Anticipated acquisition by Hitachi Rail, Ltd of Thales SA's Ground Transportation Systems Business

Addendum Provisional Findings Report

Notified: 23 August 2023

CMA
Competition & Markets Authority

The Competition and Markets Authority has excluded from this published version of the addendum provisional findings report information which the inquiry group considers should be excluded having regard to the three considerations set out in section 244 of the Enterprise Act 2002 (specified information: considerations relevant to disclosure). The omissions are indicated by [✂].

Contents

Page

Addendum Provisional Findings 2
1. Introduction 2
2. Competition assessment 3
   Uncertainty 4
      Parties' view 4
      TfL's views 5
      Our provisional assessment 6
   Local knowledge and capacity 7
      Parties' views 7
      TfL's views 8
      Our provisional assessment 11
   Hitachi's capabilities in undertaking complex CBTC projects 12
      Parties' view 12
      TfL's views 13
      Our analysis of Hitachi's bidding decisions 14
      Our analysis of Hitachi's brownfield projects 19
      Our provisional assessment 26
3. Provisional assessment 26
4. Provisional conclusion 29
5. Responses to this Addendum 29

Addendum Provisional Findings

1. Introduction

1.1 On 8 June 2023, the Competition and Markets Authority (**CMA**) published its provisional findings (the **Provisional Findings**) on the anticipated acquisition by Hitachi Rail, Ltd. (**Hitachi**) of Thales SA's Ground Transportation Systems Business of Thales SA (**Thales**) (the **Merger**) (together the **Parties**).[1]

1.2 The Provisional Findings set out the CMA's provisional view that the Merger may be expected to result in a substantial lessening of competition (**SLC**) in the supply of communications-based train control signalling systems and related services (**CBTC systems**) in the United Kingdom (**UK**) and also in the supply of digital mainline signalling systems and related services (**digital mainline signalling systems**) in Great Britain (**GB**). The Provisional Findings also explained the reasons for this provisional view, by reference to a wide range of evidence, including submissions from the Parties, internal documents and third-party evidence.

1.3 This addendum focuses on the CMA's Provisional Findings in relation to the effects of the Merger in the supply of CBTC systems in the UK. Nothing in this addendum represents a change in the Provisional Findings insofar as they relate to the supply of digital mainline signalling systems in GB.

1.4 Information gathering takes place throughout a phase 2 inquiry.[2] In line with our standard practice, we have continued to collect and analyse evidence relevant to our investigation since the publication of the Provisional Findings.[3] In doing so, we have taken account of the Parties' submissions in response to the Provisional Findings in relation to the provisional SLC decision.

1.5 The evidence and analysis set out in this addendum should be read in conjunction with the Provisional Findings.[4]

1.6 Transport for London (**TfL**) is the main customer for CBTC systems in the UK and its current suppliers of CBTC systems are Thales and Siemens. Hitachi does not currently supply CBTC systems to TfL. CBTC projects in the London Underground are regarded as being highly complex, owing to the sprawling nature of an aged network that has been in existence for over a century with its multiple lines, intersections, junctions, and narrow deep tube tunnels. The

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[1] CMA, Provisional Findings (publishing.service.gov.uk), 8 June 2023.
[2] Mergers: Guidance on the CMA's jurisdiction and procedure (**CMA2**), December 2020, paragraph 11.6.
[3] CMA2, paragraph 10.9.
[4] The defined terms in this addendum have the same meaning as in the Provisional Findings.

network is used for hundreds of millions of passenger journeys each year with trains operating at speed and high frequency matched by few other networks. There are relatively few suppliers that have the necessary track record and capabilities to meet TfL's requirements for future CBTC projects.

1.7 The question we are considering in this context, therefore, is whether Hitachi would, in the absence of the Merger, become a credible competitor for future CBTC contracts on the London Underground and whether the Merger, by removing Hitachi as a competitor, might result in an SLC in the supply of CBTC systems in the UK.

1.8 Following the submissions from the Parties received in response to the Provisional Findings, we collected additional evidence from TfL and the Parties and undertook further analysis on Hitachi's capabilities to undertake complex brownfield projects and whether it could compete credibly for London Underground tenders. As a result of this new evidence, which we have taken into account together with the evidence that we have received to date, we have now provisionally concluded that while Hitachi is developing its capabilities in undertaking complex brownfield projects, it is unlikely to have the portfolio of completed brownfield CBTC projects or the relevant experience to compete credibly for London Underground CBTC contracts within the relevant timeframe. Our assessment is that Hitachi's references are likely still to fall some way short of the three other strong global suppliers. On this basis, we consider that the Parties are not likely to be close competitors for future London Underground tenders, given the likely timings of these tenders.

1.9 On the basis of this evidence, together with the evidence set out in our Provisional Findings, our provisional view is that the Merger may not be expected to result in an SLC in the market for the supply of CBTC systems in the UK. As mentioned above, our Provisional Findings in relation to the supply of digital mainline signalling systems in GB remain the same.

2. Competition assessment

2.1 In response to the Provisional Findings, the Parties made several submissions relating to the uncertainty around the timeframe of our assessment, as well as on the closeness of competition between the Parties and the constraints from other suppliers.[5] We collected additional evidence and undertook further analysis, including in relation to the Parties' representations. This section sets out the key evidence considered since the

[5] Parties' response to Provisional Findings, 29 June 2023.

Provisional Findings, and our provisional assessment of whether the Merger would result in an SLC for the supply of CBTC signalling systems in UK. The structure of this section is as follows:

(a) Uncertainty: the likelihood, timing and scope of the future Piccadilly and Bakerloo line CBTC tenders.

(b) Local knowledge and capacity: TfL's evidence on entry barriers in the supply of CBTC in the London Underground and how it would evaluate suppliers' capabilities in future London Underground tenders.

(c) Hitachi's capabilities in undertaking complex brownfield CBTC projects: evidence on Hitachi's recent bidding decisions and assessment of Hitachi's portfolio of brownfield projects, in the light of the new evidence from TfL on the timing for future Piccadilly and Bakerloo line CBTC tenders and its requirements for delivering CBTC projects on the London Underground.

Uncertainty

2.2 In our Provisional Findings, we considered that, based on the evidence available to us at the time, the procurement for the Piccadilly and Bakerloo lines would take place around 2035.[6] On this basis, we considered that the appropriate timeframe for our competition assessment was around 10–12 years.[7] In this section, we set out the Parties' key submissions and new evidence from TfL with respect to the uncertainty around the timing and selection process to award future London Underground CBTC procurements.

Parties' view

2.3 The Parties submitted that there was 'insufficient certainty as to when, if at all, the Piccadilly and Bakerloo projects' would arise for the CMA to sensibly take them into consideration as a future possible SLC.[8] The Parties indicated that the following factors were unknown:

(a) If or when TfL will have funding to launch a tender for the projects concerned.

