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(54) Title: QUANTUM TRACKING METHOD AND APPARATUS

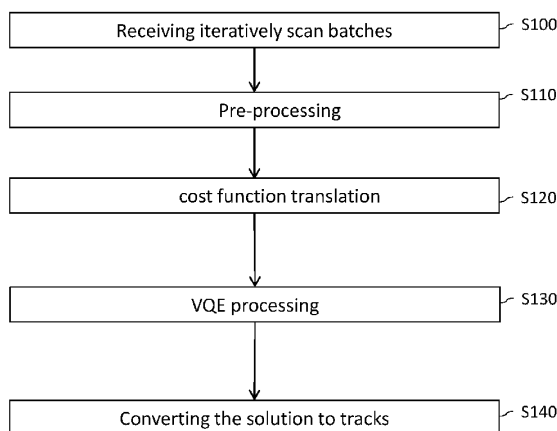


FIG. 3

(57) Abstract: The present disclosure provides a method useful in tracking one or more targets in a field of view comprising: processing a graph (G) containing said sensed plots as N vertices (V) and possible connections between pairs of plots associated with consecutive scans as edges (E); defining a cost function of the edges so as to favor geometrically relevant edge patterns for the targets being tracked; associating in said cost function each edge with a quantum state encoded by $\log_2(N)$ binary variables; optimizing said cost function using a quantum processing system by determining the ground state of a Hamiltonian encoding the cost function using the Variational Quantum Eigensolver algorithm by converting said Hamiltonian to Pauli strings and measuring expectation values of said Pauli strings; and processing one or more tracks based on a histogram built on statistics provided by the measured expectation value of said Pauli strings.

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