

ANTICIPATED MERGER BETWEEN THERMO FISHER SCIENTIFIC INC. AND THE ELECTRON MICROSCOPE PERIPHERALS BUSINESS OF ROPER TECHNOLOGIES, INC.

Notice of possible remedies under Rule 12 of the CMA's rules of procedure for merger, market and special reference groups¹

Introduction

1. On 7 January 2019, the Competition and Markets Authority (CMA), in exercise of its duty under section 33(1) of the Enterprise Act 2002 (the Act), referred the anticipated merger between Thermo Fisher Scientific Inc. (Thermo Fisher) and the electron microscope peripherals business (Gatan) of Roper Technologies, Inc. (Roper) (the Proposed Merger), for further investigation and report by a group of CMA panel members (the Inquiry Group).
2. In its provisional findings on the reference notified to Thermo Fisher and Roper (the Parties) on 17 April 2019, the CMA provisionally concluded that the Proposed Merger would result in the creation of a relevant merger situation, and that the creation of that situation may be expected to result in a substantial lessening of competition (SLC) within the market in the UK, respectively for each of the following:
 - (a) Horizontal competition concerns in the market for the supply of DD cameras for sale in the UK;
 - (b) Potential competition concerns in the market for the supply of filters for sale in the UK;
 - (c) Vertical competition concerns, both with regard to foreclosure and information sharing in the markets for respectively the supply of GI cameras, DD cameras and filters to TEM suppliers for sale in the UK.

¹ CMA Rules of Procedure for Merger, Market and Special Reference Groups (CMA17, 2014).

3. The CMA has provisionally found that the SLC may be expected to result in adverse effects in the form of lower quality products, a reduced supply of new products and higher prices compared to what would be the case absent the Proposed Merger.
4. This Notice sets out the actions the CMA considers it might take for the purpose of remedying, mitigating or preventing the SLC and any resulting adverse effects, as identified in the Provisional Findings Report.²
5. The CMA invites comments on possible remedies by 1 May 2019.

Criteria

6. In deciding on a remedy, the CMA is required in particular to have regard to the need to achieve as comprehensive a solution as is reasonable and practicable to the SLC and any adverse effects resulting from it.³
7. To this end, the CMA will seek remedies that are effective in addressing the SLC and its resulting adverse effects and will select the least costly and intrusive remedy that it considers to be effective.
8. The CMA will seek to ensure that no remedy is disproportionate in relation to the SLC and its adverse effects.⁴

Possible remedies on which views are sought

9. In merger inquiries the CMA will generally prefer structural remedies, such as divestiture or prohibition, rather than behavioural remedies, because:
 - (a) structural remedies are more likely to deal with an SLC and its resulting adverse effects directly and comprehensively at source by restoring rivalry;
 - (b) behavioural remedies are less likely to have an effective impact on the SLC and its resulting adverse effects, and are more likely to create significant costly distortions in market outcomes; and

² [Provisional Findings Report](#).

³ Section 36(3) of the Act.

⁴ [Merger Remedies: CMA87](#) (December 2018), paragraph 3.3 and 3.4. This has been adopted by the CMA board.

- (c) structural remedies rarely require monitoring and enforcement once implemented.⁵
10. At this stage, the CMA is considering the following remedies:
- (a) Full prohibition of the Proposed Merger.
 - (b) A divestiture remedy with the aim of addressing our horizontal concerns with regards to DD cameras and filters.
 - (c) A behavioural remedy with the aim of addressing our vertical concerns. Such a remedy could allow current and future products to be accessed by key third parties on fair, reasonable and non-discriminatory terms and include an information firewall to protect confidential information acquired from these third parties.
11. The CMA will consider any other practicable remedies that the main parties, or any interested third parties, may propose that could be effective in addressing the SLC and any resulting adverse effects.
12. In determining an appropriate remedy, the CMA will consider the extent to which different remedy options would be effective in remedying, mitigating or preventing the SLC and any resulting adverse effects that have been provisionally found.
13. The CMA will also consider whether a combination of measures, for example addressing vertical concerns through behavioural measures and horizontal through divestiture, would achieve a comprehensive solution. The CMA will evaluate the likely impact of any such combination of measures on the SLC and any resulting adverse effects.
14. Views are invited on whether a combination of divestiture(s) and behavioural remedies would be effective.