(b) Timing of any tender for the projects (which appears at least ten years away).

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[6] Provisional Findings, paragraph 10.321.
[7] Provisional Findings, paragraph 9.49.
[8] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.3.

(c) The subject matter and process for any future contract award. The Parties argued that TfL had changed its position in relation to the Central Line, [✂], and may change its plans for the Piccadilly and Bakerloo lines.

(d) Whether Hitachi would satisfy TfL's requirements in the future, which have not yet been scoped.[9]

TfL's views

2.4 TfL told us that the resignalling of the Piccadilly and Bakerloo lines would be competitively tendered.[10] While TfL did not provide precise and definitive timings, as the projects were subject to funding, TfL viewed 2030 as 'a strategic date' for procuring the signalling systems.[11] TfL indicated that the procurement may take place earlier or later than 2030, depending on when it receives funding from the Department for Transport (**DfT**).[12] TfL noted that the Piccadilly line rolling stock procurement had already commenced and, in an ideal world, the signalling system would take place alongside (or shortly after) the rolling stock procurement.[13]

2.5 TfL indicated that 2035 was a 'long stop-date' for the Bakerloo line.[14] If procurement started in 2035, the signalling system and rolling stock would be 50 years old, which would be unheard of in a metro environment.[15] Consistent with other evidence from the Provisional Findings, TfL indicated that it would probably need to close the Bakerloo line, as it would be uneconomical to continue to extend the useful life of the existing signalling infrastructure.[16] TfL indicated that the tender process would likely take between 12–18 months.[17]

2.6 TfL told us that the nature of the work on the Central Line was different from the Piccadilly and Bakerloo lines.[18] TfL told us that on the Central Line it was undertaking a rolling upgrade of the overall signalling system as opposed to a replacement of the signalling system.[19] As explained in the Provisional Findings, TfL typically awards upgrade works to the incumbent supplier.[20] As stated above, the Bakerloo and Piccadilly lines require replacement of the existing signalling system, which would, in addition to the renewal of the

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[9] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.3.
[10] TfL call transcript, 19 July 2023, page 3.
[11] TfL call transcript, 19 July 2023, page 4.
[12] TfL call transcript, 19 July 2023, page 3.
[13] TfL call transcript, 19 July 2023, page 3.
[14] TfL call transcript, 19 July 2023, page 4.
[15] TfL call transcript, 19 July 2023, page 4.
[16] TfL call transcript, 19 July 2023, page 4.
[17] TfL call transcript, 19 July 2023, page 4.
[18] TfL call transcript, 19 July 2023, page 5.
[19] TfL call transcript, 19 July 2023, pages 5 and 6.
[20] Provisional Findings, paragraph 9.11.

signalling assets, enhance passenger capacity.[21] For resignalling works TfL will undertake a competitive tender process, in compliance with the applicable regulations and legislation at that time.[22] TfL indicated that resignalling the Waterloo & City line did not form any part of TfL's current business plans or its procurement pipeline activity.[23]

2.7 In relation to the other London Underground lines that were signalled between 2003 and 2015 (eg Jubilee, Northern, Victoria and Elizabeth lines), TfL indicated that it was changing its approach from resignalling projects to incremental upgrades, although TfL indicated the decision would depend on the development of technology during the intervening period and whether resignalling would be beneficial in 20–30 years when the assets would be nearing the end of their useful life.[24]

2.8 As noted in the Provisional Findings, Crossrail 2 was considered as 'aspirational' as the funding was a 'long way off'.[25] TfL indicated that if Crossrail 2 was procured, it would follow a similar model to Crossrail and would be awarded through a competitive tender.[26]

Our provisional assessment

2.9 The evidence above indicates that the procurement of the Piccadilly and Bakerloo lines would likely occur around 2030, with a long-stop date of 2035. Other London Underground lines are not likely to require resignalling within a timeframe that is relevant to our assessment, as TfL may upgrade and renew the CBTC technology on a rolling basis. As set out in the Provisional Findings, these types of projects would be unlikely to undergo a competitive process.[27]

2.10 In light of the additional input from TfL, we consider that the relevant timeframe for our assessment is the next seven years. Given that only the Piccadilly and Bakerloo lines are likely to be tendered within that timeframe, we have focused our assessment on the impact of the Merger on the competition for these two tenders.

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[21] TfL call transcript, 19 July 2023, page 7.
[22] Provisional Findings, paragraph 9.12 and TfL call transcript, 19 July 2023, page 5.
[23] TfL call transcript, 19 July 2023, page 6.
[24] TfL call transcript, 19 July 2023, page 6.
[25] Provisional Findings, paragraph 9.20.
[26] TfL call transcript, 19 July 2023, page 8.
[27] Provisional Findings, paragraph 9.20.

Local knowledge and capacity

2.11 In our Provisional Findings, we considered that existing CBTC suppliers on the London Underground would likely benefit from a potentially significant competitive advantage when they compete for future London Underground tenders. Notwithstanding the material incumbency advantages, we found that new entrants would likely be able to compete and act as a constraint on incumbent suppliers, depending on their global experience and overall capabilities as a CBTC supplier.[28]

2.12 In this section, we set out the Parties' submissions and we also set out the new evidence from TfL, which provides further clarity on the nature and extent of the incumbency advantages and how TfL would assess suppliers (incumbents and new entrants) in future London Underground tenders.

Parties' views

2.13 The Parties' submissions in relation to the 'local knowledge and capacity' parameter broadly reiterated the evidence set out in the Provisional Findings.[29] The Parties submitted that the competitive pressure that CBTC suppliers would exert on each other was as much a function of perception as of objective factors. In the Parties' view, competitors would have a low expectation of Hitachi's competitive strength for London Underground projects as:

(a) Incumbents have a significant advantage when competing for CBTC projects. Thales, as an incumbent supplier in London, would be aware of these advantages compared to Hitachi, which has never seriously competed for or won a project in London.[30] Thales would not ascribe any real probability to the likelihood of Hitachi submitting a strong bid.[31]

(b) Hitachi did not have signalling resources in London.[32] In the Parties' view, the CMA underestimated the size of investment involved in hiring and training sufficient resources with the right skills, as well as in successfully constructing a winning tender.[33]

2.14 Thales estimated that a new entrant would incur incremental investment costs in the region of £[✂] million[34] to enter as a supplier of CBTC signalling to TfL

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[28] Provisional Findings, paragraph 10.97.
[29] Parties' response to Provisional Findings, 29 June 2023, paragraphs 3.22 to 3.28.
[30] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.18.4.
[31] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.18.4.
[32] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.18.5.
[33] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.18.5.
[34] Thales provided a breakdown of its estimate: [✂].

