



Ergonomics of Integration Cart: What to Look for in a Surgical AV Cart

by Editorial Team

In modern surgical environments, mobility matters just as much as performance. Whether you're live-streaming a complex procedure, recording surgeries for education, or integrating with hospital IT systems, an **integration cart** needs to be more than a monitor on wheels—it needs to be a surgical-grade command center built around ergonomics, compliance, and connectivity.

This guide breaks down the key ergonomic and functional criteria that define a high-performance surgical integration cart—helping procurement teams, OR managers, and clinical educators make informed decisions. For a closer look at purpose-built solutions, explore the [integration cart solutions at Esbee Dynamed](#).

So what separates a basic cart from a **high-performance surgical integration cart**? Here are the six defining criteria.

1. Medical-Grade Design & Compliance

A surgical AV cart must comply with:

- **IEC 60601 standards** for electrical safety in clinical environments
- Cleanable surfaces, enclosed cabling, and infection-control design

Look for carts that are engineered to meet hospital safety and hygiene protocols, with enclosed cabling and surfaces that can withstand repeated disinfection near sterile zones.

2. Integrated 4K/HD Video Recording and Streaming

A basic AV cart may support display, but a high-performance cart must:

- Record surgeries in **4K or Full HD**
- Stream video in real-time to classrooms, auditoriums, or remote consultants
- Offer dual-monitor support and multi-source display

A well-designed integration cart should support all of the above out of the box, with full media export capabilities and compatibility across devices. The [CREA Cart by Esbee Dynamed](#) is one example of a platform built to meet these video standards in clinical settings.

3. Camera Arm and PTZ Support

Positioning is everything in surgery. Your cart should:

- Include an **articulating overhead arm** for surgical field views (optional)
- Be compatible with **PTZ cameras** for zoom, pan, and angle adjustments
- PTZ camera should be Medical grade and it should be able to white balance

A capable integration cart should accommodate both articulating arms and PTZ camera inputs, giving clinical teams flexibility across procedures and room configurations.

4. Touchscreen and Footswitch Control

Hands-free interaction is critical in surgical environments. A well-designed integration cart should include:

- **Touchscreen interface** for routing, tagging, and recording
- **Footswitch input** to allow surgeons to control the cart without touching it

5. Seamless Data Integration

A high-performance AV cart must do more than record video. It should:

- Integrate with **HIS, PACS, EMR, and LMS** platforms
- Tag media with patient data or surgical context
- Support media archival, review, and export

The best integration carts handle all of the above in a vendor-neutral and secure architecture, reducing IT burden while maintaining clinical data integrity.

6. Compact Footprint & Mobility

Operating rooms are crowded. A true surgical cart should:

- Have a **heavy-duty base with a compact footprint**
- Include **locking wheels** for safety
- Be **height-adjustable** and easily repositioned

Ergonomic OR carts are purpose-designed with these spatial constraints in mind—balancing a compact footprint with the stability and adjustability needed across clinical settings.

Final Thoughts

An integration cart is far more than a tech accessory—it's a clinical infrastructure decision. From safety compliance and video quality to data integration and OR ergonomics, the right cart directly affects workflow efficiency and care quality. When evaluating options, prioritize solutions that are modular, medically certified, and built to grow with your hospital's needs.

To explore a surgical integration cart built around these principles, visit [Esbee Dynamed](#) and request a demo to see how their integration cart performs in real surgical environments.

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.