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(71) Applicants and

(72) Inventors: **SACHDEVA, Rohit** [US/US]; 2605 Court-side Lane, Plano, TX 75093 (US). **SPORBERT, Peer** [DE/DE]; Hobrechtstrasse 38, 12047 Berlin (DE). **MAETZEL, Stephan** [DE/DE]; Mittenwalder Strasse 7, 10961 Berlin (DE). **IMGRUND, Hans** [DE/DE]; Wilhelmshavener Str.25, 10551 Berlin (DE). **TANEJA, Sanjeev** [US/US]; 2220 All Saints Lane, Plano, TX 75025 (US). **ABRAHAM, Charles, L.** [US/US]; 3300 Callaway Court, Richardson, TX 75082 (US). **GETTO, Phillip** [US/US]; 5104 Walter Haven Lane, Plano, TX 75093 (US).

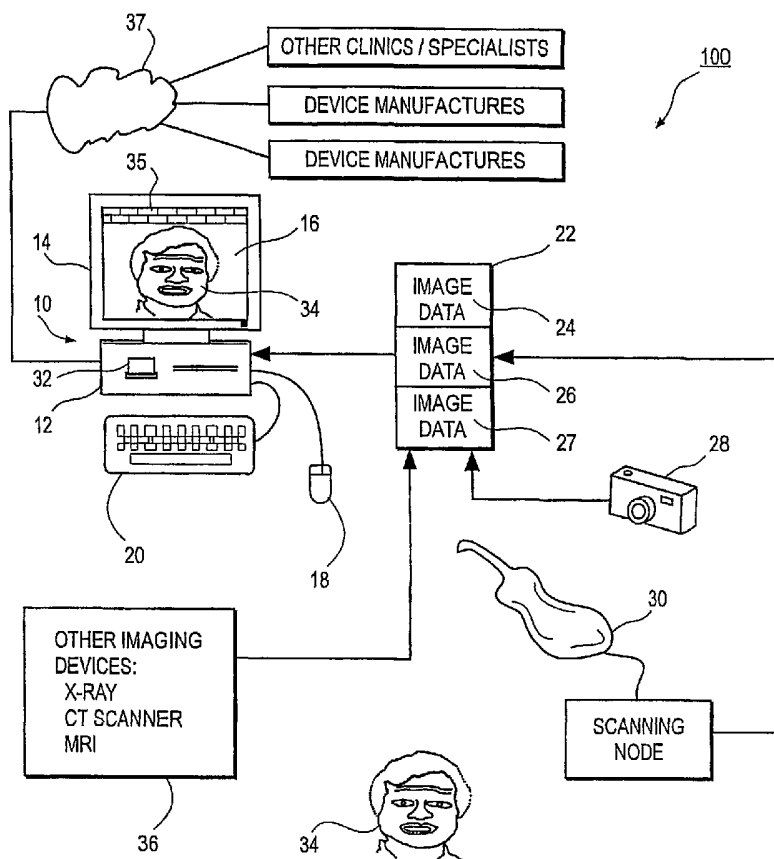
(74) Agent: **SHAH, Jasvantrai, C.**; Orametrix, Inc., 2350 Campbell Creek Boulevard, Suite 400, Richardson, TX 75082 (US).

(71) Applicant (for all designated States except US):
ORAMETRIX, INC. [US/US]; 2350 Campbell Creek Boulevard, Suite 400, Richardson, TX 75082 (US).

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(54) Title: UNIFIED WORKSTATION FOR VIRTUAL CRANIOFACIAL DIAGNOSIS TREATMENT PLANNING AND THERAPEUTICS



(57) Abstract: An integrated system is described in which digital image data of a patient, obtained from a variety of image sources, including CT scanner, X-Ray, 2D or 3D scanners and color photographs, are combined into a common coordinate system to create a virtual three-dimensional patient model. Software tools are provided for manipulating the virtual patient model to simulation changes in position or orientation of craniofacial structures (e.g., jaw or teeth) and simulate their affect on the appearance of the patient. The simulation (which may be pure simulations or may be so-called "morphing" type simulations) enables a comprehensive approach to planning treatment for the patient. In one embodiment, the treatment may encompass orthodontic treatment. Similarly, surgical treatment plans can be created. Data is extracted from the virtual patient model or simulations thereof for purposes of manufacture of customized therapeutic devices for any component of the craniofacial structures, e.g., orthodontic appliances.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61C 3/00

US CL : 433/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 433/6, 18, 20, 24

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,575,805 A (MOERMANN et al) 11 March 1986, see entire document.	11, 12, 31, 40, 41
Y	US 5,975,893 A (CHISHTI et al) 02 November 1999, see entire document.	13, 17, 18, 30, 38, 39, 42, 45-52
X	US 6,081,739 A (LEMCHEN) 27 June 2000, see entire document.	1-3, 5-10, 14-17, 19- 22, 24-27, 29, 32-37, 43, 44, 45-52
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Y		4, 11-13, 18, 23, 28, 30, 31, 38-42, 45-51
X	US 6,283,858 A (HAYES, Jr. et al) 04 September 2001, see entire document.	1-6, 14-16, 19, 20, 28, 52-56

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P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Ralph Lewis

Telephone No. (571) 272-4712