

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 March 2006 (23.03.2006)

PCT

(10) International Publication Number
WO 2006/031635 A3

(51) International Patent Classification:

G05B 11/01 (2006.01) G06F 11/00 (2006.01)
G05B 13/02 (2006.01)

(21) International Application Number:

PCT/US2005/032094

(22) International Filing Date:

9 September 2005 (09.09.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/609,172 10 September 2004 (10.09.2004) US
11/212,189 26 August 2005 (26.08.2005) US

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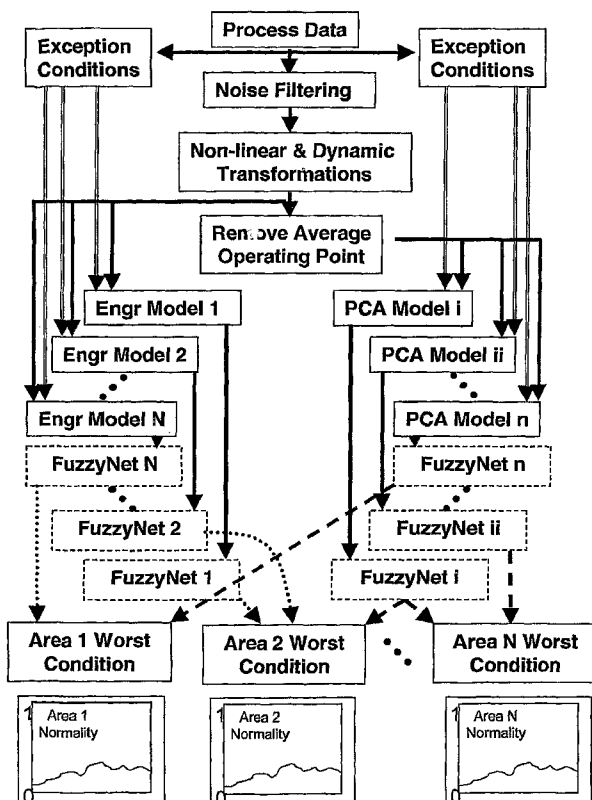
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR ABNORMAL EVENT DETECTION IN THE OPERATION OF CONTINUOUS INDUSTRIAL PROCESSES

Abnormal Event Detection On-Line Information Flow



(57) Abstract: Several years of gathered data are historized in databases for analysis and reporting. These databases can be mined for the data patterns that occur during normal operation and those patterns used to determine when the process is behaving abnormally. These normal operating patterns are represented by sets of models. These models include simple engineering equations, which express known relationships that should be true during normal operations and multivariate statistical models based on a variation of principle component analysis. Equipment and process problems can be detected by comparing the data gathered on a minute by minute basis to predictions from these models of normal operation. The deviation between the expected pattern in the process operating data and the actual data pattern are interpreted by fuzzy Petri nets to determine the normality of the process operations. This is then used to help the operator localize and diagnose the root cause of the problem.



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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, 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.

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*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(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,

(88) Date of publication of the international search report:
14 December 2006

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.