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17/308,035 04 May 2021 (04.05.2021) US(71) Applicant: **ILLUMINA, INC.** [US/US]; 5200 Illumina Way, San Diego, California 92122 (US).(72) Inventors: **OJARD, Eric Jon**; 5200 Illumina Way, San Diego, California 92122 (US). **MEHIO, Rami**; 5200 Illumina Way, San Diego, California 92122 (US). **PARNABY, Gavin Derek**; 5200 Illumina Way, San Diego, California 92122 (US). **UDPA, Nitin**; 5200 Illumina Way, San Diego, California 92122 (US). **VIECELI, John S.**; 5200 Illumina Way, San Diego, California 92122 (US).(74) Agent: **BEFFEL, JR., Ernest J.** et al.; Haynes Beffel & Wolfeld LLP, P.O. Box 366, 637 Main Street, Half Moon Bay, California 94019 (US).

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(54) Title: EQUALIZATION-BASED IMAGE PROCESSING AND SPATIAL CROSSTALK ATTENUATOR

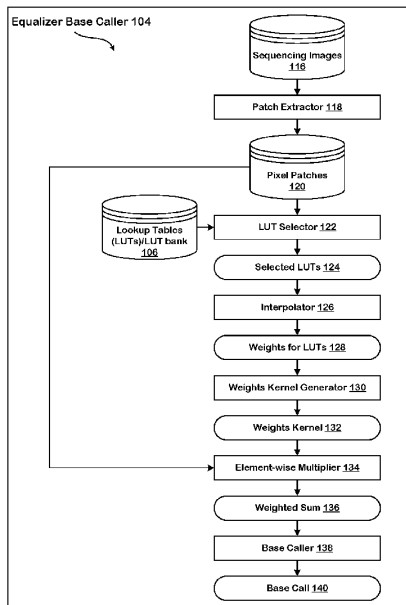


Figure 1B

(57) Abstract: The technology disclosed attenuates spatial crosstalk from sequencing images for base calling. In particular, the technology disclosed accesses an image whose pixels depict intensity emissions from a target cluster and intensity emissions from additional adjacent clusters. The pixels include a center pixel that contains a center of the target cluster. Each pixel in the pixels is divisible into a plurality of subpixels. Depending upon a particular subpixel, in a plurality of subpixels of the center pixel, which contains the center of the target cluster, the technology disclosed selects, from a bank of subpixel lookup tables, a subpixel lookup table that corresponds to the particular subpixel. The selected subpixel lookup table contains pixel coefficients that are configured to maximize a signal-to-noise ratio. The technology disclosed element-wise multiplies the pixel coefficients with the pixels and determines a weighted sum.

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Declarations under Rule 4.17:

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