

- PROVIDE A COMPREHENSIVE RANGE OF ENTERPRISE BROADCASTING EQUIPMENT
- TOTAL SOLUTION FOR BROACAST PLAYOUT AND MCR CONTROLLER
- PROFESSIONAL REAL-TIME 3D GRAPHICS SOLUTION FOR BROADCASTING
- AUDIO/VIDEO EDITING NETWORK WITH SHARED STORAGE
- SIGNAL PROCESSING AND TRANSMISSION EQUIPMENT
- PROFESSIONAL WEBCASTING AND VIDEO STREAMING SOLUTION

### Our clients

































































































#### Overview

The major fields are system integration, equipment providing and installation for broadcasting and digital audio/video editing projects, we can meet all requirements, from simple to complex.

Our advantages are consultation, designing and integration for program production center network with shared storage, using SAN/NAS technology, automation playout server systems, real-time CG for broadcasting, signal processing systems in TV studios, master control rooms, outside broadcast vans etc. with the most cutting-edge technology.

With over 13 years' experience in deploying, installation for television broadcast projects, have gained customers' confidence, with closely support from our partners, who are leading all over the world in supply of products, solutions and services. We always bring the best services and solutions with innovative technology to customers.

We are proud of young, active, good trained technical group, they understood the missions and targets of company, so they always try their best in researching and creativity for response the strictest requirements in technicality and value-added after sales services.

#### The company's activities

















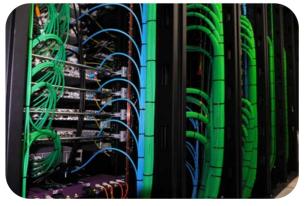
### Design and integrate Master control room (MCR), Network operating control (NOC)



Master control room for VTV9 channel, Vietnam television center at Ho Chi Minh City - 2011



Master control room for 40 HDTV channels, Audio Visual Global - AVG, 2010



The Server and master control room for 40 HDTV channels, Audio Visual Global - AVG, 2010

- We have experience in designing, installation and system integration for master control rooms (MCR) as well as network operating control room with scale up to several tens channels.
- Be consulted and supported from leading manufacturers such as Harris Broadcast, VizRT, Sony, Grass Valley, Alpha View etc., we can provide the most advantage solutions and products for broadcasting industry.
- The completed projects: Master Control Room and Network Operating Control for more than 40 HDTV channels - AVG Company, master control room for VTV9, master control room for Da Nang radio and television station etc.



Master control room, Khanh Hoa Radio and Television - 2013



# Deploying digital automation playout systems for broadcasting

- Automation playout system for broadcasting with variable configurations from one to hundreds channels, fully support for HD and SD format with many kinds of different configurations.
- We have used the solution from Vector3 the leading supplier for playout solution, with a client list of over 1000 broadcaster worldwide.
- Fully automation playout systems with variety of redundant configurations, for reliable and ensure the highest secure for TV channels.
- Open-codecs and fully support for many compression formats as well as wrappers which are using in broadcast area.
- Frame-accurate control of a wide range of broadcast equipment in master control room, such as routing devices, switches, logo inserters, VTRs for ingest and playout and management of workflows and traffic of data and files over LAN.
- The built-in character generator with powerful logo, crawl, channel branding functions. This system cans playout and recording from multiple sources at the same time.
- Fully compatible with the workflows, equipment of broadcasting industry; Can customizable to suit for each specific client.
- This solution has used at many TV stations in Vietnam such as: VOV TV channel, VTV9, MyTV channel (VASC Company), VTV center at Da Nang city, VTV center at Phu Yen province, Quang Ninh radio and television, Thai Nguyen radio and television, Da Nang radio and television, VTV3 HD, VTV6 HD etc.