for the London Underground.[35] Thales submitted that its £[✂] million estimate for technology adaptation was based on the cost of developing its own CBTC technology [✂].[36] Thales indicated that this took into account the work done between [✂] and [✂] to [✂], and the further work done between [✂] and [✂] to [✂].[37] Thales commented that the investment required would depend on the product starting point and the entrant's experience and development efficiency.[38]

2.15 Hitachi estimated that a new entrant would need to 'spend [✂] in order to deliver a hypothetical CBTC project in London'.[39] Hitachi submitted this was based on 'best estimates', as it had no previous experience in London.[40]

2.16 Thales estimated the bid costs for the future Bakerloo and Piccadilly tenders would be in the region of £[✂] million [✂], based on its experience bidding for similar projects with highly specific requirements and complex contracts.[41] Thales submitted that it had incurred bid costs on 4LM and [✂].[42] Hitachi estimated bid costs of between €[✂] million for the future Piccadilly and Bakerloo line tenders.[43] Hitachi submitted that it had incurred around £[✂] in responding to [✂].[44]

2.17 The Parties argued further that the CMA did not demonstrate that there was a material likelihood that Hitachi would overcome the high entry barriers and that it would be a more credible competitor than Siemens (which it considered to be the closest competitor to Thales).[45]

TfL's views

TfL's views on incumbency advantages

2.18 TfL told us that the London Underground was 'towards the complex or very complex end of the spectrum'. TfL told us that there were very few metro systems that shared the same level of complexity as the London Underground.[46]

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[35] Thales response to RFI dated 7 August 2023, Question 1(a).
[36] Thales response to RFI dated 10 August 2023, Question 1.
[37] Thales response to RFI dated 10 August 2023, Question 1.
[38] Thales response to RFI dated 10 August 2023, Question 1.
[39] Hitachi response to RFI dated 7 August 2023, Question 1.
[40] Hitachi response to RFI dated 7 August 2023, Question 1.
[41] Thales response to RFI dated 7 August 2023, Question 1(b).
[42] Thales response to RFI dated 7 August 2023, Question 1(b).
[43] Hitachi response to RFI dated 7 August 2023, Question 1(b).
[44] Hitachi response to RFI dated 7 August 2023, Question 1(b).
[45] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.25.
[46] TfL call transcript, 8 February 2023, page 22.

2.19 TfL explained that it had learned lessons from the failed Sub Surface Rail (**SSR**) contract with Bombardier, specifically on the standards for assessing suppliers' technical competencies.[47] At the SSR tender, TfL had accepted Bombardier reference sites that did not demonstrate the supplier's capability to undertake complex brownfield projects (eg some of the references were for airport shuttles and not in a commissioned state).[48] TfL told us that in the light of the SSR and lessons learned exercise conducted by KPMG, it was more stringent in its assessment of reference sites; in tenders since the SSR TfL has required, and in future CBTC tenders will require, suppliers to demonstrate their ability to deliver CBTC resignalling projects in an environment similar to the London Underground.[49]

2.20 TfL indicated that existing suppliers would be able to demonstrate their capabilities through their previous London Underground experience, and this would likely confer a significant competitive advantage.[50] TfL, however, did not consider that some of the other incumbency advantages set out in the Provisional Findings, such as benefits, or cost advantages conferred on existing suppliers from their TfL curated technological solution, and access to trained staff and facilities, would be significant.[51]

2.21 Despite these incumbency advantages, TfL told us new entrants would still be able to compete credibly for future TfL tenders, if they could demonstrate that they have addressed the 'same requirements, the same characteristics in other railway environment' and that the characteristics of the other metro systems met with TfL's requirements.[52]

2.22 The following section sets out more detail on how TfL would assess suppliers' capabilities.

TfL's assessment of suppliers' capabilities in future tenders

2.23 As set out in the Provisional Findings, TfL attaches greater weight to the technical competence of a supplier than to its commercial offering.[53] TfL told us that it would assess suppliers' technical capabilities by reviewing suppliers' previous experience in undertaking complex brownfield projects.[54] At the PQQ stage of the DTUP tender, TfL assessed suppliers' capabilities against

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[47] TfL call transcript, 19 July 2023, page 23.
[48] Sub-Surface Upgrade Programme Automatic Train Control Contract – Lessons Learnt', paragraphs 3.3 and 3.4, and slide 6.
[49] TfL call transcript, 19 July 2023, page 23.
[50] Provisional Findings, paragraphs 10.56 and 10.57.
[51] Provisional Findings, paragraphs 10.38 and 10.39.
[52] TfL call transcript, 19 July 2023, page 16.
[53] Provisional Findings, paragraph 9.18.
[54] Provisional Findings, paragraph 9.30.

13 characteristics.[55] TfL told us it was considering the 'generic platform' at PQQ stage and would have considered line specific factors later in the tender process if it had proceeded with that procurement. TfL told us that it was reasonable to assume that the 13 characteristics identified in the DTUP tender were relevant for the assessment of suppliers' capabilities for future Piccadilly and Bakerloo line tenders. TfL explained that these 13 core characteristics would be the starting point for its assessment for future Piccadilly and Bakerloo line tenders, but it would assess other qualitative factors, such as size (eg length of line, number of stations), intensity of service and whether the system had been proven in a stressed environment.[56] In relation to the complexity factors identified by the Parties (set out in paragraph 9.26 of the Provisional Findings), TfL indicated that some of these factors were likely to have some merit and it may consider these factors holistically.[57]

2.24 In response to our question on whether suppliers would be required to demonstrate their capabilities with a single reference, TfL told us that it did not expect there to be another metro system in another location that would meet all of TfL's criteria. TfL would therefore consider references in the round and would not rate each reference individually.[58]

2.25 TfL told us that suppliers would have to demonstrate that their products were reliable, and that the overall system was performing at the required level. TfL indicated that this could only be demonstrated through projects that suppliers had completed and that had been in operational service for at least five years. TfL said that it would consider projects that had fewer years of operational service if the supplier was able to demonstrate its capabilities on other projects with more years of operational service.[59]

2.26 As set out in paragraph 2.23, TfL told us that it would place greater weight on the technical than the commercial component of the evaluation. However, TfL told us that if the supplier was able to demonstrate its ability to meet TfL's

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[55] Between the three examples, the following characteristics must be covered: (a) Operation at GoA4 with platform screen doors. (b) Evidence of certification of the product by a European or other Railway Safety Authority that may be cross-accepted by LU. (c) Migration from an existing lineside signalling system to CBTC. (d) Operation on the same tracks with another supplier's CBTC system (interoperability). (e) Operation on the same tracks with another supplier's fixed block, multiple aspect signalling system. (f) Length of track greater than 30 route-km. (g) Bored tunnels over at least a third of the route. (h) Number of equipped trains greater than 20. (i) Number of interlockings greater than 5. (j) Achieved Technical Headways less than 100 seconds with dwell times of up to one minute. (k) Maximum line speed at least 80 km/h. (l) Low voltage DC traction. (m) Installation and migration on a brownfield site

[56] TfL call transcript, 19 July 2023, page 9.

