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(72) Inventors; and

(75) Inventors/Applicants (for US only): **FISCHER, Anath** [IL/IL]; 7 Taversky Street, 34759 Haifa (IL). **STEINER, Dvir** [IL/IL]; 50 Haviva Reik Street, 32542 Haifa (IL).(74) Agent: **BEN-AMI, Paulina**; Ben-Ami & Associates, P.O. Box 94, 76100 Rehovot (IL).

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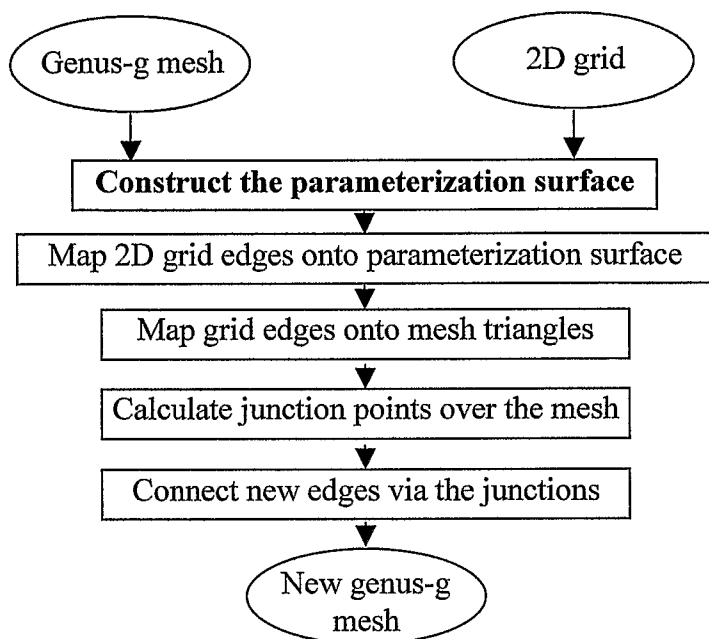
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(54) Title: AUTOMATIC REMESHING BY MAPPING A 2D GRID ON 3D GENUS-G MESHES BASED ON TOPOLOGICAL ANALYSIS

(57) **Abstract:** The present invention provides a novel remeshing approach for genus-g meshes that overcomes distortion problems. The proposed approach is based on continuous mapping of a 2D grid on the 3D meshed model. The criteria of the new mesh can be defined directly on the 2D grid. The remeshing is invariant to the original mesh. Due to topological analysis, the mapping of the 2D grid onto the 3D mesh minimizes distortion and guarantees continuity. The 2D grid, the element shapes and the density (multiresolution) can be changed straightforwardly, thus generating a modular approach.

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