QTV3 channel, Quang Ninh Radio and Television - 2010



VTV Phu Yen channel, Vietnam Television Center at Phu Yen province - 2011



VTV Da Nang channel, Vietnam Television Center at Da Nang city - 2010



VOV Television channel - 2009



### Design and integrate the graphic solutions, Channel Branding solutions for broadcast.



Graphics solution for video wall, at news studio (S4), News and current affairs center, Vietnam
Television - 2012



Virtual set studio solutions



Professional real-time 3D graphics for broadcast

- General solution for broadcast graphics, using ultimate products of word-class automated graphics software and hardware providers for television broadcasters, such as VizRT, Matrox, Harris Broadcast, VisualCG and Wasp3D.
- Broadcast graphics solutions include from simple character generators, virtual studio systems (Tracking and trackless), automated channel branding systems, video wall systems, touch screens, to complete 3D real-time weather forecast graphics supporting systems, 3D virtual sports enhancements for analysis and conclusive review many different sport games.
- Unrivaled quality virtual set studio systems with many configurations from trackless to tracking, easy to use, high effective, give impressive experiences to TV audiences.
- Graphics system for weather satisfies all requirements of weather forecasts, integrated with exactly, high-quality 3D maps, supported high resolution satellite images, automatic receiving and analysing the data from weather data provider (ex: National Centre for Hydrometeorological forecasting)
- Automatic graphics system for Channel branding makes it easy to utilize high-quality graphics for channel branding. This system receives data from daily playlist of automation or traffic, MAM systems etc., arranges its own playlists for commercial messages, program introduces etc. to the templates for one or multiple channels from a single client.
- The graphics systems for analysis and conclusive review the sport games such as football, tennis, volleyball, badminton, basketball and more... with a lot of real-time features, making the comments and analysing the games more interesting and impressed.
- Video wall systems: Unlimited size, fully supported in real-time, display high-resolution videos, images, DVE, as well as 2D/3D graphics.
- Professional character generator systems with fully features, using high quality hardware products from Matrox, Harris Broadcast, suited for studios, MCRs and OBVANs.

### Designing and system integration for studios, OBVANs

- We consult, design, and integrate broadcast studios from small to big, from simple to complex, include soundproof, lighting, audio/video equipment, and decorative etc.
- We have used high quality products and solutions from world-class producer such as Broadcast Design International, Harris Broadcast, Sony, Clear-Com, Visual CG, Matrox, Canare etc.
- Designing, system integration for OBVANs, get quality standards, meet all requirements of customers.



Design and assemble the OBVAN, Can Tho Radio and Television - 2012



News studio at VOV
Television channel



Equipment integration inside the OBVAN



Studio at Vietnam Government Web portal - 2013



# Deploying the Audio/Video post-production network systems with shared storage (SAN, NAS, IP SAN)



The servers and storage center system at Programs production technical center, Vietnam Television.



The servers and storage center system at VOV television channel.



Post-production system for VTV6 channel, Vietnam Television - 2012

- This is the most advanced TV programs post-production network by using the SAN (Storage Area Network) technology. Seamless collaboration in a video post-production environment requires a storage and networking infrastructure capable of accommodating hundreds of separate audio and video elements through live ingest, editing, playout, transcoding, and finishing. Centralized real-time storage infrastructures from SAN Solutions provide video production facilities with the power and flexibility to maintain a shared and secure file-based production environment.
- The bandwidth for each client up to 8Gbps or 16Gbps, with hundreds TB of capacity, ensures that system can edit the video with high resolution: FullHD, 2K, 4K or more.

Highly scalable both in performance and in capacity, SAN Solutions' Video Production SAN provides reliable, robust operation in the background as the creative team focuses on its work.

- We are using SAN solutions which designed for HDTV and cinematic applications from Quantum, Tiger-Technology, Infortrend, Rorke Data, with flexible, powerful capabilities, suitable for workflows of specific customers.
- The Audio/Video post-production workstation uses the industry-leading Matrox's devices, which fully support of codecs, file formats of broadcast industry, compatible with files from variety cameras as well as video servers, and meet all requirements of tapeless workflows.
- The systems have been deployed and verified at many TV stations, film production, local and worldwide. The system is used at program production technical center Vietnam television since 2007 and be responsible for production more than 70% programming show on VTV3 and VTV6 channels... and at many local TV stations.

# Providing and system integration for post-production equipment.

- We had a lot of experiences in post-production equipment for many years. We specialize in providing the cutting-edge post-production products, based on Matrox product families.
- The Matrox's product families for post-production facilities are verified of durability, reliability, compatible ability, as well as stable for many years at many local TV stations.
- The equipment has open-codecs structure, which is very easy to integrate with almost tapeless workflows at TV stations.
- The equipment has supported by many advantage technologies, such as Color correction, Chroma-key; fast, flexible, high-quality H.264 encoding etc.



