ELECTROSONIC WORLD

LIGHTING CONTROL, AUDIO, AUDIO VISUAL, VIDEO

No. 6

INSIDE

Read about worldwide applications of lighting control, audio, audio visual and video displays.

PICBLOC FOR THE BIG PICTURE

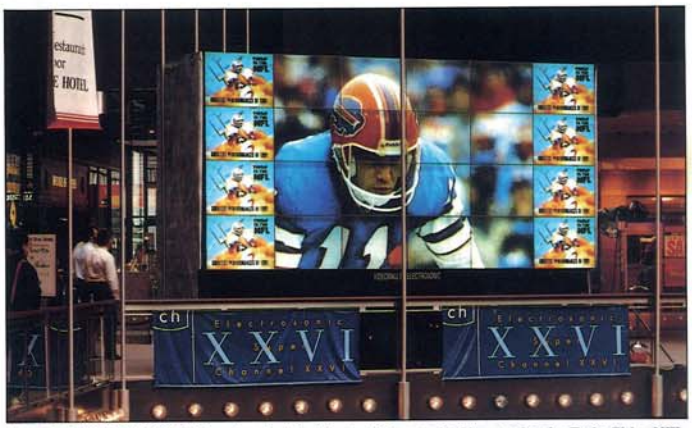
The Electrosonic PICBLOC videowall image processing system has become an industry standard since its introduction in 1987. In the same time videowalls have become an accepted presentation medium.

Their applications range from complex video multi-image displays using either monitors or projectors, to big single image display systems.

The current professional system is PICBLOC-3. It has unrivalled programming flexibility. It is available in standard resolution, high resolution and HDTV versions.

PICBLOC-3 can be used with most makes of monitors, projectors and projection "cubes". Especially cost-effective is the use of PICBLOC-3 with the Electrosonic PROCUBE, a high brightness modular projection cube developed for the arena, special event, entertainment and exhibition markets.

Recent PICBLOC installations include the World's Biggest Videowall (see Page 7), a 144 PROCUBE installation for the America West Arena (Page 6), and major retail installations for Nike and Western Development (Page 8).



A 6×4 PROCUBE/PICBLOC system installed in the Minneapolis Skyway for the Twin Cities NFL Super Bowl XXVI.

The Electrosonic MRC is used at the Royal Bank of Canada training room.

PRESENTATION PERFECTION

The Royal Bank of Canada regard training as fundamental to their business, and over a period of years have equipped a number of training rooms with audio-visual equipment.

The emphasis has always been on simplicity of use, and to help them achieve it they have called in Multivision Electrosonic Ltd, our Toronto sales and systems engineering office, to help.

A typical installation is the one at 180 Wellington Street West, Toronto, shown in the picture above. Here data projection, slides and video can all be selected using a simple cordless hand control. In each case video switching, lighting control and screen operation are all automatic from a single button press.

Electrosonic manufacture a range of specialist equipment for meeting and presentation rooms. In the example above the Electrosonic MRC is used as the room controller. This "Meeting Room Controller" is ideal for the smaller facility because it occupies minimum space and requires little or no specialist programming.

Our Systems Engineering Division can engineer complete presentation systems either where they are near one of our engineering offices, or when the project is particularly large or complex. Otherwise our aim is to make our expertise available through neat control products, which are incorporated in systems by systems builders or specialist dealers near the customer.

We are currently working on many new ideas for improving the way in which presentation spaces are controlled. New products to augment and improve our current range are being introduced throughout 1993. Our aim is to help all our customers achieve "Presentation Perfection".

IMAGINE – A NEW LIGHTING CONTROL

Back in 1964 an automatic thyristor dimmer was Electrosonic's first product. Since then we have held a leading position in the architectural lighting control market, regularly introducing innovative products designed to meet the needs of end users, designers, consultants and contractors.

Now we are proud to introduce "IMAGINE", a completely new range of lighting control products, the result of careful market research and two years' work by a twelve strong team of development engineers.

The incredibly compact IMAGINE digital dimmer module.

"SCENESET"

"IMAGINE" builds on the success of our SCENESET concept which has been such a success over the last ten years. The heart of the system is a new ES9100 SCENESET unit which can control 128 dimmer channels over 1024 scenes. Eight ES9100 units can run on one control bus giving a system capacity of 1024 dimmers.

Both the SCENESET and the associated dimmers are housed in remarkably compact thermoplastic housings. Each dimmer module contains two 20A dimmers, is only 211mm×44mm×219mm and weighs only 1.5Kg. A patent application covers the unusual compact mounting and thermal management arrangement.

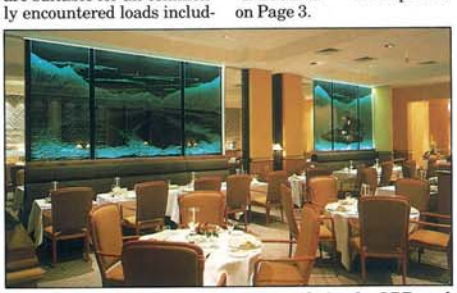
Bi-directional RS485 communication is used both between the SCENESET and its associated dimmers, and between the SCENESET and the new SCENE COMMANDER remote control panels. This allows distances of up to 1000m between the components of a complete system.

Digital

The all digital dimmers use a powerful microprocessor that allows 12 bit firing resolution, and provides complete load and thermal monitoring. The dimmers are suitable for all commonly encountered loads including electronic transformers, and are designed to meet EN50 081-1 and 082-1 EMC standards.

"IMAGINE" lighting control systems can be easily programmed using the completely new ES9500 SCENEMAKER. This includes a large graphics screen which clearly prompts the user and shows the status of the controlled channels.

There is more about the "IMAGINE" development on Page 3.



The SAS Hotel in Brussels has lighting design by LDP, and control by Electrosonic SCENESET.

EDITORIAL

Welcome to another edition of ELECTROSONIC WORLD. We have tried to keep the mixture as before, with a balance of applications stories about lighting control, video display, audio visual systems and related topics. This time the stories come from Phoenix and Pleumeur Bodou, Beijing and Berlin, Sydney and Seville. In fact, some of the most interesting applications seem to turn up in the most unlikely places!

Since our last edition there have been considerable changes at Electrosonic. We have, amongst many other things, moved our headquarters, welcomed Celco to our group, added new manufacturing capacity, increased our product development resources, opened a new office in Los Angeles, and greatly increased the size of special projects that we undertake.

All this in a time of economic uncertainty, which has affected both our own and our customers' business.

On Page 5 we describe in more detail how Electrosonic fits in to a larger group. Our strategic thinking is now to recognise the big difference between being a supplier of standard products, and being a systems engineering house.

While we intend to more clearly separate the two activities, to the extent of having separate sales forces and separate management for systems and products, we are very conscious of the fact that most of our successful products have been derived from applications first encountered as special projects.

We therefore look forward to co-operation not only between our operating divisions, but between them and a great variety of customers. Sometimes end-users, but more often intermediaries such as other systems houses, in-house specialists, VARs, consultants and designers.

Over the years we have enjoyed selling products and working on projects all over the world. We are confident that, despite short term setbacks in some markets, the demand for both will increase. Our investment in new resources is our commitment to supporting new applications wherever the control of LIGHT, SOUND and IMAGE is required.

ELECTROSONIC WORLD

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Electrosonic specialise in the manufacture of lighting control, audio, video and audio visual products and systems. They have distributors and correspondents in other major countries throughout the world.

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LIGHTING NEWS

Lighting control equipment, based on thyristor dimmers and microprocessor programmers, is an important part of Electrosonic's product range. These pages review applications of architectural lighting control and some of our new developments.

Setting Scenes in BEIJING

In the last issue of ELECTROSONIC WORLD we announced that we had received a contract to supply the lighting control systems for the China World Hotel in Beijing. Now we can show some pictures of the completed building.

The China World Trade Centre, of which the hotel is a part, is a joint venture between the Chinese Government and the Hong Kong based Kerry International Company who own and run the Shangri La group of hotels.

Nikken Sekkei from Japan were the main architects, but interior and lighting design for the hotel was by Don Ashton Design Consultants. Vic Warwick was the consultant in charge of the lighting design, and he specified the use of Electrosonic DIGIDIM modular dimmers with SCENESET control for the public areas of the hotel.

The SCENESET concept is ideal for hotel applications, because it ensures that the original design intentions are always maintained. It ensures that the lighting is always functionally and aesthetically correct for the time of day or current use of the space, and, most important, it is very easy to use, requiring only simple push button or timeclock selection of complex lighting "scenes".

In all 23 dimmer racks were supplied. These were installed by Indeco of Singapore, and in most cases are controlling light fittings supplied by Ohyama of Japan. We are indebted to Ohyama for the photographs.

The reception area of the China World Hotel uses SCENESET lighting control.

A part of the vast banqueting suite at the China World Hotel in Beijing.

CASTLES and TOWERS

The use of architectural lighting control is not confined to hotels, auditoria and other "obvious" applications. Electrosonic lighting control is in use in palaces, castles, swimming pools, breeding houses and flight control centres.

The Royal Castle in Oslo uses Electrosonic dimmers. Photo Husmo-Foto.

Edinburgh Castle, photo courtesy Historic Scotland.

Two recent "castle" installations are in Oslo and Edinburgh. The Royal Norwegian Castle in Oslo has recently been refurbished, and the refurbishment includes an environmental control system supplied by Johnson Controls. The Johnson system in turn controls large numbers of Electrosonic DIGIDIM dimmers, distributed throughout the building.

Edinburgh

In Edinburgh the Castle Palace block has likewise been refurbished. Here a distributed control system using seven SYSTEM 12 memory lighting controls is used to control the 74 circuits of lighting. The whole system is under SCENE MANAGER timeclock control, which brings up the required lighting scenes according to the time of day and use of the rooms.

The castle walls are up to 5ft (150cm) thick, so the electrical contractors, Bribern Electric Ltd had a tough job. The lighting design was by Kevin R Shaw Lighting Design, and they worked with consulting engineers Hulley and Kirkwood and interior designers Gordon Lyle Associates, all of Edinburgh.

Oslo Tower

SCENE MANAGER and Edinburgh were also a common factor in the lighting of the Oslo Station Tower. The Edinburgh connection is because the lighting designers for this scheme were Lighting Design Partnership from Edinburgh. This time SCENE MANAGER and ES7000 DIGIDIM dimmers were used for exterior lighting control.

LDP decided to turn the glass tower into a "Tower of Time". The tower carries five bands of neon, every Monday the bottom band is lit, on Tuesday the two bottom bands are lit and so on. By Friday the entire tower is illuminated.

On Saturday the lights are animated to produce a moving pattern, while on Sunday the neon is not used, and the tower is bathed in "serene" white light. The complete control system is based on standard Electrosonic products, which are manufactured to meet the Norwegian NEMKO standards.

The Electrosonic equipment used in both Oslo installations was supplied and installed by our local distributor, Audio Grafisk A/S.

The Oslo Station Tower on a Thursday night. Lighting design and photo by LDP. Lighting control by Electrosonic.

IMAGINE INNOVATION

The resources needed to develop new electronic products that can be sold on a worldwide basis are becoming formidable. However, we have found with the new IMAGINE development that core know-how can often be spread amongst several products.

For example, one of the hurdles that had to be overcome in developing this range was ensuring that the products conformed with EMC (ElectroMagnetic Compatibility) directives. This means that they must not emit interference and, just as important, they must not be susceptible to it.

A microprocessor controlled thyristor dimmer is potentially a serious emitter of interference, and, by virtue of its remote control, also likely to be affected by outside interference. A whole group of them is potentially even more of a problem!

By examining in detail the fundamentals of how interference is generated and received, by having our own test equipment to check preliminary designs, and by working closely with the independent test house at ERA, we have learnt a lot about the factors involved. This knowledge is saving a lot of time on new designs. These designs are by no means only for dimmers, much of the knowledge is just as applicable to other types of control systems.

Work proceeding on the IMAGINE range in the Electrosonic laboratories.

Thermoplastics

Another major innovation for us is the use of thermoplastics. For many years we have used small plastic parts in our products, but IMAGINE is the first product to use specialised engineering plastic for the complete product housing. This brings lightweight, electrical safety, and ease and speed of assembly. It allows a complete re-think on how this type of product should be housed.

IMAGINE uses surface mount technology in both the dimmers and the remote control panels. Indeed it would be impossible to build the products to the compact size required without SMT. Elastomeric push buttons allow us to offer many different panel layouts at reasonable cost.

IMAGINE stacker with dimmer modules and SCENESET.

Data transmission

The flexibility of the IMAGINE concept requires that it be possible to interconnect several hundred separate items in a large system. An "item" may be one of the double dimmer modules, a SCENESET, or a remote control panel. This has led us to do fundamental development work in control data transmission techniques and protocols. We have to balance the requirements of data speed, communication distance, EMC, data security and data collision avoidance. At the end of it all we must have products that are cost effective and easy for the electrical contractor to instal.

The Chewton Glen conference suite features hand painted wall decoration, built-in back projection and SYSTEM 12 lighting control.

CHEWTON GLEN

Chewton Glen is a special hotel in Hampshire, England. Voted "Best Country Hotel 1991" by American Express Expression Magazine, starred in the Michelin guide, and the English Tourist Board's "Hotel of the Year 1991", it has very high standards, and sets high standards for its suppliers.

D.J. Willrich Ltd (DJW), based at Beaulieu, are specialist dealers of ours. They carefully researched Chewton Glen's needs when, as part of a £5 million refurbishment and extension programme, the conference area was equipped.

The conference/banqueting suite divides into three areas, and is used for many different types of function. DJW recommended Electrosonic SYSTEM 12 as the ideal lighting control system for this area for its flexibility and ease of use.

