

Harley Street Specialist Hospital Digital Operating Room

AudioVisual
Nuway

Project Overview

Client: Confidential Specialist Hospital

Sector: Private Healthcare

Location: Harley Street, London, UK

Scope: Design and installation of a fully integrated 4K digital operating room with zero-latency video transmission

AV Integrator: Nuway





The Challenge

Nuway Audio Visual was commissioned to design and deliver a state-of-the-art digital operating room within a leading Harley Street specialist hospital.

The system needed to integrate seamlessly with an existing 4K surgical camera while achieving zero-latency image transmission – a non-negotiable requirement in an environment where even minimal delay can affect surgical precision and clinical decision-making.

Beyond performance, the solution had to provide:

- Medical-grade image accuracy
- Absolute system reliability
- Seamless compatibility between legacy and modern equipment
- A control interface suitable for use within a sterile environment

The result needed to balance technical complexity with operational simplicity.

An AV system to match the surgical precision required in operating rooms

Our Solution

Nuway engineered a high-performance 4K visual and control infrastructure purpose-built for clinical precision and long-term scalability.

DICOM-Accurate 4K Visualisation - At the centre of the system is a 55-inch 4K professional display with DICOM support, ensuring accurate greyscale rendering of radiological scans and diagnostic imagery.

This enables surgical teams to view detailed, high-resolution visuals with complete confidence during live procedures – maintaining diagnostic integrity while supporting real-time decision-making.

Zero-Latency Fibre-Based AV Infrastructure - To preserve native 4K quality with instantaneous response, AV-over-IP encoders and decoders were deployed across a fibre-backed network architecture.

A dedicated fibre switch provides the high-speed backbone required for stable transmission of uncompressed video, eliminating bottlenecks and maintaining image fidelity. A 4K up/down converter ensures compatibility between legacy and modern sources, allowing seamless integration across multiple equipment generations.

The infrastructure is designed for resilience, scalability and future expansion without disrupting clinical operations.

Intuitive, Sterile-Safe Control - Operational simplicity is delivered through a 22-inch sterile-safe touchscreen interface, enabling staff to manage:

- Source selection
- Video routing
- System configuration

A central control processor and graphics engine manage overlays such as patient data and visual annotations, while automating system logic to support customised surgical workflows.

Audio routing is managed via a digital sound processor supporting paging, commentary and remote consultation. Discreet in-ceiling loudspeakers ensure clear communication without compromising hygiene standards or the room's clean aesthetic.

The Result

The completed installation provides a fully integrated, zero-latency digital operating environment that enhances surgical accuracy while simplifying system control.

By combining DICOM-compliant 4K visualisation, fibre-based AV-over-IP transmission and an intuitive touchscreen-driven interface, Nuway delivered a scalable, future-ready platform that supports precision procedures today and accommodates evolving medical technologies tomorrow.

The result is a resilient, clinically aligned AV ecosystem designed around performance, reliability and patient-centred care.

“The integrated technology works flawlessly within a demanding clinical environment. Reliability, clarity and ease of use were critical and the solution delivers on all three.”

- Harley Street Specialist Hospital

Planning a similar project?

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**Fibre based high resolution
4K video delivery for precision
procedures**