



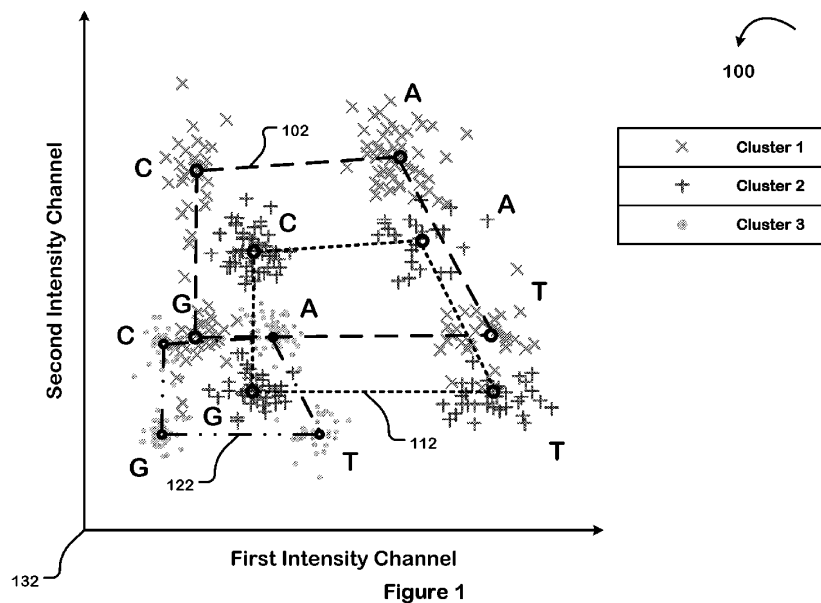
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(54) **Title:** SYSTEMS AND METHODS FOR PER-CLUSTER INTENSITY CORRECTION AND BASE CALLING



(57) **Abstract:** The technology disclosed generates variation correction coefficients on a cluster-by-cluster basis to correct inter-cluster intensity profile variation for improved base calling. An amplification coefficient corrects scale variation. Channel-specific offset coefficients correct shift variation along respective intensity channels. The variation correction coefficients for a target cluster are generated based on combining analysis of historic intensity data generated for the target cluster at preceding sequencing cycles of a sequencing run with analysis of current intensity data generated for the target cluster at a current sequencing cycle of the sequencing run. The variation correction coefficients are then used to correct next intensity data generated for the target cluster at a next sequencing cycle of the sequencing run. The corrected next intensity data is then used to base call the target cluster at the next sequencing cycle.

[Continued on next page]

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Declarations under Rule 4.17:

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- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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