Chewton Glen decided that basic AV facilities must be built into the suite. The problem then was to decide on the best method of control, bearing in mind that most users of the suite would be "one time" or infrequent users.

DJW recommended the use of the Electrosonic MRC "Meeting Room Controller". This system provides a "one button" approach to each AV facility, and was considered much more practical than more "glitzy" control systems.

Chewton Glen and DJW have provided us with valuable feedback as to how the SYSTEM 12 and MRC combination works for hotel conference users. The experience gained will certainly be embodied in new products.

The Chinese Restaurant at Parkview, Hong Kong uses SCENESET.

Light Sound Image in Hong Kong

The Voting Members Box at the Hong Kong Jockey Club's Happy Valley racetrack is where good dining, betting facilities and a good view of the race are combined.

Our Hong Kong distributor, Light Sound Image Systems supplied an Electrosonic SCENESET system to provide different lighting settings for the various activities.

LSI have been active in promoting good lighting control. Other notable installations are at the American Club, at the pub "Mad Dogs II" (lighting design by Project Lighting Design) and the Chinese Restaurant at the Parkview condominium complex.

A corner of the Voting Members box.

ELECTROSONIC AT SEA

There are many Electrosonic lighting control systems to be found afloat, especially in cruise liners and luxury ferries.

The Finnish Masa shipyards build spectacular vessels — especially the huge Baltic ferries which are quite unlike the traditional ferry. They have many restaurants, bars and entertainment areas, and have comprehensive conference facilities. Many are equipped with SYSTEM 12 and other standard Electrosonic products. Recent contracts have included Celco entertainment lighting controls.

Royal Caribbean Cruise Line's "Monarch of the Seas" was built by Chantier Atlantique of France. This 75,000 ton, 2,700 passenger vessel has fifteen racks of DIGIDIM dimmers with SCENESET control for all the public areas. The "Sound of Music" Lounge also features a 50 monitor Electrosonic PICBLOC videowall, actually two 5×5 videowalls on a travelling track.

Supplying lighting control to ships is a complex business. The owner may be in one country, operating staff in another, builder in a third, and consultants (marine, electrical, design and lighting) in two or three more. We sometimes supply direct to the shipyard, sometimes through appropriate distributors; for example Light & Sound Tech in Helsinki and Electrosonic Systèmes in France.

Silja Line's "Serenade" luxury ferry uses Electrosonic lighting control.

Miami based Multivision Inc designed and installed the PICBLOC videowall on "Monarch of the Seas" (above).

IRC in Singapore

IRC Private Ltd have been our distributors for lighting control equipment in Singapore and Malaysia for many years. They have installed Electrosonic DIGIDIM and SCENESET equipment in many prestigious hotels and public buildings.

The Penang Mutiara Beach Resort in Malaysia is a good example. With 18 acres, 440 sea facing rooms, five restaurants, two lounges, a discotheque, five meeting rooms and a ballroom it is ideal for vacation and special events.

The Palmetto Lounge of the Penang Mutiara Beach Resort.

The Langham Hotel, for many years BBC offices, now a splendid addition to the London Hotel scene. Photo Chris Arthur.

LONDON HOTELS

Many of London's top hotels have Electrosonic lighting control. One recent example is the Conrad Hilton Hotel in Chelsea Harbour. Here the interior design was by David Hicks, but as is now usual with this kind of project, a lighting designer worked as a sub-consultant — in this case Lighting Design Partnership.

Hotels operate 24 hours a day, and it is important that the reception area is always welcoming; this means different lighting "scenes" for different times of day and external lighting conditions. LDP always plan the scenes carefully with the interior designer and hotel management, but also allow for local manual override to cater for special occasions.

The Langham Hotel is another recent opening, also with lighting design by LDP and control by Electrosonic.

LIGHTING FOR ENTERTAINMENT

Our Celco Division specialises in the manufacture of lighting control consoles for live entertainment. Standard Electrosonic products are also suitable for many entertainment applications.

NEW PRODUCTS

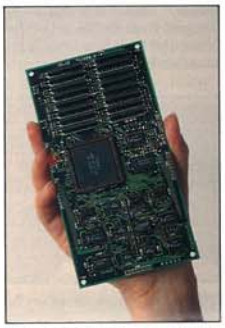
Celco is the Live Entertainment Division of Electrosonic Ltd. It designs, develops and markets lighting control consoles which are especially suitable for concerts, television, and industrial presentations. The consoles are manufactured for the division by Electrocue Ltd.

At the end of 1991 Celco introduced a completely new console; new in concept as well as in design. The NAVIGATOR was the first console to seriously address the problem of controlling moving lights and colour scrollers as part of the overall task of lighting control.

NAVIGATOR can control 96 channels; each of which can be a dimmer channel or a "movement". Where only dimmers are needed its companion product, the 60 channel PATHFINDER is a cost effective alternative.

NAVIGATORS and PATHFINDERS are remarkably compact, and excellent value for money — so good that several hundred were sold within weeks of their announcement. They can easily be linked together, using the MIDI linking feature, so rental companies can configure large systems from the standard units.

Celco NAVIGATOR, the first lighting console to combine effectively in one unit the control of lighting intensity with control of colour and direction.



Celco AVIATOR uses parallel processing based on transputers.

AVIATOR

However Celco have not forgotten the needs of the "big show", and as this issue of ELECTROSONIC WORLD was going to press they were just about to announce the arrival of the AVIATOR.

AVIATOR takes a big leap forward in sheer capacity. This console can store 1000 cues, 100 multi-part cues, 100 ninety-nine step sequences, and 25 lists. The smallest console is 180 control/1024 dimmer channels, and the largest is a whopping 720 control/2048 dimmer channels.

The number crunching required to achieve this is formidable. AVIATOR uses multiple 32 bit Transputers. This "parallel processing" arrangement allows a modular construction and a high degree of fault tolerance.

Other new features of AVIATOR include custom LCD displays, digital faders with optical encoders, 1990's styling, fast DMX set-up and more.

PATHFINDER, the companion product to NAVIGATOR, controls 60 dimmer channels.

Romsey Rapids has Electrosonic lighting control.

Romsey Rapids

Entertainment of a quite different sort is provided by the increasing number of leisure pools for the family.

Romsey Rapids, near Southampton, England, combines a fitness centre with a swimming complex that includes both a conventional pool and a leisure pool. The leisure pool has rapids, bubble bursts, a flume, a beach area and other water features.

Spectacular lighting, designed by Maurice Brill Associates, contributes to the fun and effectiveness of the pool — which is open until late at night all the year round. Programmed lighting control is by Electrosonic — of course.

Celco

In the late 70's Electrosonic made a new type of lighting control for live music applications. It was called ROCKBOARD, and some are still in use today. We decided to leave this sector of the market in the early 80's, but the baton for this type of control was very much picked up by the then new company Celco.

In 1991 we were delighted to welcome Celco as part of the Electrosonic Group. The innovative Celco products now fit well into our overall product strategy.

Celco products are sold through appointed specialist dealers. For a list of Celco dealers, fax or phone Celco, The Live Entertainment Division of Electrosonic Ltd, at Hawley Mill (see Page 2 for address details).

The finale of "Captain Henry's Gold" at Alton Towers.

TOP OF THE POPS

Celco lighting consoles are the choice of lighting designers associated with live music — especially pop music. Any time you hear of a major artiste or group on tour there is a very good chance that lighting control will be by Celco.

"Top of the Pops" on BBC Television is a show that started 25 years ago. Recently it has been revamped, redesigned and rehoused. Its great emphasis on live music, to the extent of having up to eight bands singing live each week, has placed enormous demands on the lighting designers and console operators.

The new home for "Top of the Pops" is Elstree Studio C. There is now a permanent set, which includes four separate stages. In order to give the required flexibility and variety the lighting rig is massive. A full description of it is given in the Autumn 1991 edition of "Television Lighting" by Lighting Director Rod Litherland (to whom we are indebted for the photogaphs below).

Celco Gold

The main performance control called for 120 control channels assignable to many more dimmers by soft patching. Litherland selected Celco control on the grounds that it gave all the required facilities, and the operators were familiar with it and find the reprogramming facilities easier than with other consoles. To achieve the 120 channels a 90 Channel Celco Gold is used as master and a 30 channel Celco Major as a slave.

An interesting problem emerged during the running in of the new show format. Some of the control channels are used for colour scrollers which need a DMX signal. The "Gold" is basically an analogue console with outputs that can be encoded to DMX; this can result in "bit" errors which would be unnoticeable in a dimmer, but which are a nuisance on a scroller. Celco Division helped out by supplying a separate NAVIGATOR console, which is completely digital, for this task.

AVIATOR

Of course if AVIATOR had been available, there would have been no problem! Now everything could easily be run from the single console.

Kenny Thomas and . . .

. . . Status Quo appear on the first "Top of the Pops" from Elstree Studio C. Rock lighting control by Celco.

ALTON TOWERS

Alton Towers, part of the Tussauds Group, is the United Kingdom's leading theme park, with over 2 million visitors per year. It is set in 550 acres of landscaped parkland, and boasts 125 rides and attractions.

Peter Foxley, technical manager of their entertainment department, has reported two very interesting applications of Celco products.

"Captain Henry's Gold" is a fast moving 30 minute ice show telling the story of how one of Henry Hound's (Alton Tower's mascot) ancestors, Captain Henry, came by the secret treasure to build Alton Towers.

This show is lit with a combination of rock and roll and theatre techniques, using approximately 300 theatre luminaires and PARcans powered from 120 dimmer channels. Control is by a Celco Gold 90, and a pair of Celco 90 way demultiplexers.

Dancing waters

In the Alton Towers Water Pavilion a ten minute dancing water show is controlled using a Celco NAVIGATOR.

Fourteen different fountains are controlled by the Celco NAVIGATOR via high current relays. The NAVIGATOR also controls 40 PARcans, strobes, smoke machines and tabs. An 18 way Pancan moving lights rig is driven from a "Touchstone" controller under direct control from the NAVIGATOR via a custom built interface.

MIDI

The whole show is run from an Atari 1040 ST computer using C-Lab "Creator" music sequencing software, all cues are programmed onto the sequencer which then runs the NAVIGATOR using MIDI Show Control.

The combination of HTP (Highest Takes Precedence) and LTP (Latest Takes Precedence) commands and the availability of MIDI Show Control make the NAVIGATOR the ideal lighting console for this unusual application.

MIDI (Musical Instrument Digital Interface) Show Control is assuming increasing importance, and our Celco Division is pleased that users are quickly taking advantage of this new facility on Celco products.

Fountains at Alton Towers, controlled by NAVIGATOR.

Navigator at Expo 92

Celco Navigator consoles were used for lighting and searchlight control in the EXPO NOCHE mixed media show.

See Page 14 for the whole story.

COMPANY NEWS

HES GROUP TURNOVER EXCEEDS $100 MILLION

In October 1990 Electrosonic Ltd became a subsidiary of Helvar, and the two companies now work together as the Helvar Electrosonic Group. The combined annual turnover currently exceeds £60 million ($110 million) and this makes it a strong contender in the world-wide markets it serves.

From a group point of view the activities of Helvar Electrosonic divide into four parts:

— components (Helvar brand)
— products (Electrosonic and Helvar brands)
— product manufacture (Electrocue Ltd)
— systems (Electrosonic)

The "components" are conventional and electronic ballasts for fluorescent and discharge lighting, and electronic transformers for low voltage lighting. They are designed in Finland and built on highly automated production lines at Helvar's plants in Karkkila and Helsinki. Some of the electronic transformers are now also made at Electrocue Ltd.

The components are mostly sold directly to the manufacturers of lighting fittings. At present they are designed for the worldwide "220-240Volt" market.

Products

The "products" are designed as complete electronic solutions to the needs of lighting control and audio-visual. The range includes dimmers, lighting system controllers, multi-media programming equipment, videowall and other image processing equipment, entertainment lighting control, and specialist audio equipment.

The products are mainly designed at Electrosonic's Hawley Mill headquarters, and built at the Electrocue plant at Maidstone. Electrocue Ltd is a "contract manufacturer" specialising in medium production runs for a wide range of customers. About half of Electrocue's work is for the group and half for external customers.

Some products are designed for the Helvar brand. These are unit dimmers and lighting controllers suitable for selling through the wholesale and OEM trade. However, the majority of products are designed for the Electrosonic and Celco brands. The aim is to produce products of "first choice" for professional users, and this in turn means both a wide range of products, and many different distribution channels.

Systems

Electrosonic has long been known for its systems building expertise, but the nature of this work is very different from product manufacture and marketing. Therefore from April 1992 Electrosonic Systems became a separate business unit within the group. It has its own specialist sales consultants, and targets as its market the larger AV, video, lighting control and audio installation, whether for business, entertainment or culture. It operates worldwide, and can handle individual contracts in the multi million dollar range.

Hawley Mill is the international headquarters of Electrosonic. It is outside Dartford, England, and houses group administration, sales, product development, systems engineering and systems assembly.

Electrocue's new Fairfax building has doubled our standard product manufacturing capacity.

Big Investment in Maidstone

Our wholly owned manufacturing company, Electrocue Ltd of Maidstone, has recently benefited from considerable investment in additional premises and new equipment.

The manufacturing area has doubled with the addition of the new Fairfax building. This building is now used for all products with medium to long production runs; the older Coldred Road premises house stores, purchasing and short run manufacture.

To meet the demands of several customers, and especially the new Electrosonic products, Electrocue is now equipped with Surface Mount assembly equipment (SMT). Surface mounted electronic components are much smaller than their conventional counterparts, and this is allowing us to create sophisticated products that are very compact.

Many SMT components arrive on reels, similar to 8mm movie. The assembly machine is loaded with many such "reels" and it then automatically places individual components in the right spot on each circuit board.

Electrocue's customer base is wide, and the products manufactured are as varied as background music equipment, medical electronics, circuit boards for professional fax machines, and security products.