[57] TfL response to RFI dated 13 July 2023, questions 1 and 2.

[58] TfL call transcript, 19 July 2023, page 17.

[59] TfL call transcript, 19 July 2023, pages 11 and 19.

technical requirements, it would assess the supplier's commercial proposition and assess which bidders had offered the most attractive terms.[60]

Our provisional assessment

2.27 Our view remains, given the complexities of the London Underground, that existing suppliers would likely benefit from a significant competitive advantage when bidding for future TfL tenders. We have not received any new evidence to indicate otherwise. While TfL appears to attach less importance to some of the incumbency advantages identified in the Provisional Findings, we consider that this should be interpreted in the context of the other evidence from the Parties (see paragraphs 2.14 and 2.15) and third parties (see Provisional Findings, *Incumbency on the London Underground* section) that there are significant investment costs to enter the London Underground. As a result, incumbent suppliers may be able to compete more strongly or exploit the commercial component of the evaluation to a greater extent than new entrants as they would likely have lower investment costs.

2.28 The new evidence from TfL set out in paragraph 2.23 has provided greater clarity on how TfL would assess suppliers' capabilities, in particular on the experience that suppliers would require to compete credibly for future CBTC tenders on the London Underground. TfL indicated that the 13 characteristics it assessed at the DTUP tender would be a sensible starting point and in addition that it would consider other qualitative factors that may indicate whether a supplier has undertaken brownfield projects that share the complexity of the London Underground. TfL indicated that suppliers would have to demonstrate their capabilities through completed projects that have been operational for several years.

2.29 Based on the new evidence, we consider that incumbent suppliers are likely to have a significant competitive advantage with respect to the local know-how and capacity' parameter of competition. Nonetheless, for the reasons set out in our Provisional Findings and the evidence set out in this addendum, we consider that new entrants with the relevant capabilities and experience in undertaking other complex brownfield projects could, in principle, compete credibly for future London Underground tenders and exercise a meaningful constraint on incumbent suppliers.

[60] TfL call transcript, 19 July 2023, page 23.

Hitachi's capabilities in undertaking complex CBTC projects

2.30 In our Provisional Findings, we considered that Hitachi was an experienced supplier that had an established track record of undertaking high-value brownfield projects. While we noted that Hitachi [✂], our assessment had found that Hitachi has since expanded its portfolio of brownfield projects and its portfolio consisted of CBTC projects that met some or most of the characteristics that contributed to the complexity of a metro system. Before the next London Underground tender, Hitachi is expected to have completed the contracts for several brownfield references that it had not delivered at the time of the DTUP: Ankara ([✂], £[✂] million), Philadelphia ([✂], £[✂] million), Glasgow ([✂], £[✂] million), Brussels ([✂], £[✂] million), Baltimore ([✂], £[✂] million), Paris ([✂], £[✂] million) and BART ([✂], £[✂] million).[61]

2.31 Third-party evidence, including from some of Hitachi's key customers, indicated that Hitachi was performing well on its CBTC brownfield projects, including on projects where the Parties have told us that Hitachi [✂].[62] Internal document evidence shows that Hitachi [✂].[63]

2.32 Based on the evidence available to us at the time of the Provisional Findings, we considered that Hitachi had the relevant management experience and technical expertise to undertake complex brownfield projects and be a credible competitor for future London Underground contracts, exercising a meaningful constraint on Thales and the other potential bidders.[64]

Parties' view

2.33 Hitachi submitted again that [✂] tenders, [✂].[65] Hitachi argued that the CMA was wrong to discount the evidence from its recent decisions not to compete for brownfield tenders in [✂]. Hitachi contended that the factors that led it not to bid were not specific to these projects but were quite common in brownfield projects and CBTC projects more generally.[66] Hitachi submitted that the issues which [✂].[67]

2.34 Hitachi submitted that as a global supplier of CBTC projects, its local sales and bidding teams naturally identify and consider a range of CBTC opportunities, even if Hitachi ends up dismissing these early in the process for

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[61] Provisional Findings, paragraph 10.250.
[62] Provisional Findings, paragraphs 10.281 to 10.284.
[63] Provisional Findings, paragraphs 10.273 to 10.276.
[64] Provisional Findings, paragraph 10.340.
[65] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.14.
[66] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.16.
[67] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.16.

strategic decisions. Following our Provisional Findings, Hitachi identified another [✂] projects – [✂] – that it did not pursue and [✂].[68]

2.35 Hitachi submitted that [✂].[69] Hitachi noted that [✂].[70]

2.36 The Parties submitted that our case on Hitachi being a credible bidder revolved largely around the successful BART bid. The Parties submitted that BART was not as complex as London and that our analysis did not adequately reflect that it was a greater challenge to manage many dimensions of complexity at the same time, as was necessary in London, than it would be to manage just one or two, as might be necessary for BART.[71] The Parties also submitted that the BART project [✂].[72] The Parties submitted that BART was just one project that must also be assessed against the full context of Hitachi's brownfield experience, [✂].[73]

2.37 The Parties submitted that the comparison criteria listed in Table 20 of the Provisional Findings were relevant but not sufficient to compete for future London tenders. The Parties submitted that the Table 20 criteria did not reflect the full set of parameters to which TfL would have regard and it was insufficient to apply these criteria to say that Hitachi had comparable CBTC experience. Even based on the criteria from Table 20, the Parties submitted that this comparison showed that there were key features of future London projects that Hitachi could not match based on its previous experience.[74] We consider the Parties' submissions on Hitachi's individual projects in more detail in the section 'Our analysis of Hitachi's brownfield projects'.

TfL's views

2.38 TfL submitted that while TfL has not assessed the BART system in detail, it considered that BART 'had its own complexities'. TfL told us that BART was a reference that it would consider. TfL considered that BART had aspects of the complexity TfL would look to see in a reference but it was not to the level of complexity of the London Underground. TfL noted that there was 'not loads of London Underground complexity around the world' and that it would be a case of assessing a number of different reference sites in order to understand their different characteristics and the overall capability of the system.[75]

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[68] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.47.6.
[69] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.29.
[70] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.29.
[71] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.30.1.
[72] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.30.2.
[73] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.30.2.
[74] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.38.
[75] TfL call transcript, 7 July 2023, page 26.

