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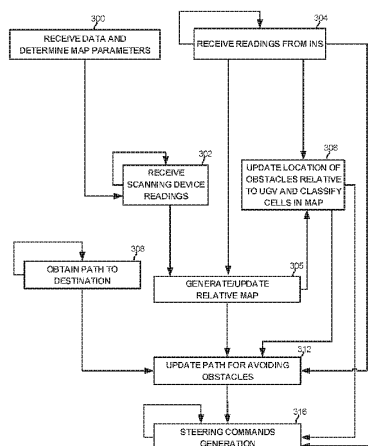


FIG. 3

(57) Abstract: The presently disclosed subject matter includes a system and a method of navigating an unmanned ground vehicle (UGV) vehicle comprising a scanning device and an Inertial Navigation System (INS) being operatively connected to at least one processor. Operating the scanning device for scanning an area surrounding the UGV, and generate scanning output data; Generating, based on the scanning output data, a map representing at least a part of the area, the map being relative to a location of the UGV and comprising cells, each cell is classified to a class selected from at least two classes, comprising traversable and non-traversable, and characterized by dimensions larger than an accumulated drift value of the INS over a predefined distance; receiving INS data indicative of a current location of the UGV and updating a location of the UGV relative to cells in the map based on the INS data.



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