



ROBOTICS FOR TELE-HEALTH AND TELE-SURGERY IN PAKISTAN

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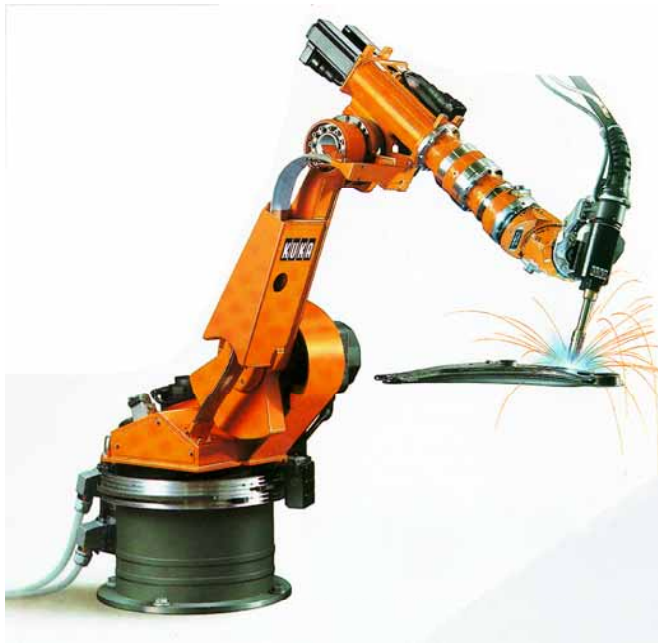


BACKGROUND

- Robotics during early days
- Robotics today
- Robotics for Surgery
- Robotics for Tele-Surgery



ROBOTICS DURING EARLY DAYS



ROBOTICS TODAY



ROBOTICS FOR SURGERY



OBJECTIVES

- Development of a Tele-Surgical Training Robot and Simulator
 - Cost Effective
 - Training of Minimally Invasive Surgical Procedures (MIS)
 - Training of Robotic Surgery
 - Training with Haptic Feedback
- Deployment in Pakistan for training purposes initially
- Deployment for Tele-Surgical Operations



METHODOLOGY

- Precision & Accuracy
 - Using software and hardware approach for attaining accuracy and precision
- Cost Effective
 - Using Open Source Technology
- Software technology
 - Open Source Software
 - Quality Assurance - how
- Hardware technology
 - Components
 - Build from scratch?



