SDVoE Solution

Software Defined Video over Ethernet Solution

• Transmit, Receive and Composition of full 4K images over IP

• Quad, PIP, and PAP layouts

• Pre-Configured and Customizable layouts

• Built in KVM for USB HID devices

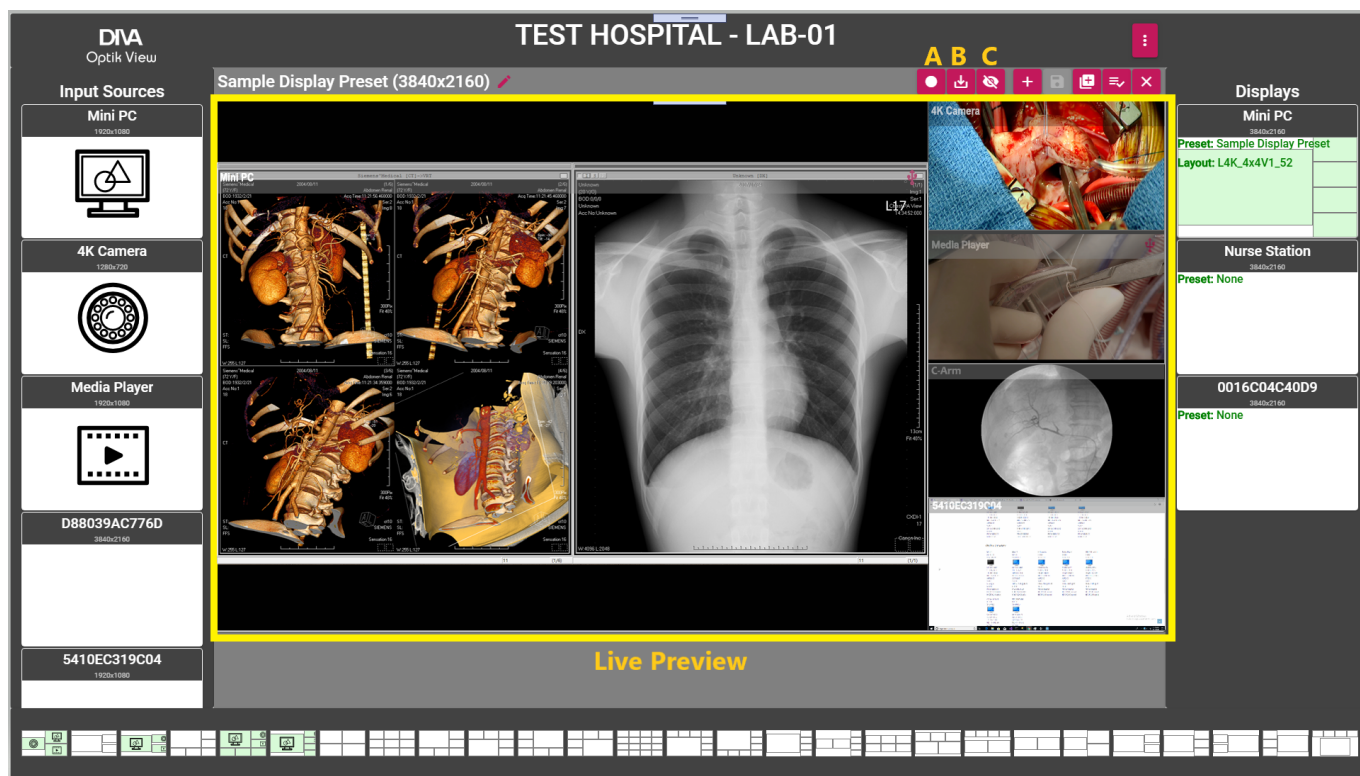• 10G over Fiber or Copper

• Enterprise ready

System Specifications

• 4K60 4:4:4 with uncompressed image quality
• Compatible with full range of formats, including 4K60 RGB/4:4:4, HDR, 3G and broadcast-friendly 4K60 10-bit 4:2:2
• Zero latency extension and switching
• Scaling, compositing and image splitting
• Compositing engine for combining multiple sources into a single display with user-defined layouts for multi-view, tiling and picture-in-picture applications
• Supports 10G Ethernet over category cabling and optical fiber
• Built-in KVM extension and matrix switching over IP
• Single device for transmitter (Tx) or receiver (Rx) products
• Bi-directional audio
• Device control via RS-232
• Contact closures for triggers.
• Enterprise ready (Remote serviceable, Infield/Remote centralized update, Predictive data analytics)
• Live Preview of sources
• Live Streaming
• Video Recording
• Custom User Interface

