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2:

# Why Choose Innvolution Healthcare?

Innvolution Healthcare was founded in 2010 by a group of highly accomplished leaders in the medical device industry, With a combined experience of over 100 years in Cardiovascular Devices. Innvolution is India's second-largest Cath Lab selling company with best-in-class solutions for the treatment of Cardiovascular Disease.

Drug Eluting Stents, Balloon Catheters and Guidewires are part of the Cardiovascular Devices Portfolio, while the multiple award-winning and fastest-growing Cath Lab Pinnacle and Premier is part of the Imaging Solutions Portfolio.

Innnvolution, with its deep-rooted history and connection to VJT, a prominent player in Nondestructive Testing, X-ray Source and Nuclear technologies, along with EX-Alpha Group, known for spearheading Asia's inaugural Cath Lab outside Japan in 2004 and the first DSA in 2006 before its merger with Philips in the Netherlands, collaboratively established "IITPL," a successful partnership aimed at creating acclaimed Cath Labs.

Innvolution is a research-focused entity celebrated for its many groundbreaking accomplishments in its respective fields.



### **Proven Track Record**



Innvolution Cath Lab isn't just a choice; it's a recognized leader. With accolades like 'The Fastest Growing Cath Lab of India in 2018–2019' and Asia's most awarded Cath lab company with 14 National and International Awards, our achievements reflect our dedication to excellence.

### **Unmatched Customer Satisfaction**



At Innvolution, our focus goes beyond technology; we prioritize your satisfaction. With an impressive 89% customer satisfaction rate, we take pride in being a trusted partner for a seamless experience.

### **Reliability at Its Best**



Our commitment to your success is unwavering. Since our inception, we have experienced less than 48 hours of downtime at any installation, ensuring that you operate smoothly without interruption.

#### **Global Impact**



Our solutions have earned the trust of healthcare providers on a global scale and we have a strategic initiative to expand into 20 countries across Southeast Asia, Western Europe, Latin America, Africa and the Middle East. Innvolution is deeply committed to improving the lives of countless cardiac patients every day.

### **Innovate with Confidence**



Innvolution's R&D initiatives focus on Drug Eluting Balloon, Tele-echocardiography, Live QCA, Dynamic Coronary Roadmap, Virtual-FFR and 3D rendering of the entire coronary tree. These efforts will pave the way for a future where innovation, expertise, and patient-centric care converge.







## **Key Features**



#### **Advanced Imaging**

with a high-frequency 100KW X-ray generator and an advanced 3 MHU grid controlled liquid metal bearing tube for exceptional imaging quality.

#### **ASPIRE**<sup>™</sup> Algorithms

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empowering high-speed noise reduction and achieving the sharpest image quality



#### **Unique Upgrade** Capability

without necessitating a full system overhaul

#### with Stent Clarity, QCA, IVUS, OCT, Live QCA

and vFFR

#### Enhanced Image Acquisition

with real-time highresolution imaging and low-dose fluoroscopy recording

#### Post Processing Tools

for image inversion, flipping, clarity adjustment and magnification modes



#### **Enhanced Safety** & Customizable Angulation

with ergonomic design and user-friendly controls. L-arm movement of 240° and C-arm angulation of 120° (LAO/RAO) and 55° (CRA/CAU)

# and roadmap

Integrated with

peak opacification,

landmarking, pixel shift,

<u>8</u>

neurovascular, interventions



Versatile Table Functionality

offering comprehensive head-to-toe coverage, table swivel movement and achieving minimal table height

#### **Seamless Software** Integration

#### Monitor Flexibility

with a ceiling-suspended monitor for 330-degree rotation

#### **Dual-Level** Anticollision System



#### Comprehensive Monitoring

with large displays, multiple views and integrated monitoring

ensuring patient and professional safety

#### **Digital Subtraction** Angiography



#### Stent Enhancement Tools

for precision enhancement, substantial time reduction and realtime adjustments

#### Comprehensive Patient Coverage





#### Comprehensive Solutions

for ventricular assessment, vessel analysis, integrated ultrasound guidance, live QCA and TAVI planning



The Premier Cath Lab, harnesses the synergy between our cutting-edge technology and your skilled hands. The seamless collaboration between you and our state-of-the-art technology re-enforces precise diagnosis, enhanced safety, and versatility in tackling of complex scenarios in the field of cardiovascular medicine.

