

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 September 2001 (13.09.2001)

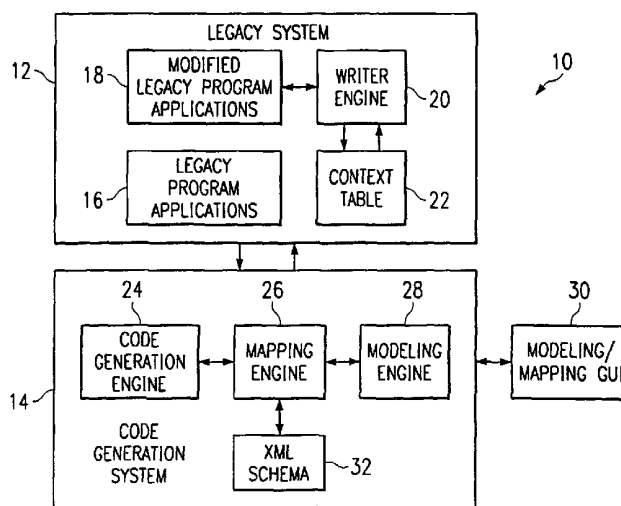
PCT

(10) International Publication Number
WO 01/067289 A3

- (51) International Patent Classification⁷: G06F 09/44
- (21) International Application Number: PCT/US01/07177
- (22) International Filing Date: 7 March 2001 (07.03.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/522,277 9 March 2000 (09.03.2000) US
- (71) Applicant: ELECTRONIC DATA SYSTEMS CORPORATION [US/US]; 5400 Legacy Drive, H3-3A-05, Plano, TX 75024 (US).
- (72) Inventors: BALLANTYNE, Alando, M.; 212 Bonnieview, Austin, TX 78704 (US). SMITH, Michael, K.; 8324 La Plata Loop, Austin, TX 78737 (US). HINES, Larry, M.; 4613 Chiappero Trail, Austin, TX 78731 (US).
- (74) Agent: PAGE, Steven, L.; Chief Intellectual Property Counsel, Electronic Data Systems Corporation, 5400 Legacy Drive, H3-3A-05, Plano, TX 75024 (US).
- (81) Designated States (national): AU, JP.
- (84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).
- Published:
— with international search report
- (88) Date of publication of the international search report:
10 October 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND SYSTEM FOR APPLYING XML SCHEMA



(57) Abstract: A method and system for modifying program applications of a legacy computer system to directly output data in XML format models the legacy computer system, maps the model to an XML schema and automatically modifies one or more applications to directly output XML formatted data in cooperation with a writer engine and a context table. A modeling engine lists the incidents within the applications that write data and generates a report data model. The report data model includes statically determined value or type of the data fields and is written in a formal grammar that describes how the write operations are combined. A modification specification is created to define modifications to the legacy computer system applications that relate applications that write data to the XML schema. A code generation engine then applies the modification specification to the applications to write modified applications that, in cooperation with a writer engine and context table, directly output XML formatted data from the legacy computer system without a need for transforming the data.



WO 01/067289 A3

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/07177

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F9/44

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)
IPC 7 G06F

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 practical, search terms used)
INSPEC, COMPENDEX, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	SHANMUGASUNDARAM J ET AL: "Efficiently publishing relational data as XML documents" PROCEEDINGS OF THE 26TH INTERNATIONAL CONFERENCE ON VERY LARGE DATABASES, VLDB 2000, 'Online! 10 - 14 September 2000, pages 65-76, XP002200686 Cairo, Egypt Retrieved from the Internet: <URL:http://www.acm.org/sigmod/vldb/conf/2000/P065.pdf> 'retrieved on 2002-05-31! page 71, left-hand column, line 23 - line 44 --- -/--	1-3, 16-18

Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed
- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search 24 June 2002	Date of mailing of the international search report 15/07/2002
---	--

Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Müller, T
--	-------------------------------------

INTERNATIONAL SEARCH REPORT

ational Application No
PCT/US 01/07177

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>COYLE FRANK P: "Legacy integration - changing perspectives" IEEE SOFTWARE;IEEE SOFTWARE 2000 IEEE, LOS ALAMITOS, CA, USA, vol. 17, no. 2, 2000, pages 37-41, XP002200688 the whole document</p> <p style="text-align: center;">---</p>	1-18
A,P	<p>COMELLA-DORDA S ET AL: "A survey of black-box modernization approaches for information systems" PROCEEDINGS INTERNATIONAL CONFERENCE ON SOFTWARE MAINTENANCE, PROCEEDINGS INTERNATIONAL CONFERENCE ON SOFTWARE MAINTENANCE. ICSM-2000, SAN JOSE, CA, USA, 11 - 14 October 2000, pages 173-183, XP001061421 2000, Los Alamitos, CA, USA, IEEE Comput. Soc, USA ISBN: 0-7695-0753-0 page 175, right-hand column, line 22 -page 176, left-hand column, line 6</p> <p style="text-align: center;">-----</p>	16