ABSTRACT

Explanatory note 57 pages , 46 pictures, 11 sources, 3 posters.

LASER SCANNING, GEOMETRY OBJECT CONTROL, THREE-DIMENSIONAL SCANNER, CLOUD POINT, 3D SCANNING, RECONSTRUCTION METHODS

An analytical review of the technology of three-dimensional scanning and an explanation of the principle of operation of 3D scanners were conducted in this work. The theoretical bases of laser scanning are indicated and the analysis of three-dimensional reconstruction methods is presented.

The object of the development is to create an installation for the process of scanning. Based on the Ciclop project, the necessary elements were selected and a detailed overview of the Horus software was made. The main stages of designing a three-dimensional scanner are given in the explanatory note.

The purpose of the work is to familiarize yourself with a laser 3D scanner. Conduct a scan process by pre-calibrating the device. Obtaining a scan result in the form of cloud points. Explanation of prospects and practical application of scans.

In this paper, after reviewing the 3D scan, presents a number of important examples of its use. Particular importance 3D scanners acquire in the industry, including not subject to the control of the geometry of OK, as well as archeology, cinema, medicine and other spheres. Also presented the theoretical information on the reproduction of scans. The conclusions summarize the work.