# **Comprehensive Confident** Care



**Full-body patient coverage** for accurate diagnosis and treatment of complex cardiovascular, neurovascular and peripheral vascular conditions.

**Enhanced medical imaging** for accurate diagnosis and improved visualization of anatomical structures.

**Optimized decision-making** through Advanced Image Acquisition, Real-time Image Processing & Advanced Imaging Tools.

Versatile mechanical movements for optimal imaging angles, for improved patient care and outcomes.

## Assured Precision for Optimal Results



#### **Ergonomic design and user-friendly control**

- For longer interventions without compromising patient comfort and safety
- Focusing on reducing physical strain, discomfort and fatigue

Two layer anti collision system with sensors around the tube and detector side to mitigate patient risks.

**Parallel lead shutters and multi beam Filters** for safer environment, for patients and healthcare professionals.



**Optimum space and positioning** for cardiac, neuro and peripheral treatments.

Multi-angle imaging to diagnose complex conditions, plan interventions and ensure accurate device placements.

**Enhanced adaptability** through upgrade opportunities without changing the entire system.

Seamless integration with Intravascular Ultrasound (IVUS), Optical Coherence Tomography (OCT) and Virtual Fractional Flow Reserve (vFFR) as a comprehensive toolkit.



# **Confidence with Precision**

## Enhanced Diagnosis with **Comprehensive Patient Coverage**

#### Premier Elite's Adaptable Technology Ensures

Full-body patient coverage

Accurate diagnosis and treatment of complex conditions

Improved clinical decisions and optimized treatment strategies

LAO/RAO: +/- 120° **CRAN/CAUD: +/- 55°** 

+/- 120°

Better Diagnosis with Enhanced Visualization

With High Frequency X-ray Generator and Liquid Metal Bearing Tube Offers:



Fine-tunes collimation settings, for enhancing image guality and

control radiation exposure

• Max. current of 1000 mA for continuous sequences • 3MHU Grid Controlled Liquid Metal Bearing Technology • X-ray tube with 8.5-degree anode angle operating at

• Current range of 10-130 mA for dynamic fluoroscopy • Dual-focus feature with choices between 0.4 and 0.8 for

#### **Cardiac Soft Collimation**

Empowers healthcare professionals to capture precise images



# **Confidence with Safety**





**Enhancing Patient** Safety with Two-Layer **Anti-Collision** Protection



Within the realm of radiation safety, Premier Cath Lab incorporates advanced features in its X-ray technology to safeguard patients and healthcare professionals.

#### Multi Beam Filters (MBF)

MBF is an innovative feature designed to optimize image quality and control radiation exposure

#### **Dynamic Lead Shutters**

These intelligent shutters automatically adapt to the Source-to-Image Distance (SID), effectively reducing scatter dose and enhancing patient safety during medical procedures



#### **Optimized Ergonomic Design for Better** Outcomes

#### **ASPIRE**<sup>™</sup>

Sharp clinical images at the lowest radiation dose designed for patients and clinician's safety

# **Confidence with Versatility**



## Improved Flexibility through Dynamic Motion

Premier Cath Lab's table features offer unrivaled versatility. With a table pivot movement of +/- 90 degrees, HCPs can perform vascular hybrid cases including coronary angiography, angioplasty, stent placement, valve interventions and more with ease. The table's sweep provides seamless head-to-toe coverage for peripheral vascular, neurovascular, cardiac and lower extremity interventions.



Premier Cath Lab's commitment to uniting diverse diagnostic modalities showcases our dedication to delivering the most advanced cardiac care solutions available.



