



国家心血管病中心
National Center Cardiovascular Diseases, China



阜外心血管病医院
Fu Wai Hospital, CAMS & PUMC

Functionally Integrated Platform in a Novel Catheterization Laboratory

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Purpose of establishment
- 02** | **Design**
Design scheme
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Construction process and result
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Various practical instance





01

Requirement

Catheterization Laboratory at Fu Wai Hospital

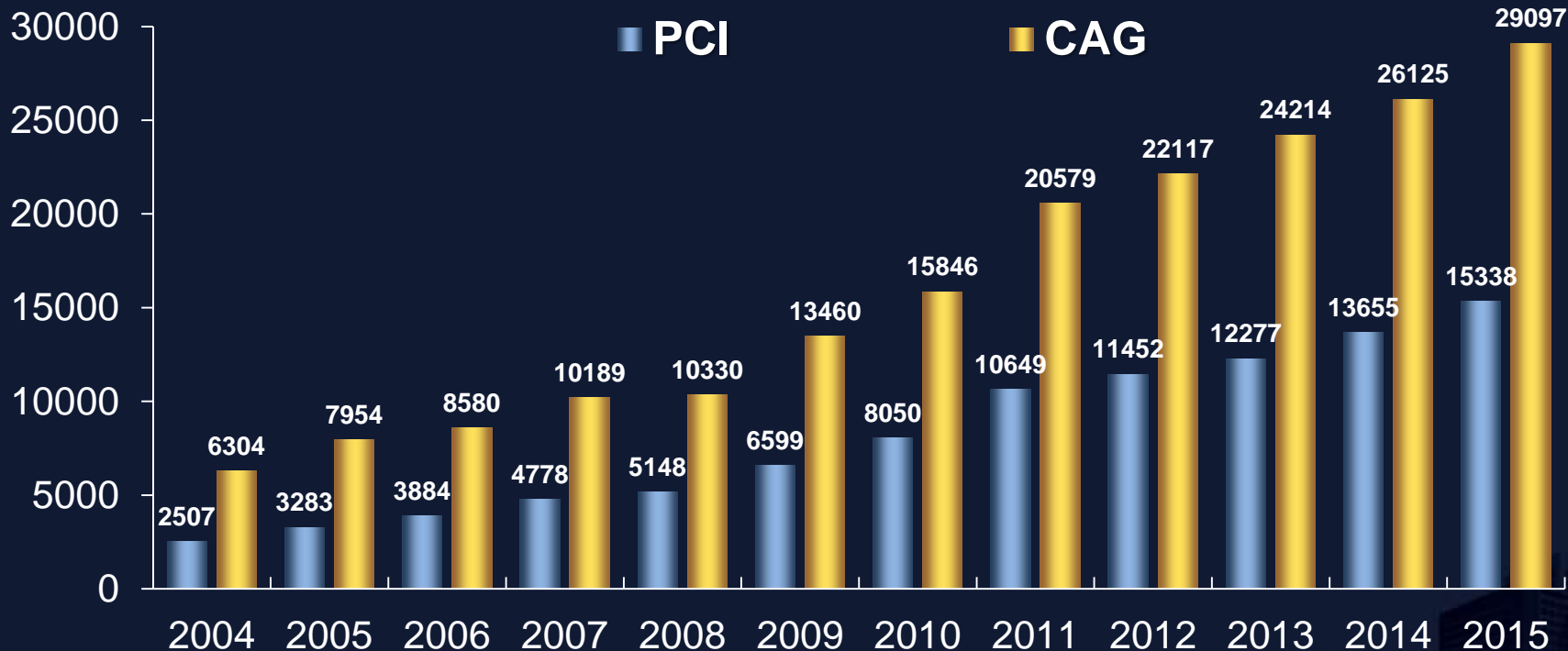
- **Integrated Platform for Diagnostic Catheterization and Intervention**
- **13 Cath Labs; 4 Hybrid Operation Rooms**
- **Cover: Coronary Artery Disease; Aortic Valve and Structural Heart Disease; Aortic and Peripheral Vascular Disease; Pulmonary Vascular Disease; Heart Rhythm, etc.**

