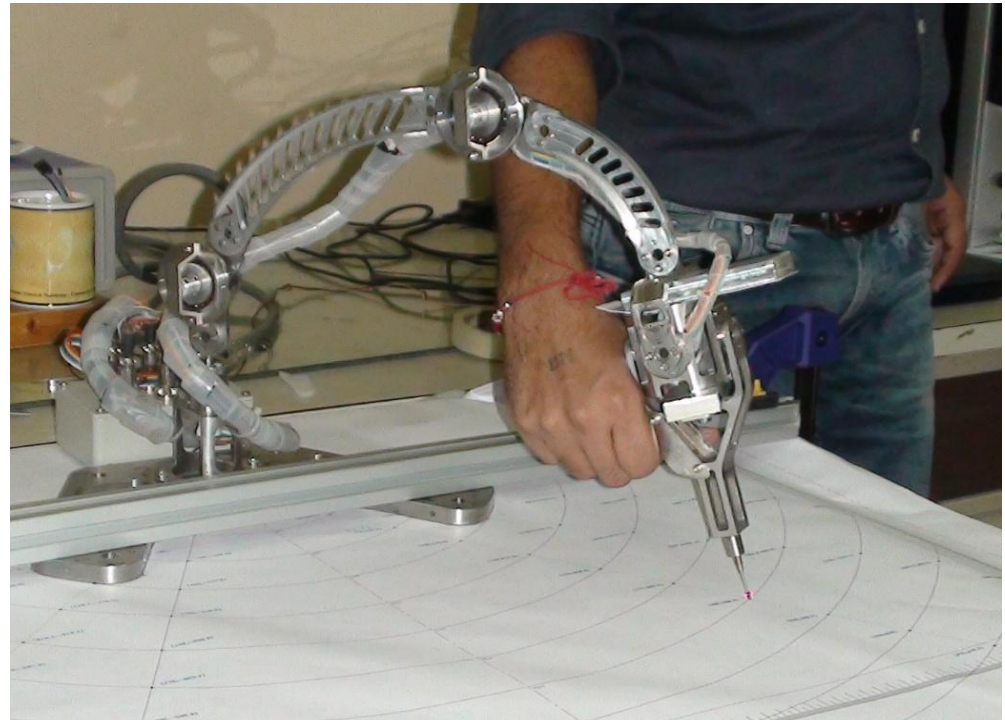


Serial Coordinate Measuring Mechanism (SCMM)

SCMM is a 5 DOF passive electromechanical device used to measure the (X-Y-Z) co-ordinates of a spatial point as well as a 3D line vector passing through the point with respect to its base coordinate system. This device can be used for patient registration in Neuro-Surgical procedures, for reverse engineering applications involving feature (surface and volume) generation from a given object and as an educational kit for enhancing imagination and visualization.

