

**DESIGN AND IMPLEMENTATION OF A LASER TRACKING SYSTEM USING IEEE1451
STANDARD INTERFACE THROUGH BLUE TOOTH TECHNOLOGY**

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Abstract: *This paper presents the design of a laser tracking system and its implementation using an IEEE 1451 standard interface through Bluetooth technology which enables the user to monitor laser tracking at a remote place. The applications of which include the field of robotics, aero space industries, metallurgical industries and in defense. Laser tracking systems normally work on the amount of back scattered light during a rapid scan around the presumed object position. The proposed work is to make some modifications in the tracking mechanism. The suggested modifications are increasing the operating frequency of beam steering mirrors, increasing the contrast between the tracking object and the surrounding objects, using Kalman filtering techniques to accurately estimate motion and orientation of the tracking object. Final step is to implement the improved laser tracking system with IEEE 1451 standard interface. IEEE1451 standard consists of a Smart Transducer Interface Module (STIM) and Network Capable Application Processor (NCAP). STIM connects the signal from the laser tracking system to the network through NCAP. Programming of NCAP is done to make the system work in Bluetooth environment.*

Key words: *Laser tracking system, Kalman filter, IEEE 1451 standard, STIM, NCAP.*