2.39 TfL told us it knew that Glasgow was not yet commissioned and that it was 'certainly nothing' like as complex as the London Underground, with effectively only one or two sets of points; TfL commented that it was towards the other end of the complexity spectrum from the London Underground.[76]

2.40 More generally, TfL reiterated that it would assess the comparability and relevance of reference projects only during active procurements. TfL told us that as a result of this approach it had not carried out a detailed evaluation of Hitachi's CBTC projects since the DTUP tender and whether they would be relevant for future TfL CBTC procurements.[77]

Our analysis of Hitachi's bidding decisions

2.41 We have analysed Hitachi's recent bidding decisions, focusing on brownfield projects to gain a better understanding of the types of brownfield projects that Hitachi has competed in and whether Hitachi has been successful in winning those tenders in competition with its global rivals. Our analysis is set out in the following way:

(a) analysis of Hitachi's bidding decisions between 2017 and 2023;

(b) Hitachi's failure to prequalify for the brownfield CBTC tender in [✂]; and

(c) Hitachi's no-bid decisions on [✂].

Hitachi's bidding decisions

2.42 As set out in our Provisional Findings, our global bidding analysis showed that Hitachi competes for greenfield and brownfield projects across all continents. Between 2017 and 2022, Siemens and Alstom were the two largest suppliers globally, followed by Hitachi in third and Thales in fourth place, by both the number and total value of tenders contested and won.[78] This analysis indicates that Hitachi is an important CBTC player globally.[79] However, the evidence also indicates that Hitachi's participation rate in brownfield tenders of [✂]% is significantly lower than Siemens and Alstom which have participation rates of [✂]% and [✂]% respectively, and slightly higher than Thales which was at [✂]%. Similarly, Hitachi's win rate of [✂]% is significantly lower than Siemens' and Alstom's win rates of [✂]% and [✂]% respectively, and higher than Thales' [✂]% win rate.

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[76] TfL call transcript, 19 July 2023, page 11.
[77] TfL call transcript, 19 July 2023, pages 8 and 9.
[78] Provisional Findings, paragraph 10.209.
[79] Provisional Findings, paragraph 10.218.

2.43 Following the Provisional Findings, Hitachi provided further details of the opportunities it was aware of.[80] Hitachi provided all the tenders it has competed in between 2017 and 2023 (to August) and the opportunities it had considered but did not pursue.[81] We consider that the data on the no-bids is unlikely to be complete, particularly in the earlier part of this period, given the way that Hitachi records and stores its information.[82]

2.44 Figure 1 sets out our analysis of this data for brownfield CBTC projects. Overall Hitachi's participation rate in brownfield CBTC projects between 2017 and 2023 was [✂]%. Between 2020 and 2023, Hitachi's participation rate was [✂]%. Between 2017 and 2019, its participation rate was higher than the later period[83] at [✂]%. It shows that since 2019 Hitachi has competed in [✂] projects than it has turned down or not pursued. Hitachi provided a number of reasons for this, including [✂] (we consider these in more detail in paragraphs 2.59 to 2.62). However, given the data issues explained in paragraph 2.59 , we consider that it is difficult to isolate the reasons for the [✂] in the participation rate. We do not consider that we can draw strong inferences from the participation rate as evidence of [✂].

Figure 1: Hitachi bids and no-bids of competitive brownfield CBTC tenders between 2017 and 2023

[✂]

Source: CMA analysis.

Table 1: Hitachi's participation rate in competitive brownfield CBTC tenders between 2017 and 2023

	2017	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*
Number of bids	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Number of no bids	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Participation rate	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Total	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CMA analysis.

2.45 As an indicator of the level of complexity of the project, we asked Hitachi to map the characteristics of its brownfield projects against the 13 characteristics

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[80] This is a different dataset from the combined global bidding data for the main CBTC suppliers used in our Provisional Findings, as Hitachi may not have been aware or considered all possible CBTC tenders globally.
[81] We sent our information request on 11 July 2023. [✂]. Hitachi told us that it was therefore 'extremely burdensome to collect a list of no bid decisions over a seven-year time horizon' and that it would endeavour to provide as full response as possible.
[82] On 11 August 2023 – three weeks after the deadline for the submission – Hitachi submitted further updates to its no-bid decision. Hitachi shared email correspondence with the customer – [✂] – in which Hitachi explained that it would not pursue a brownfield CBTC tender in [✂] in 2023 worth £[✂] million (€[✂] million) because of [✂]. We have updated our bidding analysis to take account of the [✂] no-bid decision but note that Hitachi's decision to not participate in this tender does not appear related to [✂].
[83] Between 2020 and 2023.

assessed by TfL during the DTUP (see Figure 2). The mapping shows that, against this measure of complexity, [✂]. Furthermore, projects competed for by Hitachi were [✂] than the projects that it chose not to pursue. As set out in paragraphs 2.59 to 2.62, this is counter to Hitachi's stated [✂].

Figure 2: Hitachi's participation in competitive brownfield CBTC tenders by complexity between 2017 and 2023

[✂]

Source: CMA analysis.
Note: Some of the points in this figure contain multiple data entries: [✂].

Hitachi's failure to prequalify for the brownfield CBTC tender in [✂]

2.46 The Public Transport Authority (**PTA**) issued a tender for resignalling of the [✂] metro system in 2023. [✂] is a large metro system with a total line length of [✂] km and is towards the more complex end of the spectrum satisfying eight of TfL's 13 characteristics.[84] The total contract value for the signalling component was EUR [✂] million.[85]

2.47 Hitachi submitted that it failed to prequalify for the [✂] brownfield tender.[86] Hitachi did not provide any independent feedback from PTA but instead shared its notes from a feedback meeting that took place on 1 August 2023. Overall, the PTA considered that Hitachi's [✂].[87] [✂].[88] [✂].[89]

2.48 The above evidence indicates that Hitachi failed to prequalify for the [✂] tender for various reasons, with a concern that Hitachi was unable to demonstrate [✂].

Hitachi's no-bid decisions

2.49 In our Provisional Findings, Hitachi submitted that recent decisions not to bid in [✂].[90] We note that we have received no Hitachi internal documents that [✂]. Our review indicated that various factors contributed to Hitachi's decision not to bid for these projects. For the reasons set out in paragraph 2.62 , we do not consider that these individual decisions [✂]. Since our Provisional Findings, Hitachi has provided [✂] further examples of no-bid decisions – [✂] – that it submits [✂]. We consider [✂].

