ABSTRACT

A spanning tree of a connected graph is a tree which consists the set of vertices and some or perhaps all of the edges from the connected graph. In this paper, a model for spanning tree transformation of connected graphs into single-row networks, namely Spanning Tree of Connected Graph Modeling (STCGM) will be introduced. Path-Growing Tree-Forming algorithm applied with Vertex-Prioritized is contained in the model to produce the spanning tree from the connected graph. Paths are produced by Path-Growing and they are combined into a spanning tree by Tree-Forming. The spanning tree that is produced from the connected graph is then transformed into single-row network using Tree Sequence Modeling (TSM). Finally, the single-row routing problem is solved using a method called Enhanced Simulated Annealing for Single-Row Routing (ESSR).