

# **ANTICIPATED ACQUISITION BY THERMO FISHER SCIENTIFIC INC. OF THE ELECTRON MICROSCOPE PERIPHERALS BUSINESS OF ROPER TECHNOLOGIES, INC.**

## **Issues Statement**

**31 January 2019**

### **The reference**

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 acquisition by Thermo Fisher Scientific Inc. (Thermo Fisher) of the electron microscope peripherals business (the Target) of Roper Technologies, Inc. (Roper) (the Proposed Merger) for further investigation and report by a group of CMA panel members.
2. In exercise of its duty under section 36(1) of the Act, the CMA must decide:
  - (a) whether arrangements are in progress or in contemplation which, if carried into effect, will result in the creation of a relevant merger situation; and
  - (b) if so, whether the creation of that situation may be expected to result in a substantial lessening of competition (SLC) within any market or markets in the UK for goods or services.
3. In this statement, the CMA sets out the main issues that it is likely to consider in reaching its decision. This does not preclude the consideration of any other issues which may be identified during the inquiry.

### **Background**

4. Thermo Fisher is a US-based corporation, listed on the New York Stock Exchange. Thermo Fisher is a global manufacturer of a broad range of analytical instruments, scientific equipment, consumables, services and software for research, analysis, discovery and diagnostics.

5. Thermo Fisher manufactures electron microscopes (EMs) through its wholly-owned subsidiary FEI Company (FEI) which it acquired in 2016. Thermo Fisher supplies both transmission EMs (TEMs) and scanning EMs (SEMs) for use in life science, material science and semiconductor applications. Thermo Fisher also supplies EM peripherals such as cameras and detectors, both with its EMs and separately to customers who already have a compatible Thermo Fisher EM.
6. The turnover of Thermo Fisher in 2017 was approximately £16 billion worldwide, of which approximately £[~~1~~] million was generated in the UK.
7. Roper is a US-based manufacturer of technological equipment. Roper manufactures and supplies EM peripherals globally under the Gatan brand, including: filters, direct detection (DD) and general imaging (GI) cameras, detectors, and specimen preparation kits.
8. The Target's turnover in 2017 was approximately £[~~1~~] million worldwide, of which approximately £[~~1~~] million was generated in the UK.
9. On 24 April 2018, Thermo Fisher agreed to acquire the electron microscope peripherals business of Roper for approximately US\$925 million. The Target consists of the entire share capital of several Roper subsidiaries, as well as certain other associated assets and liabilities of Roper. The Target operates under the Gatan brand.
10. The Proposed Merger is not yet complete and is conditional upon clearance by the CMA. Thermo Fisher and the Target informed the CMA that the Proposed Merger had also been the subject of review by the Federal Trade Commission in the USA and the Austrian Federal Competition Authority. The Proposed Merger has been allowed to proceed by both authorities.
11. In this document and in this inquiry, the CMA will refer to Thermo Fisher and the Target as 'the Parties' or the 'Merged Entity'.

## **The markets in which the Parties operate**

12. The purpose of market definition is to provide a framework for the analysis of the competitive effects of a merger. The relevant market contains the most significant competitive alternatives available to the customers of the merging firms and the most relevant constraints on the behaviour of the merging firms.<sup>1</sup>

---

<sup>1</sup> [Merger Assessment Guidelines](#), paragraph 5.2.1.

13. However, the boundaries of the market do not determine the outcome of the CMA's analysis of the competitive effects of the merger in any mechanistic way. In assessing whether a merger may give rise to an SLC, the CMA may consider constraints outside the relevant market, segmentation within the relevant market, or other ways in which some constraints are more important than others.<sup>2</sup>
14. In general, the CMA notes that market definition and the analysis of competitive effects largely overlap since both are driven by considerations relating to the 'closeness' of substitution between the Parties' offers and those of alternatives.