FORM FACTOR

Replaces traditional AV/KVM extenders, matrix switchers, video wall controllers and windowing processors, with a simple network transceiver and off the shelf Ethernet switch.

FULLY CUSTOMIZABLE

Fully Customizable layouts and user interface as per your needs.

CERTIFICATION

IEC/EN 60601-1, EN 60601-1-2,FCC
Manufactured with ISO 13485.

VIDEO INPUT	HDMI2.0
VIDEO OUTPUT	HDMI2.0
NETWORK	10G SFP+ Fiber module (MM LC-LC) or 10G SFP+ Copper (10GBASE-T, RJ45)
CONTROL	HID (Mouse and Keyboard) USB2.0 RS232 Contact Closure (GPIO)
AUDIO	Analog Audio Input/Output
POWER	12V / 1.6A
PHYSICAL DIMENSIONS	L 5.07" x W 6"x H 1"

ENTERPRISE SOLUTION

The SDVoE Solution not only provides uncompressed 4K picture quality but comes with a full operating room integration software. Take control of the OR from a single screen. Below are some of the key features of the SDVoE Solution system.

REMOTE RECORDING

The SDVoE Solution can record any layout or source routed to the main screen just by clicking the record buton (A) Recordings can be reviewed and downloaded by clicking the download button (B). This can be done from the Nurse touch-panel, tableside control or a web browser.

VENDOR NEUTRAL

The SDVoE Solution provides vendor neutral integration.

SECURITY & PRIVACY

The SDVoE Solution was designed with security and privacy in mind. Credentials are validated through hospital's own AD (Active Directory). Any room can be made private which blocks the video stream by pressing the privacy button (C).

LIVE PREVIEW and VIDEO STREAMING

Live preview of sources and layouts is available on the nurse touch-panel. The same video can be streamed to any device (with user authentication) such as smartphones and tablets.

