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(54) Title: ARTIFICIAL INTELLIGENCE-BASED SEQUENCING

(57) Abstract: The technology disclosed processes a first input through a first neural network and produces a first output. The first input comprises first image data derived from images of analytes and their surrounding background captured by a sequencing system for a sequencing run. The technology disclosed processes the first output through a post-processor and produces metadata about the analytes and their surrounding background. The technology disclosed processes a second input through a second neural network and produces a second output. The second input comprises third image data derived by modifying second image data based on the metadata. The second image data is derived from the images of the analytes and their surrounding background. The second output identifies base calls for one or more of the analytes at one or more sequencing cycles of the sequencing run.

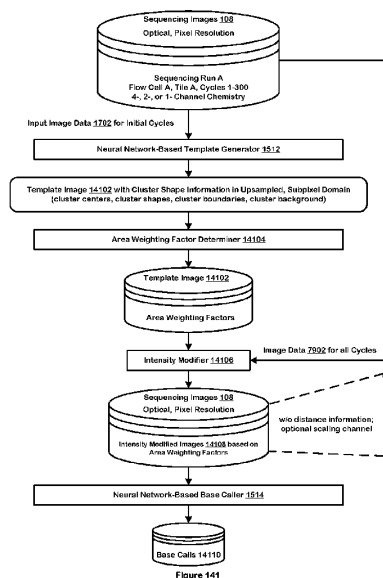


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[Continued on next page]

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