more than a projector replacement programme. TMS systems like Sony's really will revolutionise the way the cinema business operates, bringing enormous efficiency gains which will apply to all the major chains.

I couldn't help be surprised and impressed by the company's proud claim that within the next two years one-third of all UK screens and 12,000 projectors globally will be Sony 4K and managed by the Sony TMS. It will mark quite a turnaround for a company that had only about 10% of the UK digital cinema market share last year.

Jim Slater