A corner of the Fairfax building. In the foreground a rolling production line, in the background SMT automatic assembly equipment.

The office of Electrosonic Leisure Systems in Los Angeles.

LOS ANGELES

In 1991 we opened a new office in Burbank, near Los Angeles. In fact, Burbank is right in the centre of things when it comes to entertainment know-how, and this is the reason we chose the location.

As explained above, Electrosonic's activities are divided between the supply of products and the engineering of special systems. The Los Angeles office is definitely concerned with the latter and trades as "Electrosonic Leisure Systems". (Our Minneapolis office is our North American HQ, and products are distributed from there).

Leisure Systems is building on Electrosonic's twenty years of experience in the USA, and is concentrating on the technical systems needs of theme parks, museums, visitors' centres and permanent exhibitions. Systems are usually supplied on a "design and build" basis, but we are also pleased to build to a customer or consultant's specification.

The Los Angeles office serves the North American systems market, and also works on projects within the Pacific Rim. Close co-operation is maintained with Hawley Mill so that know-how and resources can be shared.

One a Second

Over 20 million fluorescent lighting ballasts come off the fully automated production lines every year at Helvar's Karkkila factory, 40km from Helsinki. This means that the lines are producing one ballast every second when working 24 hours a day five days a week!

The specialised production machinery used on the lines is designed and built by Helvar. The designing and setting up of a completely new line can take several years.

This "component" operation of Helvar's is quite different from the "systems" orientation of Electrosonic's systems and products. But the two are complementary — especially when it comes to the control of new lightsources. Sharing technical and development know-how within the HES group is assuming greater importance.

Helvar's Karkkila factory in the forests of Finland.

An automatic assembly station in the Karkkila factory.

Re-Organization

The considerable expansion that has taken place within Electrosonic over the last few years, and the new business focus arising from membership of a larger group with long term market strategies, has resulted in some changes in the way we do business.

Just three examples. We regard the Middle East and Far East (or "Pacific Rim") markets as so important that we now have a separate sales division and divisional director covering them. As part of this operation we have a representative office in Hong Kong. This office does not trade itself, but is there to support our dealers and distributors.

In Europe we expect to trade through many new outlets as our product portfolio becomes more diverse. EEC trading patterns and diverse products mean that there will be fewer cases where it will be possible to have only a single outlet within a country. This thinking led us to close our office in Holland in favour of working directly with specialist trade outlets.

In North America our Los Angeles, Minneapolis and Toronto offices are working closely together; each providing complementary expertise.

THE VIDEOWALL

The Videowall is a powerful method of display and is finding many applications, some of which are described here. Electrosonic's PICBLOC videowall control system is a market leader.

The nightclub scene from "Bodyguard" being filmed in Hollywood.

HOLLYWOOD

Electrosonic videowalls are widely used in entertainment, and make frequent appearances in Hollywood enterprises, including movies, game and talk shows, music videos and stage productions.

The Warner Brothers movie "Bodyguard" (release December 1992) starring Kevin Costner (who also directs) and Whitney Houston features a 6×6 PROCUBE installation in a dark, surreal nightclub scene

Filming videowalls requires the videowall to be synchronised to the camera shutter speed to avoid moving dark bars appearing on the finished film. Electrosonic provided special software to run the videowall at 24 frames per second to match the Panavision cameras used to shoot "Bodyguard".

The set of "Solitary Confinement" at Pasadena Playhouse, prior to Broadway.

Broadway & Las Vegas

The videowall gives great opportunities for live performers or presenters to interact with multiple video images.

Pasadena playhouse premiered "Solitary Confinement", by Rupert Holmes. The only live actor plays a Hughes-like recluse living in a high-tech "castle" in New Mexico. He communicates with the outside world entirely by video.

So in this play the supporting actors all appear on "the big screen", whether they be the principal's staff, business colleagues or even chef. In fact most of the support is pre-recorded on videodisc — and the show depends on PICBLOC and C-THROUGH control.

In Las Vegas the COMDEX trade show is the largest computer show in the world. At the 1991 event the 3M company used an 18-projector PROCUBE array to launch two new products.

Live and pre-recorded actors played "Data Man" and his nemesis "Data Bandit" with full interaction from the audience.

An attentive audience for the 3M presentation at COMDEX. Four videodiscs fed 18 PROCUBES via PICBLOC processing.

This picture shows two of the four videowalls in the America West arena in Phoenix.

PICBLOC for ARENAS

Large scale video displays are becoming an indispensable feature of indoor sports arenas. They provide an amenity for the spectators because they give action replays, scores, statistics and fan-rousing messages. They give an excellent opportunity for advertisers and sponsors to show relevant commercial advertising.

The projected videowall is a highly cost effective medium for the indoor arena. It is bright enough to compete with full lighting, and has a high resolution, allowing relatively short viewing distances in the smaller hall. It is considerably less expensive than the fluorescent/cathode ray matrix display, and the videowall concept allows for the creation of multiple image special effects.

Videowalls give a clear view at the Target Center . . .

The economics of projected videowalls are sufficiently attractive that it is possible to instal four displays in a typical arena. Depending on the size of the arena they may be 4×4, 6×6, or 8×8 — ranging from approximately 13ft to 24ft wide. Electrosonic PICBLOC with C-THROUGH computer software is the ideal image processing system for this application.

Timberwolves

Our first arena installation was in the Target Center, Minneapolis MN, home of the Minnesota Timberwolves. This used four 4×4 Mitsubishi projection cubes with PICBLOC 256 control, and has made a very effective feature of "fan-rousing" video. The videowalls become very much part of the event.

This was closely followed by a similar installation at the Met Center, Bloomington MN, this time using Pioneer projection cubes. This is a simpler installation using PICBLOC-36, but has proved equally effective. In both these cases we worked with the client's management to ensure that every seat in the house gets a good view, by correctly positioning and angling the displays.

America West

As explained opposite we are pleased to supply our image processing equipment for any type of projector; but we naturally recommend that for best value for money our own PROCUBE 2 projection cubes are used. Certainly when the America West Arena in Phoenix, AZ, came to make a choice, their general manager, Robert Machen, and their sports marketing consultant Terry Pugh reckoned that the all-Electrosonic combination gave the best "bang for the buck".

The America West installation consists of four 6×6 PROCUBE 2 displays, each with its own PICBLOC-3 image processing equipment. This allows each display to operate independently when appropriate. In addition to the four main displays, four 4×4 monitor displays are used for advertising in the concourse area.

The idea of using monitor based videowalls for concourse advertising is followed in the Toronto Skydome, where the retail concourse area uses five 4×4 PICBLOC videowall displays.

Special Events

PROCUBE videowalls are also suitable for temporary events taking place in large arenas. For example in the 1991/92 "Disney Double Feature" Disney on Ice tour two PROCUBE videowalls were trucked from venue to venue. Our dealers on both sides of the Atlantic offering rental services also often hire out Electrosonic videowalls to political conventions.

. . . as they do for a different sport at the Met Center.

The video control room at the Target Center. Note the preview videowall, and the "Howl" routine to rouse the Timberwolves supporters.

Monitor based videowalls in the retail area of the Toronto Skydome.

One of our UK dealers, Anna Valley Electronics, provided Electrosonic videowall equipment for both the 1990 and 1991 Conservative Party Conferences.

Ringling Bros "Walt Disney World on Ice" tours PROCUBE videowalls.

PICBLOC Developments

Since its introduction several years ago PICBLOC image processing equipment for videowall display has become an industry standard.

Our current leading product is PICBLOC-3, which besides providing excellent image splitting and programmability, allows the creation of a number of special effects, especially in respect of source transitions. In its standard version PICBLOC-3 is optimised for broadcast standard video, whether composite, component or RGB.

There is now an increasing demand for displays giving higher resolution, and for displays suitable for showing computer graphic output in place of standard video.

At Electrosonic we are rising to this challenge; but we are doing so as part of an evolutionary process. This ensures that our customers who have already invested in PICBLOC-3 product will not be shut out of the benefits of new developments.

The architecture of the standard PICBLOC-3 equipment is based on the use of separate digitisers, followed by image processing for each output display. This arrangement facilitates dealing with multiple sources, and allows us to process new kinds of input with alternative digitisers. In our higher resolution systems the system cardcage, power supply and the output cards (representing the larger part of the system) remain the same.

Graphics

We are offering a range of alternative digitisers for customers who need higher resolution, or who need to display different kinds of input. There are a number of alternatives which include, but are not limited to:

- improved display of standard video, with 4:2:2 or 4:4:4 sampling
- the display of progressive scan video (for example the output of Faroudja processors or other "line doublers")
- the display of standard computer graphics, for example VGA, without loss of resolution
- the display of Apple Macintosh graphics
- the display of 1125/60 HDTV
- the display of 1250/50 HDTV

In order to retain compatibility with industry standards, and to avoid the need for extra processing, there are certain restrictions on the format of the higher resolution displays. In some cases it is not possible to have more than one source, but in most cases at least two sources are possible. Some combinations permit a mixture of high resolution and standard video sources.

Initally the new digitisers are being sold on a "project" basis. Those for enhanced standard video, progressive scan video, and video graphics will shortly become standard products, but HDTV digitisers will remain special order items.

The Electrosonic PROCUBE 2 is a high brightness projection cube ideal for big image display. This unretouched photo of a 6×4 array shows its even illumination and suitability for high ambient light operation.

Monitors or Cubes?

It is easy for users and viewers to be confused as to what constitutes a videowall. Is it a big image or a multi-image device? Does it use monitors or projectors?

The answer is both in both cases. At Electrosonic our prime product is the PICBLOC image processing electronics that can split an incoming video signal into many separate signals. Each output signal feeds a standard video display device, and it does not matter to us whether this is a monitor, a standard video projector or a specially designed video projector.

Monitor displays have their place in exhibition and display, and in applications, for example retail, where space is at a premium. But there are many applications where projectors are the only option in order to ensure an uninterrupted big image.

For high ambient light conditions several manufacturers have developed back projection "cubes" that stack together to make a single display. Each cube uses a specially designed projector and a high gain screen with black stripe front to enhance contrast.

PICBLOC equipment will work with any manufacturers' cubes, and we are happy to co-operate with customers who wish to use our processing electronics with a cube of their choice. For certain applications we may recommend the use of another manufacturer's "cube" as being the most suitable for the job — especially when it must handle both 50 and 60Hz signals, or may be used as a single screen display viewed from close-up.

We ourselves offer PROCUBE 2, manufactured by our Minneapolis based company, Electrosonic Systems Inc. This is intended for large image displays viewed at a distance. It has exceptional light output, with excellent centre to corner illumination. It is very good value-for-money, ideal for big installations; however, it is only available as a single frequency unit, either 50Hz (for 50 field per second sources e.g. PAL) or 60Hz (for 60 field per second sources e.g. NTSC and PICBLOC processed VGA).

For a "Guess" Perfume promotion Dayton Hudson used a PICBLOC monitor videowall in their Minneapolis store. Monitors save space in retail applications.

Videowalls — the book

The only book that has been published on videowalls is "Videowalls" by Robert Simpson. It is in the Media Manuals series published by Focal Press, an imprint of Butterworth Heinemann.

This useful paperback is in an ideal format for the user, programme commissioner, installer, programmer — or indeed anyone who works with videowalls. This is because each pair of pages deals concisely with a particular detailed subject, and can be read on its own.

Subjects covered are as diverse as the application of videowalls to conferences, commercial considerations, "how videowalls work", and suggestions for programming.

See the item "Effective AV — the book" on page 11 for details of how to obtain "Videowalls" — the book.

This "Media Manual" entitled "Videowalls" is available from Focal Press.

WORLD'S BIGGEST VIDEOWALL

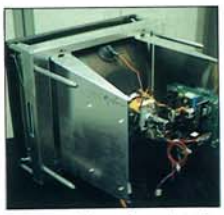
The Telecommunications Pavilion at EXPO 92, Seville, presented a sequence of shows in three theatres, all of which had audio-visual engineering by Electrosonic. But the heavyweight was the first of them, with its show called "The Global Village'. It used a massive 850 monitor videowall arranged 34×25.

Weighing over 35 tons, and measuring 16m (53ft) wide and 10m (33ft) high it must be considered the world's biggest videowall — when measured by the number of separate display devices.

The show used powerful imagery to trace the history of communication from the first forms of script to the satellite communication of today.

The architect's design concept was that the videowall could, as part of the show, present a map of the world where each monitor was a "pixel".

The "Global Village" videowall at EXPO 92, a 34×25 video wall. This photograph clearly shows the architect's "pixel" concept.



The special monitor chassis. Notice the location "pins".

Monitors

The size of the videowall meant that it was not practical, or affordable, to use conventional video monitors. The videowall was built as a self supporting steel frame, complete with four levels of rear access platforms. The structure was built for us under sub contract by George Dashper Associates.

The monitors were custom built RGBS analogue units (electronic design by ABA Electronics, built under sub contract by Electrocue Ltd) which were fitted with large locating pins that "plugged in" to the main uprights. Thus all weight was directly transferred to the support structure, and individual monitors could be easily withdrawn completely if required.

Control

For control purposes the videowall was divided into five main sections. In the centre there were two groups of monitors each 7 wide × 15 high, together making a 14×15 array. Flanking these, but separated by columns of one monitor were two further groups each 6 wide × 15 high. These four main areas were full multi-source videowalls with complete image control and splitting.

The remainder of the videowall was "background". In principle it was also fed from image processing electronics, but with only six outputs which were then distributed by video distribution amplifiers. The background monitor groups were arranged to allow "contouring" of the background, and allow the production of the complete "map of the world" effect with six types of "pixel". Because each of these sources could be either moving or still images, some very impressive effects were achieved, and the audience were not aware of any limitation imposed by the fact that not all the monitors were equipped with full image processing.