01

Requirement

Catheterization Laboratory at Fu Wai Hospital Largest in the World

Person-Time





01

Requirement

Functionally Integrated Platform

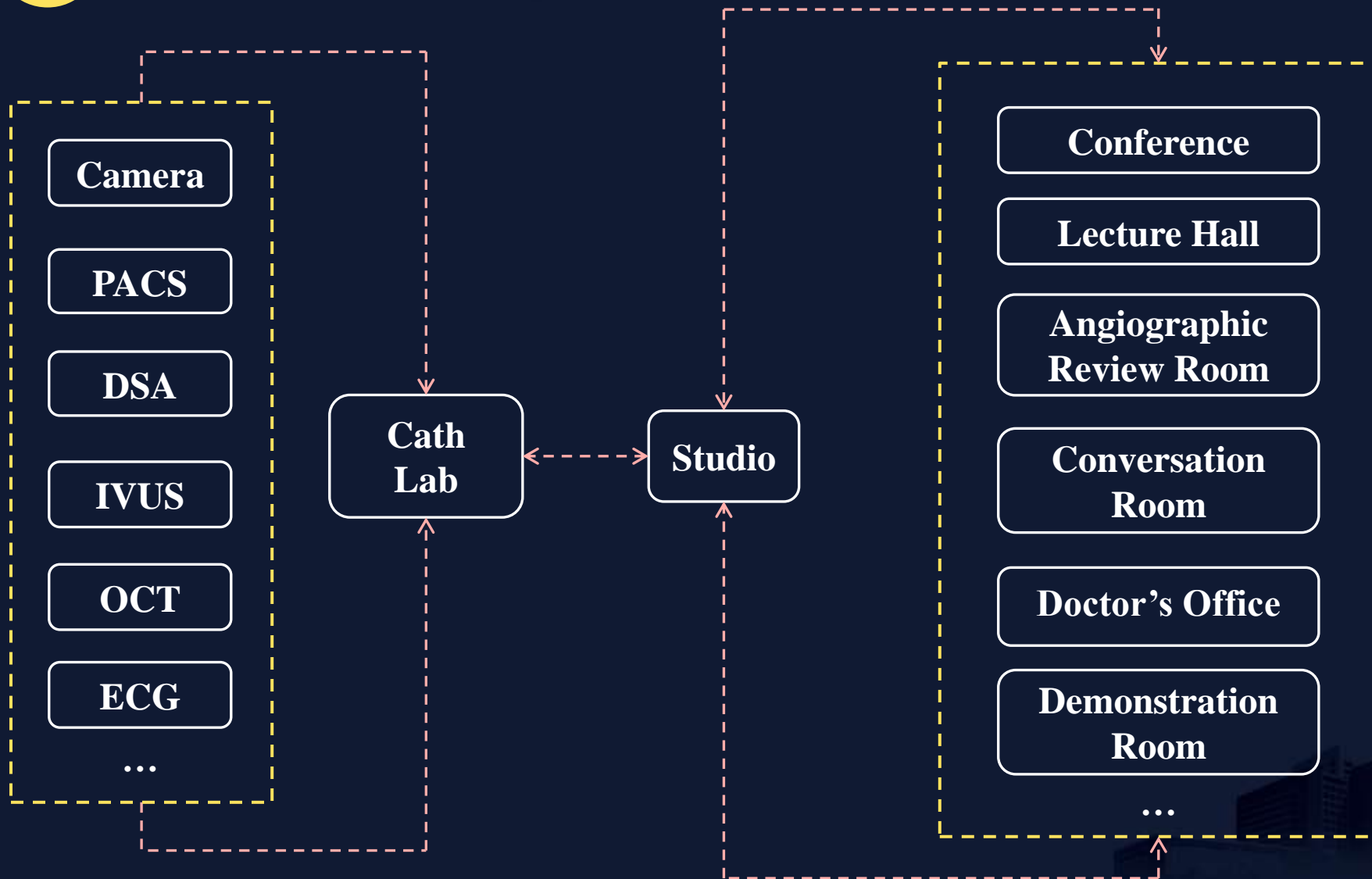
What We Want ?

