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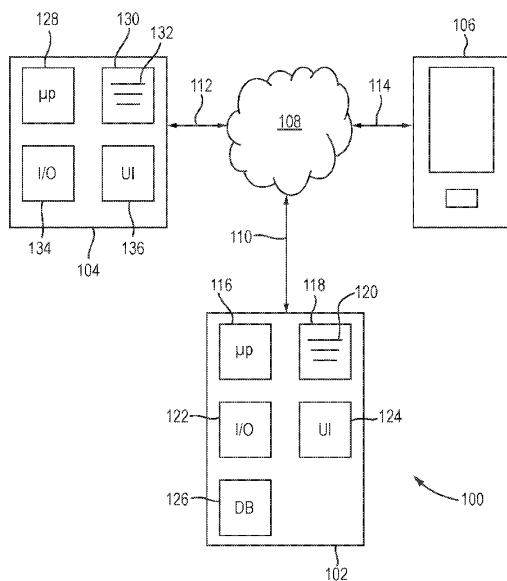
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- (54) **Title: COMMUNICATIONS SERVER APPARATUS AND METHOD FOR SIMULATING SUPPLY AND DEMAND CONDITIONS RELATED TO A TRANSPORT SERVICE**

Fig. 1



(57) **Abstract:** A communications server apparatus for simulating supply and demand conditions related to a transport service and deriving associated spatio-temporal prediction data, the communications server apparatus comprising a processor and a memory, and being configured, under the control of the processor, to execute instructions stored in the memory to: obtain supply and demand data, said supply data comprising service provider location and availability data and 0 said demand data comprising user bookings data; generate, using said supply and demand data, aggregated supply and demand data comprising a plurality of data records associated with a plurality of respective predetermined time periods, each record being representative of an available supply pool of one or more service provider types in one of a plurality of regions, and demand therefor, during the respective predetermined time period; generate, using said supply and demand data, probability data for each of said plurality of regions and supply pools in relation to respective predetermined time periods, said probability data comprising probability values representative of a likelihood of demand associated with respective time slot/supply pool/region combinations; perform a simulation of supply and demand conditions in said plurality of regions by mapping said aggregated supply and demand data to said probability data in a trained forecasting model and generating prediction data for each of said plurality of regions and supply pools, said prediction data being representative of a probability that a service provider will receive a user booking in a specified region within a predetermined period of time; and output said prediction data for display on a service provider communications device.

SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

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