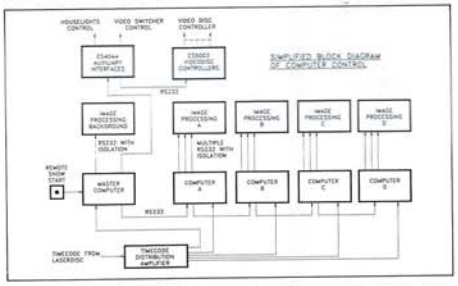
The show was run from six standard laserdisc players. However, there was also a CRV disc player that allowed the introduction into the show of up-to-the-minute images. For example, on the opening day of EXPO 92, the King of Spain opened EXPO at 12.00 noon. At 1.00 p.m. — just an hour later, the Telecommunications Pavilion opened to the public, and the show included coverage of the opening ceremony. This was achieved by off-air recording onto Betacam SP tape, and then transferring the selected few seconds of programme onto the CRV disc.

The image processing system used was the Electrosonic PICBLOC 3 system. This gives an unrivalled range of programmable effects which were fully exploited in the show. Particularly effective were the "wipe" source changes which gave the effect of a series of overlapping images sliding up or down the videowall.

Computers

Five control computers were used. Each computer was fitted with a number of Electrosonic communications cards that provided the required high speed communications to the image processing equipment, and provided synchronization to timecode. Four of the computers dealt with the four main image areas, and the fifth computer was used for programming the background effects, video switching and source control.

This fifth computer was also the "master" computer. It is a feature of the C-THROUGH computer program that it is easy to run several computers in synchronisation using one as a master.



The show used multiple computers for programming. One computer was the "master" and four were "slaves" running from the same timecode.

Installation

The rear of the videowall was very neat, with power distribution and video cables carried in trunking or cable trays.

Power to the monitors was distributed by an automatic switching unit that eliminated switch-on surges.

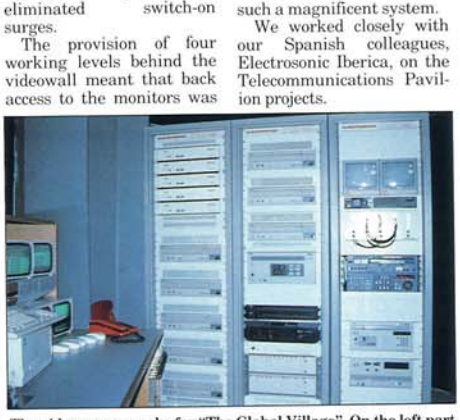
The provision of four working levels behind the videowall meant that back access to the monitors was easy. Front access was achieved using a mobile scissor lift platform. However, during the summer the lift was stored in an inconvenient location and our show operating subcontractors, Autoshow Ltd, used abseiling as an alternative method of front access.

The neat construction of the videowall simplified installation and maintenance.

The complete system was a major feat of video engineering. It is a testimony to the systems engineering resources of Electrosonic, and to the power of the Electrosonic PICBLOC Videowall control products, that such a huge system was installed so quickly, and showed itself to be a reliable and spectacular show medium.

It was also a testimony to the imagination of the client (The Pavilion of European Telecommunication Operators), architect (Macua and Garcia-Ramos of Madrid) and show producer (Sono Multivision of Barcelona) that Electrosonic were given the opportunity to design, manufacture and instal such a magnificent system.

We worked closely with our Spanish colleagues, Electrosonic Iberica, on the Telecommunications Pavilion projects.



The video source racks for "The Global Village". On the left part of the programming console can be seen.

RETAIL

Retailing is becoming more competitive. The control of lighting, and the use of audio-visual methods are becoming essential in some retail environments. Electrosonic has products and systems expertise to help.

MEGA-MALL VIDEO

Washington DC based Western Development specialise in the creation of "Mega-Malls". These under-cover developments can be up to a mile (1.5km) long, allowing the accommodation of as many as 200 shops on a two mile frontage. The total covered area can be as much as 2.2 million sq.ft (220,000 sq.m).

Electrosonic Systems Inc have recently worked with Western Development's Technical Director, Daniel Barnycz, on two of their projects. The first was Sawgrass Mills, near Fort Lauderdale FL, and the second was Gurnee Mills, 35 miles north of Chicago.

In both cases we provided an extensive video distribution and display system, in the case of Gurnee Mills we also provided the audio distribution. Western refer to the systems as "electronic amenities" which inform and entertain shoppers, and keep them in the mall.

"Mills TV"

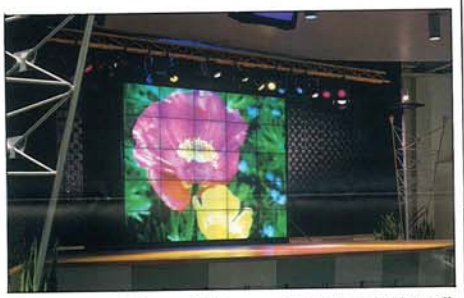
The video programming is especially interesting. In addition to a fully automated playback installation, each mall has its own video production suite, so that advertisers' programs can be properly integrated with locally produced material. It is an important part of Western's philosophy that even the smallest tenant can be promoted on "Mills TV".

It is also important that "Mills TV" entertains and informs. For example outside weather information is continuously updated.

Fibre Optic

Video programs are distributed through the malls using fiber-optic distribution (because of the distances involved) and are mainly shown on 35" monitors. However, videowalls are also used.

The central control system for Gurnee Mills "Mills TV" was built by Electrosonic Systems Inc.



The stage area at Gurnee Mills uses a 5×5 projected videowall, for both entertainment support and for "Mills TV".

At Sawgrass there are two 4×4 projection videowalls, and at Gurnee one 5×5. These show the "Mills TV" program, but are also used to support live entertainment which takes place in the malls at weekends and other peak leisure times.

PICBLOC

Naturally the videowalls use Electrosonic PICBLOC videowall processing equipment (the projection cubes are Pioneer). So versatile is the standard Electrosonic videowall programming software (C-THROUGH) that it is used to schedule the video programming for the complete system, in addition to programming the videowall effects.

At Gurnee Mills the videowall is also equipped with a PICBOX realtime videowall effects selector which is used when the videowall is supporting live entertainment.

At Electrosonic we know of many cases where video is used to support retail activity, but we know of no other installations where the audio and video programming concepts have been so thoroughly researched and executed. We are very pleased to have been involved with the complete video engineering for these "Mills" installations, because they have given us valuable experience which we can incorporate in new product concepts in our PICBLOC range.

Video at Sawgrass Mills in Florida. One of two 4×4 videowalls (above) and a typical part of the mall with overhead monitor (below).

The Lakeside shopping complex uses Electrosonic automatic lighting control.

LAKESIDE LIGHTING

Programmed lighting control is now an important element of retail design. Our dimmer systems are widely used in individual stores, but sometimes we are involved with lighting control for an entire mall.

Lakeside is a huge shopping complex at Thurrock, on the Essex side of the River Thames in England. The architects, Chapman Taylor Partners, commissioned Lighting Design Partnership to design the lighting scheme.

The total lighting load is in excess of 1.4MW. In order to ensure its effective and economic use, it is controlled by a fully automatic lighting control system supplied by Electrosonic, and installed by Crown House Engineering.

Control is exercised by Electrosonic SCENE MANAGER, with daylight sensor override. SCENESET memory controllers store the many different lighting scenes, and final control is by DIGIDIM dimmers and custom built switching racks.

There are 380 dimmers and 300 switched circuits in the system; making it one of the largest retail lighting control installations we have undertaken.

A corner of the Opel showroom in Berlin. Mirrors make the videowalls go further!

Opel in Berlin

The twenty two Opel Dealers in Berlin have formed a consortium to run a common showroom in the centre of Berlin. It is an ideal site for using video sales support during the day, and video public relations at night.

The showroom has two 4×4 suspended videowalls. When the showroom is open, visitors can make their choice of ten video programmes giving dealer and product information on the car of their choice within the Opel (GM) range.

In the evenings, and well into the night hours, the videowalls can be seen through the showroom windows by pedestrians on the busy Friedrichstrasse, on their way between the Friedrichstadt Palace and Metropol Theatre. A continuous "night programme" on the latest Opel products is shown.

CRV Disc

The installation is a four-source PICBLOC-3 system with VCU control. The main four sources are Sony CRV disc players LVA4500P. The CRV disc is ideal for this type of installation because it gives component quality, and allows for easy programme updates and changes.

The CRV disc is recordable, and it is not necessary to "fill" the disc first time; an existing disc may have new material added to it (but it is not possible to erase the recording). The quality is superb — Betacam SP component recordings can be transferred to the disc without loss of quality.

The complete installation at Opel an der Spree was ordered by Opel AG of Ruesselsheim, and completed by Electrosonic GmbH of Langenfeld.

NIKE on the wall

Portland, Oregon and Chicago are the first flagship "Nike Town" stores to use innovative video displays designed by Dennis Earl Moore Productions. These showcase Nike's sports and fitness products.

The AQUA POOL is a "video pond" of nine monitors installed face-up under glass. Visitors try on shoes on adjacent benches while watching a video presentation of beach scenes and undersea life.

The TREADMILL has four monitors in a vertical column carrying footage of athletics in action, matched by four mounted face up showing the ground beneath the athlete's feet.

Both displays use Electrosonic PICBLOC videowall equipment. Dennis Earl Moore Productions report that the AQUA POOL, TREADMILL and other new video concepts will be included in further "Nike Town" store openings.

Kensington Arcade has 24 hour-a-day automatic lighting control from Electrosonic.

KENSINGTON ARCADE

The Kensington Arcade shopping mall in London is also the entrance to the busy Kensington High Street Underground Station. Lighting here must be functional 24 hours a day, and must attract visitors to the shops in business hours.

Lighting Design Partnership designed a lighting scheme with 32 "scenes" to suit the time of day, day of week and external (daylight) lighting conditions.

An Electrosonic SCENESET system is used to control the combination of dimmed and switched lighting circuits. It is controlled by a SCENE MANAGER which selects an appropriate lighting scene according to the time of day, but which is modified according to daylight conditions.

The Nike Town store in Portland, Oregon, uses PICBLOC equipment in its unusual video displays.

TRADE SHOWS AND CONFERENCES

Electrosonic videowall, multi-image, entertainment lighting and mixed media equipment is widely used for trade show exhibits and conferences. It is usually hired through an extensive dealer network.

GLAXO

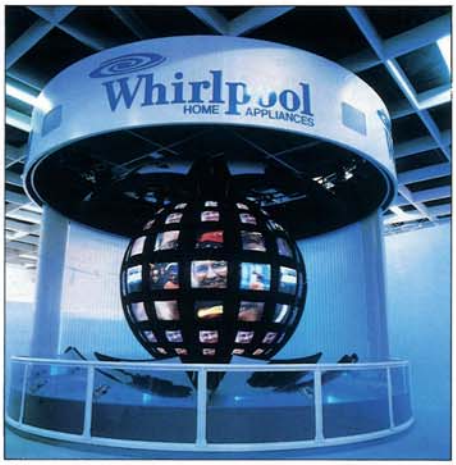
When large audiences gather for a conference or special event, it is often difficult for members of the audience to feel any rapport with the speakers, because of the viewing distances involved and the sheer size of the venue.

Occasions like these benefit from big screen video reinforcement. The medium can also be used for visuals support.

PROCUBE videowalls are ideal for this purpose because they need very little depth, give a high resolution image that can be viewed from both close-to and at a distance, and can work in high ambient light. This last factor was of particular importance when Glaxo Laboratories opened their multi-million dollar corporate facilities in Mississauga, near Toronto.

The opening ceremony was in a huge tent and everyone got a clear view thanks to the giant 7×7 PROCUBE videowall (6.3m, 21ft wide) which was organized by our Toronto office.

Canada's Prime Minister, Brian Mulrooney, gave the keynote address at Glaxo's Mississauga opening. PROCUBE made him visible.



This amazing video display for Whirlpool used Electrosonic PICBLOC image processing.

WHIRLPOOL

For the 1991 Domotechnica show in Cologne, Whirlpool commissioned agency HP:ICM to produce a "corporate manifestation" to portray Whirlpool as a global enterprise, and the world market leader in white goods.

Interactive Television provided the specialist equipment, technical design and programming services for HP:ICM to realise an amazing 49-monitor "globe". This gave a show every eight minutes, starting with fountains playing and a closed "globe".

"Petals" then opened to reveal the video globe. Images were sourced from eight laserdisc players, with image "splitting" being used on the centre 7×3 array of monitors. No magnification bigger than 3×3 was used, in order to maintain image quality at close viewing.

The system supplied by Interactive Television used Electrosonic PICBLOC image processing, C-THROUGH computer control and ES5003/4044 disc and effects control. A Celco 60 lighting desk was controlled directly by C-THROUGH for the synchronised lighting effects.

500 YEARS

"Deutsche Post" recently celebrated its 500th anniversary with many special events. One of these was Post Forum where delegates from all the German-speaking countries came to a big conference in Cologne.

The audio-visual producer Fred Peer was commissioned to make a special show that was used both to open the conference, and to run at fixed performance times during it. He decided that the multi-image medium was the most appropriate for the event, both because of the need to include a lot of still images, and because multi-image gives the highest possible image quality.

The show was given on a 15m wide screen, and used no less that 76 Kodak Carousel SAV projectors and three video projectors. The slide projectors were arranged in a huge "soft edge" array, so that it was possible to show both big single images, and multiple images.

30,000 slides

Fred Peer "distilled" the show from 30,000 original slides and 100 hours of videotape. Reger Studios of Munich did the rostrum camerawork, show slide preparation, and soft-edge production. The six-channel sound track, a blend of specially composed music and real sounds was composed by Claude Larson.

