

## **THREE-DIMENSIONAL MODELING OF TRADISIONAL MALAYSIAN WOODEN ENGRAVING ARTS USING CLOSE-RANGE LASER SCANNING TECHNOLOGY**

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### **ABSTRACT :**

As a tourism country, Malaysia was enriched with historical monuments and artifacts. One of the famous artifact is the wooden engraving art which was hand built by wooden engraving art experts. The art was unique which contained some important information about the history at the time it was built. In Malaysia, the recording of the details information about historical artifact like wooden art was fully organized by the National Museum and state branches museum. The information about the art was recorded manually using camera and special form. The documents were opened for un-safety condition and the recording (by camera) was in two dimensional, while the wooden engraving is in three dimensional. Three-dimensional laser scanning system was known as an excellent method to record the three-dimensional object in its true characteristic. It has been used to record historical monuments and artifacts for producing replica of that objects. In this paper, the high precision Minolta Vivid 910 laser scanner was used to acquire the three dimensional model of the wooden engraving. Few scans have been done to the object and the Interactive Closest Points (ICP) method was used to merge the scan data. The built in CCD camera was used to capture the real texture of the object and was transformed to the point clouds datasets for a complete three-dimensional model. The analysis involved with the comparison of slope distances measured on the computerized model and the real model (using MicroScribe 3D digitizer and calipers). The results show that the laser scanner was fast, non-invasive and reliable to be used in recording the wooden engraving art.