### ***Product markets***

15. The Parties are vertically related as the Target is active upstream in the supply of peripherals to Thermo Fisher, and Thermo Fisher is active in the downstream market for the sale of EMs with the Target's peripherals. The Target supplies Thermo Fisher, as well as other manufacturers of EMs and end-users, with cameras, filters and sample holders. Thermo Fisher also buys specimen preparation products and detectors from the Target.
16. The Parties overlap horizontally in the supply of peripherals (e.g. specimen preparation products, cameras and detectors) for use with EMs. The Target supplies peripherals to EM manufacturers and on some occasions (such as on the aftermarket) to end-users. Thermo Fisher sells specimen preparation products as standalone products and supplies other peripherals either with its EMs or to customers who already have a Thermo Fisher EM.
17. On the basis of the information obtained to date (including during the CMA's initial Phase 1 investigation), the CMA thinks the descriptions below are useful starting points for the various market definitions.<sup>3</sup>
  - (a) Upstream, the supply of the following products to EM manufacturers and end users:
    - (i) Filters;
    - (ii) DD cameras; and
    - (iii) GI cameras.

---

<sup>2</sup> [Merger Assessment Guidelines](#), paragraph 5.2.2.

<sup>3</sup> This only includes market definitions that relate to the theories of harm covered in the Issues Statement.

(b) Downstream, the supply of the following products:

- (i) TEMs with filters;
- (ii) TEMs with DD cameras; and
- (iii) TEMs with GI cameras.

18. The CMA will consider whether there are narrower or broader segmentations where the Parties' offerings may compete in its examination of the closeness of competition. See the section on '[Theories of harm to be investigated by the CMA](#)' below. The CMA welcomes comments on this.

### ***Geographic market***

19. The statutory test for this inquiry is whether the Proposed Merger may be expected to result in an SLC within any market(s) in the UK for goods or services. The CMA will, therefore, focus on competitive effects in the UK and on the effects on UK customers.
20. In doing so, the CMA will take account of global matters to the extent that they have competitive effects in the UK. The CMA will collect both UK and global data from the Parties on matters such as sales, prices and margins, most likely with more detailed data for the UK sales and aggregated data for global sales. The CMA will consider all relevant global competitors and it will analyse any economic incentives of the Parties (such as to foreclose) in the context of their operations in a global market.

## **Assessment of the competitive effects of the Proposed Merger**

### ***Counterfactual***

21. The CMA will consider the possible effects of the Proposed Merger on competition compared with the degree of competition in the counterfactual situation (that is, the situation that would have arisen in the short to medium term absent the Proposed Merger).
22. For anticipated mergers, such as the Proposed Merger, the CMA generally adopts the prevailing conditions of competition as the counterfactual against which to assess the impact of the merger. The CMA may examine several possible scenarios, one of which may be the continuation of the pre-merger situation but ultimately only the most likely scenario will be selected as the counterfactual.

23. The CMA will typically incorporate into the counterfactual only those aspects of scenarios that appear likely on the basis of available facts and its ability to foresee future developments. The CMA seeks to avoid assessment of any spurious claims to accurate prediction or foresight.
24. Since announcing the Proposed Merger, Thermo Fisher has entered into long-term agreements with two EM manufacturers (JEOL and Hitachi), which would govern the supply of the Target's peripherals following completion of the Proposed Merger.
25. As the agreements are conditional upon completion of the Proposed Merger, the CMA's starting point is that these agreements would not have existed in the absence of the Proposed Merger. However, the CMA may still consider the impact of the agreements in its competitive assessment.

### ***Theories of harm to be investigated by the CMA***

26. Theories of harm describe the possible ways in which an SLC may be expected to result from a merger and provide the framework for analysis of the competitive effects of a merger. The CMA sets out below the theories of harm that it is currently planning to investigate.
27. The CMA may revise its theories of harm as the inquiry progresses. The identification of a theory of harm does not preclude an SLC being identified on another basis following further work by the CMA, or its receipt of additional evidence.
28. For example, the CMA considered whether it should investigate a coordinated effects theory of harm and a potential competition theory of harm. The CMA may revisit the former when it has analysed the available information. Regarding the latter, the CMA will initially assess whether this applies to filters by looking at whether Thermo Fisher has any plans to begin producing filters and whether the threat of entry into filters by Thermo Fisher imposes a competitive constraint on the Target.<sup>4</sup>
29. The CMA is currently considering a vertical theory of harm and a horizontal theory of harm.

