

**Collaborative Engineering**

### Functionality – TKP System



- Visualization
- Motion Animation
- Cross Section
- Transparency
- Collision Detection

*OrthoCAD Lab, I.I.T. Bombay*

**Functionality Study – Visualization**

- Visualization



**Functionality Study – Flexion**

- Visualization
- Flexion



**Functionality Study – Rotation**

- Visualization
- Flexion
- Rotation



**Functionality Study – Motion Limits**

- Visualization
- Flexion
- Rotation
- Limits – Flexion



$0 - 120^\circ$

**Functionality Study – Motion Limits**

- Visualization
- Flexion
- Rotation
- Limits – Flexion
- Limits – Rotation



$0 \pm 5^\circ$

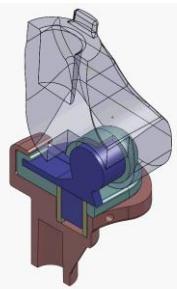
### **Functionality Study – Transparency**

- Visualization
- Flexion
- Rotation
- Limits – Flexion
- Limits – Rotation
- Transparency



### **Functionality Study – Cross Section**

- Visualization
- Flexion
- Rotation
- Limits – Flexion
- Limits – Rotation
- Transparency
- Cross – Section



### **Functionality Study – Combined**

- Visualization
- Flexion
- Rotation
- Limits – Flexion
- Limits – Rotation
- Transparency
- Cross – Section



### **Functionality Study – Exploded Views**

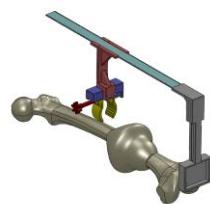
- Visualization
- Flexion
- Rotation
- Limits – Flexion
- Limits – Rotation
- Transparency
- Cross – Section
- Assembly



### **Functionality Study – Process**

- Visualization
- Flexion
- Rotation
- Limits – Flexion
- Limits – Rotation
- Transparency
- Cross – Section
- Assembly
- Instrumentation

Femoral Jig



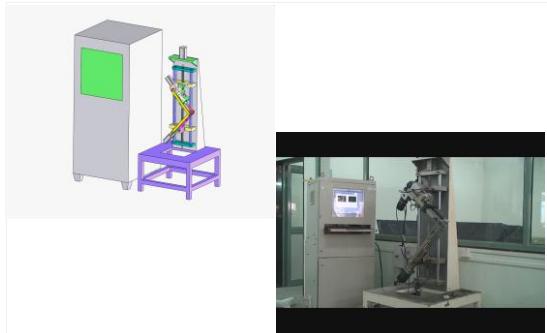
Tibial Jig



### **Functionality Study – Process**

- Visualization
- Flexion
- Rotation
- Limits – Flexion
- Limits – Rotation
- Transparency
- Cross – Section
- Assembly
- Instrumentation

### **Functionality Study – Machine Simulation**



### **Functionality Study – Rapid Prototypes**

- Visualization
- Flexion
- Rotation
- Limits – Flexion
- Limits – Rotation
- Transparency
- Cross – Section
- Assembly
- Instrumentation
- Machine Simulation
- Prototyping – Form & Function