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[84] Hitachi, Annex H.RFI17.Q1.
[85] Hitachi, Annex H.RFI17.Q1.
[86] Hitachi, Annex H.RFI17.Q9.
[87] Hitachi, Annex H.RFI17.Q9.
[88] Hitachi, Annex H.RFI17.Q9.
[89] Hitachi, Annex H.RFI17.Q9.
[90] Provisional Findings, paragraph 10.107.

[✂] (2021)

2.50 In 2021, [✂] transport service provider initiated a procurement to renew and modernise signalling technology across the city's metro, tram and light rail network on the basis of CBTC technology.[91] The signalling element of the procurement was valued at around £[✂] million.[92] The [✂] project satisfied seven of TfL's 13 characteristics.[93]

2.51 To understand Hitachi's rationale for not participating in the tender, we obtained contemporaneous documentation recording its decision. We reviewed a draft bid approval document prepared for an opportunity review meeting and an internal email from Hitachi's Head of Rail Control, which outlined the final decision not to bid.

2.52 In its draft bid approval document, Hitachi noted that the [✂] project involved resignalling of multiple metro, tram and light rail lines and described the opportunity as 'a very unique huge mixed brownfield project'.[94] When appraising potential risks, we note that Hitachi identified a [✂] and stated that it did not have [✂]. Hitachi also considered [✂].[95]

2.53 In outlining the decision not to pursue the opportunity, an email from Hitachi's Head of Rail Control stated that the project was [✂]. The email added that Hitachi should [✂].[96]

2.54 The evidence outlined above indicates that Hitachi's senior management took a decision not to pursue the opportunity in [✂] in part because its [✂] reduced the likelihood of winning the contract. More specifically, [✂] – [✂] – appeared to affect the management's decision.

[✂] (2022)

2.55 The Parties told us that the decision not to participate in a 2022 tender in [✂] provided further evidence [✂]. The Parties told us that the decision not to bid [✂].[97] Hitachi subsequently told us that the [✂] opportunity was a light rail and tram project, rather than a CBTC project.[98] The scope and complexity of the project cannot therefore be compared against the criteria assessed by TfL.

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[91] Hitachi, Annex H.RFI 8.012, slides 4 and 5.
[92] Hitachi response to RFI 14, Annex 'Hitachi post PF template'.
[93] Hitachi response to RFI 14, Annex 'Hitachi post PF template'.
[94] Hitachi, Annex H.RFI8.012, slide 6.
[95] Hitachi, Annex H.RFI8.012, slide 7.
[96] Hitachi, Annex H.RFI14.FollowUp.001.
[97] Parties' response to Provisional Findings, paragraph 3.47.6(c).
[98] Hitachi's email to the CMA, 26 July 2023.

2.56 Notwithstanding the fact that the [✂] opportunity was not a CBTC project, we note that a contemporaneous email stated that '[✂]'.[99]

2.57 We set out evidence on [✂] in the Provisional Findings and how Hitachi had reacted internally to the performance of these contracts.[100] [✂].[101]

2.58 The email provided in relation to [✂] supports that Hitachi is more cautious in its assessment of [✂]. However, it does not follow that management has implemented a strategy to [✂]. We note that Hitachi did not provide any subsequent internal documents which record senior management's ultimate decision not to bid in [✂] and the reasons for that decision.

Our provisional assessment on Hitachi's bidding decisions

2.59 Our analysis shows that Hitachi's participation rate in the last three years is [✂], but we have not been able to confirm whether this was [✂] than in previous years given the data issues or to identify a causal link with Hitachi's [✂]. Hitachi, although not successful, bid for [✂] and [✂], which were high-value and complex brownfield tenders where Hitachi did not benefit from any incumbency advantage.

2.60 Hitachi submitted that it is a global supplier of CBTC projects, [✂].[102] To align organisational objectives, it would be reasonable to expect that Hitachi would have documented an important and material change of direction with regards to CBTC and communicated this strategy to local teams to clarify which tenders it should pursue and which it should reject, or at least to have set this out in a document shared with the senior staff members who make the ultimate decisions about whether to pursue projects. Our assessment of Hitachi's bidding analysis indicates that Hitachi has not applied its rule rigidly [✂].

2.61 The outcomes of Hitachi's bids indicate that it has been [✂] in the tenders for more complex brownfield projects. Of the [✂] tenders competed by Hitachi between 2017 and 2023, it won only four, with its largest value win being BART in 2020.[103] Hitachi has won no brownfield tender since BART.[104] [✂]. As set out in the Provisional Findings, [✂] provided feedback noting [✂].[105] Evidence from Hitachi's internal documents on [✂] also indicates that the

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[99] Hitachi, Annex H.RFI8.010.
[100] Provisional Findings, paragraphs 10.136 to 10.144.
[101] Provisional Findings, paragraph 10.170.
[102] Parties' response to Provisional Findings, paragraph 3.47.4.
[103] Hitachi's four wins were: Baltimore, BART, Paris Line 6 and Tokyo Hibiya.
[104] For completeness, we note that Hitachi was awarded a brownfield line extension contract in respect of Ankara, in 2021.
[105] Provisional Findings, paragraphs 10.287 and 10.288.

[✂], and given Hitachi's recent previous experience in [✂], Hitachi's senior management took the decision not to bid.[106]

2.62 Consistent with our Provisional Findings, we consider that the evidence shows that Hitachi is being [✂] in bidding, but we do not consider that there is sufficient evidence to conclude that Hitachi has introduced or implemented a [✂]. However, we consider that Hitachi's relative [✂] in recent, more complex, brownfield projects may be indicative of its current level of experience and act as a signal to its rivals about its overall capabilities and competitive strengths for other complex projects.

Our analysis of Hitachi's brownfield projects

2.63 As set out in our Provisional Findings, TfL told us [✂].[107] TFL's view was based on its assessment of Hitachi's capabilities at the [✂]. At that time, Hitachi had only completed one CBTC brownfield project. Since then, Hitachi has won [✂] CBTC tenders (greenfield and brownfield), of which [✂] are brownfield projects.[108] Overall, Hitachi has won [✂] tenders for brownfield projects, [✂] tenders for greenfield projects and [✂] CBTC tenders in total.

2.64 At the time of writing in August 2023, Hitachi has completed [✂] brownfield CBTC projects, currently in operational service, and has [✂] brownfield CBTC projects under execution. By the end of [✂], Hitachi will have completed [✂] brownfield projects.[109]

Hitachi's capabilities and experience in undertaking complex brownfield projects

2.65 None of Hitachi's brownfield projects share all of the complexities of the London Underground. To understand the relative complexity of Hitachi's projects, we mapped each of Hitachi's brownfield projects against TfL's characteristics (see Figure 3).

Figure 3: Hitachi's brownfield CBTC projects by complexity

[✂]

Source: CMA analysis.