Electrosonic GmbH of Langenfeld delivered the complete show system, engineering it as a "push button start" show. ES4003 multi-image controllers were used, and the show was programmed using the Electrosonic BSC mixed-media computer control program.

Slide projection is an important element of special event image presentation because of its high quality, flexibility of format and high image brightness. Post Forum made good use of these attributes.

Multiple imagery in the Post Forum show. In the lower picture the circular images are video.

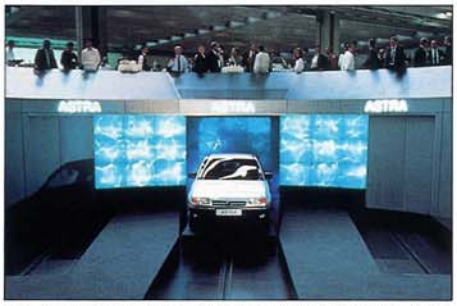
The giant screen for Post Forum used 76 slide projectors, controlled by Electrosonic ES4000 equipment.

MOTOR PROMOTION

The automobile manufacturers were among the first users of videowalls in trade shows. The dynamic possibilities of the medium complement the glamorous products. The high image brightness means that there need be no lighting compromises in the trade show environment.

The way in which the medium is used varies enormously. Both Ford and General Motors have used videowalls to back live presentations. More usually videowalls are used as backdrops to static displays, like the BMW example shown here.

Unusual formats, like the Mazda example, add interest to the exhibition stand design.



The Astra launch on the Opel stand at the Frankfurt Motor Show used a moving videowall.

An elaborate videowall display, designed by HP:ICM and engineered by Interactive Television, was used by Adam Opel AG at the Frankfurt Motor Show to launch the new Astra. This used a 9×3 PROCUBE display, the centre section of which moved to reveal the car. Programming was by Electrosonic C-THROUGH, which also sent commands to the Celco lighting control.

At the Toronto and Montreal Auto Shows, Ford used a 5×3 PICBLOC videowall.

Unusual shapes enhance the stand. The Mazda booth at the 1991 Minneapolis Auto Show.

General Motors Exhibit at the 1992 Detroit Auto Show used a 6×3 PROCUBE videowall to support a major presentation on a new concept car.

BMW used a 5×5 PROCUBE videowall to support their exhibit at the 1992 Toronto and Montreal Auto Shows.

100 DEALERS

There are many users of Electrosonic PICBLOC videowall systems who have no need to buy the equipment, especially those who need the equipment for short trade shows or for conferences. Their needs are better served by renting, because the rental house can usually offer a complete package that includes other AV or staging equipment.

Renting can also save money in respect of transport, and usually ensures that service costs are reasonable. Electrosonic now has a network of dealers throughout the world who can supply PICBLOC systems on a short term rental basis. These dealers also sell the equipment on outright sale for permanent installations.

In the USA, Canada and Mexico there are well over 40 dealer locations, and new ones are being added to fill in any geographical gaps. European countries like the UK, France, Germany, Spain and Italy each have between 6 and 15 dealers, and nearly all European countries have at least one dealer. The European total is nearly 60, and we hope to fill the gaps (mainly East Europe) in the near future . . .

The Pacific Rim is well supported; Japan, Australia, Indonesia, Korea, Taiwan, Hong Kong, Philippines, Singapore and Thailand have a futher 13 dealers between them. South Africa also has a big inventory of PICBLOC equipment.

We believe PICBLOC to be by far the best supported videowall product on the worldwide market. If you want to hire a videowall, and do not know the name of a PICBLOC dealer near you, then contact any of the offices listed on Page 2 for a recommendation.

THE PRESENTATION ROOM

We specialise in meeting the technical needs of presentation, meeting and trai- rooms. Our expertise covers lighting control, audio, video, optical projection, d..a display, and room control systems. We have a range of specialised products for systems installers, and our own Systems Division engineers complete systems in local markets.

PRESENTATION PROST!

Diebels is the sixth largest brewer in Germany, and is sector market leader with both their Diebels Alt and Issumer Alcohol-Free brands.

Their new presentation facilities have been designed to meet varied needs. In common with many companies in the consumer drinks market they find that looking after visitors well is good public relations, but that, to be effective, hospitality must be accompanied by information.

And in their day-to-day operations they need good communication both within the Diebels company and with their trade colleagues. This means that their presentation room must be suitable for both showing computer graphics, and for showing a multi-image "house show".

Electrosonic GmbH of Langenfeld designed and installed the complete Audio-Visual system. Naturally full advantage is taken of the flexibility of the Electrosonic product range. An APU-Turbo runs the multi-image show, a SYSTEM 12 controls the lighting, and central control is by Electrosonic PRC.

Selection of TV, Videotape, Slides, "House Show" Multi-image, OHP, Data, Graphics and Teletext can be done from the lectern with "one button" control. This means that each time an item is selected, the lighting, video switching, audio routing and other room effects are all correctly adjusted.

Different methods of control. A fixed panel in the lectern, and two cordless panels of different complexity.

The multi-image projectors, neatly concealed within the ceiling structure.

The Diebels Brewery Presentation Room.

The room can also be controlled by cordless controllers. One 15-button controller can select all the main room effects. A second, much simpler, 4-button controller can be used for slide projector or other simple sequence control. This arrangement is much easier for occasional users of the room.

In common with all Electrosonic engineered room systems, the complete control system was built and fully tested off-site, before delivery to the customer. This greatly reduces installation time and improves system reliability. We encourage dealers in our control products to work the same way.

The Electrosonic racks behind the scenes.

The TWS Media 5 ETX wall at BNS. The writing surface is motoring up over the screen. The open equipment access door reveals the Electrosonic rack.

Barclays & Hutchison

TWS plc (Teaching Wall Systems) are well known as manufacturers and suppliers of specialist furniture, equipment housings and teaching walls. We often co-operate with them, working as a team where TWS design and instal the "housings" and we engineer, and provide service for, the "electronics".

Barclays Network Services, with head office in Bishopsgate, London, are the data networking arm of Barclays Bank plc. Their new high level training and presentation room is fitted with a TWS Media 5 ETX presentation wall.

The ETX unit is finished in American Walnut veneer to match the boardroom table, and features a sliding motorised screen cover door, motorised writing board, overhead projection screen and concealed flipchart. The complete system includes slide, TV, data and video projection.

Motor interlocks for the moving panels are part of the TWS system, which in turn is connected to the Electrosonic built AV source and control rack. This includes VHS, U-matic, two data inputs, TV tuner, sound system and overall Electrosonic PRC control.

Videoconference

A TWS Column Board Unit is used in the Hertford, England, Boardroom of Hutchison Telecommunications UK Ltd. Here we worked closely with the interior designers, Edwards Delaney, to integrate the AV system behind a bespoke joinery wall.

The room is fitted with a Wolf Visualiser, slide, video and data projection, and is under the control of an Electrosonic MRC. Lighting control is by MULTIDIM.

The installation is of particular interest because it can be hooked in to the video conferencing system that links Hutchison's Hertford, Bristol and Darlington sites. Each site is equipped with Compression Labs videoconferencing codecs.

Hutchison Telecommunications UK's Hertford boardroom.

Boardroom of Credit Lyonnais Nederland.

Paris and Amsterdam

Credit Lyonnais Bank Nederland in Amsterdam is one of the many companies in Holland who have the benefit of an Electrosonic engineered presentation room system. The room uses SYSTEM 12 lighting control and PRC room control, and includes a Philips CCS400 conference and simultaneous interpreting system.

While our Systems Division will do large installations throughout Europe, we more often supply products or sub-systems through local dealers — for example Visual Hardware Systems BV of Amsterdam.

The Paris HQ of GM's Dallas based Electronic Data Systems has three presentation rooms, all engineered by Electrosonic, with the support of Electrosonic Systèmes. The wide screen "House Show" shown in the photograph combines multi-image slide with video.

We also provided the corresponding installations for EDS at Stockley Park in England and at Geneva in Switzerland (with the support of AV Ganz).

One of EDS' presentation rooms in Paris.

Molson in Toronto

The photograph above is of Molson Breweries boardroom in the centre of Toronto, Canada. It is difficult to see that there are any AV facilities in it! But actually the room is fully equipped for presentations and meetings.

Interior designers Frankland Rusznyak Associates went to great lengths to ensure that technical equipment did not obtrude. They worked closely with the Electrosonic Toronto office to ensure the neat integration of the AV equipment. Motorised panels conceal the comprehensive projection facilities.

Teleconferencing microphones are built into the table, and the boardroom and executive area is equipped with Electrosonic DIGIDIM lighting control.

Alcatel in Madrid

Our associates in Spain, Electrosonic Iberica, report considerable success installing presentation room systems in Spain and Portugal.

The photograph below is of the main boardroom of Alcatel Standard Electrica in Madrid. This is one of several installed by Electrosonic Iberica using a "standard package" of MRC for AV control and SYSTEM 12 for lighting.

The system includes video and slide projection, control of screens and curtains, lighting and audio control. Some systems include simultaneous interpreting equipment.

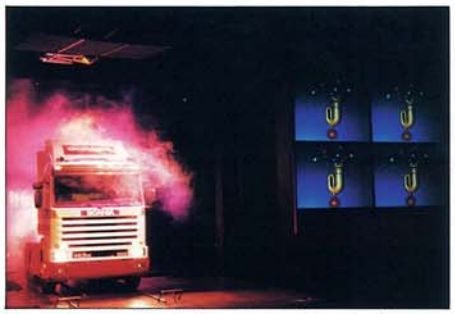
Besides Alcatel, recent clients for the same package include Gayoso Wellcome Laboratories and Cristaleria Espanola in Madrid, and Shell Portuguesa, Circulo de Leitores and Upjohn Farmoquimica in Lisbon.

Allied Dunbar in Swindon

Allied Dunbar, a major financial services company headquartered at Swindon, England, spent £20 million building their own training college.

It includes residential accommodation for 200, a restaurant, two 50-seater lecture theatres and 30 training rooms. B.J. Auditorium Design were called in as AV consultants, and Electrosonic delivered and installed complete AV systems to B.J.'s specification.

The two fully equipped lecture theatres include Electrosonic PRC control. The College also has eight video/audio learning carrels linked to a "Learning Centre", and several of the syndicate rooms are equipped with CCTV and audio recording facilities.



The finale of the Scania show. The truck appeared to come through the projection screens.

SCANIA 100

Sometimes it is necessary to build a special presentation environment. This was the case in 1991, which was Swedish truck manufacturer Scania's centenary year.

Over a six month period more than 45,000 employees, press, dealers and customers visited a specially constructed presentation theatre in the company town of Sodertalje. Here they saw a specially commissioned show, the brainchild of Kaj Sandell, PR Director of Scania.

The one-hour show was in several "acts", reviewing the company's history, products and achievements, and could be given in no less than nine languages. The 25m (82ft) wide set combined the use of live action, multi-channel sound, animatronics, special effects, 35mm movie, multi-screen video and multi-image.

21 video and 81 slide projectors were used, and the set included moving screens programmed with millimetre accuracy. The impressive feature of the show from the AV professional's point of view was the seamless way in which the different methods of image projection blended together. A great credit to the show producers, Producenterna of Stockholm.

The complete system engineering was carried out by our distributors Ljus & AV Teknik, and a lot of Electrosonic product was used. DIGIDIM dimmers, PICBLOC image processing equipment, ES4000 multi-image equipment, ANCOR animatronic control to name but some.

The fully automatic show used three computers running in sync. One ran BSC, one C-THROUGH and one ANCOR.

SINGAPORE

Our AV distributors in Singapore are Tech-Men Communications Pte Ltd, and they have many years experience serving the AV Systems needs of the Singapore business community.

They use both our PRC and MRC meeting room control systems, depending on the size and complexity of the installation. Two recent prestige installations are those for the Boardroom of Jurong Town Corporation (PRC) and for the Training Technology Centre of Andersen Consulting Singapore (MRC).

Singapore presentation rooms: Jurong Corporation (above) and Andersen Consulting (below).

The Australian Telecom Network Management Centre is in the background, seen from the presentation room through a glass wall.

SYDNEY NERVE CENTRE

Australian Telecom's new Network Management Centre in Sydney includes an operational control room and a presentation room for visitors. These are interconnected and use a single Electrosonic PRC for simplified control.

Davenport Campbell & Partners, the architects, called in Electrosonic Systems Pty Ltd to advise on the design and integration of the various audio-visual devices to be used.

The Management Centre itself uses a BARCOGRAPHICS 800 projector working onto a high gain 100" fresnel lens rear projection screen. Surrounding the main screen are four Barco 33" data monitors. Within the operating area it is possible for the operators to select any of their 20+ computer program displays to the main display system.

Special Software

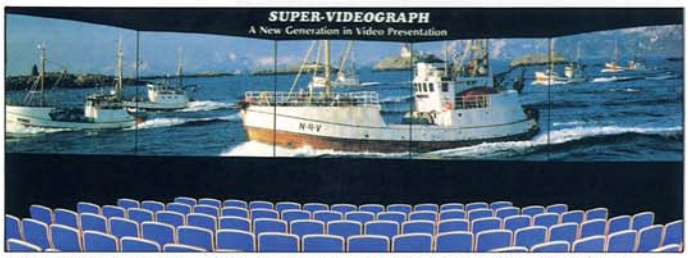
This required both special control software from Electrosonic Systems and the supply of a sophisticated matrix switcher from another Australian company, Talia.

The adjacent visitors' presentation room is equipped with another BARCOGRAPHICS 800 projector, this time arranged for front projection. The audience can be shown network information from the operations room next door, video from a number of sources, data from a dedicated presentation computer and presentation material from a Wolf VISUALISER. The room is also equipped for slide presentations.

Lighting control is by an Electrosonic SYSTEM 12, and the presenter stands at a custom built LECTRUM L500 lectern. Such was the emphasis on design integration that Electrosonic Systems had to build both a trolley for the Wolf VISUALISER and a tea trolley to match the LECTRUM style.