Prohibition

15. Prohibition of the Proposed Merger would prevent any SLC, whether vertical or horizontal in nature, from arising in any relevant market. The CMA therefore takes the provisional view that prohibition would represent a comprehensive solution to all aspects of the SLC it has provisionally found (and consequently any resulting adverse effects which are expected to arise) and that the risks in terms of the effectiveness of such a remedy are very low.

⁵ [Merger Remedies: CMA87](#) (December 2018), paragraph 3.46. This has been adopted by the CMA board.

16. The Parties have claimed that the Proposed Merger will result in Relevant Customer Benefits (RCBs).⁶ Whilst the CMA takes the provisional view that prohibition would represent a comprehensive solution to all aspects of the SLC, the CMA also notes that prohibition would prevent customers from enjoying the benefits of any RCBs that may arise from the Proposed Merger. RCBs are discussed in paragraphs 45 to 50 below.

Divestiture

17. In evaluating possible divestitures as a remedy to the SLC it has provisionally found, the CMA will consider the likelihood of achieving a successful divestiture and the associated risks.
18. To be effective in remedying the provisional SLC, any divestiture package would need to be appropriately configured to enable a purchaser to operate effectively as an independent competitor and be attractive to potential purchasers.
19. The CMA's current view is that although the Parties carry on business in the UK, their UK-based operations do not correspond closely to the specific SLC(s) the CMA has provisionally found.⁷ Competition in this market is global in nature. The CMA therefore considers that there is not a UK-only divestiture that would be effective at addressing the provisional competition concerns.
20. At this stage, the CMA is considering whether its provisional horizontal concerns with regards to DD cameras and filters could be remedied through divestiture. The CMA has identified the following potential divestitures:
- (a) A divestiture of the Parties' DD camera and filter business operations.⁸
21. The CMA considers there are likely to be significant practical challenges with regards to a divestiture of either the DD camera or filter business operations. However, if these can be overcome, a divestiture may address the provisional horizontal concerns.
22. The CMA notes that these products are a key part of the transaction rationale and that a divestiture of the DD camera and filter business operations would put at risk any RCBs associated with these products and consequently may

⁶ See chapter 13 of the provisional findings report on Efficiencies.

⁷ The intellectual property is owned by US corporations and the relevant products are manufactured outside the UK.

⁸ The Merger is an anticipated transaction, as such any divestiture could only occur at the same time as, or shortly after, the proposed Merger had completed.

prevent customers from enjoying any such benefits. RCBs are discussed in paragraphs 45 to 50.

23. The CMA invites views on:
- (a) whether it is possible to address the provisional horizontal concerns through a divestiture of the Parties' DD camera and filter business operations?
 - (b) What would need to be included in this package of assets to attract a suitable purchaser and allow them to operate as an effective competitor in the market?
 - (c) Who would be a suitable purchaser⁹ for such a package of assets?

Behavioural remedies

24. Behavioural remedies are designed to address an SLC and its adverse effects by regulating the ongoing conduct of parties following a merger. The CMA will generally only use behavioural remedies as the primary source of remedial action where¹⁰:
- (a) structural remedies are not feasible;
 - (b) the SLC is expected to have a short duration; or
 - (c) behavioural measures will preserve substantial RCBs that would be largely removed by structural measures.
25. Behavioural remedies seek to change aspects of business conduct from what may be expected, based on businesses' incentives and resources. The design of behavioural remedies seeks to avoid four particular forms of risk to enable these measures to be as effective as possible¹¹:
- (a) Specification risks: these risks arise if the form of conduct required to address the SLC or its adverse effects cannot be specified with sufficient clarity to provide an effective basis for monitoring and compliance.

⁹ The CMA will wish to be satisfied that a prospective purchaser is (a) independent of the main parties; (b) has the necessary capability to compete; (c) is committed to competing in the market; and (d) will not create further competition concerns.