2.66 [✂] of Hitachi's brownfield projects, which are either completed or expected to be complete by [✂], satisfy nine or more of TfL's characteristics. Another [✂] satisfy seven of the characteristics while Hitachi's other brownfield projects

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[106] Hitachi, Annex H.RFI8.012, slide 7.
[107] Provisional Findings, paragraph 10.242.
[108] Hitachi response to RFI 14, Annex 'Hitachi post PF template'.
[109] Hitachi email to the CMA on 21 August 2023.

satisfy six or fewer of the TfL criteria. We consider the more complex of Hitachi's brownfield projects in more detail (see Table 2 below).

Table 2: Assessment of Hitachi's projects against TfL's 13 criteria

TfL conditions set out in PQQ of DTUP	*BRUSSELS*	*BART*	*PARIS Line 3*	*ANKARA*	*PARIS Line 6*
Operation at GoA4 with platform screen doors	[✂]	[✂]	[✂]	[✂]	[✂]
Certification of the product	[✂]	[✂]	[✂]	[✂]	[✂]
Migration from an existing lineside signalling system to CBTC	[✂]	[✂]	[✂]	[✂]	[✂]
Operation on the same tracks with another supplier's CBTC system	[✂]	[✂]	[✂]	[✂]	[✂]
Operation on the same tracks with another supplier's fixed block, multiple aspect signalling system	[✂]	[✂]	[✂]	[✂]	[✂]
Length of track (greater than 30 route-km)	[✂]	[✂]	[✂]	[✂]	[✂]
Percentage (%) of the route with bored tunnels (at least a third of the route)	[✂]	[✂]	[✂]	[✂]	[✂]
Number of equipped trains (greater than 20)	[✂]	[✂]	[✂]	[✂]	[✂]
Number of interlockings (greater than 5)	[✂]	[✂]	[✂]	[✂]	[✂]
Time of technical Headways (less than 100 seconds with dwell times of up to one minute)	[✂]	[✂]	[✂]	[✂]	[✂]
Maximum line speed (at least 80 km/h)	[✂]	[✂]	[✂]	[✂]	[✂]
Low voltage DC traction	[✂]	[✂]	[✂]	[✂]	[✂]
Installation and migration on a brownfield site	[✂]	[✂]	[✂]	[✂]	[✂]
Number of conditions met	[✂]	[✂]	[✂]	[✂]	[✂]
End date of contract	[✂]	[✂]	[✂]	[✂]	[✂]
Years in operation if procurement is in 2030	[✂]	[✂]	[✂]	[✂]	[✂]

Source: Hitachi response to RFI 17, Annex H.RFI17.Q1 and CMA analysis.

2.67 Based on the evidence, we note Hitachi would, in principle, be able to meet all 13 of TfL's characteristics through a combination of three projects. We note that only [✂] of the brownfield projects are complete and the others are in progress. Figure 4 sets out information on the anticipated completion dates and the operational service of those projects by 2030, which is the expected procurement date for the Piccadilly and Bakerloo line tenders. We note that there is uncertainty around both the completion date, as Hitachi's projects [✂] (see [✂], and the procurement date, which may take place earlier or later than 2030 (see paragraph 2.4)).

Figure 4: Operational service of Hitachi's brownfield CBTC projects by 2030

[✂]

Source: CMA analysis.

2.68 On the basis of the current scheduled dates, most of Hitachi's more complex brownfield projects are expected to be complete by the end of 2029 and should have [✂] by 2030.[110] BART, which is a very large and complex project that TfL and competitors have regarded as a potentially suitable reference for future London Underground tenders, is expected to be complete [✂].[111] If the TfL procurements take place earlier than 2030, Hitachi may be restricted in

[110] See paragraphs 2. for more detail on how TfL would assess suppliers' capabilities in future tenders.
[111] Email from Hitachi to CMA on 9 August 2023.

using its experience on BART to demonstrate its capabilities of undertaking more complex brownfield projects.

2.69 In addition to our analysis of Hitachi's portfolio against TfL's 13 characteristics, we have also considered Hitachi's experience based on other qualitative factors, such as size of metro system, length of line, number of stations and scope and size of the respective contracts.

[✂]

2.70 Hitachi is completing the resignalling of the entire [✂] metro network, delivering [✂]). [✂] has [✂] stations and resignalling is expected to achieve 90 seconds technical headways. The signalling component of the contract is around £[✂] million.[112]

2.71 The Parties submitted that the complexity of [✂] was not comparable to the London Underground. The Parties also submitted that [✂].[113] To provide supporting evidence [✂], Hitachi provided emails between employees of the [✂] Metro Infrastructure Managers, MVIB/STIB, copied to Hitachi's employees that [✂].[114] Hitachi submitted [✂]. Hitachi told us that [✂].[115]

2.72 In the Provisional Findings, we set out evidence from MVIB/STIB, which provided broadly positive feedback on Hitachi's performance, [✂].[116] In response to our question on how it would assess other projects that had experienced [✂], TfL told us that it would conduct site visits as part of its evaluation and would seek to understand the supplier's performance and verify the reasons for [✂]. TfL would require assurances from the supplier that those aspects of delivery would not occur on its projects.[117]

2.73 As set out in Table 2, the [✂] metro system satisfies 11 of TfL's 13 characteristics, which suggests that Hitachi is managing several dimensions of complexity on a single project. While [✂] may not be directly comparable to the London Underground, we consider it demonstrates Hitachi's growing experience in undertaking more complex brownfield projects and that, on completion, [✂] could be used to indicate to other transport authorities Hitachi's growing capabilities. However, we note that Hitachi [✂] of the project that has led to [✂] of potentially more than [✂].[118]

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[112] Hitachi response to RFI 14, Annex 'Hitachi post PF template'.
[113] Parties' response to Provisional Findings, 29 June 2023, paragraph 3.29.
[114] Annex H.PF.001-T to the Parties' response to the Provisional Findings.
[115] Hitachi's email to CMA of 9 August 2023.
[116] Provisional Findings, paragraph 10.281.
[117] TfL response to the CMA RFI dated 19 July 2023, question 1.
[118] Hitachi's email to the CMA, dated 9 August 2023.