Normally the glass partition between the rooms is curtained off, but the presenter can open the curtains to allow visitors to see the operators at work. A discrete alarm is sounded in the Management Centre before the curtains open, which gives the operators time to prepare for public scrutiny!

The whole installation is one which combines function and style. It allows full time use as an operations centre, and as a display of Australian Telecom's Network Management. Electrosonic control makes it easy to use.



The five screen video concept of Caprino Filmcentre is suitable for prestige presentation rooms.

Norsk Hydro goes

PANORAMIC

Caprino Filmcentre of Norway have developed a multiscreen video production facility that makes the excitement of widescreen presentations both practical and affordable for the commercial presentation client.

Norsk Hydro, the Norwegian Petroleum and Chemicals Giant, commissioned Caprino to produce a show to be used first at the Stavanger Off-Shore Exhibition, and then to be permanently installed at their Bergen Headquarters.

Caprino call their system "Super-Videograph". It uses five video projectors to produce a panoramic picture up to 23m (75ft) wide. They have constructed a special camera rig fitted with five BetaCamcorders, that can be dolly mounted or mounted on a car or helicopter.

The Caprino 5-Betacam camera rig.

The Norsk Hydro installation is Caprino's fourth. Others are at North Cape, the Hunderfossen Theme Park and at the Norwegian Glacier Centre. They plan more productions in Britain, Spain and France.

Audio Grafisk, Electrosonic's AV Distributors in Norway, have helped with the realisation of the showing system.

In the Norsk Hydro system an Electrosonic VCU and ES5003 are used to control and synchronise five laserdisc players. They also select language, and control the houselights and screen curtains.

The complete Norsk Hydro installation also includes standard presentation facilities, including data projection. The presentation room can therefore be used both for visitor shows on the wide screen and for business presentations.

This is an excellent example of how standard Electrosonic products can be used to simplify automatic shows, whether they be in a museum, visitors centre or business presentation room.

LINTAS IN AUCKLAND

The photograph on the right shows the boardroom/presentation room of advertising agency Lintas in Auckland, New Zealand.

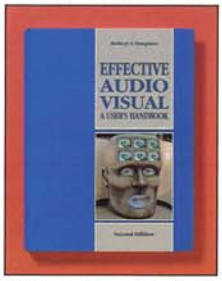
The complete AV installation was carried out by our New Zealand distributor, Reynolds AV. It is of special significance to us because it was, in fact, the first installation to use our MRC Meeting Room Controller which is especially suitable for the smaller presentation room.

Effective AV — the book

Audio-visual systems are more often than not used by people who are not themselves professionally engaged in AV. Things which seem obvious to an AV enthusiast may be totally obscure to a finance director who finds himself giving a group presentation.

A book designed to help the AV user, and also to help the professional who may be familiar with one aspect of AV but would like reminding about another, is "Effective Audio-Visual, a user's handbook" published by Focal Press. It is the kind of book that should be on hand in every presentation facility.

Originally published in 1987, it has now been completely revised and the second edition was published in July 1992. Apart from the updating of existing chapters, there are new chapters on programme commissioning and on developments in interactive AV.



Effective AV — second edition.

Both this book, and Robert Simpson's book on "Videowalls" referred to on Page 7, can be obtained from the publishers; Focal Press, an imprint of Butterworth Heinemann. They have offices in Boston (USA), Oxford (UK), Munich (Germany), New Delhi (India), Singapore, Sydney (Australia), Tokyo (Japan), Toronto (Canada) and Wellington (New Zealand).

"Effective Audio-Visual" is ISBN 0-240-51327-4, and "Videowalls" is ISBN 0-240-51294-4. If you have any difficulty obtaining either title, the Electrosonic offices listed on Page 2 may be able to help.

MUSEUMS AND TOURISM

Electrosonic manufacture many products that have application in museums and tourist visitor centres. Our Systems Division can also provide a complete audio visual systems engineering service. These pages describe typical product applications and complete projects.

ESTA IN SWITZERLAND

AV Ganz AG of Zurich have been distributing Electrosonic audio-visual products for more than twenty years, and recently they have been involved with several interesting museum and visitor centre projects.

Two of them are particularly intensive users of ESTA, Electrosonic's system of tapeless audio, which uses EPROM "chip" memory as the means of sound storage. It ensures a system that requires virtually no maintenance. We pioneered this method of audio storage in 1985, and are continually developing the product to take advantage of new chip technology. The current ESTA product is particularly suitable for multi channel application, and for systems where it must be integrated with lighting and effects control.

Mr Houriet the watchmaker speaks to visitors at the Watch Museum in Locle, Switzerland.

Watch Museum

ESTA's flexibility is well illustrated by the two examples in Switzerland. The Watch Museum at Locle is a special kind of museum that likes to talk to its visitors, and in the midst of other audio-visual displays there is the workshop of an oldtime watchmaker. He is Mr Houriet, a celebrity of Locle in the 19th Century.

He is busy at his workbench, poorly lit by an oil lamp. From the open window come sounds from the street below, horse drawn carriages, dogs barking and the chimes of the nearby church bells.

As a visitor you can ring Mr Houriet's bell. A faint tinkle is heard, the houselights dim and his studio lamp brightens. Mr Houriet looks up from his work, turns to his visitors and starts speaking to them. When he has finished talking he takes up his work again.

ESTA "tapeless audio" equipment gives maintenance-free playback of sound in museums.

When next he is disturbed, he tells a different story. In fact he tells four different anecdotes. The background sounds, Mr Houriet's narration and the timing commands for controlling the lighting are all stored on ESTA 24 equipment. Lighting control is by ES10 automatic dimmers.

The splendid animated figure of Mr Houriet was constructed by Michel Bertrand, and its control, its integration with the ESTA system, and the audio production were realised by Paratte Film Studio.

Fire!

A quite different application, using 70 separate sound tracks totalling over one hour of recording, is to be found at the La Grangette Training and Fire Prevention Centre in Lausanne run by the Canton of Vaud Fire Insurance Establishment. The exhibition here is open to the public and special interest groups.

The fire-damaged apartment (above) and the "fickle finger of fate" (below), exhibits at the La Grangette Fire Prevention Centre.

The Exhibition Producer, Alain Laessle of Multivision SA, has created an interactive environment, where the triggering of audio effects, lighting effects and animated displays is under the control of logic controllers actuated by audience sensors and audience selection.

For example in one area visitors see a fire damaged apartment. Special effects like the crashing of beams and dripping of water are triggered as the visitors pass through.

Another exhibit emphasises the importance of choosing the right building material. The materials are displayed as columns, the idea being to show architects that approved materials do not lessen choice. In this area there are seven individual music soundtracks which are triggered according to how the visitors move.

Interactive

A similar exhibit displays doors which meet safety standards. These are accompanied by eye-witness accounts from people who have survived fires. The most complex exhibit is in the form of an interactive "labyrinth" of rooms where visitors can only move from one to another having passed a test — for example one of the first tests asks them how to put out a chip-pan fire. Each room has background sounds, spot sound effects and commentary as required — all stored on the large Electrosonic ESTA system.

Throughout the exhibition giant animatronic exhibits representing the human senses are activated as the public pass through, and associated with each is an appropriate message.

AV Ganz AG provided the technical support for these ESTA installations — including recording over 1,000 EPROMs for the Lausanne installation alone.

The giant antenna at Pleumeur Bodou is now part of a multi-image show. It is housed in a 60m diameter radome.

BSC DRIVES 340 TONS

Does anyone remember Telstar? Thirty years ago this satellite inspired a pop song, but communication with it was anything but easy. Because it was not a geostationary satellite it was necessary to track it using a moving antenna.

The little village of Pleumeur Bodou in Brittany was chosen as the site of French satellite communications. To communicate with Telstar a huge antenna, looking something like a giant's ear trumpet on wheels and weighing 340 tons, was installed in a 60m (200ft) diameter radome in 1961.

This multi-image show in the Telecommunications Museum uses 12 slide projectors and one video projector.

Big Ear

The big ear has recently been brought back to life in an exhibit sponsored by the Ministry of Telecommunications. In the tourist season from June to September a mixed media show on a huge scale is presented to groups of eighty visitors at a time. The show describes the history of satellite communication, and the part that France has played in its success.

The show is presented on two "screens". One is the 20m (65ft) diameter mouth of the giant horn; it is served by two 1000W xenon arc slide projectors which cover the whole screen, and two video projectors that cover part of it. The second screen is a conventional rectangular screen, also about 20m wide, and is served by twelve slide projectors and a video projector.

Scene Projectors

The radome and its antenna are lit by a 48 channel dimmer system. Two 4500W xenon arc scene projectors project imagery across the entire "sky". There is an eight channel sound system, with programmable amplifiers, fed from three laserdisc players. Five tracks of sound are used, and the remaining videodisc sound track provides timecode.

The Telecommunications Museum with radome in the background.

The entire show is run using Electrosonic's BSC multi-media computer program. Through standard interfaces this controls the lighting, the audio levels, the videodiscs and the image projection. It also controls the movement of the giant antenna itself, which at 340 tons must represent a record for the weight of any single object controlled in a public multi-media show.

The neat equipment racks installed by Electrosonic of Paris.

The programme was produced by Andre Chantre of ARC, with sound design by M. Cabasse of Kergolan and lighting design by Faust. Audio-visual engineering was by Electrosonic Systèmes of Paris. Slide projectors were supplied by Kodak and xenon arc equipment by Hardware.

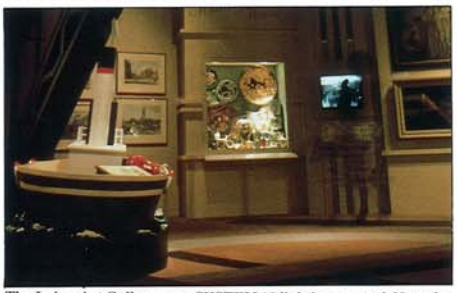
Museum

The radome exhibit is just a part of the Telecommunications Museum at Pleumeur Bodou. There are many other exhibits, and where appropriate these are supported by AV techniques. For this application, Electrosonic Systèmes have supplied a central source and control system that serves several exhibits including a multi-image theatre.

Light on Tyneside

Lighting control is important in museums and art galleries from many points of view. It can provide the desired design effect, save energy and lamp costs, and ensure conservation light levels are maintained.

The Laing Art Gallery in Newcastle upon Tyne, England, has brought together both the applied and fine arts of the region in a new permanent gallery "Art on Tyneside" designed by exhibition specialists Redman Design. Interpretive display techniques are used to bring art to a wide audience.



The Laing Art Gallery uses SYSTEM 12 lighting control. Note the multiple choice video display.

An Electrosonic SYSTEM 12 is used for lighting control. A number of pre-set lighting "scenes" are selectable by push-button, and in this case permit lighting levels to be temporarily raised for visitors with impaired sight.

Continuous sound effects are reproduced from ESTA equipment, and laserdisc players are used for two video displays.

Robotic dinosaurs at the Natural History Museum.

DYNAMIC DINOSAURS

Three vicious Deinonychus tear at the flesh of a freshly killed Tenontosaurus. They screech and hiss as they squabble over the rich pickings. All happening today in respectable Cromwell Road in South West London, England.

The Natural History Museum's new Dinosaur Gallery asks the questions; were dinosaurs like animals we know today? how did they live? why did they die out? The gallery was designed and built by specialist communication group "Imagination" of London, and is based on highly realistic animated models made by the Japanese company Kokoro Ltd.

The imaginative diorama uses programmed sound and light, and programmed "animatronics" to bring the dinosaurs to life. Some of the dinosaur movements are "digital", with only two positions, others are "analogue" which means they can be programmed to go to any position within two preset limits.

The actual movements are made by pneumatic actuators within the dinosaur models. While the original programming was done in "real time" using a computer, the final show, both in respect of the audio and the programming commands, is carried in solid state EPROM, which means that the sound and control equipment for the show is virtually maintenance free.

A good example of the imagination of "Imagination" being realised by standard Electrosonic show control products.

Laser and Monolith at Archeoscope, Carnac, France.

Archeoscope & Paristoric

Audio-visual techniques have been widely used at French tourist sites for many years, and our associates in Paris, Electrosonic Systèmes, are engineering "AV for tourism" on a regular basis. Two recent installations are interesting, because they are both commercial enterprises.

Charles and Michel Routy have invested 6 million francs (more than $1m) in a tourist multi-image show called "Paristoric". Sited in Boulevard des Batignolles, the ultra modern 200 seat auditorium gives a show every hour.

The show gives a historical review of Paris, which puts seeing the Paris of today into perspective. The show is given on a 14m (46ft) wide screen served by 28 slide projectors. The commentary is available in seven languages. Show control is by Electrosonic ES4000 system.

At Carnac in Brittany there is a celebrated archeological site which is now being interpreted by an underground mixed media theatre. 10 million francs (about $1.8m) have been invested in a show that combines two 35mm movie projectors with 15 slide projectors, 48 lighting channels, lasers, smoke and mechanical special effects.

The government authority gave the Archeoscope investor/operator a free lease in return for him providing the whole construction and show investment.

History on the Move

The idea of using the "dark ride" as a means of presenting a serious subject in an entertaining way was, as with so many leisure concepts, first seriously exploited by the Disney organization. However, while it is necessary to have a reasonable budget, it is not necessary to have a "Disney" budget to use the technique. There are now a number of visitors' centres where dark rides are used for historical interpretation.

The London based exhibit designers, Event Communications, were involved with two such projects in 1991. Both present history by transporting visitors on a 15 minute ride; both use Electrosonic automatic sound and light equipment, but there are differences in transport and presentation technique.