- Improving the efficiency of catheterization laboratory
- Providing interventional operators with necessary information
- Improving quality of medical care
- Creating favorable condition of academic exchange
- Enhancing ability of training and further education
- Optimizing work environment of medical staff



02

Design

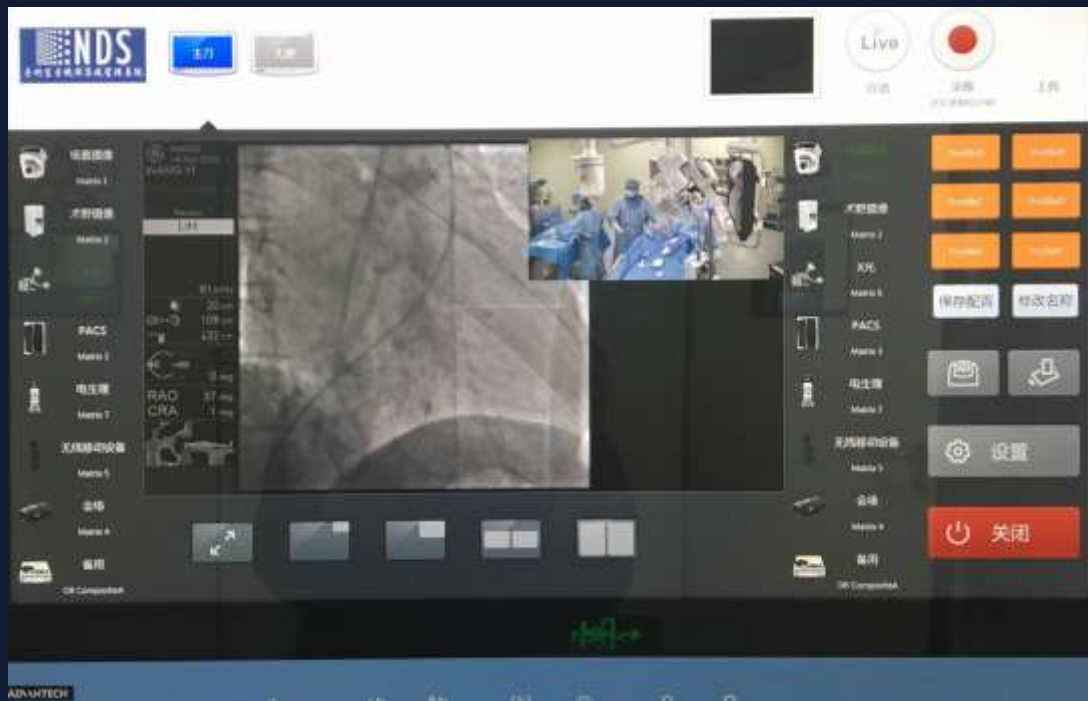
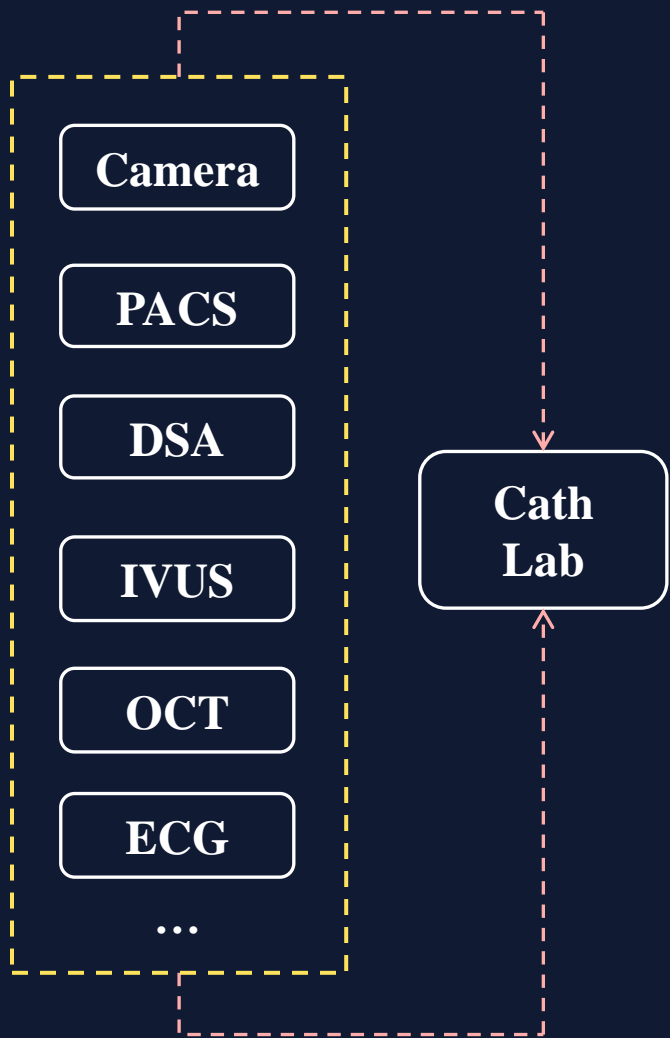




