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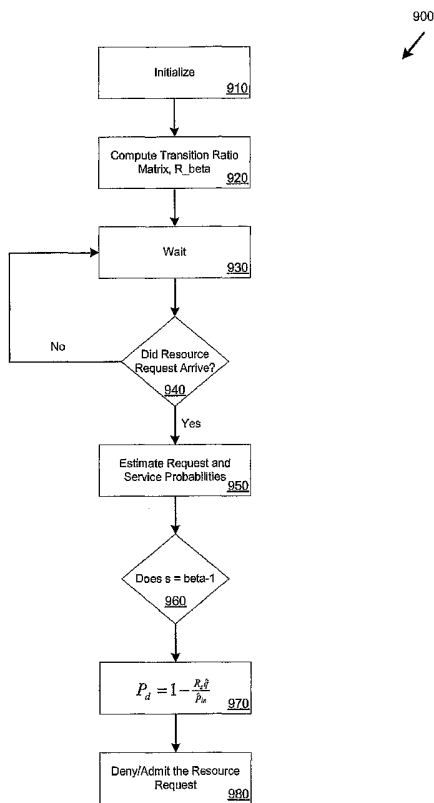
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(54) Title: NONLINEAR ADAPTIVE CONTROL OF RESOURCE-DISTRIBUTION DYNAMICS

(57) Abstract: A method of controlling a resource management system by modeling the resource management system with a Markov process. The transition probabilities used in the Markov model are determined by making empirical measurement of the distribution of the actual system and using actual statistic to estimate the transition probabilities. The transition probabilities are constantly modified based upon a feedback control measurement system per Fig 9.

900

Initialize 910

Compute Transition Ratio Matrix, R_beta 920

Wait 930

Did Resource Request Arrive? 940 — No

Yes

Estimate Request and Service Probabilities 950

Does s = beta-1 960

$P_d = 1 - \frac{R_s \hat{s}}{P_{su}}$ 970

Deny/Admit the Resource Request 980

SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC: G01R 31/08

USPC: 370/233;704/256,256.1
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. : 370/233; 704/256, 256.1

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US2002/0041566 A1 (YANG et al) 11 April 2002 (11.04.2002) , pages 2-3	1-2 & 12-21
Y	US 6,047,322 A (VAID et al) 04 April 2000 (04.04.2000) col. 3 line 59-col. 4 line 16	15
Y	US 6,442,550 B1 (RAJAMONY) 27 August 2002 (27.08.2002), column 4 line 23-42	16
Y	US 6,351,734 B1 (LAUTZENHEISER et al) 26 February 2002 (26.02.2002), Figure 2	17
Y	US 5,867,559 A (JORGENSEN et al) 02 February 1999 (02.02.1999), Fig 4	18
Y	US 6,694,247 B2 (HAMELEERS et al) 17 February 2004, column 1 lines 56-67	19
Y	US 6,122,572 A (YAVNAI) 19 September 2000 (19.09.2000), column 4 line 58-column 43 line 43	20

☐ Further documents are listed in the continuation of Box C.   ☐ See patent family annex.

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"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
23 March 2006 (23.03.2006)	21 APR 2006

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