



- (51) International Patent Classification:  
G06F 9/46 (2006.01)
- (21) International Application Number:  
PCT/US2014/024801
- (22) International Filing Date:  
12 March 2014 (12.03.2014)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
13/797,652 12 March 2013 (12.03.2013) US
- (71) Applicant: ITRON, INC. [US/US]; 2111 North Molter Road, Liberty Lake, WA 99019 (US).
- (72) Inventors: BLUMENFELD, Symen; c/o Itron, Inc., 2111 North Molter Road, Liberty Lake, WA 99019 (US). LOPEZ, Ricardo, Luis; c/o Itron, Inc., 2111 North Molter Road, Liberty Lake, WA 99019 (US). TOTTY, Stephen, Craig; c/o Itron, Inc., 2111 North Molter Road, Liberty Lake, WA 99019 (US).
- (74) Agents: THOMPSON, David, S. et al.; Lee & Hayes, PLLC, 601 W. Riverside Ave, Suite 1400, Spokane, WA 99201 (US).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published: — with international search report (Art. 21(3))

[Continued on next page]

(54) Title: METER READING DATA VALIDATION

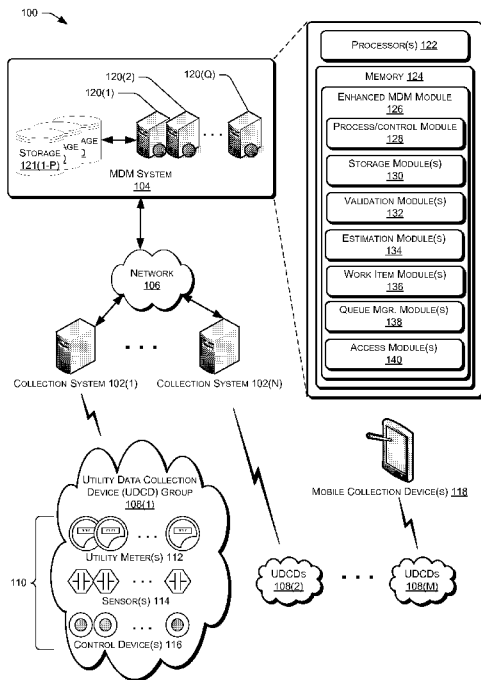


FIG. 1

(57) Abstract: A meter data management (MDM) system processes imported blocks of utility data collected from a plurality of utility meters, sensors, and/or control devices by using independent parallel pipelines associated with differing processing requirements of the data blocks. The MDM system determines processing requirements for each of the imported data blocks, selects one of the pipelines that matches the determined processing requirements for each of the imported data blocks, and directs the data blocks to the selected one of the pipelines for processing. The pipelines may include a validation pipeline for validation processing, an estimation pipeline for estimation processing and a work item pipeline for work item processing.

WO 2014/165208 A3

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

**(88) Date of publication of the international search report:**  
2 June 2016

<b>INTERNATIONAL SEARCH REPORT</b>	International application No. PCT/US14/24801
------------------------------------	---

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC: G06F 9/46(2006.01)

USPC: 718/100  
 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. : 718/100

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)  
 DEVICE; CORRESPOND; DATA; BLUMENFELD-SYMEN; ELECTRICITY; WATER; UTILITY; GAS

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
------------	--	-----------------------

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2008/0074284 A1 (EDWARDS ET AL.) 27 MARCH 2008, SEE ENTIRE DOCUMENT.	1-20

<input type="checkbox"/> Further documents are listed in the continuation of Box C.	<input type="checkbox"/> See patent family annex.
* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	
Date of the actual completion of the international search 25 April 2016 (25.04.2016)	Date of mailing of the international search report <b>28 APR 2016</b>
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer <b>ANDRE ROBINSON</b> Telephone No. (571) 272-5005