

From the INTERNATIONAL BUREAU

PCTCOMMUNICATION IN CASES FOR WHICH
NO OTHER FORM IS APPLICABLE

To:

FULLER, Michael, L.
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2040 Main Street, Fourteenth Floor
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ÉTATS-UNIS D'AMÉRIQUE

Date of mailing (<i>day/month/year</i>) 13 July 2018 (13.07.2018)	
Applicant's or agent's file reference ILLINC346WO	REPLY DUE see paragraph 1 below
International application No. PCT/US2017/055653	International filing date (<i>day/month/year</i>) 06 October 2017 (06.10.2017)
Applicant ILLUMINA, INC.	

1. REPLY DUE within months/days from the above date of mailing
 NO REPLY DUE, however, see below
 IMPORTANT COMMUNICATION
 INFORMATION ONLY

2. COMMUNICATION:

The International Bureau acknowledges receipt of Form PCT/ISA/217 dated 17 July 2018 and the accompanying sheets dated 5 July 2018.

The International Bureau notifies the applicant, the designated Offices and, where a demand has been made, the International Preliminary Examining Authority that the rectification of an obvious mistake authorized under Rule 91 has not been taken into account for the purposes of the international search.

A copy of this notification together with Form PCT/ISA/217 and the accompanying sheets are being sent to designated Offices.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Feuillassier Anne e-mail pct.team7@wipo.int Telephone No. +41 22 338 74 07
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PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL SEARCHING AUTHORITY

**NOTIFICATION OF DECISION CONCERNING
REQUEST FOR RECTIFICATION**

(PCT Rule 91.3(a) and (d))

To:
KNOBBE, MARTENS, OLSON & BEAR LLP
Attn. Fuller, Michael L
2040 Main Street, 14th Floor
Irvine, CA 92614
ETATS-UNIS D'AMERIQUE

Date of mailing
(day/month/year) 17/07/2018

Applicant's or agent's file reference
ILLINC346WO

REPLY DUE
NONE
However, see last paragraph below

International application N°.
PCT/US2017/055653

International filing date
(day/month/year) 06/10/2017

Applicant
ILLUMINA, INC

The applicant is hereby notified that this International Searching Authority has considered the request for rectification of obvious errors in the international application/in other papers submitted by the applicant to this Authority, and that it has decided:

1. a. to authorize the rectification:

as requested by the applicant.

to the extent set forth below*:


b. The rectification **will be or has been taken into account** for the purposes of the international search (Rule 43.6bis (a)).

The rectification **has not been taken into account** because it was authorized by this Authority after this Authority has begun to draw up the international search report (Rule 43.6bis (b)).

2. to refuse to authorize the rectification or part of it for the following reasons*:

A copy of this notification, together with a copy of the applicant's request for rectification, has been sent to the receiving Office and to the International Bureau.

* **If the authorization of the rectification has been refused in whole or in part**, the applicant may request the International Bureau, within two months from the date of the refusal and subject to the payment of a special fee, to publish the request for rectification and the reasons for refusal by this Authority and any further brief comments that may be submitted by the applicant together with the international application. See rule 91.3(d) and, for the amount of the fee, see the **PCT Applicant's Guide**, Volume I, Annex B2(1B).

<p>Name and mailing address of the International Searching Authority</p>  <p>European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016</p>	<p>Authorized officer</p> <p>Loredana Gabor</p>
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VIA FACSIMILE**011.31.70.340.3016**

THE EUROPEAN PATENT OFFICE
Attention: International Search Authority
P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk

Applicant : Illumina, Inc.
Application No. : PCT/US2017/055653
Filing Date : 06 October 2017 (06.10.2017)
Title : SYSTEM AND METHOD FOR SECONDARY ANALYSIS OF
NUCLEOTIDE SEQUENCING DATA

**SUBMISSION OF CORRECTION OF OBVIOUS ERRORS IN DOCUMENTS UNDER
PCT RULE 91.1**

Dear Sir or Madam:

Pursuant to PCT Rule 91.1(a), Applicant respectfully requests entry of the attached corrected specification submitted as "Rectified Sheets" to correct page 3. Applicant submits a marked-up copy of page 3, in which one skilled in the art would recognize that the figures should be noted as Figs. 11A and 11B, and not Figs. 14A and 14B. Nothing else could have been intended than the proposed rectification, and rectification is believed to be appropriate in this instance under PCT Rule 91.1(c).

Applicant makes this request under PCT Rule 91.1 (b)(ii), which states that an error can be rectified by the International Searching Authority if the error is in any part of the international application other than the request. In accordance with PCT Rule 91.2, the Applicant submits this request before the expiration of 26 months from priority. This request is also being made prior to the publication of the international application, and Applicant would like the corrected specification included in the publication. Accordingly, Applicant is copying the International Bureau on this request so that publication of the corrected sheets can timely occur.


PCT/US2017/055653

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 11 May 2018

By:


Michael L. Fuller
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cc: International Bureau

Attached: 1) Marked-up copy of page 3
2) Replacement Page 3— filed as “Rectified Sheets”

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[0015] FIG. 10 is another flowchart of an example method for performing a real-time secondary analysis.

[0016] FIGS. 11A and 11B compare an existing variant caller (FIG. 11A) to a variant caller that uses high confidence, low processing path as described herein (FIG. 11B).

DETAILED DESCRIPTION

[0017] In the following detailed description, reference is made to the accompanying drawings, which form a part hereof. In the drawings, similar symbols typically identify similar components, unless context dictates otherwise. The illustrative embodiments described in the detailed description, drawings, and claims are not meant to be limiting. Other embodiments may be utilized, and other changes may be made, without departing from the spirit or scope of the subject matter presented herein. It will be readily understood that the aspects of the present disclosure, as generally described herein, and illustrated in the Figures, can be arranged, substituted, combined, separated, and designed in a wide variety of different configurations, all of which are explicitly contemplated herein.

[0018] Disclosed herein are systems and methods for performing secondary analyses of nucleotide sequencing data in a time-efficient manner. In some embodiments, the method comprises performing a secondary analysis iteratively while sequence reads are generated by a sequencing system. Secondary analyses can encompass both alignment of sequence reads to a reference sequence (e.g., the human reference genome sequence) and utilization of this alignment to detect differences between a sample and the reference. Secondary analyses can enable detection of genetic differences, variant detection and genotyping, identification of single nucleotide polymorphisms (SNPs), small insertions and deletion (indels) and structural changes in the DNA, such as copy number variants (CNVs) and chromosomal rearrangements.

[0019] By performing secondary analyses while sequence reads are generated, the system and method can determine preliminary variant calls iteratively in real-time (or with zero or low latency). Final results of variant determinations may be available soon after (or immediately after) the end of a sequencing run. Alternatively, a sequencing run can be terminated early if variant calls are available with sufficient confidence during the run. In some embodiments, only information related to variant determinations (e.g., variant calls) is transferred off the sequencing system. This can decrease, or minimize,