---

<sup>4</sup> The CMA will assess actual potential competition and perceived potential competition. Thermo Fisher does not currently manufacture filters but the Target does. Absent the Proposed Merger, if Thermo Fisher began to manufacture filters, it could impose a competitive constraint on the Target. This actual potential competition would be lost if the Parties merge, which could lead to a worse offering to end users. Absent the Proposed Merger, the threat of entry into filters by Thermo Fisher may impose a competitive constraint on the Target. This perceived potential competition would be lost if the Parties merge, which could lead to a worse offering to end users.

30. The concern under a vertical theory of harm is that bringing together the merging parties creates or increases the ability or incentive of the Merged Entity to harm competition at one level of the supply chain through its behaviour at another level of the supply chain.
31. The concern under a horizontal (unilateral) effects theory of harm is that the removal of one party as a competitor allows the Merged Entity to increase prices, lower quality, reduce the range of their services and/or reduce product development, all relative to the counterfactual.
32. In addition to considering each theory of harm separately, the CMA will also consider how the theories interact, and consider the effect of the Proposed Merger in the round.
33. **The CMA welcomes views on the theories of harm set out below and the potential theory of harm with regard to filters, as well as suggestions as to additional theories of harm that it might consider.**

*Theory of harm 1: vertical effects. The Merged Entity uses its market power upstream to harm rivals downstream through input foreclosure.*

34. The CMA will examine whether the Proposed Merger may be expected to result in an SLC as a result of vertical input foreclosure. This could be through total foreclosure, whereby the Merged Entity stops supplying the Target's peripherals to competing TEM suppliers altogether, or partial foreclosure whereby the Merged Entity may increase prices, reduce quality or restrict access to the Target's peripherals.
35. The Target supplies a range of peripherals to suppliers of TEMs. The CMA proposes to focus analysis specifically on the supply of filters, DD cameras and GI cameras to TEMs, where, based on the information obtained to date (including during the CMA's Phase 1 investigation), the Parties have high shares of supply. The CMA proposes to consider related products and services to the extent that they are relevant to the products specified above (for example, as complements, substitutes or offered as part of a package).
36. Three necessary conditions need to be met for this vertical theory of harm to hold:
  - (a) **Ability** – will the Merged Entity have the ability to harm competitors? To answer this question, the CMA will consider:
    - (i) whether the Parties have market power. For example, the alternatives available to competitors to the peripherals supplied by

the Merged Entity and the costs of switching to such alternatives, including self-supply;

- (ii) the importance of filters, DD and GI cameras to TEM suppliers;
- (iii) the mechanisms through which the Merged Entity could harm competitors, e.g. a price increase, a worsening of the quality of peripherals, reduced access to, or compatibility with, new peripheral models, or by refusing to supply peripherals, etc;
- (iv) the extent to which supply agreements protect competing TEM suppliers from any foreclosure strategy; and
- (v) the extent to which there are barriers to entry and expansion in the supply of peripherals for use with TEMs.

(b) **Incentive** – will the Merged Entity have the incentive to harm competitors? To answer this question, the CMA will consider:

- (i) the Parties' revenues and margins, their key drivers and relative size in order to understand the profits that the Merged Entity would gain and lose from foreclosing TEM competitors;
- (ii) the extent to which the Merged Entity could divert a sufficient volume of TEM customers to its own platform to make a foreclosure strategy profitable.

(c) **Effect** – will any resulting harm to competitors result in harm to competition? To answer this question, the CMA will consider:

- (i) whether the Merged Entity will have the ability to foreclose a sufficient number of TEM providers in order for such a strategy to have a substantial effect on competition;
- (ii) whether there are any efficiencies (including customer benefits) resulting from the Proposed Merger.

37. The CMA will also consider what access the Merged Entity will have, as a result of its ownership of the Target, to commercially sensitive information on rival TEM manufacturers, such as their planned price changes, their bidding behaviour, their quality of service and/or product developments. Access to such information could result from the Merged Entity supplying peripherals to rival TEM suppliers.

38. The CMA will consider the extent to which this information could be used to weaken competition as part of, or separately to, a foreclosure strategy. For

example, access to price or other information on rival TEM manufacturers may allow the Parties to compete less aggressively on price and/or quality and so lead to a worse offering to customers.

