



US008825722B2

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

(10) **Patent No.:** **US 8,825,722 B2**
(45) **Date of Patent:** **Sep. 2, 2014**

(54) **CALCULATION OF PROPERTIES OF OBJECTS/SHAPES ACROSS VERSIONS OF APPLICATIONS**

(75) Inventors: **Daniel Clay**, Newcastle, WA (US);
Michael Woolf, Seattle, WA (US);
Matthew Dorbin, Seattle, WA (US);
Stephanie Lorraine Horn, Bellevue, WA (US)

(73) Assignee: **Microsoft Corporation**, Redmond, WA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 285 days.

(21) Appl. No.: **13/350,118**

(22) Filed: **Jan. 13, 2012**

(65) **Prior Publication Data**

US 2013/0185339 A1 Jul. 18, 2013

(51) **Int. Cl.**
G06F 12/00 (2006.01)
G06F 7/00 (2006.01)

(52) **U.S. Cl.**
USPC **707/821**; 707/696; 707/795; 707/801

(58) **Field of Classification Search**
CPC G06F 11/368; G06F 3/0484; G06F 8/24;
G06F 8/71; G06F 9/4435
USPC 707/821
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

753,943 A * 3/1904 Clarke 229/68.1
5,655,121 A 8/1997 Delagi et al.
5,890,176 A 3/1999 Kish et al.

6,016,492 A * 1/2000 Saxton et al. 1/1
6,457,013 B1 * 9/2002 Saxton et al. 707/795
6,704,432 B2 * 3/2004 Eversole et al. 382/100
6,868,425 B1 * 3/2005 Bergstraesser et al. 1/1
6,915,301 B2 * 7/2005 Hirsch 717/100
7,257,772 B1 8/2007 Jones et al.
7,451,435 B2 11/2008 Hunt et al.
7,593,943 B2 * 9/2009 Clarke et al. 1/1
7,738,690 B2 * 6/2010 Liu et al. 382/135
7,941,659 B2 * 5/2011 Lam 713/2
2002/0059293 A1 * 5/2002 Hirsch 707/103 R
2002/0123992 A1 * 9/2002 Goldick 707/4
2003/0076978 A1 * 4/2003 Eversole et al. 382/100

(Continued)

OTHER PUBLICATIONS

“The StarOffice™ 6.0 Suite,” New Features Guide, author not available, obtained online Jul. 27, 2011 at <http://download.oracle.com/docs/cd/E19064-01/so6/816-5405/816-5405.pdf>, Jul. 2002, 34 pages.

“Collaborating With Previous Versions,” author not available, obtained online Jul. 27, 2011 at <http://technet.microsoft.com/en-us/library/cc179174%28office.12%29.aspx>, 4 pages.

(Continued)

Primary Examiner — Binh V Ho

(74) *Attorney, Agent, or Firm* — Steve Crocker; Jim Ross; Micky Minhas

(57) **ABSTRACT**

Systems and methods are disclosed in which a self-describing file is generated and utilized to provide applications with the ability to properly preserve unknown file content. A self-describing file may contain, or be associated with, an extension section that provides information that an application can use to properly calculate unknown file content. The extension section may include functions of formulas that the application can use to calculate values for data that the application would not otherwise support. This allows for the content of the self-describing file to be modified by an application that does not support all of the capabilities of the file while maintaining the integrity of the file and user experience when the file is subsequently accessed by a full featured application.

21 Claims, 8 Drawing Sheets