Tralee

Tralee Council, of County Kerry, Ireland, commissioned the "Geraldine Tralee Experience", and it is proving very popular with tourists. Here visitors are transported back to a day in 1450 when the Geraldines ruled a great and prosperous area of Munster from their capital in Tralee.

The ride technique used here is the "automatic guided vehicle", a battery powered vehicle that follows a buried guide wire. The vehicles transport visitors through various internal and external scenes, and these scenes are brought to life by dynamic lighting and sound.

In this case all the sound is "off board", some of it continuous, and some, especially where voices are used, is triggered by the arrival of the vehicle.

Tower Pageant

Right next to the Tower of London, Culverin Consortium, in association with the Museum of London, have built the Tower Hill Pageant. Besides having a "conventional" museum area which presents the results of the Museum's outstanding archeological work along the River Thames, Tower Hill Pageant features a dark ride that transports visitors from pre-Roman times to the present day.

As at Tralee, lighting control is by Electrosonic SCENESET, and off-board sounds are carried in ESTA digital sound stores. However, the transport system runs on a mains powered track and all the transport "pods" have on-board stereo sound.

The requirements here were difficult to meet within a sensible, but not extravagant, budget. Ideally the on-board sound would also have been carried in EPROM. However, this was economically impractical because the requirement was for fourteen minutes of stereo sound in five languages, resulting in the need to store 70 minutes of stereo.

In order to allow the sound tracks to be more or less continuous, the solution chosen was to fit each "pod" with a CD player. This is controlled by a custom built microprocessor controller that selects the right track, in the chosen language, for each scene within the ride. The controller knows where each pod is, because as it enters each new zone it receives a unique control signal from a ride-side infrared transmitter.

At both Tralee and Tower Hill Pageant the lighting designers were DHA Lighting, and the sound tracks were prepared by SAV Studios.

The Geraldine Tralee Experience. One of the automatic guided vehicles in the foreground.

A scene from the Tower Hill Pageant.

Tower Hill Pageant's vehicles are tracked, and have on-board CD sound.

HERITAGE IN GENOA, KIEV, KENT, RHONDDA AND IRELAND

Part of the contemporary marine and maritime display in the UK exhibit, Columbus 92, Genoa.

Some of our most successful systems work arises from a continuing relationship with a client, allowing us to discuss projects in detail and in confidence before they are "over specified", and ensuring the best value for the mutual end customer.

One such is Heritage Projects of York, a leading exhibition "design and build" company which has been involved in numerous heritage, museum, and exhibition projects since its formation in 1985.

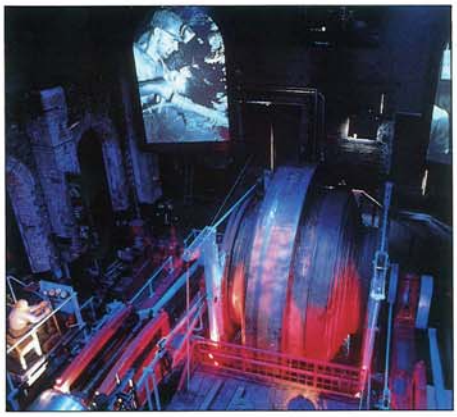
Heritage designed the award-winning "Black Gold" exhibit at the Rhondda Heritage Park in the Lewis Merthyr Colliery in Wales. This includes two mixed media shows, combining CD sound with multi-image projection and subtle lighting effects.

Heritage's commitment to quality extends from the most prestigious international exhibitions to the smallest of interpretive centres. Close and early co-operation between Heritage and Electrosonic assured the recent successful openings of the Tonbridge Castle Gatehouse Exhibition in Kent and the Aughrim Interpretive Centre in County Galway, Eire.

The UK Foreign and Commonwealth Office commissioned Heritage to mount the largest temporary exhibition ever staged in the ex-Soviet Union. This was "British Life Today", presented in Kiev in 1990. It used a massive array of lighting control, CD sound, videowall displays and multi-image projection; all of which ran faultlessly.

The FCO were again the client for the "Columbus 92-Ships and the Sea" exhibition in Genoa. Heritage designed the UK exhibit and had it ready well ahead of the other forty national exhibits. Careful pre-planning with Electrosonic ensured trouble-free installation of the AV elements.

Heritage's Colin Pyrah reports the finalising of designs for two major projects in Northern Ireland, and "on the drawing board" status for projects in Yorkshire, Belgium, Scandinavia and the Far East.



One of the two mixed media shows at Rhondda Heritage Park. Designed by Heritage, AV engineering by Electrosonic.

MIXED MEDIA AND MULTI-IMAGE

The programming of lighting, special effects, moving and still images is an important part of Electrosonic's work. Here are some interesting examples, mostly taken from EXPO 92.

The "Time Machine of Dreams" 3D show at Sanrio Puroland uses twin 70mm projection. Photo Landmark Entertainment.

3D in Japan

Electrosonic Leisure Systems in Los Angeles, and our Systems Engineering Division are often involved with the engineering of special movie projection systems. A good example of this expertise at work is the "Time Machine of Dreams" show at Sanrio Puroland in Japan.

This show uses a twin 70mm projection system with fully automatic film handling and digital multitrack sound from three laserdisc players. These gave six digital and five analogue tracks plus timecode.

The "Puro Village" has continuous programmed effects of great complexity.

The electronic interlock of movie to disc is now almost a "standard product" of Electrosonic.

Landmark

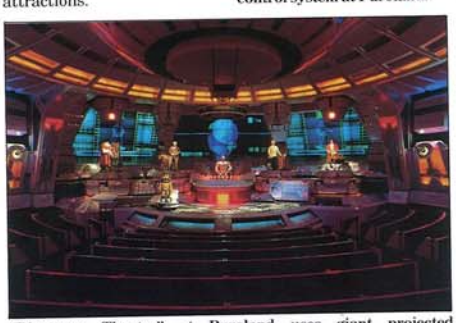
Puroland is a six acre indoor theme park presented by the Sanrio Corporation. They turned to the Landmark Entertainment Group of Hollywood for the overall concept and design of the park, and Landmark also became responsible for the production of 80% of the attractions.

Electrosonic Systems Inc were appointed main contractors for show control, show monitoring, video source systems and movie systems. The project was so big that consortium working was essential, and in this case Itec Productions of Orlando, and Triad Productions of Des Moines were sub contracted to Electrosonic.

Itec were responsible for show monitoring design, programming and commissioning. Triad were responsible for show control for some of the main attractions using their Synthesis software and associated interface hardware. The complete control systems, amounting to 50 full size instrument racks, were built by Electrosonic in the UK.

All shows other than the Synthesis controlled shows were controlled by Electrosonic ANCOR systems. 14 large ANCOR systems using EPROM program storage were installed.

A very small part of the control system at Puroland.



"Discovery Theatre" at Puroland uses giant projected videowalls (PICBLOC controlled) animatronic figures and many special effects. Photo Landmark Entertainment.

The Expo Noche show and its amazing water screens. Photo Lighting and Sound International.

EXPO NOCHE

One of the "must-see" shows at EXPO 92 in Seville was the EXPO NOCHE mixed media show that ran every night for the duration. The show was presented by EXPO 92 on the lake, and used an amazing mixture of pyrotechnics, image projection, lasers, searchlights, sound, hydraulics and special effects. It was commissioned by the EXPO authorities and produced by a consortium of the Spanish companies Resorte Comunicacion and Sevilla Services.

Some of the central source and control equipment built by Electrosonic.

Many visitors who saw it simply could not believe what they saw. Images seemed to emerge from the water and vanish. Laser beams seemed to be plucked like guitar strings. Searchlights choreographed in unison aimed at villains which then disappeared in a blaze of pyrotechnics. Horses trotting on the water and a giant inflateable "man in the moon" were just two of the unlikely images to stay in your head after seeing the show.

Resorte

The creative ideas, design, 70mm filming and production management of the show were the responsibility of Spanish company Resorte Comunicacion. Manuel Coronado, their creative director, wrote the script, and directed both the show and the 70mm filming.

One notable technique was the use of six giant water projection screens, created by high power pumps, each served by three 7kW xenon projectors; one 70mm movie, one giant slide and the third a horizontal filmstrip. The combination of imaging techniques allowed for many striking effects.

International

While the creative ideas and show management came from the consortium, they turned to many international specialists for help with aspects of the show. Valencia is famous for fireworks, so it was no surprise that Pyrotechnia Caballer supplied the nearly 300,000 fireworks needed. Big outdoor image projection is a speciality of France. 7kW xenon arc slide and giant filmstrip projectors, based on Hardware for Xenon equipment, came from ETC of Paris. Another French company, ECA2, organised the movie projection and the water screens.

Spanish fountain specialists GHESA supplied additional fountains and lighting, Synchrolite of the USA supplied the searchlights. Siemens España did the heavy power engineering and lake perimeter lighting control. Teleng, the Spanish distributors for National Panasonic, supplied the loudspeakers and power amplifiers. Laser Creations from London supplied three high power computer controlled laser systems suitable for graphics and video image display.

Celco "Navigators" controlled lighting and searchlights.

Master control

And right in the middle of it all, Electrosonic engineered the master control system and the audio and video source equipment. The main control computer controlled many items directly, but also issued control commands to sub-systems which had their own computers. Everything was kept synchronised together using SMPTE/EBU timecode.

One of the engineering imperatives for Electrosonic was to ensure that high speed computer data could reach the controlled devices. Some of the under water cable routes were over 2km long. Optically isolated RS422 and RS485 data transmission was used, with conversion to and from RS232 where necessary.

The EXPO NOCHE project was challenging for us, possibly the most difficult job we had at EXPO 92 — but we enjoyed doing it, and the greatest satisfaction came from the obvious enjoyment of the audience. Many of the locals were regular visitors to the show.

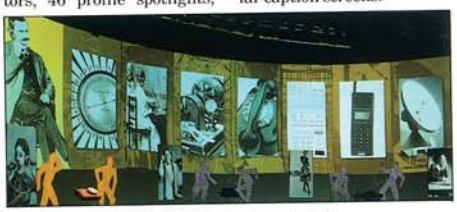
SIEMENS

"Audio Visual" magazine wrote that the "Evolution of Networks" multi-image show in the Siemens Pavilion at EXPO 92 was "one of the most effective 360 degree multi-image shows it has ever been our privilege to see".

Audiovision & Fotografie of Berlin created and installed the show over "eight months of 12 hour days". The audience were on a rotating platform, precisely synchronised to the 31 Prolite high output projectors, 32 standard Kodak Carousel SAV2050 projectors, 46 profile spotlights, Akai DD1000 digital hard disc recorder, and MIDI controlled sound.

The overall show control and multi-image programming was by an AT-386 computer running the Electrosonic BSC 96 program. Control interfaces were ES4003, ES4044 and ES7932AS.

The 360 degree images were in "layers". On the cylindrical wall images 7m high and 4.7m wide were projected by the high power projectors (a 66m, 216ft overall width of image!). Set in front were human silhouette "screens" and rectangular caption screens.



Part of the Siemens "Evolution of Networks" show.

Norwegian multi-image in a tube at EXPO 92. Photo Scan Foto.

117 PROJECTORS in a tube

A most unusual multi-image show was installed in the Norwegian Pavilion at EXPO 92. The main feature of the pavilion was a 47m (150ft) long, 6.6m (22ft) diameter tube, apparently floating 15cm (6") above a pond.

The Norwegian Pavilion.

Inside the tube visitors saw a multi image presentation along the entire length of the tube, with imaging on 270 degrees. 110 Kodak SAV2060 projectors were used in a configuration which, if considered as a flat screen projection, would be termed "one big soft-edge picture arranged 5×11". Seven additional projectors were used in an entrance area, and the entire system was run from Electrosonic's BSC 192 computer program using ES4003 dissolve units.

The ceiling projection required the use of diverter mirrors, and the operation of the projectors at an angle of 26 degrees. Docter 25mm objective lenses were used, and this short focal length resulted in the need for large mirrors.

The show's theme was "water", as a resource, as necessary for life, and as a thing of beauty. Imagery was symbolic as opposed to "picture postcard", and the show was accompanied by a complex electronic music sound track. Ten synchronised CD players were used for the main show, and an additional two were used for the Ice House entrance to the pavilion.

The AV Contractors to the Norwegian Pavilion were Audio Grafisk of Oslo. They in turn asked Electrosonic Ltd's Systems Division to deliver the main source and control racks as factory built items. The racks included the disc players, main computer with hot stand-by, Electrosonic ES5003 disc controllers and the complete audio amplification system. In addition it included a panel to show the lamp status of every projector.

MAGIC IN UK PAVILION

Visitors to the United Kingdom Pavilion at EXPO 92 in Seville saw two major audio visual presentations, both excellent examples of shows suitable for entertaining and informing general audiences. Both were engineered by Electrosonic Ltd's Systems Division.

The need for visitor entertainment shows was clearly understood from the outset by the RSCG Conran interior design team and by the UK Department of Trade and Industry, our client. The original show concepts were devised as part of the pavilion interior design.

Visitors entered the Pavilion in groups of 200. They went first into a "Welcome" area, where they saw a magnificent video sculpture. This was arranged as four "sails", and the audience sat either side of the overall display. Each half of the audience saw a total of 144 video monitors, and in all there were 48 monitors of 32" diagonal, 96 of 14" diagonal and 144 of 7" diagonal.

As the audience entered there was a video loop playing, with many different people from all over Britain saying "Hello". Once the audience were seated two "Navigators" (bi-lingual guides) introduced themselves to the audience and started the show. The first part of the show, about British character, included comments from the "Navigators". The remainder, about British life and achievements was accompanied only by a music sound track.

Multiple monitors

The video sculpture was not a videowall, because the monitors were separated and were all different sizes. However, the monitors were fed by Electrosonic PICBLOC image processing equipment, and this allowed a number of special effects to be programmed. For example source switching, separated image splitting, image freezing and special transition effects.

