

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 April 2004 (15.04.2004)

PCT

(10) International Publication Number
WO 2004/031913 A3

(51) International Patent Classification⁷: **G06N 3/00**, 3/12, A61B 5/05, G06F 17/60, G10L 13/00, G06F 17/28

(21) International Application Number:

PCT/US2003/031214

(22) International Filing Date: 1 October 2003 (01.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/415,481 1 October 2002 (01.10.2002) US

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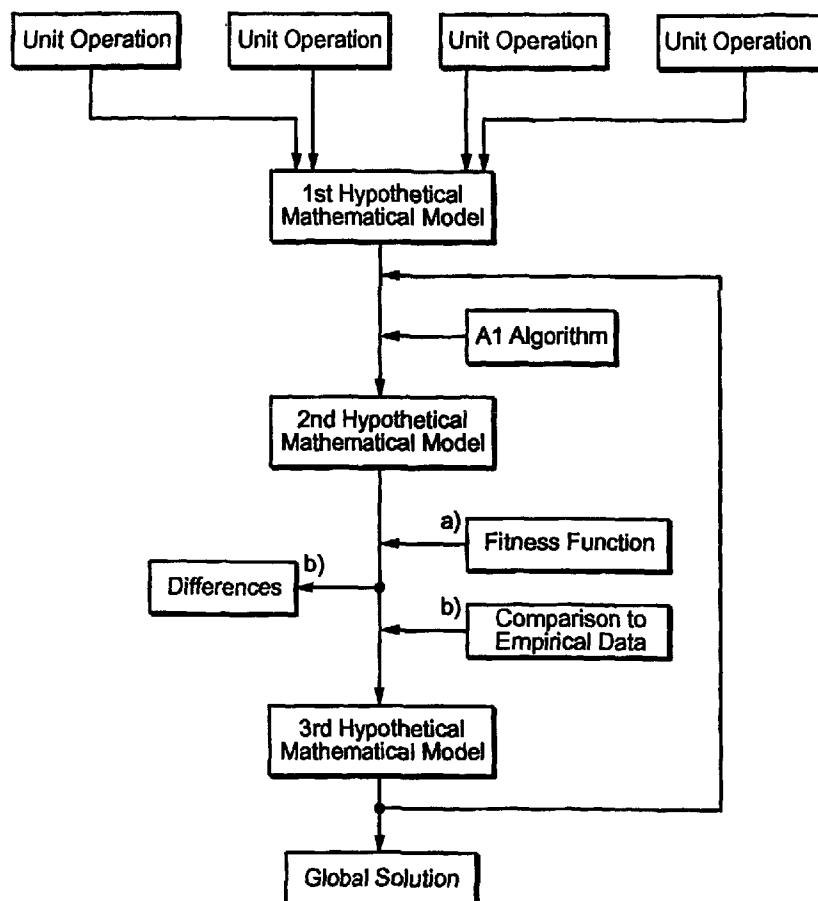
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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV,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

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

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(54) Title: ARTIFICIAL INTELLIGENCE FOR ANALYZING HYPOTHETICAL MODELS



(57) Abstract: Biology models of biochemical systems have proven to be powerful conceptual tools for the analysis of biological data. Biological data is unique in that it exists mostly in the differential display format. The present invention (Fig. 1) uses artificial intelligence (AI) to synthesize bioinformatic data (unit operations) for building and analyzing models of underlying physiologies (hypothetical mathematical models). In addition to AI methods, the invention describes the use of differential equations [e.g. the Michaelis-Menton kinetics equation, $d/dt(\text{Substrate}[t]) = -\text{Enzyme}[t] \text{Substrate}[t] / (K_m + \text{Substrate}[t])$] and linear algebra (i.e. the linear differential equation of the Michaelis-Menton kinetics equation and its Laplace transform) to recast the models into another mathematical domain. The direct use of differential display data formats for model testing provides more complete alternatives for modeling physiological and other complex systems towards a global solution.



Published:

— with international search report

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.

(88) Date of publication of the international search report:

17 June 2004