

CASE STUDY

Measurement of knee joint angle for Healthy Subjects on a treadmill

Protocol

Trials were carried out by the University of Salford under controlled clinical trials conditions.

Two healthy subjects were asked to walk and run at a variety of speeds on a treadmill.

Optical data using the VICON system was collected for validation studies.

ETB Sensor system

Each subject wore one sensor unit on the leg below the knee and the other sensor above the knee, as shown below.



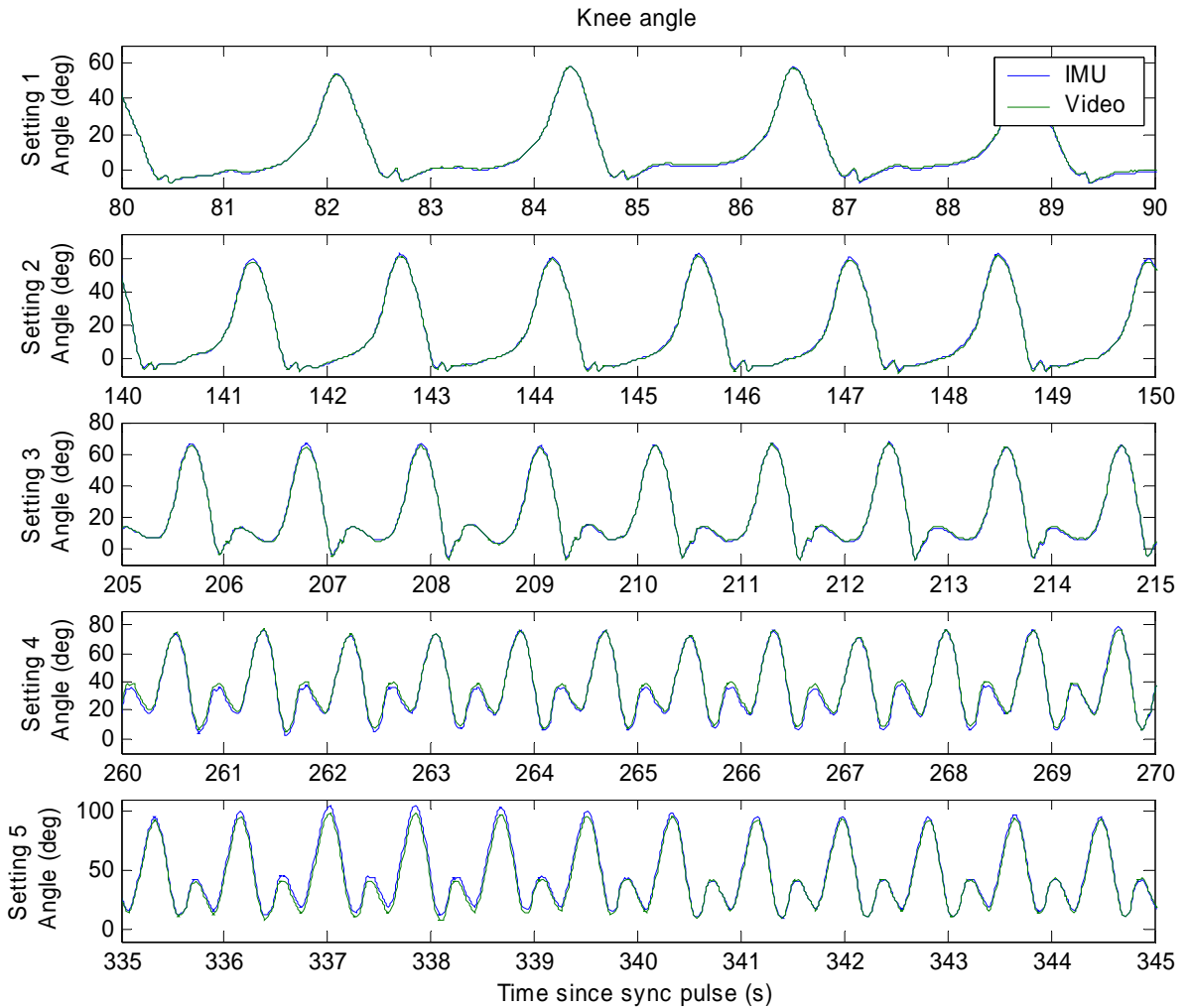
Sensor module



Person with the units mounted walking on the treadmill

Validation

On the treadmill the knee joint angle for 2 different subjects and 5 different walking and running speeds was found to be within 3 degrees of that measured using the Gold standard optical system, VICON.



Findings

The joint angle over time can be easily determined from the two units mounted each side of the knee joint. This system can be used overland as well as on a treadmill, making it possible to monitor people in their normal environment.