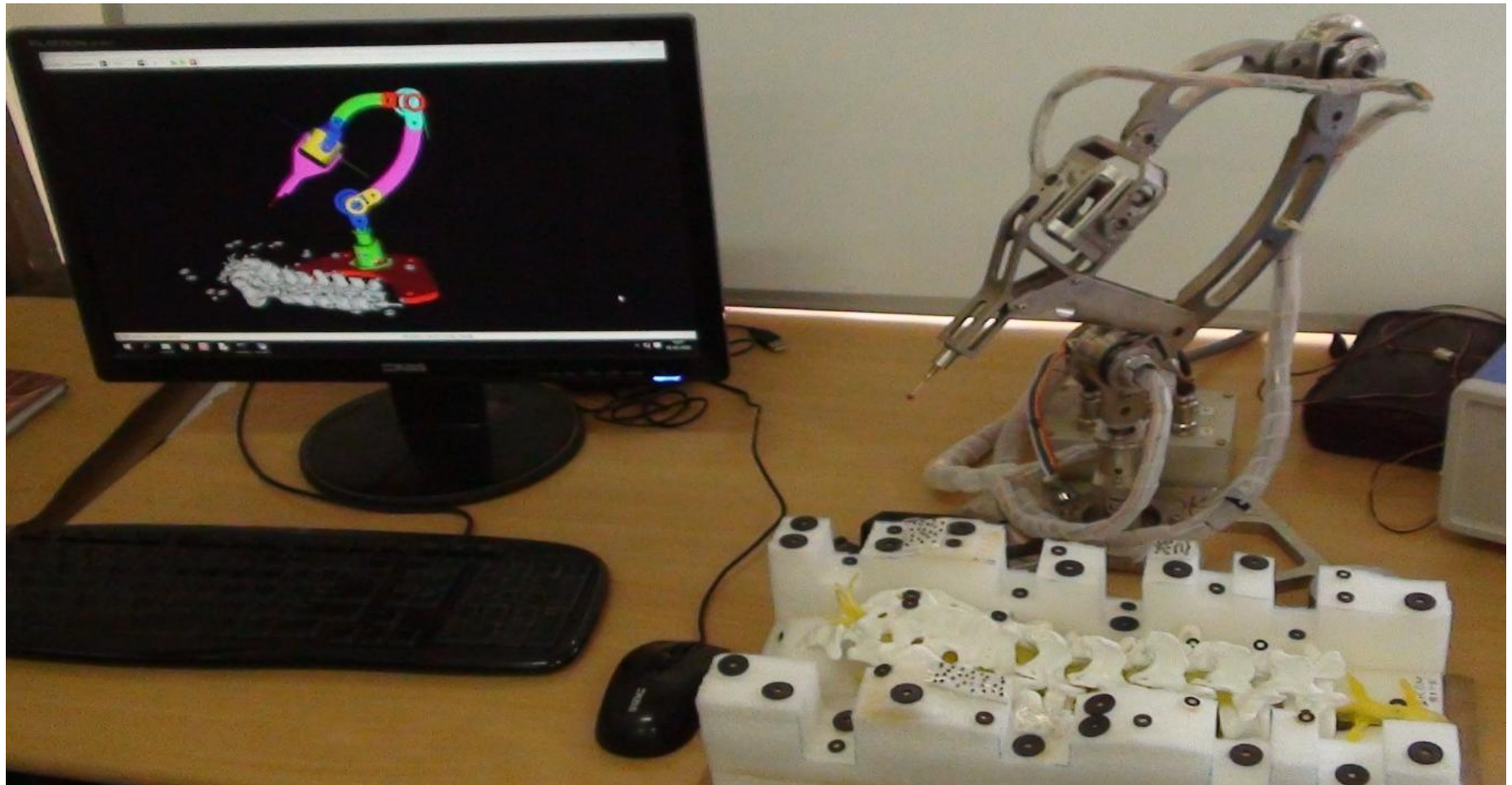


Prototype of SCMM

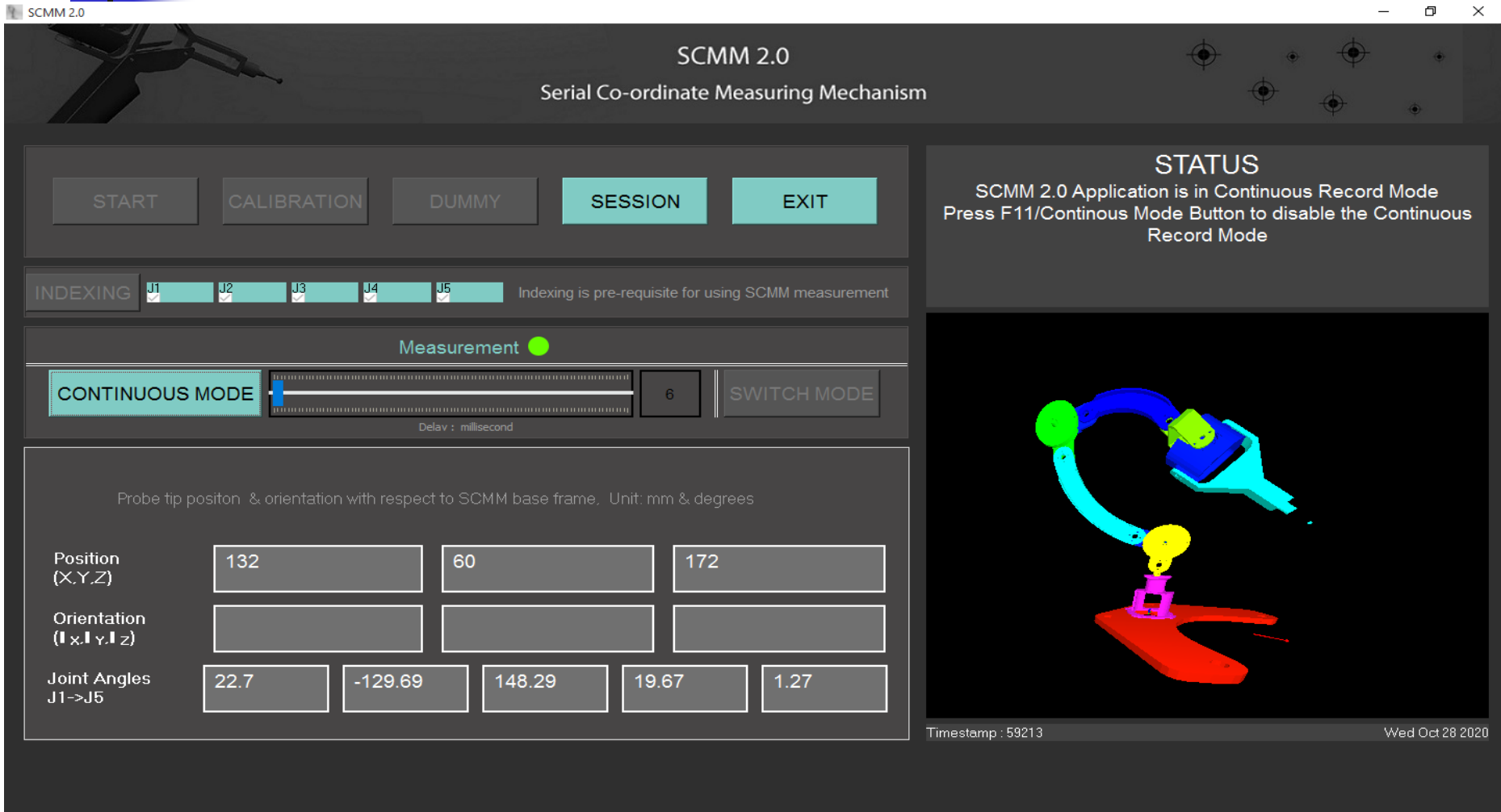


SCMM during calibration procedure

Neuronavigation procedure demonstrated for SCMM on a spine phantom



Guided User Interface (GUI) during running of SCMM



The screenshot shows the SCMM 2.0 GUI with a dark theme. At the top, the title bar reads 'SCMM 2.0'. The main window title is 'SCMM 2.0 Serial Co-ordinate Measuring Mechanism'. On the left, there are buttons for 'START', 'CALIBRATION', 'DUMMY', 'SESSION' (highlighted in teal), and 'EXIT'. Below these are 'INDEXING' controls for joints J1 through J5, each with a checked checkbox. A 'Measurement' indicator shows a green dot. The 'CONTINUOUS MODE' section features a slider set to 6 milliseconds and a 'SWITCH MODE' button. The bottom left displays probe tip position and orientation data in a table. The bottom right shows a 3D model of the SCMM arm and probe. A status box on the right indicates the application is in Continuous Record Mode.

SCMM 2.0
Serial Co-ordinate Measuring Mechanism

STATUS
SCMM 2.0 Application is in Continuous Record Mode
Press F11/Continuous Mode Button to disable the Continuous Record Mode

START CALIBRATION DUMMY **SESSION** EXIT

INDEXING J1 J2 J3 J4 J5 Indexing is pre-requisite for using SCMM measurement

Measurement ●

CONTINUOUS MODE 6 SWITCH MODE
Delay : millisecond

Probe tip position & orientation with respect to SCMM base frame. Unit: mm & degrees

Position (X,Y,Z)	132	60	172		
Orientation (I _x ,I _y ,I _z)					
Joint Angles J1->J5	22.7	-129.69	148.29	19.67	1.27

Timestamp : 59213 Wed Oct 28 2020