The entire display was under computer control using Electrosonic's C-THROUGH computer program. This programmed the image processing equipment, the houselighting, and the video disc players that were the sources. Show production was by Line TV Ltd, and the director was Tymn Lintell.

Theatre Show

Visitors left the Welcome Show and rode up a series of travelators that took them up to the top of the pavilion.

Here they had the opportunity to see an exhibition display before they moved into one of two identical 200 seat theatres.

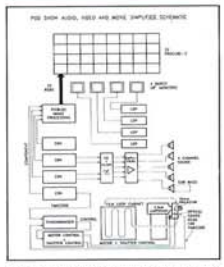
The theatre show had the theme "Britain communicating with the world", and embraced such themes as the Channel Tunnel, the BBC World Service, Britain entertaining the world, the City of London and Britain communicating knowledge to the world. The show was produced by Media Projects International and directed by Malcolm Lewis. It was an outstanding show, one of the highlights of EXPO 92.

The backdrop of the show was a large videowall using projection "cubes", arranged in an 8×4 format. Although

The "Welcome" show in the UK Pavilion used 288 video monitors.

it was technically possible to display large single images on this videowall, it was, in fact, used very much as a "multi-image" display system with image magnifications being restricted to 3×3 as a maximum, ensuring that the image quality was always excellent.

The videowall used



35mm projection (top) source and control racks (centre) and block schematic (bottom) for the Theatre Show in the UK Pavilion.

Electrosonic PROCUBE 2 projectors, and was sourced from four Sony CRV disc players. These component disc players retained the image quality of the Betacam original tapes.

35mm Projection

Approximately 2m in front of the videowall there was a gauze screen, served by a 35mm movie projector. The combination of the large 35mm image and the back projected video gave the whole show a "3D" look. In parts of the show the gauze screen lifted, using an elegant version of a "garage door" mechanism engineered by McAndroids Ltd.

The show system was fully automatic with push-button start. To ensure reliability and long print life the film was carried in an endless loop cabinet. The complete movie projection package was engineered by Electrosonic Systems Inc.

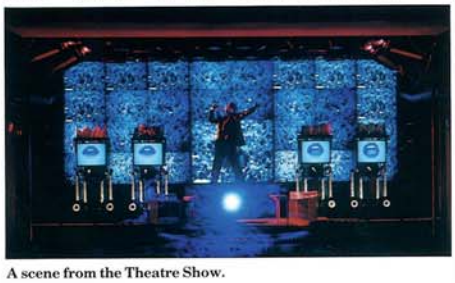
Live actor

Besides the videowall and the 35mm film, the show featured a live actor who interacted with the projected images. He performed in the space between the videowall and the gauze. The resulting presentation was very entertaining, and really did get a message across without the need for commentary, there was therefore no language problem.

Special effects

The show was supported by many special effects. Many of these depended on the elaborate lighting system (by DHA Lighting). But there were also many controlled "props" and additional effects. For example there were four "Android Sisters", actually 28" video monitors on 2-stage pneumatic lifts with built-in lighting and flip-up "hair".

The strong sound track, produced by SAV Ltd, was an important part of the show. It was reproduced through Bose loudspeakers, augmented by the Bose Acoustic Wave Cannon. Both Bose and Electrosonic were sponsors of the UK Pavilion at EXPO 92.



A scene from the Theatre Show.

Aart's Paradise at Floriade combined High Definition Television with animatronics and many special effects.

High Definition at Floriade

"Floriade" was the huge garden festival that ran for six months in 1992 near The Hague in Holland. It was the site of the first use in Europe of High Definition Television within a mixed media automatic show.

Floriade occupied 70 Ha (175 acres) divided into themed areas. In the "Future and Science" area there was a pavilion sponsored by the Ministry of Agriculture called "Aart's Paradise", and its main feature was a high tech mixed media show that combined high definition television with animatronics and programmed lighting.

The theme of the show was the intense competition for the use of land, and the need to maintain the correct ecological and chemical balance to ensure effective food production. The message was put across in a highly entertaining and effective way.

Aart's Paradise

The show was given in a specially constructed theatre that is "Aart's Paradise". Aart is an earthworm, and he was seen in his underground control room directing the successful growing of plants from a giant console. Above his head were the roots of vegetables, but occasionally less desirable things like concrete piles or drums of chemicals drop down.

Behind him were two big screens, one showing what is going on above ground, the other showing the frantic efforts of his co-workers in keeping the soil just right for plant growth — and especially for the production of asparagus! Another smaller screen was a "hot line" to his girl friend Eline, who lives in the prime minister's flower pot and who relays the political priorities of different kinds of land use.

The set included many other animated devices, a miniature "production line" for quality control, a giant calculator, a "periscope", pipes conveying nutrients, water and pollutants and a countdown clock to "Asparagus Day". Aart himself is an animatronic figure — at over 5m long certainly the biggest earthworm to be seen anywhere!

The ANCOR programming console used to program "Aart", the earthworm.

The show was produced for the Ministry of Agriculture by Carillon Producers BV. (Design and production by H. Arp). The set, and Aart himself, were created by Prospekt Studios. The main show control and audio visual system was engineered by Coen Margadant for Electrosonic using HDVS equipment from Sony and Electrosonic show control equipment.

The show used three Sony HDVS projectors, two back projecting onto 4m wide screens, and one onto a 1.5m screen built into a "giant monitor". They were each served by an HDVS high definition videodisc player. The show also used seven standard laservision disc players (Sony LDP1550P) to provide standard PAL images on the small video screens and to source more sound channels. Nine Bose 802 loudspeakers were used to give precisely located audio channels, with bass augmented by Bose Acoustic Wave Cannons.

BSC Control

The whole show was under the control of a computer running the Electrosonic BSC program. There were more than 2,000 cues. The computer directly controlled 64 channels of lighting (through Electrosonic DIGIDIM dimmers), the complete audio system (through Electrosonic analogue interfaces and VCAs) and most of the special effects.

An Electrosonic VCU show controller, programmed using the C-THROUGH program, controlled all the video sources both directly and through ES5003 disc controllers. PICBLOC image processing was used on the four PAL monitors to allow flexibility in source switching and to create special effects.

Animatronic control for "Aart" was by another subsystem, this one using Electrosonic show playback cards programmed using the ANCOR real time program.

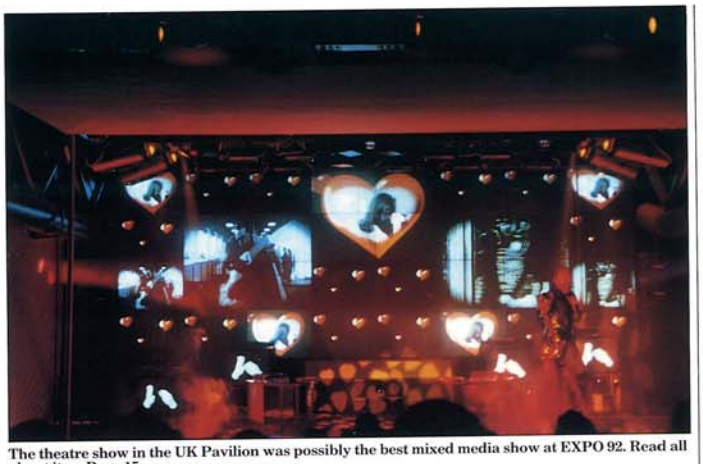
Natura Finlandiae

. . . is the title of a beautiful book of photographs of Finland, but it was also the theme of part of the Finland Pavilion at EXPO 92.

Both are the work of celebrated photographer and multi-image producer Odert Lackschéwitz, born in Latvia, brought up in wartime Germany, but a resident of Finland since 1952.

The multi-image show used nearly 10,000 slides in a 15 minute show accompanied by quadraphonic CD sound.

The 120 projector multi-image show in the Finland Pavilion used Electrosonic ES4003 multi-image equipment.



The theatre show in the UK Pavilion was possibly the best mixed media show at EXPO 92. Read all about it on Page 15.

35 PAVILIONS AT EXPO 92

For Electrosonic, EXPO 92 in Seville was something of a showcase. It was a showcase both for Electrosonic standard products and for Electrosonic's expertise as systems engineers.

Electrosonic equipment could be found in at least 35 pavilions at EXPO. We say "at least" because a lot of equipment was supplied through worldwide distributors and dealers, and in many cases we only discovered that the equipment was there when we were asked for assistance on site.

Video had a high profile at EXPO, and of the thousands of video images to be seen approximately 2,000 were by courtesy of Electrosonic's PICBLOC image processing equipment or ES5003 video disc control. The images were seen in diverse ways, on monitors of 7", 14", 21", 28" and 32" diagonal, on videowalls of all shapes and sizes, on Electrosonic high gain rear projection screens, on flat screens, on globe screens, on gauzes and even on water.

Multi-image

Optical projection still has a big part to play at EXPOs. 500 automatic slide projectors in ten pavilions used Electrosonic ES4003 dissolve units and BSC program control.

Many pavilions used Electrosonic lighting control, especially the popular SYSTEM 12 Scenesetting dimmer system which is ideal for both architectural and automatic show applications. CELCO dimmers and NAVIGATOR lighting control products were also in use.

The Systems Engineering Division of Electrosonic received several large contracts. The complete AV engineering in the British Pavilion and in the Telecommunications Pavilion were the highest profile projects. Control systems for huge multi-image displays in the Finnish and Norwegian Pavilions, and the complete AV engineering in the United Nations Pavilion were of equal importance. The Division was also a subcontractor to several companies, for example to Imagination in the EEC Pavilion and Pan Audio Visual and Modern Display in the Irish Pavilion.

Site support

In order to support the work at EXPO 92 Electrosonic Ltd worked closely with their associates in Spain, Electrosonic Iberica. A Seville office was set up during 1991, and this was followed by the setting up of a service workshop next to the EXPO 92 site early in 1992. Over 50 permanent and contract staff from Electrosonic Ltd worked on the site during the installation phase, and a staff of over 20 were in Seville for the duration of EXPO 92.

Because of the many different routes by which Electrosonic equipment arrived on the EXPO 92 site, it is difficult to estimate the value of EXPO 92 to Electrosonic — but it was almost certainly more than $10 million.

And in the opinion of "Audio Visual" magazine the best multi-image show was in the Siemens Pavilion. See Page 14.

GARDALAND

Electrosonic's products have many applications in theme parks, and our Systems Division is able to manage large contracts associated with them. An example is the "pirates" ride recently opened in Gardaland.

Gardaland is a family theme park, in a beautiful setting near Lake Garda in Northern Italy. The owners have now invested in a new major attraction, produced and created by some of the most famous names in world-wide entertainment.

The 'I Corsari' water ride is constructed underground in a 7000sq metre concrete bunker, and is themed on a pirate adventure. The ride uses 40 seater boats, starts in a 'Grotto' loading area, and is followed by 18 scenes of various lengths, before the boats are pulled to the surface again.

Rats

The ride is unique due to its size, and the way that the whole ride tells a story, rather than running through continuous sequences. Each of the scenes is a theatrical set, with a show that follows the boat movement. The activities in each of the scenes involve complex animatronic human figures, trees and animals, or special effects ranging from water explosions to swimming rats. Audio plays a major part in every scene, with a general background track and many spot effects tracks. A theatrical lighting scheme and many optical, video and slide special effects all combine in a well rehearsed ride that contains so much activity, that a second ride can be a new experience.

The show control for the ride is based on the Electrosonic ANCOR system, providing sophisticated but simple-to-program control of all special effects and animatronics. ANCOR is also used to trigger all sound effects and general sound tracks. Each of the scenes was programmed and rehearsed using a computer based programming station with a special panel complete with servo driven sliders, joy-stick and switches. The completed programs were then recorded on to solid state EPROM based show cards for the highest level of reliability.

ESTA

All audio is replayed using the Electrosonic ESTA tapeless audio range. General background tracks and spot effects are recorded on to EPROM again, for reliability. Every audio channel is equalised using Electrosonic modular mixers.

The "I Corsari" project is a good example both of the application of our standard products, and of our ability to work internationally.

Gardaland in Italy has a major new ride, built by an international team.

The grotto entrance (above) and a small part of the Electrosonic control equipment (below).

The Design and Construction Team

Show Production — Richard Crane Productions, Florida.
Main Contractor and Project Management — Mellon Stuart International, Florida.
Set Building and Design — Museum Services Inc, Florida
Ride — Intamin, Switzerland
Show Control, Lighting and AV Control Systems — Electrosonic, UK.
Animatronics — Creative Presentations, California.
Special Effects — Technifex, California.
Audio Visual Production — Media Projects International, London.
Lighting — David Hersey Associates, London.
Sound — Tony Frossard, UK.

Using a mobile ANCOR programming station to program animated figures. ANCOR is used at both Rock Circus and Gardaland.

ROCK CIRCUS

A new attraction in London's Piccadilly Circus is "Rock Circus", an exhibition devised and built by the Madame Tussauds organization.

The exhibition traces the history of Rock Music, starting around the time of Bill Hayley, up to the present day. Elaborate tableaux using complex sound and light techniques bring the stars to life. The climax of the visit is a revolving theatre show where "live" performances are given by animatronic figures of the Beatles, Phil Collins, Madonna and many others.

The main theatre shows and a large part of the exhibition use Electrosonic DIGIDIM dimmers and BSC and ANCOR programming equipment. In the exhibition area sound is relayed to the visitors using Sycamore/Philips infra-red cordless headphones. All sound tracks are sourced from laser videodiscs or CDs.

Well worth a visit if you are visiting London. (Rock Circus tell us that over 50% of their visitors are from outside the UK).

Elvis at Rock Circus. Control system and videowall by Electrosonic.

The Beatles on stage again. The end of the "travelling theatre" show at Rock Circus.

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