39. If it is likely that the Merged Entity would have access to such confidential information, the CMA will consider the extent to which there are any factors that might mitigate against the inappropriate use of such information, and the role of the supply agreements in mitigating any potential concern.
40. Finally, as part of its assessment, the CMA will also consider the importance of Thermo Fisher's wider commercial relationships with competing TEM providers, and the extent to which this might affect the incentive to engage in a foreclosure strategy. It might do this by reducing the incentive to foreclose because of the risk of retaliation by the competitor in respect of the wider commercial relationship, or by increasing the incentive, as a response by Thermo Fisher, to a competitor's wider commercial behaviour.

*Theory of harm 2: horizontal unilateral effects on the supply of DD and/or GI cameras*

41. The CMA will examine whether the Proposed Merger may be expected to result in an SLC as a result of horizontal unilateral effects in the supply of DD and/or GI cameras.
42. The Target sells cameras to TEM manufacturers, as well as to distributors and directly to end-customers. Thermo Fisher sells cameras either together with its TEMs or to customers who already have a compatible Thermo Fisher TEM. In some cases, Thermo Fisher supplies customers with the Target cameras, for example if the user specifies certain requirements which can only be met with a Target product.
43. The CMA will assess whether, as a result of the loss of direct competition between the Parties, the Merged Entity could increase the price of its products, deteriorate quality and/or reduce the supply of new products to the market.
44. In general, for this theory of harm to be substantiated, the following conditions must be met:
  - (a) The Parties are close competitors in the supply of DD and/or GI cameras.
  - (b) Rivals are unlikely to replace effectively the competitive constraint that the Parties exert on one another, or that one Party exerts on the other if they constrain each other asymmetrically, in the supply of DD and/or GI cameras.



(c) Rivals are unlikely to enter or expand in the market for the supply of DD and/or GI cameras within a reasonable timeframe and which can replace the competitive constraint that would be lost through the Proposed Merger. Further consideration of this is set out in the section on [countervailing factors](#) below.

45. The CMA will consider whether any competitive effects of the Proposed Merger vary significantly according to type of customer or product.

### **Countervailing factors**

46. The CMA will consider whether there are countervailing factors which are likely to prevent or mitigate any SLC that it may find.

### ***Entry and expansion***

47. The CMA will consider whether entry or expansion by effective competitors, including self-supply of peripherals by competing TEM providers, could be expected to be timely, likely and sufficient to prevent any SLC that it may find. To do this, the CMA will:

- (a) look at the history of entry, expansion including acquisition, and exit by the Parties and by their competitors in both upstream and downstream markets; review any future plans and projections of market growth;
- (b) consider the costs, time and other requirements (such as reputation or specialist R&D) necessary to enter and/or expand for competitors or new entrants;
- (c) consider other barriers to entry/expansion including the costs and time required; and
- (d) examine other factors that might inhibit entry or the expansion of existing competitors, such as the importance of reputation and any impediments to switching amongst customers.

### ***Buyer power***

48. The CMA will investigate whether customers individually or collectively, have countervailing buyer power, and whether this buyer power would be sufficient to address any effects of any SLC that it may find. To an extent, this will be influenced by the alternatives available to customers, which the CMA will cover in the competitive assessment.

## ***Efficiencies***

49. The CMA will examine any evidence put to us in relation to efficiencies arising from the Proposed Merger. In particular, it will consider whether there are merger-specific rivalry-enhancing efficiencies such that the Proposed Merger may not be expected to result in an SLC.

## **Possible remedies and relevant customer benefits**

50. Should the CMA provisionally conclude that the Proposed Merger may be expected to result in an SLC in one or more markets, it will consider whether, and if so what, remedies might be appropriate, and it will issue a further statement.
51. In any consideration of possible remedies, the CMA may have regard to their effect on any relevant customer benefits that are put to it, that may be expected to arise as a result of the Proposed Merger and, if so, what those benefits are likely to be and which customers would benefit.

## **Responses to the issues statement**

52. Any party wishing to respond to this issues statement should do so in writing by no later than **10:00 GMT on Tuesday 19 February 2019**.
53. Please email [thermofisher\\_roper@cma.gov.uk](mailto:thermofisher_roper@cma.gov.uk) or write to:

Project Manager  
Thermo Fisher – Roper Inquiry  
Competition and Markets Authority  
Victoria House  
Southampton Row  
LONDON  
WC1B 4AD