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(54) **Title:** HARDWARE ACCELERATED K-MER GRAPH GENERATION

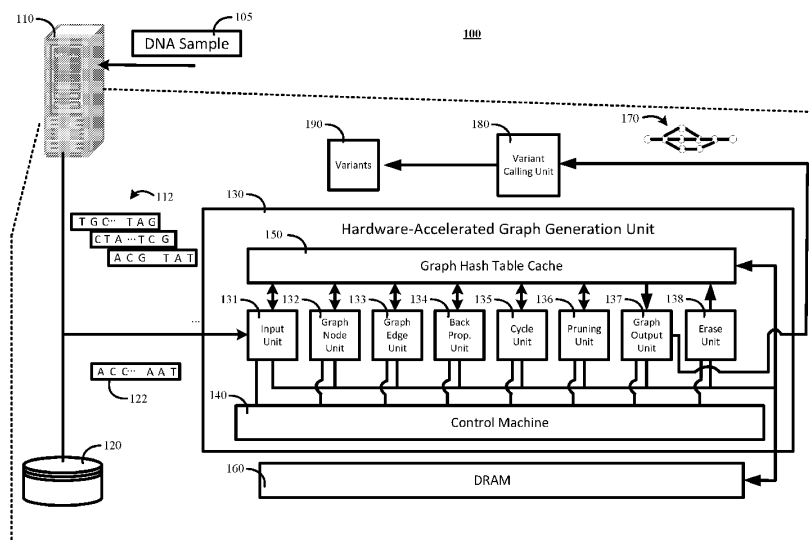


FIG. 1

(57) **Abstract:** Methods, systems, and apparatus for hardware-accelerated generation of a K-mer graph using a programmable logic device. In one aspect, a method includes actions of obtaining a first set of nucleic acid sequences, generating a K-mer graph using the obtained first set of nucleic acid sequences and using a plurality of non-pipelined hardware logic units of a programmable logic device, and periodically updating, with a control machine, graph description data for the K-mer graph after performance of the one or more operations by each hardware logic unit.

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