¹⁰ [Merger Remedies: CMA87](#) (December 2018), paragraph 7.2

¹¹ [Merger Remedies: CMA87](#) (December 2018), paragraph 7.4

- (b) Circumvention risk: as behavioural remedies generally do not deal with the source of an SLC, it is possible that other adverse forms of behaviour may arise if particular forms of behaviour are restricted.
 - (c) Distortion risks: these are risks that behavioural remedies may create market distortions that reduce the effectiveness of these measures and/or increase their effective costs.
 - (d) Monitoring and enforcement risks: even clearly specified remedies may be subject to significant risks of ineffective monitoring and enforcement.
26. For behavioural remedies to have the desired impact, it is essential that there are effective and adequately resourced arrangements in place for monitoring and enforcement, so that there is a powerful threat that non-compliance will be detected and that action will be taken to enforce compliance where this is necessary.¹²
27. This is especially important in this case as there is no expectation that the SLC the CMA has provisionally found will be time-limited. In addition to considerations of effectiveness, the CMA would also be concerned about the risks and potential future costs associated with putting in place complex and burdensome arrangements for ongoing monitoring, enforcement and review in relation to any behavioural remedy that was not expected to be time-limited.

The design of a behavioural remedy

28. The CMA has identified two provisional vertical SLCs that may be expected to result from the Proposed Merger:
- (a) input foreclosure by the Merged Entity in the markets for the supply of respectively filters, DD cameras and GI cameras to rival TEM suppliers.
 - (b) Thermo Fisher will gain access to commercially sensitive information of its rival TEM suppliers and that it will have the incentive to use this information to compete less aggressively in the supply of TEMs and/or otherwise to put its TEM rivals at a competitive disadvantage thereby harming competition.
29. Any behavioural remedy must be appropriately designed to address both of these issues.

¹² [Merger Remedies: CMA87](#) (December 2018), paragraph 7.5.

Access remedies in the context of foreclosure concerns

30. Behavioural measures may enable downstream rivals to have continued access to necessary products or facilities on appropriate terms, or prevent the merged entity exploiting privileged access to commercially sensitive information about these rivals.¹³ The core of this type of behavioural remedy is to allow downstream rivals to have reliable access to products or infrastructure on fair, reasonable and non-discriminatory terms (FRAND). A remedy requiring access on FRAND terms is referred to as an access remedy.
31. As outlined in the Provisional Findings, Thermo Fisher entered into supply agreements with JEOL and Hitachi (the Supply Agreements) which are conditional on completion of the Proposed Merger, that it said would enable JEOL and Hitachi to continue to access Gatan's peripherals in line with the pre-Proposed Merger situation. The CMA has provisionally found that the Proposed Merger may be expected to result in an SLC despite the existence of these agreements.
32. The CMA is currently considering whether a type of access remedy could maintain or restore elements of pre-Proposed Merger competition by enabling competitors to have access on appropriate terms to the products and/or facilities of the Merged Entity that they require to remain competitive. This remedy may incorporate elements already covered under the Supply Agreements.
33. The CMA's provisional concern is that an access remedy may not be effective because:
 - (a) Such a remedy is unlikely to produce the innovation and efficiency generated by dynamic competition;
 - (b) The complexity of the market means it might not be possible to accurately specify an effective access remedy;
 - (c) It might not be possible to design a remedy so that it covered all new products and services; and
 - (d) Customers may not be able to identify whether or not they were being given access on FRAND terms.
34. Whilst in theory, a behavioural remedy might address the provisional foreclosure concerns (and, as considered below, our information concerns),

¹³ [Merger Remedies: CMA87](#) (December 2018), paragraph 7.6.

we have also provisional horizontal concerns in relation to DD cameras and filters. It is unclear how a behavioural remedy would address these concerns.

