

Response to Notice of Possible Remedies

1. This response to the CMA's Notice of Possible Remedies ("NPR") proposes remedies that address the CMA's provisional substantial lessening of competition ("SLC") findings, and identifies the important relevant customer benefits ("RCBs") that would result from the proposed remedies. More specifically, the RCBs of the Transaction include the following:¹
 - (i) Wider distribution of/access to PacBio's products and technology by enabling PacBio to benefit from Illumina's global production, and support and service infrastructure;
 - (ii) Increased adoption of PacBio's systems by clinical and diagnostic customers by enhancing PacBio system quality with Illumina's quality systems and system management processes;
 - (iii) Improved PacBio systems using Illumina's proprietary technologies;
 - (iv) Development of coordinated solutions (including bioinformatics) to enable customers to harness the complementary nature of the Parties' technologies; and
 - (v) Accelerated innovation.
2. For the avoidance of doubt, the Parties consider that the Provisional Findings ("PFs") contain important errors that undermine the SLC findings. The Parties have made a separate submission in response to the PFs. The CMA ought to consider the Parties' representations on these points before deciding whether there is an SLC that requires remedy. These representations are also relevant to the assessment of the appropriateness and proportionality of the proposed remedies.
3. Contrary to the statement in the NPR, prohibition is not the only comprehensively effective solution to address the SLC provisionally found by the CMA. Illumina's remedy proposal described below is a sufficient package that removes any SLC whilst preserving the RCBs.
4. Further, prohibition would not be a proportionate or "*reasonable and practicable*" (under section 36(3) Enterprise Act 2002) solution. Further, the RCBs identified are significant in scale and nature, and the CMA should take into account the RCBs that would be lost as a result of a prohibition. All RCBs would be lost if the Transaction were to be prohibited.
5. Illumina proposes the following undertaking to remedy the SLC provisionally identified by the CMA:
 - a. To grant a perpetual, royalty-free, irrevocable, licence to any of Illumina's and PacBio's pre-closing patents and patent applications to any interested third-party undertaking for use in the field of single molecule, native long read sequencing systems and associated sequencing chemistries. For the avoidance

¹ See paragraphs 426 to 459 of the Merger Notice.

of doubt, this commitment also extends to pre-closing inventions that lead to patent applications filed within 12 months after the closing date.

- b. To relinquish any exclusive rights in the field of single molecule, native long read sequencing systems and associated sequencing chemistries that Illumina or PacBio might have in relation to any in-licensed patents held as of the closing date.
 - c. To make available, prior to and as a condition to closing the Transaction and thereafter for as long as the patents are in force, to any interested third-party undertaking a complete form license agreement for use in the field of single molecule, native long read sequencing systems and associated sequencing chemistries.
6. A list of Illumina's and PacBio's existing patents, whether owned or exclusively in-licensed, are attached as Annex 1.
 7. The CMA Merger Remedies Guidelines recognise that an exclusive, irrevocable, and royalty-free technology licence "*will effectively be treated by the CMA as structural in form and subject to similar consideration and evaluation as an asset divestiture*".² The undertaking proposed above would be sufficient to remedy the SLC provisionally identified by the CMA in its PFs.
 8. A perpetual, royalty-free, irrevocable, licence of PacBio's and Illumina's patents to any interested third-party undertaking for use in the field of single molecule, native long read sequencing systems and associated sequencing chemistries would be a fully effective, reasonable and proportionate undertaking to remedy the SLC provisionally identified by the CMA. Further, this undertaking addresses the concerns expressed by the CMA in paragraphs 24 and following of the NPR regarding the appropriateness of an IP remedy in the case at hand.
 9. First, by making these patents fully accessible to third-party undertakings active in developing single molecule, native long read sequencing systems and associated sequencing chemistries, one of the most significant barriers to entry identified by the CMA in its NPFs, *i.e.*, IP, is eliminated.
 10. Second, the CMA is concerned that "*any licensee would need to have sufficient capabilities*" in "*supporting commercial infrastructure (for example sales and marketing, manufacturing) [...] to effectively compete with the merged entity, which would retain all of these assets*".³ However, in the pool of potential licensees there are a number of large companies, including Roche (the world's largest biotechnology company and the world leader in IVD and tissue-based cancer diagnostics), Agilent (a leader in life sciences, diagnostics and applied chemicals with almost \$5 billion in revenue and more than 24,000 customers in 110 countries), and NanoString (a provider of life science tools for translational research and molecular diagnostics which has had success commercialising its non-sequencing products), all of which have significant commercial capabilities. For example, Roche will be able to leverage its existing

² Merger Remedies Guidelines, 13 December 2018, paragraph 6.2.

³ See paragraph 28 of NPR.

distribution infrastructure, relationships with clinical customers (which are more extensive and well-developed than Illumina's), and its previous experience in supplying sequencing systems.

11. Third, the CMA asserts that the potential licensee should be able to leverage "*the potential competitive benefits of existing short read operations*".⁴ In the pool of potential licensees there are companies which are currently offering or developing short read systems, such as BGI, Thermo Fisher, Agilent, and Omniome.
12. While the Parties reject the provisional SLC findings, the proposed commitment will ensure that any potential SLC is eliminated and that the important RCBs are maintained. In contrast, a prohibition would involve a loss of all RCBs and would therefore be unnecessary and disproportionate.
13. Finally, Illumina proposes compliance mechanisms to address any concerns that Illumina might be incentivised to breach any of its commitments including: (i) the appointment of a monitoring trustee; and (ii) making a fast-track dispute resolution mechanism open to third parties. The CMA approved monitoring trustee will monitor compliance with the licencing terms and prepare a compliance report every 12 months. The monitoring trustee will also rule on any disputes between the licensee(s) and Illumina under a fast-track dispute resolution process. If a party wishes to appeal a ruling by the monitoring trustee, there will be recourse to a fast-track arbitration procedure. Illumina commits to follow the monitoring trustee/arbitrator's rulings on any disputes and to provide the monitoring trustee with all the information and assistance (including access to confidential documents) as may be reasonably required in order to carry out its mandate effectively. The mandate of the monitoring trustee, and Illumina's commitment to fast-track dispute resolution, will terminate on expiry of the last of the relevant patents.

⁴ See paragraph 28 of NPR.