NUCLEUS
The smart digital operating room platform

Overview

Manage, store and share video-rich content across hospital networks

NUCLEUS™ is the open, scalable and vendor neutral video-over-IP platform that transforms surgical workflow efficiency in today's networked hospital environment. NUCLeUS™ connects devices, applications and data transparently for real-time informed decisions by every hospital stakeholder.

Developed in consultation with leading surgeons, NUCLeUS™ guides clinical staff through the planning, recording and sharing of video images and other patient-related data in the Operating Room, across the hospital campus and beyond.

Controlled by the intuitive GUI, live images can be displayed on any screen in the Operating Room or elsewhere on the hospital campus.

Multiple video feeds from endoscopes, surgical microscopes, room cameras and other sources can be recorded simultaneously, on an eNSOR™ appliance (a network-based platform) in any combination of formats and resolutions.
A truly end-to-end IP workflow solution, NUCLeUS™ also lets surgeons in the Operating Room share live video with other doctors and medical students.

Captured content can also be associated with other patient records and stored centrally for secure access from anywhere over hospital-wide IP networks.

Features

Seamless, intuitive image workflow
NUCLeUS™ features an intuitive touch interface that simplifies workflow and reduces the risk of ‘information overload’ for clinical staff in today’s busy operating rooms. Instantly route any image source to any destination, with no need to re-plug equipment. Record multiple video sources in the Operating Room simultaneously, on an eNSOR appliance (a network based application), in any combination of formats and resolutions.

Scalable, open and vendor neutral
NUCLeUS™ is device-, format- and resolution-agnostic, handling HD and 4K sources from a wide range of modality manufacturers. Video and audio are distributed in real time over secure, standard IP connections for centralised storage and access right across the hospital network.

Compatible with any image source
NUCLeUS provides surgeons and clinicians direct, fingertip control over a wide range of medical image sources including live video signals from endoscopes, ultrasound scanners, in-light cameras, PACS workstations and many more.
Flexible display options
NUCLeUS™ offers a wide range of display modes, including switching to multiple monitors in full screen, picture-in-picture or multi-split. This flexibility supports smoother workflow to suit the needs of surgeons, doctors and medical staff through all phases of a surgical intervention, from planning to intervention to post-operative review.

Advanced image enhancement apps
A growing range of apps adds powerful real-time image processing features to assist surgeons and clinical staff. A Vascularisation Filter gives clearer visibility of blood vessels. Rotation Correction compensates for movements of an endoscope camera, ensuring that images are always seen ‘right way up’.

For teaching, training and knowledge sharing
NUCLeUS™ Broadcast (option) supports live video streaming with two-way audio communications – and no need to use a mobile phone for communicating with colleagues. With simple touch-panel control, it’s ideal for ‘narrowcasting’ surgical procedures in the Operating Room to students or consultants – or even to conference delegates at a remote location. Powerful functionalities like Telestration (optional) can help an advising surgeon outside side of the OR communicate easily with the team inside.

Streamlined information management
NUCLeUS™ simplifies the management of all relevant patient data from interventions in the Operating Room. Multiple image sources from live surgery can be seamlessly integrated with PACS, EMR and HIS/RIS to create a comprehensive, easily accessible patient record that can be browsed.
Enabling smoother hospital workflow
NUCLeUS™ communicates with the entire hospital using DICOM and HL7 standards, providing input to PACS and multimedia archives and generating a wide spectrum of surgical information that can be combined with the Electronic Patient Record. NUCLeUS™ scales smoothly, integrating with Hospital Information Systems, Operating Room Planning Systems and DICOM worklists for a seamless workflow.

Easy integration, seamless upgrades and remote support
NUCLeUS™ offers hospital IT departments the benefits of easy integration plus low ownership and support costs. The system’s all-IP architecture provides a seamless upgrade path from HD to 4K, and flexibility and scalability. It also enables remote management capabilities including preventive maintenance.

Open for developers
Open APIs simplify rapid integration with modality manufacturers’ Operating Room controllers and other hospital systems. This also offers an attractive environment for developers to create their own modality-specific applications that can be hosted on the NUCLeUS™ platform.
Gallery