EMR INTEGRATION

The SDVoE Solution can seamlessly integrate with any EMR server. It has the ability to pull and push cases directly to the server.
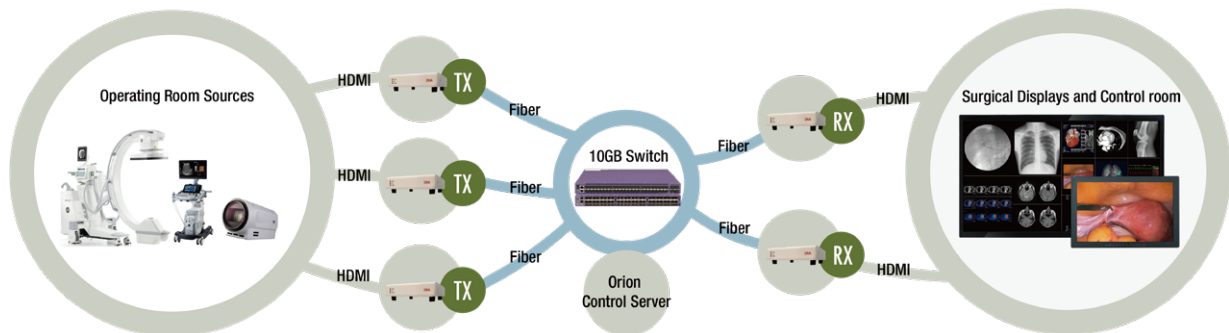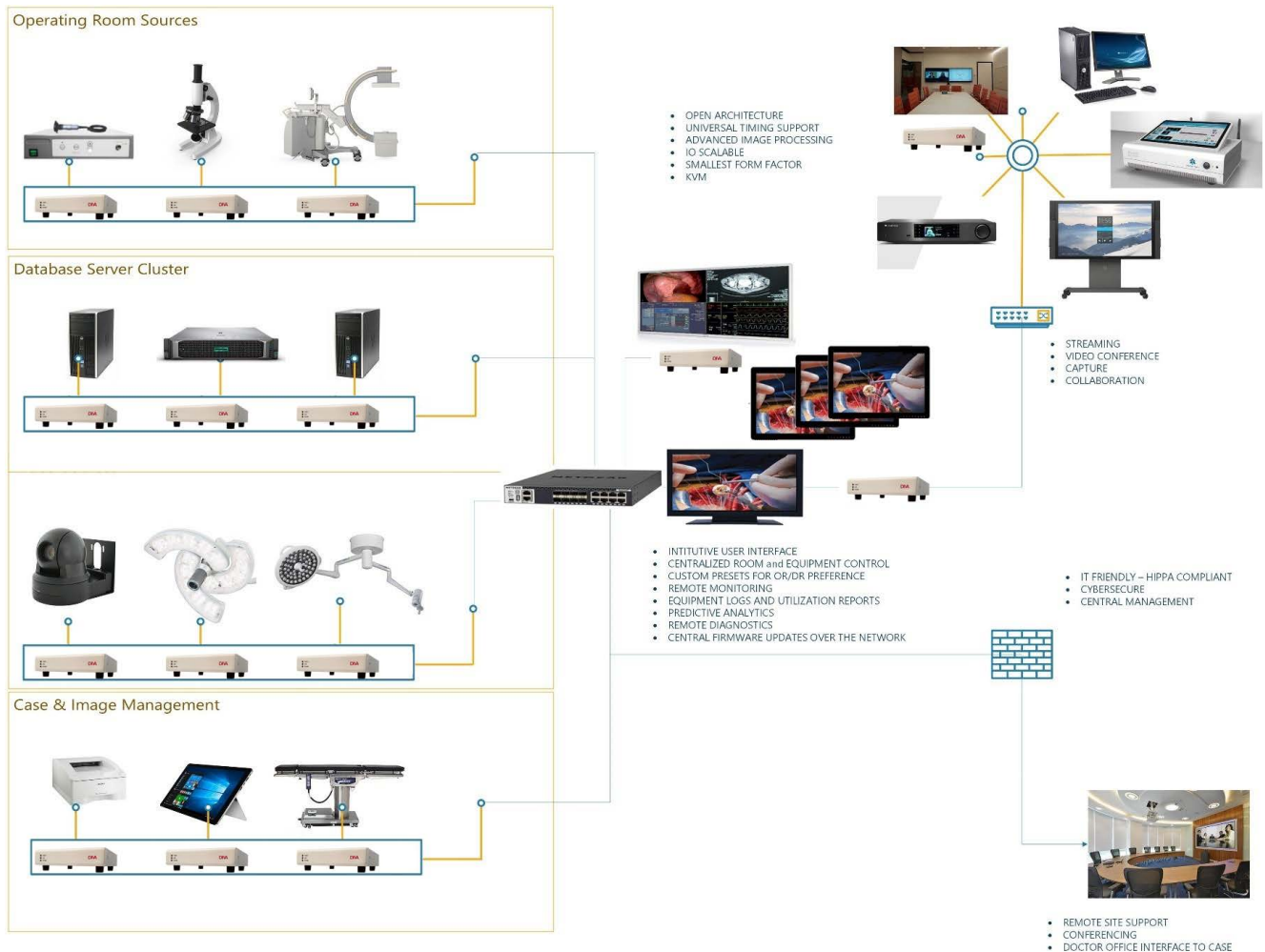
CENTRAL ROOM MANAGEMENT

Take control of any OR with central room management feature. Control is only available to authorized users and is based on the user role (e.g. Bio-med, nurse, surgeaon, Admin)

REMOTE DIAGNOSTICS & MAINTENANCE

The SDVoE Solution provides real time monitoring dashboard with live diagnostics data, room utilization and remote configuration.

