US006791572B1

(12) **United States Patent**
Cloney et al.

(10) **Patent No.: US 6,791,572 B1**
(45) **Date of Patent: Sep. 14, 2004**

(54) **GENERATING MEDIA OUTPUT DURING BIOS BOOT-UP**

(75) Inventors: **Peter Cloney**, San Jose, CA (US); **Wolfgang Dunsdon**, Santa Clara, CA (US); **Glenn E. Jystad**, Dove Canyon, CA (US); **Myungseok Kim**, Irvine, CA (US)

(73) Assignee: **Phoenix Technologies Ltd.**, Milpitas, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/458,613**

(22) Filed: **Dec. 10, 1999**

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/336,509, filed on Jun. 18, 1999.

(51) **Int. Cl.**[7] **G06F 17/00**; G06F 9/445; G06T 1/00

(52) **U.S. Cl.** **345/619**; 418/474; 418/501; 418/522; 418/530; 713/1; 713/2; 707/104.1

(58) **Field of Search** 345/418, 473, 345/619, 621, 474, 636, 581, 501, 503, 522, 530, 547, 551, 553, 556, 537, 559; 711/1; 703/24; 713/1, 2; 707/103–104.1; 700/83, 5, 2, 19, 87, 88; 709/208, 221, 321; 714/723

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,305,437 A * 4/1994 Fritze et al. 345/520
5,307,451 A 4/1994 Clark
5,414,809 A 5/1995 Hogan et al.
5,719,761 A * 2/1998 Gatti 364/130
5,802,361 A * 9/1998 Wang et al. 345/600
5,812,394 A * 9/1998 Lewis et al. 364/146
5,818,444 A 10/1998 Alimpich et al.
5,977,978 A * 11/1999 Carey 345/419
5,978,507 A * 11/1999 Shackleton et al. 382/195
5,982,383 A * 11/1999 Kumar 345/440
5,995,916 A * 11/1999 Nixon et al. 702/182
6,026,433 A * 2/2000 D'Arlach 709/217
6,049,871 A 4/2000 Silen et al.
6,053,951 A * 4/2000 McDonald 717/1
6,148,387 A * 11/2000 Galasso et al. 711/203
6,182,083 B1 * 1/2001 Scheifler et al. 707/103
6,195,095 B1 2/2001 Beer et al.
6,195,591 B1 * 2/2001 Nixon et al. 700/83
6,232,974 B1 * 5/2001 Horvitz 345/419
6,237,045 B1 * 5/2001 Enomoto 709/328
6,243,172 B1 * 6/2001 Gauthier et al. 358/1.18
6,262,729 B1 * 7/2001 Marcos 345/335
6,272,627 B1 8/2001 Mann
6,275,935 B1 * 8/2001 Barlow 713/182
6,304,272 B1 10/2001 Schanel et al.
6,373,498 B1 * 4/2002 Abgrall 345/619
6,446,139 B1 * 9/2002 Leung et al. 710/1
6,449,682 B1 * 9/2002 Toorians 711/100
6,452,599 B1 * 9/2002 Campbell 345/522
6,487,656 B1 * 11/2002 Kim et al. 713/2
6,519,659 B1 * 2/2003 Stevens 710/15
6,542,160 B1 * 4/2003 Abgrall 345/537

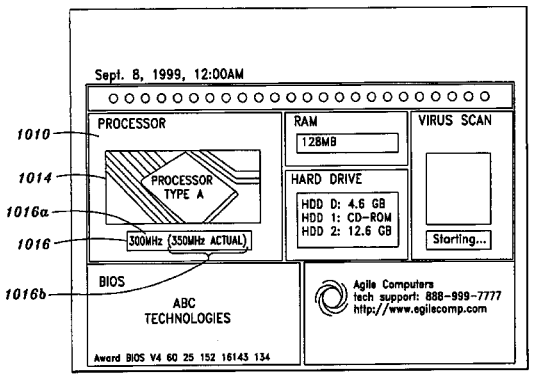
OTHER PUBLICATIONS

BIOS is used to Determine Processing Speed by Retrieving Device Parameters for Devices Other Than Processors Since BIOS can be used, to Determine Various Other Device Parameters (i.e., RAM, Mass Storage Devices, Video Graphics Cards, Sound Cards, etc.*

* cited by examiner

Primary Examiner—Matthew C. Bella
Assistant Examiner—Wesner Sajous

(57) **ABSTRACT**

The present invention is a method and apparatus to display information. The method comprises retrieving a first value representative of a first device parameter, and detecting a second value representative of a second device parameter. A template corresponding to a graphic object is retrieved from a storage. A graphic attribute that characterizes the graphic object is generated from the template. The first and second values displayed and an image is generated from the graphic object according to the graphic attribute.

60 Claims, 19 Drawing Sheets