(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
17 August 2006 (17.08.2006)

PCT

(10) International Publication Number
WO 2006/085296 A1

(51) International Patent Classification:
G06F 9/44 (2006.01) *G06F 17/50* (2006.01)

(21) International Application Number:
PCT/IE2006/000010

(22) International Filing Date:
13 February 2006 (13.02.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2005/0071 11 February 2005 (11.02.2005) IE

(71) Applicant *(for all designated States except US)*: **KINEMATIK RESEARCH LIMITED** [IE/IE]; Eastgate House, Eastgate, Little Island, County Cork (IE).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **BORILLO, Dante** [IT/IE]; Washington Street, Cork (IE). **KEENAN, Kevin, Brendan** [IE/IE]; Derrylusk, Mountrath, County Laois (IE).

(74) Agents: **O'BRIEN, John, A.** et al.; c/o John A. O'Brien & Associates, Third Floor, Duncairn House, 14 Carysfort Avenue, Blackrock, County Dublin (IE).

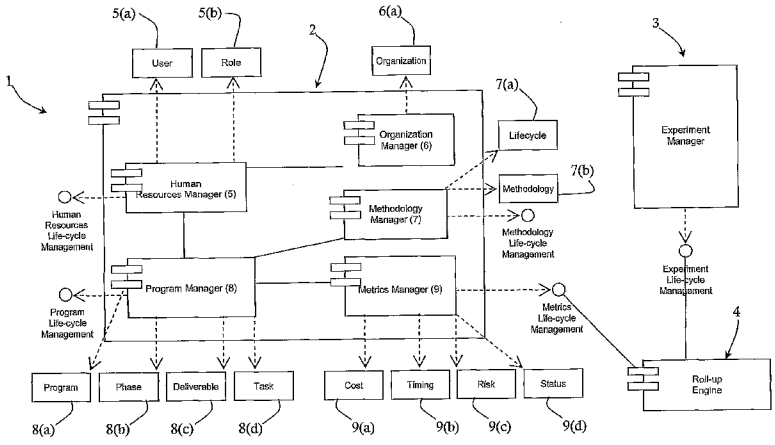
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

[Continued on next page]

(54) Title: A CONTROL SYSTEM



(57) Abstract: A scientific experiment control system (1) includes a main controller (2) for high-level control, an experimental manager (3) for lower-level control of scientific experiments, and a roll-up engine (4) for automatically propagating modifications (or "changes") within the system (1) to ensure consistency across the system (1) and instruments which are linked to it in an automatic and dynamic manner. When any of experiment control objects (3 (a) to 3(c) or 8 (a) to 8(d)) automatically detects a change event as defined by any of the metrics inherited from (objects 9(a) to 9(d)) it transmits a notification to an interface (9(e)). The latter automatically instantiates a change event object (4(a)), which is managed in a queue by an input interface of the roll-up engine (4). The roll-up engine (4) automatically interrogates the network of objects contained in the program object (8(a)) to determine the identity of every object in the hierarchy down to the notifying object which is involved in performance of the current experiment run. It then automatically transmits a notification to each of these identified objects. The notification is simply a message identifying the event and the change event originating object. Each object which receives the notification has sufficient codes in its software code methods to automatically act upon the notification to implement the actions considered necessary.

WO 2006/085296 A1

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.