### **Versatility through Flexibility**

Our floor-mounted single-plane cath lab offers a rotation of +/- 120 degrees. This setup optimizes space efficiently and accommodates a wide range of procedures, including those related to cardiac, neuro and peripheral vascular interventions, even at deeper angles. Additionally, it facilitates the smooth implantation of Arrhythmia-related devices. Further flexibility comes from the CRAN/CAUD angulations allowing precise adjustments in cranial and caudal directions.





### **Optimal Imaging Angles through Precise Mechanical Movements**

The mechanical movements in the Premier Cath Lab refer to the intricate system of motorized components and sophisticated machinery that allow for precise positioning and angulation of the imaging equipment, crucial during cardiac catheterization and other interventional procedures. Here's how the versatile mechanical movements contribute to optimal imaging angles:

#### **Customizable Angulation for Precise Imaging**

Gantry Rotation: 240 deg

**C**-arm angulations: LAO/RAO: CRAN/CAUD: 120 deg 55 deg

#### With 240 Degree Rotation

Provides unmatched space optimization, enabling a wide range of cardiac, neurovascular and peripheral vascular procedures at deeper angles. It also offers ease of implantation for all arrhythmia-related devices.

#### With Enhanced Precision

Accuracy of interventions is exemplified to target specific areas more effectively and reduce the risk of unnecessary damage to surrounding tissues

#### With Enhanced C-arm speed

Up to 25 degrees per second, minimize procedure time for efficient procedures



#### With Dynamic Imaging

Visualize the catheter's movement and its interaction with the blood vessels and cardiac structures in real-time

#### With Reduced Patient Exposure

Optimize imaging angles to reduce the need for repeated imaging shots, thus lowering the overall radiation exposure

#### With Lower Table Height

Avoid the need for a patient trolley to assist ambulatory patients in sitting up & dismounting.

# Down 300mm



### Optimized Decision-Making through Advanced Imaging

## **Real Time**

#### **Image Processing**

Premier Cath Lab is equipped with advanced image processing software to ensure:

Real-time image capturing and storage

Display in a high-resolution format of 1344x1344

Anatomical details with precision and accuracy

## **CINE** Recording

Capability of upto 3-25 frames per second (FPS)

Real time capture and preservation for analysis

Enhanced clinical decisionmaking



## Integrated MPM (Multi Para Monitor)



Cine, fluoro, DSA, roadmap and stent view display onto a single 43-inch monitor Live QCA, VFFR, IVUS/OCT Coregistration on a single monitor enhances workflow efficiency

## **43**" Live Display Monitor

Extensive display with a 43" Live Display Monitor

Superior visualization and comprehensive analysis of various imaging modalities and patient parameters

Multi-view functionality for simultaneous visualization in 4K resolution



Better data visualization and decision-making



## **Real-time** Radiation Dose Display

Real-time dose display of DAP readings, irradiation time and RAK values

Precise control over radiation exposure

Contributes to a more secure and efficient clinical environment



#### Virtual Fractional Flow Reserve (vFFR)

vFFR is a less invasive angio-derived FFR calculation method.Without the need of adenosine and pressure wire achieving 94% correlation with invasive FFR measurements to enhance procedural efficiency and patient care.



# Tab-based User Interface

Industrial-grade tablet for entire workflow

Managing screen GUI and image processing features

**User-friendly UI** 

#### Enhanced Detectors with Generous Imaging Area

Advanced detectors to enhance imaging capabilities for precise visualization of intricate structures with a distance setting and a large imaging area, handling complex procedures becomes easier to manage.





### **ASPIRE™** (ADVANCED SUPERCOMPUTING BASED PINNACLE IMAGE RESOLUTION) Algorithms

Premier Cath Lab incorporates ASPIRE<sup>™</sup> (ADVANCED SUPERCOMPUTING BASED PINNACLE IMAGE RESOLUTION) proprietary supercomputing algorithms, for sharp clinical images at the lowest radiation dose designed for patients and clinician's safety.