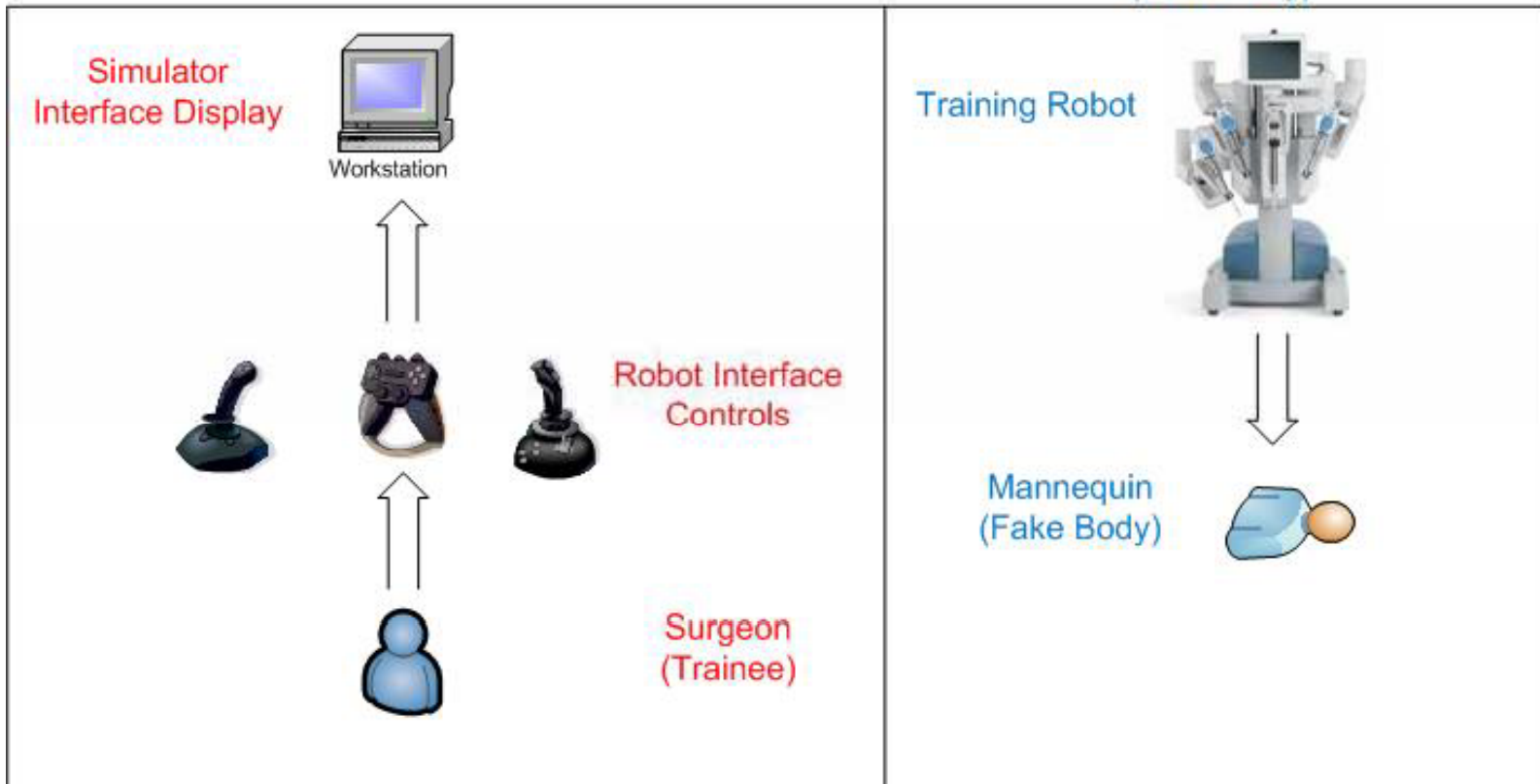
METHODOLOGY - COMPONENTS

Simulator

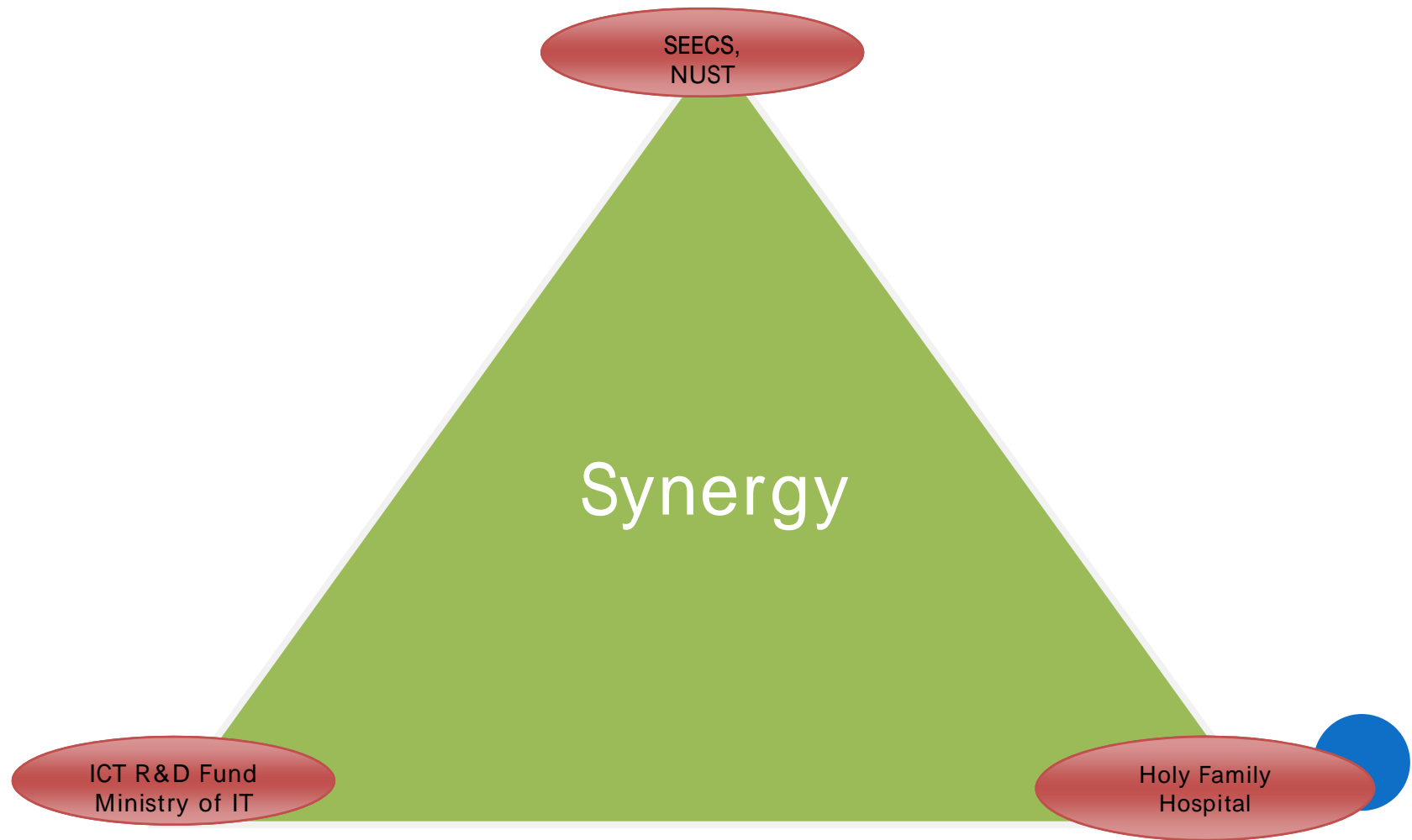
Simulator with Virtual Environment

Training Robot

Surgical Training Robot used with mannequin (Fake Body)