02

Design

- ✓ Video and audio signals related to procedure can access visualization system
- ✓ Switching signals to get desired images



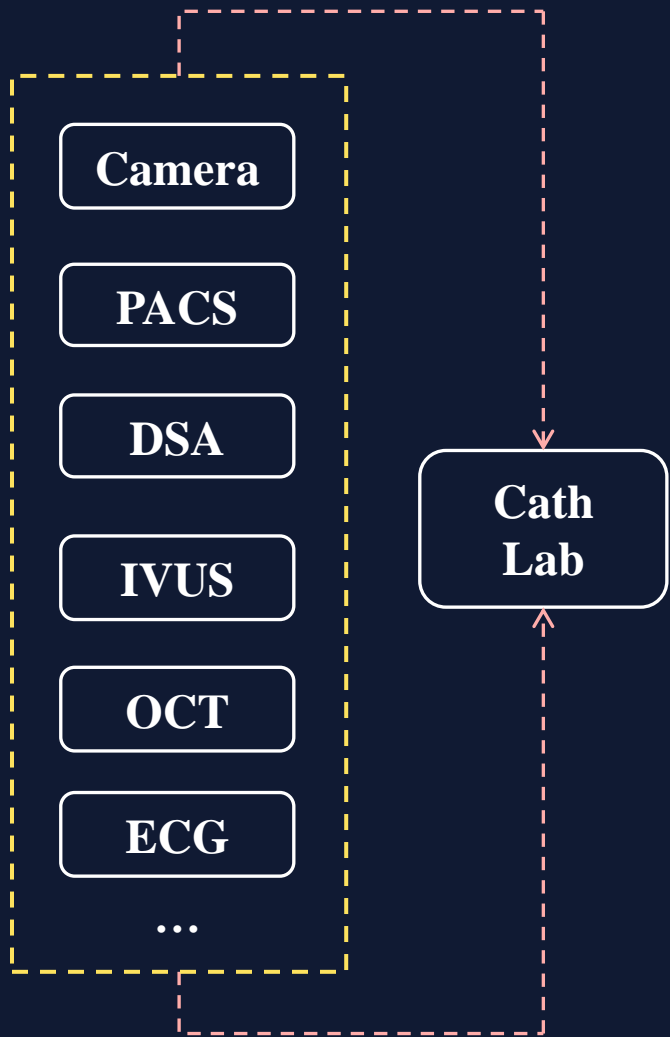
Full-featured Control Panel



02

Design

- ✓ Video and audio signals related to procedure can access visualization system
- ✓ Switching signals to get desired images





02

Design

- ✓ Centralized view scene of each cath lab
- ✓ Broadcasting or connecting to cath lab by intercom system

Fiber Network Satellite

- Conversation Room
- Angiographic Review Room
- Demonstration Room
- Lecture Hall
- Whole Hospital
- Conference in Beijing
- Domestic conference
- International Conference

Cath Lab

Studio

- ✓ Video and audio signals controlled

- Cath Lab ↔ Cath Lab
- Cath Lab ↔ Conversation Room
- Cath Lab ↔ Lecture Hall
- Cath Lab ↔ Angiographic Review Room
- Cath Lab ↔ Live Transmission