35. The CMA invites views on the effectiveness of an access remedy in terms of specification, circumvention, and monitoring and enforcement risks in particular:
- (a) How would FRAND terms be defined and specified to remedy effectively the SLC or the resulting adverse effects that have provisionally been found, including the adverse effects associated with the loss of dynamic competition?
 - (b) How would an access remedy address any future developments in the products or services offered by Gatan?
 - (c) Should an access remedy apply to only Gatan's current customers or should FRAND terms be made available to all potential Gatan customers?
 - (d) Should an access remedy be subject to a time limit?
 - (e) How might compliance by Thermo Fisher with the access remedy be monitored and any disputes resolved? Could compliance be monitored by Thermo Fisher's customers, or should there be an independent body charged with this function? Are there any circumstances or situations where compliance by Thermo Fisher with the access remedy would be difficult to monitor (eg because it would be unavoidably complex, or prohibitively costly to do so)?
 - (f) How might a breach of FRAND terms by Thermo Fisher be remedied (eg third party damages or compensation)?
 - (g) What would be the initial and ongoing costs to Thermo Fisher and to Thermo Fisher's customers of an access remedy?

Access in relation to application software

36. It has been raised with us that the loss of continued access to Gatan's application software would become a significant barrier for those peripheral providers that currently ensure compatibility of their peripherals with Gatan's software.
37. The CMA invites views on the effectiveness of an open access remedy in relation to application software, in terms of specification, circumvention, and monitoring and enforcement risks, in particular on the following:

- (a) How should an open access measure be designed and specified to ensure it remedies the SLC and the adverse effects that have provisionally been identified?
- (b) How would an open access remedy address any future developments in application software?
- (c) Who should an open access application software remedy be made available to?
- (d) How might compliance by Thermo Fisher be monitored and any disputes be resolved?
- (e) What would be the initial and ongoing costs to Thermo Fisher or to Thermo Fisher's customers of an application software open access remedy?

Behavioural remedies in the context of information sharing concerns

- 38. As a result of the Proposed Merger, it is expected that Thermo Fisher will gain access to commercially sensitive information of its rival TEM suppliers and that it will have the incentive to use this information to compete less aggressively in the supply of TEMs (including TEMs with peripherals) and/or otherwise to put its TEM rivals at a competitive disadvantage thereby harming competition.
- 39. One potential means of overcoming these provisional concerns could be the imposition of firewall measures as these can prevent access to privileged information by effectively insulating the firm or division generating the information from parts of the group. This is generally achieved by restricting information flows and use of shared services, physically separating premises and staff, and regulating transfers of management and any permitted interactions between relevant staff.¹⁴
- 40. Integration of Gatan's products into Thermo Fisher's TEMs is a key part of Thermo Fisher's stated rationale for the Proposed Merger. The CMA is of the view that this could conflict with and potentially undermine the effectiveness of a firewall. The CMA also considers that there are large incentives that risk undermining an information firewall as Gatan will ultimately be answerable to Thermo Fisher.

¹⁴ Merger Remedies, paragraph 7.25.

41. The CMA invites views on the effectiveness of a firewall remedy in terms of specification, circumvention, and monitoring and enforcement risks and in particular on the following:
- (a) Is it possible to implement firewall measures¹⁵ between Gatan and Thermo Fisher to prevent commercially sensitive information relating to Gatan's customers being shared with Thermo Fisher?
 - (b) How would such a firewall remedy be designed?
 - (c) How might compliance by Thermo Fisher with a firewall remedy be monitored and any disputes be resolved?
 - (d) What would be the initial and ongoing costs to Thermo Fisher or to Thermo Fisher's customers of a firewall remedy?

Behavioural remedies in the context of horizontal concerns

42. The CMA's view is that there is no behavioural remedy that would address the provisional horizontal concerns with respect to DD cameras and filters. The CMA invites specific views on:
- (a) whether there are any behavioural measures that would effectively address the provisional horizontal concerns with regards to DD cameras and filters?

Cost of remedies and proportionality

43. In order to be reasonable and proportionate, the CMA will seek to select the least costly remedy, or package of remedies, that it considers will be effective. The CMA will seek to ensure that no remedy is disproportionate in relation to the SLC and its adverse effects. Between two remedies that the CMA considers equally effective, it will choose that which imposes the least cost or restriction.¹⁶
44. The CMA invites views on what costs are likely to arise in implementing each remedy option.