Installation & Setup

Operating Room Sources

- OPEN ARCHITECTURE
- UNIVERSAL TIMING SUPPORT
- ADVANCED IMAGE PROCESSING
- IO SCALABLE
- SMALLEST FORM FACTOR
- KVM

Database Server Cluster

- STREAMING
- VIDEO CONFERENCE
- CAPTURE
- COLLABORATION

- INTITUTIVE USER INTERFACE
- CENTRALIZED ROOM and EQUIPMENT CONTROL
- CUSTOM PRESETS FOR OR/DR PREFERENCE
- REMOTE MONITORING
- EQUIPMENT LOGS AND UTILIZATION REPORTS
- PREDICTIVE ANALYTICS
- REMOTE DIAGNOSTICS
- CENTRAL FIRMWARE UPDATES OVER THE NETWORK

- IT FRIENDLY – HIPPA COMPLIANT
- CYBERSECURE
- CENTRAL MANAGEMENT

Case & Image Management

- REMOTE SITE SUPPORT
- CONFERENCING
- DOCTOR OFFICE INTERFACE TO CASE

EASY INSTALLATION

Single transceiver unit makes installation much easier. Connect the same unit to either a source or destination and it will automatically configure itself.

WIRING & CABLING

Wiring and cable infrastructure need not to be upgraded or changed to support the SDVoE Solution. Existing HD installs can be extended to support 4K resolutions.

COST EFFECTIVE

Off the shelf 10G network switch cost is less than a traditional matrix switcher. Video processing is integrated into the end points compared to HDBaseT solutions eliminating additional boxes.

SMALL FOOTPRINT WITH NO FANS

The SDVoE Solution transceivers are approximately 5" x 6" x 1" and can be easily installed in a rack, under the desk, on the desk or inside an IT closet. Having no fans prevent the unit from unwanted bacteria and dust.

The SDVoE Solution processor quality and latency

QUALITY ASSURANCE

Optimized for video, graphics and text quality, the SDVoE Solution's AV processor supports both up-scaling and downscaling for resolutions up to True 4K 60Hz RGB 4:4:4.

LATENCY- ULTRALOW

8µs for 4K 60Hz uncompressed video.

OPEN API ARCHITECTURE

The SDVoE Solution comes with a fully flexible API architecture that allows software teams to customize system and user interface and functionality based on their solution.

SDVoE Video Quality

Optimized for video, graphics and text quality, the SDVoE Solution's AV processor supports both up-scaling and downscaling for resolutions up to True 4K 60Hz RGB 4:4:4.

This broadcast quality scaling engine is architected with fully programmable horizontal and vertical taps and includes pre and post processing algorithms to reduce ringing and aliasing artefacts while preserving the sharpness of edges.

The SDVoE Solution scaling engine operates inline with other functional blocks of the chipset, such as HDMI encoding/decoding, AES 128-bit encryption, extension (10G streaming) and lightweight compression (if required), adding only 16-lines of latency to the video transmission (maximum of 0.12ms of latency at 4K 60Hz). A wide variety of input formats including RGB and YUV (444/422/420) are supported along with 8-bit, 10-bit and 12-bit colour depths. Output of The SDVoE Solution's scaler is always RGB 8-bit.

The SDVoE Solution's extension and switching SDVoE chipsets transmit uncompressed, pixel-for-pixel video signals extended over long distances and switched through IP switches with zero-frame latency.

In a few cases, it is required to apply lightweight compression to enable a video resolution to be transmitted across a limited bandwidth network.

For such situations, a unique compression algorithm is employed with a compression ratio of just 1.4:1. When enabled, this lightweight compression ratio results in visually indistinguishable image quality.

The SDVoE Solution's compression is a high-quality compression technology designed for the very specific task of compressing 12G 4K signals, such as 4K 60Hz 8-bit 4:4:4 or 4K 60Hz 10-bit 4:2:2, to fit within a 10GbE infrastructure using approximately 9G of bandwidth, leaving 1G for general purpose network data.

Compression is achieved by analyzing only five lines of video at a time, limiting latency to five line periods (under 8 µs for 4K 60Hz video). Video quality that is indistinguishable from native video and with imperceptible latency.

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