

TECHNOLOGY OF DENTAL WORK SCANNING

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Abstract: This article shows how the dental field has evolved to present dental impressions scanning technology for a particular type of dental work. This paper will present the main scanning device, details about it, how to scan a dental impressions and last but not least we have the import of the scanned paper in a design program.

Keywords: 3shape device, dental impressions, dental work

Introduction

Classic dental impressions are obtained by placing the toothpaste in the patient's mouth. This putty hardens slowly, the patient must bite, while the material solidifies on the shape of the teeth so that the imprint remains in the substance, resulting in molding.

After that, a long process of preparing the mold for restorations begins, and sometimes the resumption of the dental impression may be necessary to correct any errors.

1. Dental scan

A solid CAD/CAM system that combines scanning with design software is the only way to meet the future demands of your customers. 3Shape Generation Red E lab scanners provide high ISO documented accuracy, high speed, and many advanced scanning features. From the affordable E1 scanner to the high-performance E4 scanner, 3Shape's scanner portfolio offers a solution perfectly matched to the needs of your lab.

Impression scans were performed using the 3shape E3 device.

It features 2 x 5.0 megapixel cameras, the accuracy is 7 nanometers, the scanning texture is done in color, it can scan both plastered models and dental fingerprints, which will be mentioned in this article [1].

A scan of a dental work, DCR type (corono-radicular device)- the dental pivot is a prosthetic device that aims to restore fractured or decayed teeth, which will later be covered by a dental crown., will be performed with the 3Shape scanner - E3 series. Figure 1 shows the interface of the program with which the scanner works, you can see details, such as tooth identification, project series, scan details.

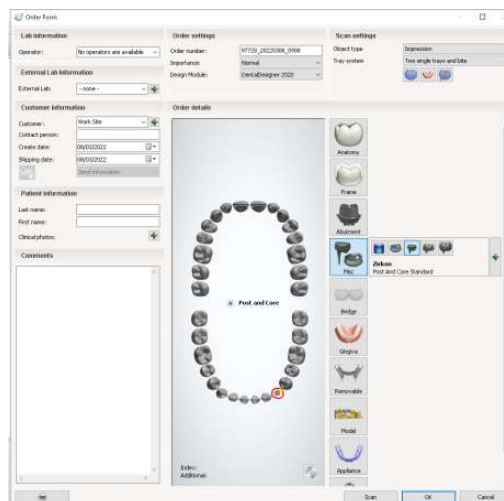


Figure 1. 3shape software interface

In order for the DCR type work to be done correctly, it is necessary to scan the dental impressions from the oral cavity - upper jaw, lower jaw and necessarily the bite, in order to observe the correct dimensions of the work (figure 2, figure 3, figure 4).

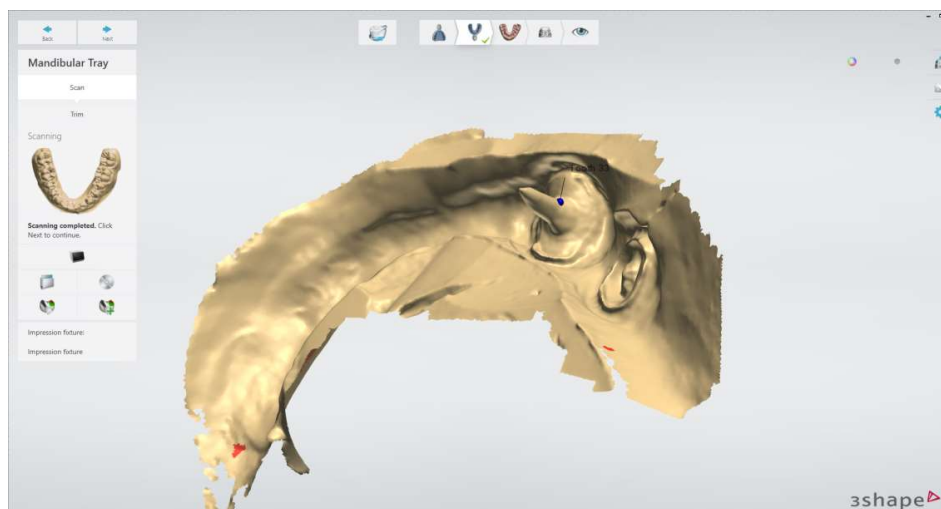


Figure 2. Lower jaw



Figure 3. Upper jaw

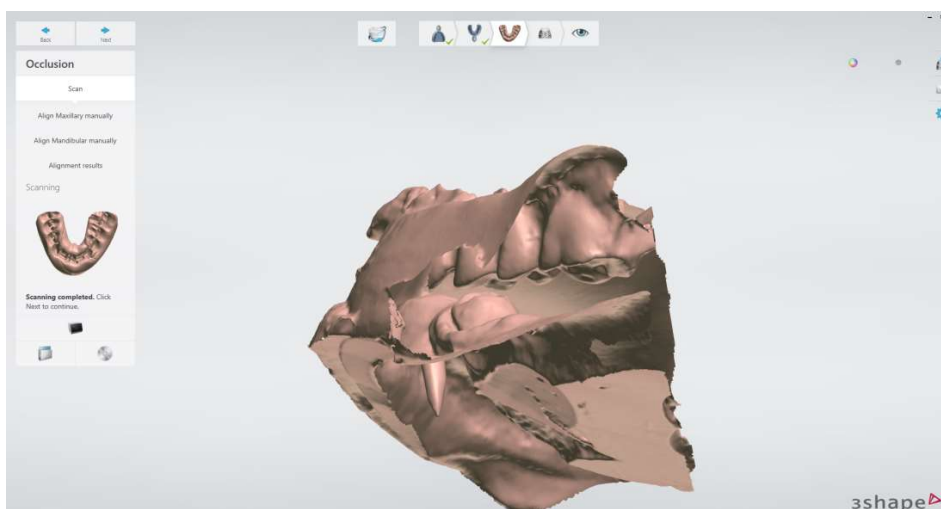


Figure 4. Bite- occlusion

The dental impression, in which the future work (DCR) can be observed, scanned can be seen in figures 5, 6 and 7.