¹⁵ These may be referred to alternatively as 'Chinese wall' measures.

¹⁶ Merger Remedies, paragraph 3.6

Relevant customer benefits

45. In deciding the question of remedies, the CMA may in particular have regard to the effect of any remedial action on any relevant customer benefits in relation to the creation of the relevant merger situation.¹⁷
46. Relevant customer benefits are limited by the Act to benefits to ‘relevant customers’ in the form of:
- (a) ‘lower prices, higher quality or greater choice of goods or services in any market in the United Kingdom ... or
 - (b) greater innovation in relation to such goods or services.’¹⁸
47. For these purposes, ‘relevant customers’ are direct and indirect customers (including future customers) of the merger parties at any point in the chain of production and distribution – they are not limited to final consumers.¹⁹
48. The Act provides that a benefit is only a relevant customer benefit if the CMA believes that:
- (a) the benefit may be expected to accrue within a reasonable period as a result of the creation of the relevant merger situation; and
 - (b) the benefit is unlikely to accrue without the creation of that situation or a similar lessening of competition.²⁰
49. The Parties have put to the CMA that there a number of customer benefits that will arise as a direct result of the Proposed Merger. The CMA welcomes views on the nature of any relevant customer benefits and on the scale and likelihood of such benefits and the extent (if any) to which these are affected by the different remedy options under consideration.
50. The CMA invites specific views on the scale and likelihood of the relevant customer benefits claimed by the Parties set out below²¹:
- (a) **Elimination of double marginalisation (EDM).** Gatan currently sells peripherals to Thermo Fisher with [X] margins. Post-Proposed Merger, Thermo Fisher will acquire these products at cost. If these cost savings

¹⁷ Section 36(4) of the Act, see also [Merger Remedies: CMA87](#) (December 2018), paragraph 3.15 and 3.16.

¹⁸ Section 30(1)(a) of the Act, see also [Merger Remedies: CMA87](#) (December 2018), paragraph 3.17.

¹⁹ Section 30(4) of the Act, see also [Merger Remedies: CMA87](#) (December 2018), paragraph 3.18.

²⁰ Section 30(3) of the Act, see also [Merger Remedies: CMA87](#) (December 2018), paragraph 3.19.

²¹ See chapter 13 of the provisional findings report on Efficiencies.

are at least partially passed on to consumers, this will result in lower prices for TEM systems.

- (b) **Better integration of peripherals, and reductions in the total costs of TEM system ownership (TCO).** The Parties submit that Thermo Fisher [X]. Greater integration could enable Thermo Fisher to produce better products and reduce TCO for Gatan filter users. Further, Thermo Fisher will be able to apply Gatan's data compression technology to its own peripherals. This will reduce the TCO for Thermo Fisher customers.
- (c) **Improved TEM and peripheral maintenance and support.** The Parties submit that Gatan customers will benefit from Thermo Fisher's extensive and faster maintenance and service support. Customers will also benefit from a single point of contact and having engineers that are trained on both systems.
- (d) **Product repositioning.** The Parties submit that Thermo Fisher will have incentives to reposition Gatan and Thermo Fisher peripherals, which will improve the variety of products available to customers.
- (e) **Sales expansion.** The Parties submit that the impact of the above efficiencies will enable Thermo Fisher to offer cheaper and more accessible microscopes. This could increase the use of TEMs in both material and life science.

Next steps

- 51. Interested parties are requested to provide any views in writing, including any practical alternative remedies they wish the CMA to consider, by 1 May 2019 (see Note (i)).
- 52. A copy of this notice will be posted on the [CMA website](#).

Martin Coleman

Group Chairman

17 April 2019

Note

(i) This notice of possible actions to remedy, mitigate or prevent the SLC and/or any resulting adverse effects is made having regard to the Provisional Findings announced on 17 April 2019. The main parties have until 8 May 2019 to respond to the Provisional Findings. The CMA's findings may alter in response to comments it receives on its Provisional Findings, in which case the CMA may consider other possible remedies, if appropriate.