ACTIVE RESEARCH COLLABORATION

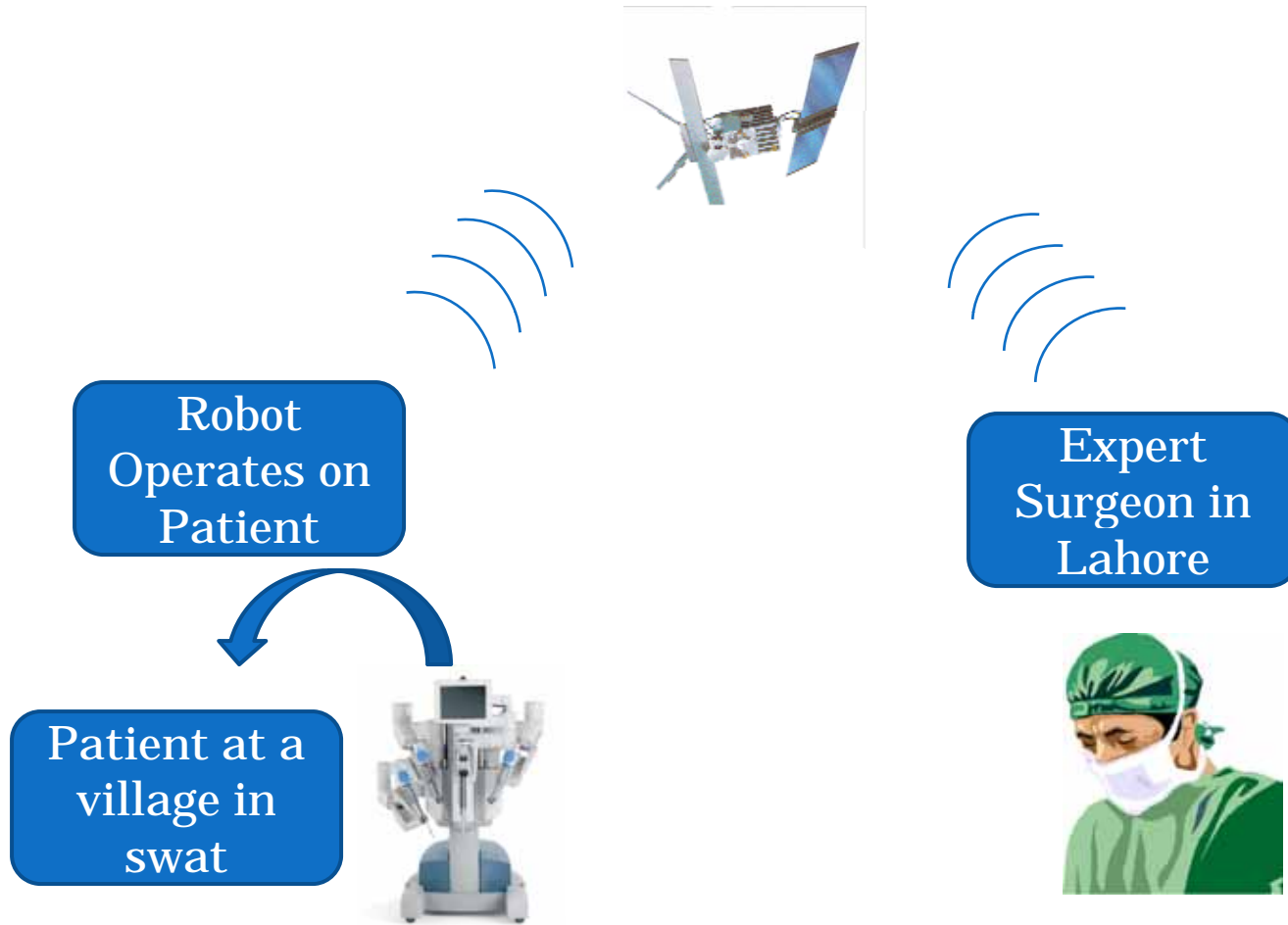


RESULTS

- Ongoing Research
- Collaboration between
 - SEECS
 - Tele-Medicine and E-Health Training Center, Holy Family Hospital
 - ICT R&D Fund
- Outcomes
 - Indigenously built Surgical Robot and Simulator
 - Cost effective with commercial potential



AN EXAMPLE



LEARNING OBJECTIVES

- Creating expertise in the field of robotics and tele-health
- Deployment on a large scale
 - For training of surgeons
 - Tele-surgery
 - Tele-mentoring



CONCLUSION

- Tremendous Commercial Potential
- Great service to the Pakistani People
 - Quality HealthCare at your doorstep
- Saving Huge infrastructure costs for the government
- Saving travel costs and trouble for patients
- Creating a trend for active research in the area of intelligent Robotics
 - (SMART Lab)



QUESTIONS / COMMENTS

- Contact

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<http://smart.seecs.edu.pk>

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