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(54) Title: BELIEF PROPAGATION FOR GENERALIZED MATCHING

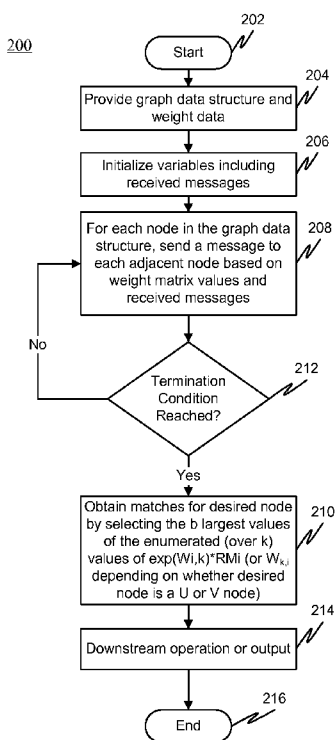


FIG. 2A

(57) Abstract: Entities may be matched to enhance the efficiency of various commercial activities using various system and method embodiments of the disclosed subject matter. Belief propagation on a graph data structure defining a bipartite or unipartite matching opportunity is used to calculate a best matching. In embodiments, functions are implemented based upon the match, such as executing sales between matched buyers and sellers in an online auction system. In embodiments, messages with scalar values carry information about the relative value of possible matchings, initially provided as weights or values for the possible matchings. Weights may depend on, for example, bids or costs. Messages may be passed, for example over a network between processors respective to the nodes. Belief values reflecting a best matching can be continuously updated for each node responsively to the value information and received messages to rank the matches respective to each node, which progressively improve. This allows short or complete terminations conditions to determine the goodness of the matching. Differing numbers of matches respective to each member of the disjoint sets and distributions of the desirability of different numbers of matches can be integrated in the matchings in respective embodiments.



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**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models since 1975.

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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

e-KOMPASS " advertise, bid, graph, propagate, system"

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2001-0056395 A1 ( Saadat H. Khan et al.) 27 December 2001 See abstract; figures 1,5,6,BF1, SF1, SF2; claims 1,9,11,112.	1-69
A	KR 2007-0058046 A (INBIZTECH CO., LTD.) 7 June 2007 See abstract; figures 1-7; claims 1-20.	1-69
A	JP 2006-039955 A (DENSAN SYSTEM CO., LTD.) 9 February 2006 See abstract; figures 1-13; claims 1-14.	1-69
A	US 2006-0271438 A1 (Andrew Shotland et al.) 30 November 2006 See abstract; figures 1-21; claims 1-30.	1-69

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

\* Special categories of cited documents:

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Information on patent family members

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