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Date: September 28th 2005

**ISO/TC106 Dentistry Meeting in Rome,
26th September- 1st October, 2005**

ISO/TC106/ad-hoc Group: “Dental CAD/CAM systems”

Place: Cervini room at Sheraton Golf Parco de Medici, Rome
Chairman: Prof.dr ir J.M. van der Zel, the Netherlands
Secretary: Prof.dr A.J. Feilzer, the Netherlands

The meeting was opened at 9:05 by the convenor prof. dr J.M. van der Zel.

This first meeting on the subject of dental CAD/CAM systems was attended by 28 experts from 10 countries. The task of the ad-hoc working group is to reveal the field of dental CAD/CAM system with respect to the need for specific dental standards. The convenor gave a short explanation to the goal of the meeting and clarified first a guidance document “Validation of CAD/CAM systems”, prepared by the convenor. In this white paper three areas of interest were described; dental surface digitizing systems, electronic data management, and devices for computerized manufacturing for dental use. In the document many relevant items are explored, for example the work undertaken in similar bodies, liaisons deemed necessary with other bodies, items to be included in the scope, purpose and justification, relevant documents and scientific references.

It was recognized that the original scope of the ad-hoc working group is wider than presented in the white paper. The meeting discussed the missing items and came to the following overview:

Process related division:

1. Surface Digitization Devices
2. CAD/CAM software
3. Interface-management (electronic data management)
4. Computer Aided Manufacturing Devices
5. Materials used in CAD/CAM
6. Disinfection/Sterilization of intra-oral devices (FDA 'guidance document')
7. Electrical safety (covered by IEC).

Fields of application:

1. Prosthetic dentistry/Restorative dentistry
 - a. Full dentures
 - b. Crown and Fixed Partial Dentures
 - c. Gnathology
 - d. Color determination
1. Orthodontic CAD/CAM applications
2. Implant planning
3. Maxillo-Facial/Oral surgery

It was clear that not all items could be intensely discussed at this meeting. Before the discussion started three representative presentations of 20 minutes each were given. This provided insight in a calibration method for dental surface digitization, an extensive overview of existing (NIST) standards on optical measurement and an overview of state-of-the art dental digitizers.

The opinion of the participants showed a wide variety of the need for specific dental CAD/CAM standards. Some participants strongly emphasize the need for specific standards, as well as others who do not see a need at all.

During the meeting three items for standard development were recognized.

1. Digitizing quality
2. Interface between CAD and CAM (A standard for the data format of scan-design data)
3. Evaluation of system quality from the customer's perspective (documentation of accuracy). Because in a closed system (scanner, CAD and CAM form a system) only the quality of the end result is relevant

Due to the varying opinions no consensus could be reached on the proposal, also because there were no documents prepared on which a more detailed discussion could be based. For that reason it was proposed that the convenor and secretary will write three new work item proposals on these topics, which will be submitted by the Dutch national body (NEN), after circulation to the participants for comments, to the P-members of ISO TC 106. When approved by the voting procedure it is up to the ISO TC 106 meeting in Beijing to decide whether the task can be done by an existing WG or whether a special WG or SC has to be setup.

The chairman thanked the invited experts for their contribution and expressed the hope that they will continue to participate in future work.

The meeting closed at 12:15 hrs.

Respectfully submitted,

Prof.dr ir Jef M. van der Zel