What Actually Goes Into OR Integration: A Look at How CREA Fits Into the Operating Room

by Kavita Joshi

Most hospitals spend months planning an operating room build. They think carefully about airflow, lighting, pendant placement, and infection control zones. OR integration, though, often gets treated as a final add-on, something to sort out after the walls are up. That is where things go wrong.

OR integration is the system that connects every imaging source, display, camera, and control interface in the operating room into a single, manageable workflow. Done right, the surgeon can pull up a laparoscopic feed, adjust lighting, and start recording without taking their hands off the field. Done as an afterthought, you get misaligned cutouts, loose cables, and a system that technically works but frustrates everyone who uses it.

This post covers how CREA, the OR integration platform from Esbee Dynamed, fits into a modern operating theatre, and what needs to happen before the panels even go up.

Why Zone Placement Matters More Than People Expect

A modern OR is divided into four zones, each with a different sterility requirement. Most of the OR integration infrastructure sits in Zone 1, the outer protective area: network servers, IT racks, audio-video routing hardware, and the main control system. The sterile core, Zone 3, is where the surgical team works, and the only integration components that belong there are surgical displays.

Zone	Name	What Lives Here
Zone 1	Protective Area (Outer)	Network servers, IT racks, main control infrastructure, wall-mounted displays, AV routing system
Zone 2	Clean Area	Scrub rooms, sub-stores, equipment staging
Zone 3	Sterile Area (Core OT)	Surgical displays only
Zone 4	Disposal Area	Waste management (minimal IT integration)

This separation exists for good reason. Scrubbed staff should be able to control room functions, adjust camera views, or trigger a recording without ever crossing into a non-sterile area. The integration system has to support that. If controls are placed incorrectly, you break the sterile field every time someone needs to change a display source.

What CREA Actually Does in the OR

CREA is a wall-mounted OR integration system built around two components: a 24-inch Essential PC and a 55-inch intermediate

display positioned directly in the surgeon's line of sight. The idea is that the surgeon gets a single, consolidated view of multiple imaging feeds, regardless of where those feeds are coming from.

In practice, that means CREA can pull in feeds from laparoscopic cameras, C-arms, endoscopes, robotic systems, OT lights, and patient monitors, and display them in a multi-view layout on the 55-inch screen. The surgeon does not have to look sideways at a secondary monitor or ask the scrub nurse to relay what the C-arm is showing. Everything is visible from one point, at the right height, in the right place.

CREA also handles intraoperative recording and live streaming at high definition, which matters both for medico-legal documentation and for surgical training. Recordings are stored and accessible for post-operative review. For teaching hospitals, the live stream capability lets remote faculty observe a procedure in real time.

On the compliance side, CREA supports NABH Digital Health Standards with digital safety checklists and integrates with DICOM, HL7, PACS, HIS, and EMR systems. For hospitals working toward NABH accreditation, this matters.

Why OR Integration Has to Be Planned Before the Walls Go Up

This is the part that trips up most hospital projects. OR integration is not something you can retrofit cleanly. The physical installation of CREA depends on decisions made during the civil construction stage, before wall paneling begins.

The sequence looks like this:

- Laminar flow, ceiling, and pendant markings are done first, before any construction lock-in.
- OT light structures go in after HVAC and floor connections are confirmed.

- Wall panels are fabricated with factory-made cutouts for the CREA Essential PC and display, using exact measurements taken on site.
- HDMI patch panels are installed on both the anesthesia and surgical pendants.
- A CAT6 cable runs directly from the hospital network to the CREA unit.

The reason for factory-made cutouts is straightforward. If panels are produced before accurate measurements are taken, manual cutting on site creates uneven slots. The unit fits poorly, the finish looks wrong, and in some cases it affects cable management inside the wall cavity. Getting this right is mostly a coordination problem, making sure the integration vendor is involved in the conversation during planning, not after installation.

Cable Routing: The Detail That Decides Whether OR Integration Works

Connectivity is where OR integration either holds together or falls apart. CREA needs cables routed from the unit through the ceiling to both pendant-mounted and wall-mounted patch panels. Each imaging source connects into that network via HDMI. If cables are run incorrectly or without sufficient planning, you end up with signal degradation, visible lag, or sources that simply will not connect.

The practical rule: cable routing should be planned at the same time as pendant placement. Both the anaesthesia pendant and the surgical pendant need HDMI patch panels. The OR integration vendor should be coordinating with the modular OT supplier and the hospital's IT team at this stage, not after commissioning.

When done correctly, CREA delivers high-definition video from multiple sources with no visible lag, which is the baseline requirement for OR integration to actually support intraoperative

decision-making.

The Cost of Getting OR Integration Wrong

Hospitals that treat OR integration as a procurement decision rather than a design decision tend to run into the same problems. Panels fabricated without cutout dimensions. Pendants commissioned without HDMI patch panels. IT infrastructure isolated from the integration system. All of these are fixable, but they are expensive to fix after the fact and often mean the OR goes live with a compromised setup.

CREA is designed for the operating rooms where these details have been handled correctly. The zero-footprint wall-mount design only works if the cutouts are precise. The multi-source display only works if the cable infrastructure is in place. The recording and streaming features only work if there is a proper network connection running to the unit.

None of this is complicated. It just requires that OR integration be part of the conversation from day one of the project. If you are planning an OR build or a modular OT upgrade and want to understand how CREA fits into the infrastructure, we are happy to walk through the specifics. Reach out to the Esbee Dynamed team and schedule a demo.

Esbee Dynamed specialises in OR integration and connected surgical instrument tracking solutions. To learn how we can support your operating theatre, contact our team.

Write to us at info@esbeedynamed.com for more info.