#### **Digital Subtraction Angiography (DSA)**

vessels and

in DSA images

Peak
Opacification
Visualize the peak

opacification of

**Image Processing** 

vessels

Metrics

### **Mask Overlay**

Find and track important Enhancing the visibility of blood interventional procedure markers structures of interest

Roadmap

#### **Pixel Shift**

Image adjustment for best quality and view





facilitates a clear and steady stent's view and reduces movement blurriness during procedures.

#### Real-time Path Map enables precise guidance for catheter movement during procedures, ensuring optimal accuracy and procedural success.



#### **Customizable Image Settings** expedite imaging processes and allows personalized configuration for the specific procedures. It streamlines the workflow, ensuring precision and efficiency throughout a range of interventions.





Premier Cath Lab's innovative stent enhancement tool is transforming stent placement procedures, helping healthcare professionals achieve better outcomes in less time.

#### **Integrated Foot Pedal**

- Enables seamless work with our smart software
- Visualize vital insights for accurate stent placement in real-time

#### **Real-Time Stent** Enhancement

- Procedure time of 3 to 5 seconds
- Enables instant enhancement of stent visualization during procedures

#### **Offline Stent Enhancement**

- Procedure time of 12 to 15 seconds
- Enhances stent visualization during offline review and analysis



- Access enhanced stent images for post-procedural analysis



### **Additional Key Software Features (Optional)**

#### Live Quantitative Coronary Analysis

Al powered real-time QCA helps in automated vessel segmentation, lesion analysis, stent recommendation, automated vessel classification

#### **Virtual Fractional Flow Reserve**

vFFR is a less invasive angio-derived FFR calculation method. Without the need of adenosine and pressure wire achieving 94% correlation with invasive FFR measurements to enhance procedural efficiency and patient care

#### **IV-LINQ**

Real-time co-registration of IVUS/OCT data with angiography to obtain a detailed view of the lesion and its exact location in the coronary tree. Vendor independent Software runs with almost every X-ray, IVUS and OCT system

#### **Advanced Ventricular Assessment**

Enhances ventricular assessment with LVA/RVA Analysis for automated workflows to precisely calculate volumes, analyze wall motion and assess ejection percentage

#### **Precise Peripheral Vessel Analysis**

From the abdominal aorta to carotid, renal, iliac and femoral arteries, the QVA workflow offers unparalleled precision to improve procedural efficiency and accuracy

#### **Integrated Ultrasound**

With combined precision and ultrasound guidance, including vascular Doppler studies, perform guided arterial punctures and transthoracic echocardiography during procedures

#### **Elevated TAVI Planning**

Assists in streamlining Transcatheter Aortic Valve Implantation (TAVI) planning before the procedure with the 3mensio Structural Heart software that enables in elevating procedural success rates with detailed visualization and meticulous analysis







### Enhanced Procedural Agility and Monitor Adaptability

An adjustable monitor setup is included to achieve seamless positioning and unmatched flexibility, ensuring your access to essential information effortlessly for improving clinical versatility and enabling real-time procedural guidance.

Perform Cardiovascular Procedures with Flexible Monitor Stand and adjustable MCS counter balance featuring

Single 43" 6-Foot 500 mm Live Display Monitor with **Radius Spring Arm** Height Adjustment Range Mounting with Rotational Flexibility

#### The single monitor can be divided into:

Multiple sections for live display

Reference window Hemodynamic monitoring, thumbnail views

Radiation control Patient database management



#### Versatility through Upgrade Facilities

The Premier Cath Lab provides a game-changing pioneering benefit, effortlessly upgrading basic models to advanced ones, enabling swift adaptability to evolving clinical requirements without the need for a complete system overhaul.

#### Versatility through Integration

Experience the seamless integration with different diagnostic modalities with Premier Cath Lab:

Exceptional capability to seamlessly integrate a variety of diagnostic modalities, including OCT and IVUS vFFR enhances diagnostic accuracy, offering insights almost equivalent to invasive measurements while conserving resources

This integrated approach eliminates the need for disjointed procedures and ensures a smooth workflow

### **Compact Floor-mounted Design for Space Optimization**