- ✓ Reserved signal channels for live transmission





03

Implementation

All cath labs are equipped with integrated system

Distributed across two control halls



West Control Hall



East Control Hall



03

Implementation



Studio: Connection Layout Box



03

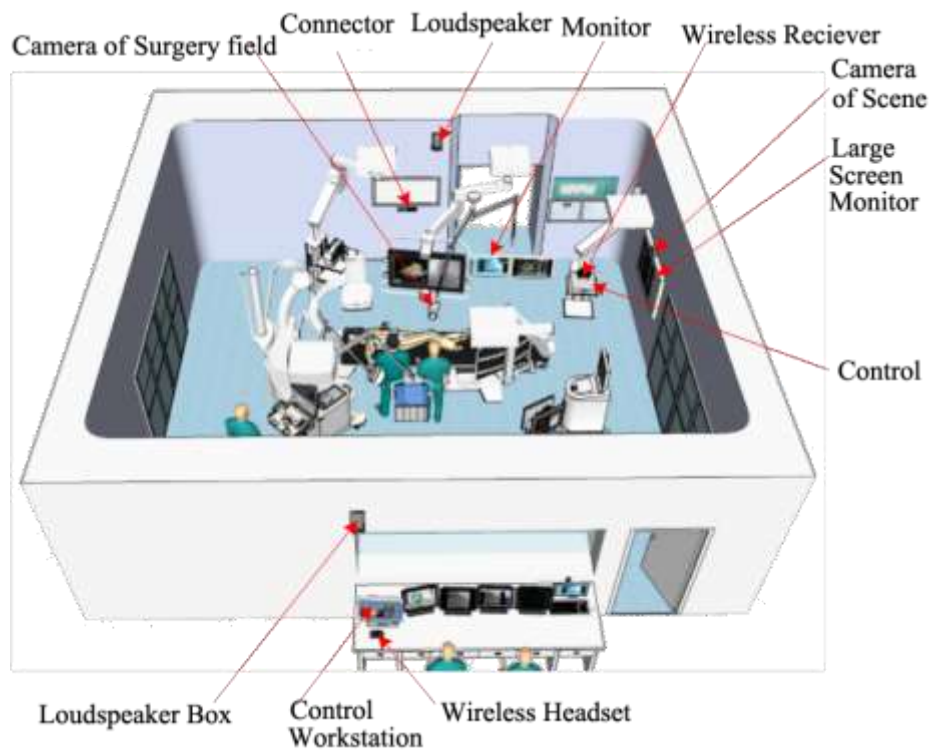
Implementation



Cath Lab
Equipped with **GE IGS-730**

03

Implementation

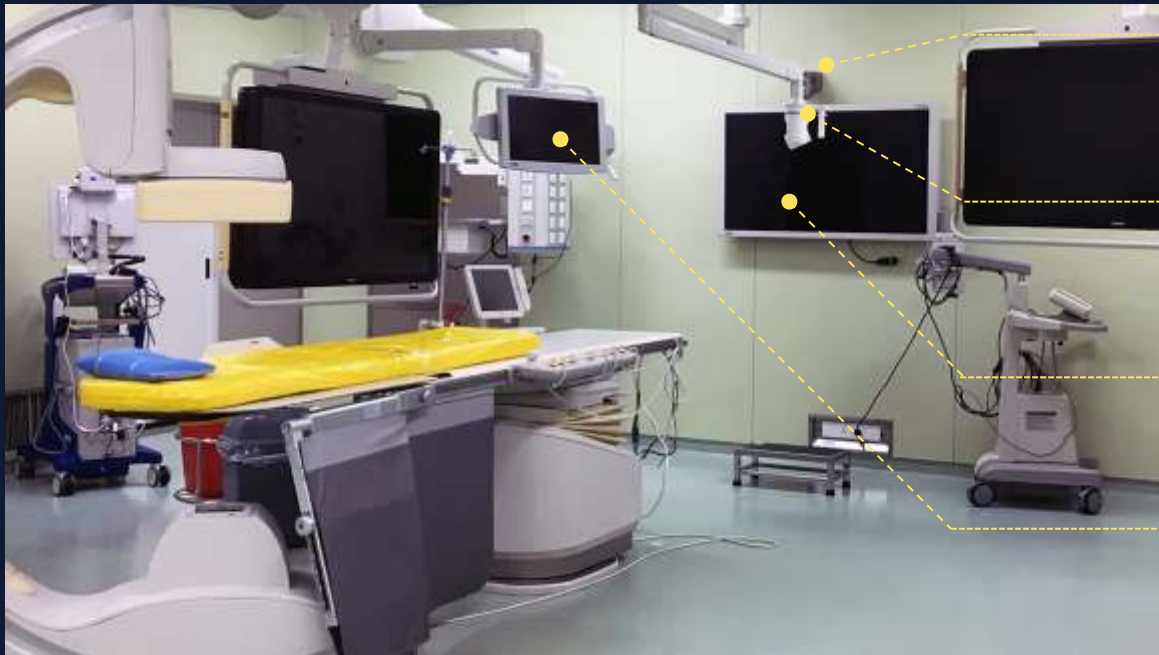


Cath Lab
Equipped with **GE IGS-730**



03

Implementation



Camera of Scene

Camera of Surgery Field

Large Monitor for Assistant

Monitor for Operator

Cath Lab
equipped with PHILIPS FD-20



Touchscreen Control panel



03

Implementation



Hybrid Operation Room
Equipped with **SIEMENS Zeego**





03

Implementation



Touchscreen
Control Panel

Camera of
Surgery Field

Double-Monitor
for Operator

Monitor for
Assistant

Projection Screen

Hybrid Operation Room
Equipped with **SIEMENS Zeego**



Touchscreen