Figure 5. Upper jaw- dental impression



Figure 6. Lower jaw- dental impression- top view



Figure 7. Lower jaw- dental impression- occlusal view

2. Importing scans

The import of the scans from the 3shape software into Exocad - the program with which the DCR type work will be designed is done with the help of the functions identified in figure 8.

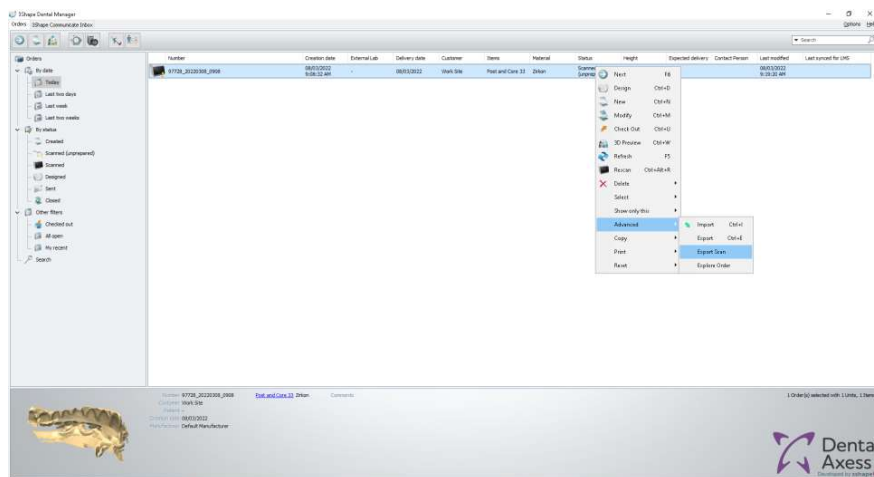


Figure 8. Import scans- 3shape soft

Figures 9 and 10, shows how the scan was imported into the dental software design software.

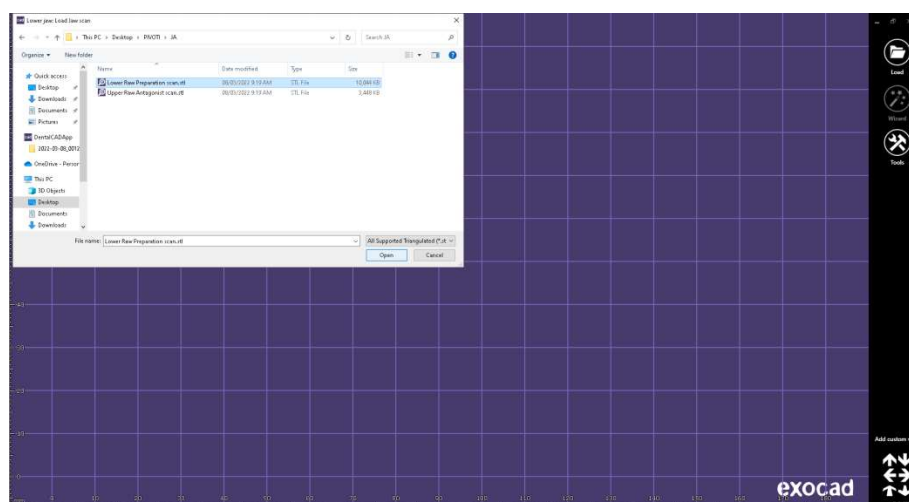


Figure 9. Import scans- ExoCAD

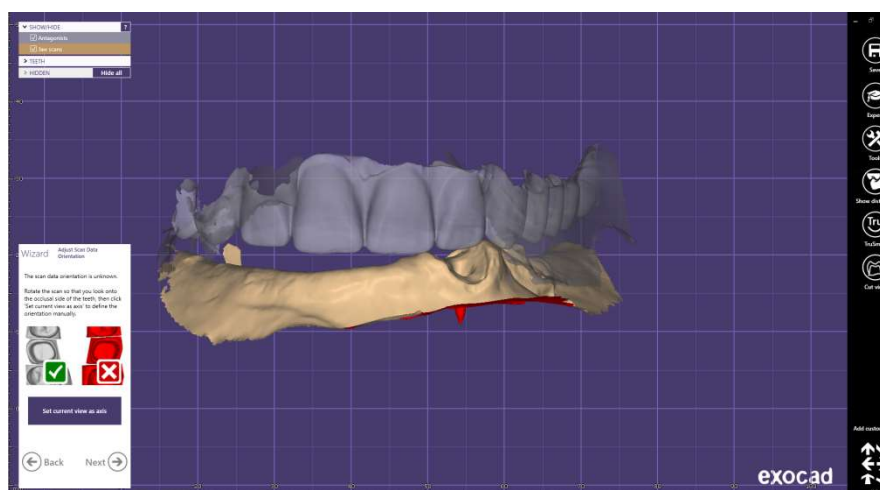


Figure 10. Import scans- ExoCAD- upper and lower jaw

Conclusions

The transition from traditional dental technology to virtual technology, such as scanning and virtual 3D design, determines the following facilities: speed in carrying out the work, the patient does not wait long after a dental work, raw materials used are few dental impression, observation of details, at the level of dental work, very high accuracy, errors are relatively few, only the inattention of the observer during the scan could lead to errors - wrong overlaps, as an example.

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