Ingest room for VTV6 channel, Vietnam Television - 2012



Post-production system for VTV3 channel, Vietnam Television



Post-production system for QTV3 channel, Quang Ninh Radio and Television - 2010



Post-production system for VOV channel

# Webcasting and video streaming solution, IPTV, signal test and measurement equipment and transmitter



The online dialogue programs of Ministers and people program, at Vietnam Government Web portal - 2012

Storage Center Infortrend \$24F/48TB

MetaLAN server

MetaLAN Server

Gigabit Switch

Streaming Server

Matrox MXO2 LE Max

Fiber Optic

Gigabit Ethernet

Audio/Video

TYPICAL DIAGRAM

Internet

Streaming Encoder

Matrox MXO2 LE Max

Streaming Encoder

Matrox MXO2 LE Max

Remote Site

- The professional online video streaming solution with high-quality, using solutions and products of Viewcast.
- Compatible with almost streaming servers in the market, these devices use H.264 codec for the highest-quality images.
- This solution is deployed and exploited at Vietnam Government Web Portal - Government Office, for the online dialogue programs of Ministers and people.
- Providing the baseband signal test and measurement as well as file-based checking with products and solutions of Tektronix the technology and market leader in the field of testing products for broadcasters, telecommunication, cable operators, post-production facilities, and military.
- Beside, we also provide analog transmitters, as well as digital terrestrial transmitters (DVB-T and DVB-T2) of Harris Broadcast. The transmitters for radio and television of Harris have been used all around the world, with a lot of powerful features such as high reliability, compact, and more.



The test and measurement equipment



Transmitter system

### Providing products and equipment for broadcasting field

- We offer fully products and equipment for broadcasting field. All products are provided by world-class manufacturers such as: Matrox, Harris Broadcast, Canon, Shotoku, Sony, Vector3, Tiger-Technology, Infortrend, Tektronix, ATTO, Rorke Data, HP, Grass Valley, Canare etc.
- All products are imported genuinely from the producers or authorized distributors and be guaranteed for the best warranty/maintenance services.



Post-production equipment



Automation play-out server

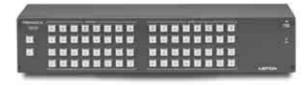








Signal processing equipment



### Consulting and designing for broadcast projects

We have a lot of experiences in consultancy, designing for the broadcasting projects, such as: Television centers, studios, master control rooms (MCR), network control centers (NCC), monitoring systems of broadcasting network operation, post-production networks etc.



Designing of network control center (NCC) for Transmission technical center, Vietnam Television



Designing of master control room for Vietnam Government Web Portal



Designing of master control room (MCR) for VOV television channel





Designing of studio for Vietnam Government Web Portal

### Technical transfer and training organization



Media asset management training course for technical staff of VTV - Singapore 2009

- -- We organized many specialized seminars, training courses for TV stations in Vietnam; we train in expert at post-production networks, automation playout systems, audio/video editing, system administration etc.
- Otherwise, we also cooperate with partners to arrange the seminars and courses abroad for engineers of TV stations, and many courses for our technical staffs to improve the knowledge, update new technologies.
- We take part in the broadcast and television exhibitions, local and abroad.



Digital post-production and play-out workflows course, Hanoi Radio and Television - 2009



Broadcast graphics solutions course, at VizRT training center - Thailand - 2013



Program production course for Army television - 2012

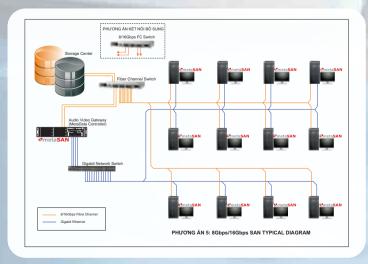


Post-production with storage center systems workflows course, VOV television channel - 2008

### Research and development for the broadcast applications.

- We develop the applications for broadcast field, based on the hardware from Matrox, Harris Broadcast, and Tektronix etc.
- Hardware and software applications, support recording/playback, transcoding, signal processing, character generator, graphics for broadcast field.
- Remotely monitoring and operating solutions for broadcast systems.
- Research and develop the administration applications to meet all requirements of customers and suitable features with the demands and using environments.







## **Technical partners**























































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