Control panel

04

Utility

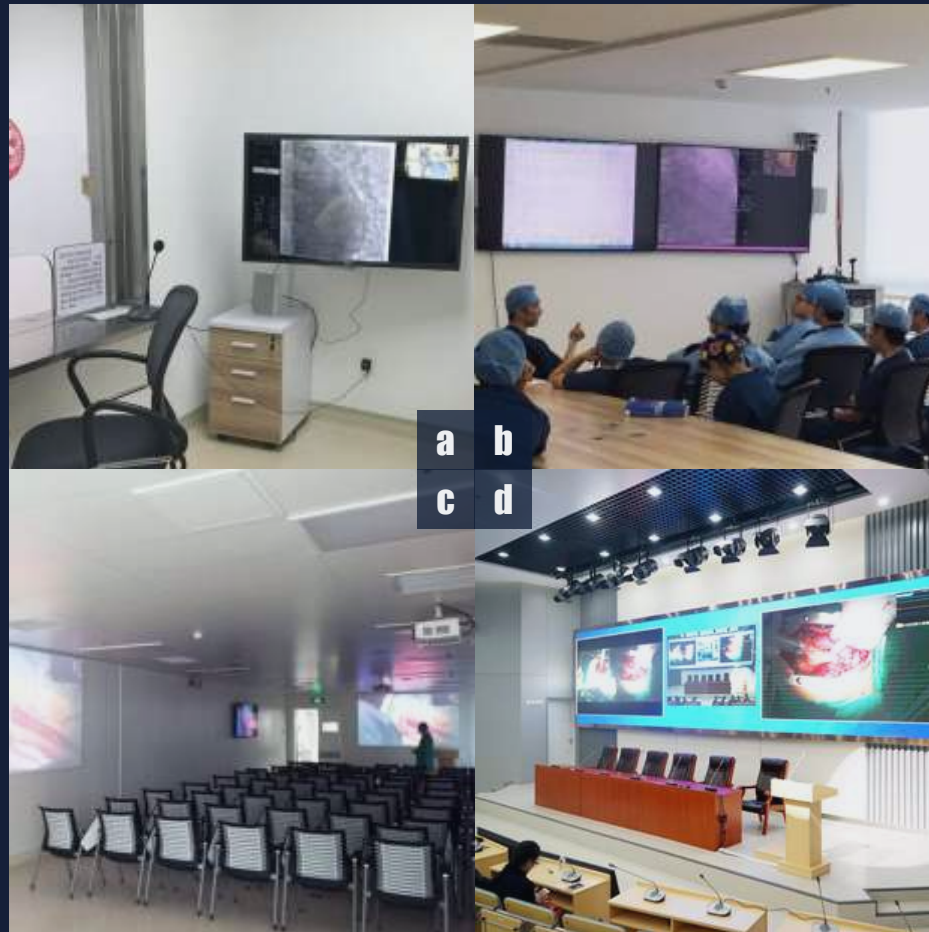
Cath Lab



Studio



Hybrid Operation Room



- a** Conversation Room > Talking with families of patient
- b** Angiographic Review Room > Regular discussion
- c** Demonstration Room > Live broadcast teaching
- d** Lecture Hell > Academic communication



04

Utility



Workshop



Nurse concentrated in the procedure



Operator viewing the image

04

Utility



Live broadcast over
the network



Live broadcast
on mobile platform



04

Utility



04

Utility



CIT 2016

Image acquisition
at the cath labs

Live transmission
at the conference



Functionally Integrated Platform

Integration

Digitization

Visualization

Tendency

- A contemporary trend in developing interventional platforms
-

Responsibility

- A valuable tool in promoting education and demonstrating daily works
-

Foundation

- A foundation in bridging current practice to intelligent medicine