BART

2.74 Hitachi is completing the resignalling of the entire six-line BART network in San Francisco. Each line is between 58km and 88km in length and has between 18 and 28 stations, with the exception of the Beige line, which is 5.1km and has two stations. The total track length of resignalling is 201km.[119] The estimated signalling component of the contract is £[✂] million, which is the [✂] globally, [✂]. The expected completion date is [✂].[120]

2.75 The Parties submitted that BART was not a complex metro system and was mainly a suburban network with few interconnecting junctions. The headways are far greater than in London (up to 12 minutes) and the system is closed at night, which would give Hitachi five to eight hours to carry out signalling works (rather than the four/five hours it would likely have for London Underground works). The Parties indicated that it was not a 'high capacity' metro and that it had a significantly lower footfall than London.[121]

2.76 Since their initial submission, the Parties have told us that the multiple BART lines share a single-track in most parts of the network. While individual lines may appear to have longer headways, given that multiple lines share the same track, the headways between each train can be significantly shorter on many areas of the track. For example, the Parties submitted that the 'Transbay tube' section of the network (south-east) currently operates 21.5 trains per hour per direction but following resignalling, it is expected to [✂].[122] As set out in paragraph 2.36, the Parties submitted that [✂].

2.77 In the Provisional Findings, we set out third-party evidence which suggested that BART was a complex brownfield project and potentially a suitable reference for the London Underground.[123] As noted in paragraph 2.38, TfL noted that BART was complex although it may not share all of the complexities of the London Underground.

2.78 BART is a very significant and high value contract. While the metro system may not share all the complexities of the London Underground, as there are suburban parts of the system with longer headways, the evidence indicates that the resignalling is still likely to be challenging given the wide-ranging scope and size of the project. Overall, we consider that BART is a complex brownfield project that will enable Hitachi to grow its technical capability and

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[119] Annex E to the Parties' response to the Annotated Issues Statement and Working Papers, 2 May 2023.
[120] Email from Hitachi to the CMA on 9 August 2023.
[121] Annex E to the Parties' response to the Annotated Issues Statement and Working Papers, section 4, 2 May 2023.
[122] Hitachi response to RFI dated 11 July 2023, Question 1(b).
[123] Provisional Findings, paragraphs 10.238 to 10.241.

experience in undertaking complex brownfield projects. We note that BART is currently under execution and the expected completion date is [✂] the expected procurement dates for the Piccadilly and Bakerloo line tenders, which raises questions whether Hitachi would be able to use its BART experience for those tenders.[124]

Paris (Line 3 and Line 6)

2.79 Hitachi won two CBTC projects on the Paris metro system: Line 3 (2004-2011) and Line 6 (2018-2025). For both lines, the ATS and interlocking were not procured as part of these projects.[125] Hitachi told us that RATP procures brownfield CBTC contracts in separate 'Lots'. The 'Lots' for the Paris Line 6 were: Lot 1: Wayside;[126] Lot 2: On Board; and Lot 3: Design Communication Systems (DCS) wayside and On Board. Hitachi supplied the wayside equipment in both projects. The contract values for Line 3 and Line 6 were £[✂] million and £[✂] million respectively.[127]

2.80 Hitachi submitted that TfL had not previously procured wayside CBTC or onboard CBTC separately when resignalling a line.[128] Hitachi submitted that Hitachi's 2018 contribution to the Paris Line 6 was a relatively small part of a wider project (made up of components supplied by multiple suppliers and integrated by the customer).[129] For Paris Line 3, the Parties explained that the project was for [✂].[130] Hitachi submitted later that it was not well placed to respond on whether its Paris experience would be able to meet TfL's requirements for the Piccadilly and Bakerloo lines, given the very different procurement strategies in London and Paris, and the fact that TfL's requirements for future tenders were unknown at this stage.[131]

2.81 Hitachi used Paris Line 3 as one of its references [✂]. In its feedback on Hitachi, [✂].[132] The moderation report described that there was '[✂].[133] [✂]'.[134]

2.82 Based on the evidence above, we consider that the Paris metro system is likely to be towards the complex end of the spectrum and potentially on par

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[124] See paragraph 2.25 for more detail on how TfL would assess suppliers' capabilities in future tenders.
[125] The customer – the Paris Transport Authority (RATP) – [✂].
[126] This comprises the design to commissioning works (including installation) for wayside equipment (zone controller, Frontam, interface device and power supply).
[127] Hitachi response to RFI 17, question 4.
[128] Hitachi response to RFI 17 of 4 August 2023, question 6, paragraph 6.3.
[129] Parties' CBTC submission, footnote 22.
[130] Parties' response to the PFs, footnote 172
[131] Hitachi response to RFI 17, paragraph 6.3.
[132] [✂] response to CMA s109 dated 27 March 2023, [✂], page 20.
[133] [✂] response to CMA s109 dated 27 March 2023, [✂], page 15.
[134] [✂] response to CMA s109 dated 27 March 2023, [✂], page 15.

with the London Underground. However, we note that TfL and RATP adopt different procurement approaches. Focusing on Hitachi's two CBTC Paris projects, we note that the scope, scale, and size of these projects differ materially from London Underground resignalling projects that have taken place in the past, and the likely scope of future Piccadilly and Bakerloo line tenders. The contract values for future London tenders are likely to be [✂] than each of Hitachi's projects. While the Paris projects demonstrate Hitachi's capabilities to win and undertake CBTC projects on a complex metro system, we consider that Hitachi's experience on the Paris metro, given the more limited scope of Hitachi's work on these CBTC projects, may not be directly transferable to the technical competencies required for future Piccadilly and Bakerloo line projects.

Ankara

2.83 Hitachi's Ankara project consists of four lines (M1, M2, M3 and M4). M1 is a brownfield line while the remaining three are greenfield. The total contract value was EUR [✂] million. Hitachi submitted that there were several stages to this project, each with their own completion dates.[135] All of the lines were upgraded to CBTC by May 2018 and the integration of the operation management function was completed in May 2021.[136] In total, Hitachi completed the resignalling for [✂] km, of which [✂] km related to the brownfield M1 line.[137]

2.84 Hitachi submitted while the M1 Line involved a brownfield environment, it had very limited similarities to the London underground lines: it did not involve shared tracks that create additional interfaces and complexities; it did not have junctions/interchange stations with other lines; and it does not operate 24/7.[138]

2.85 Hitachi used Ankara as one of its references for the [✂]. [✂] feedback to Hitachi [✂].[139] [✂] also noted that [✂].[140]

2.86 As set out in Table 2, Ankara meets nine of TfL's 13 characteristics when the project is considered as a whole, including all lines. However, when focusing on the brownfield component of the project – the M1 line – it fails to satisfy the length of line criterion. Based on the evidence above, while Ankara satisfies many of the TfL's characteristics and demonstrates Hitachi's technical

[135] Email from Hitachi to the CMA on 9 August 2023.
[136] Email from Hitachi to the CMA on 9 August 2023.
[137] Hitachi response to RFI 14, Annex 'Hitachi post PF template'.
[138] Hitachi response to RFI 17 of 4 August 2023, question 3, paragraph 3.2.
[139] [✂] to [✂] response to RFI of 29 March 2023.
[140] [✂] response to CMA s109 dated 27 March 2023, [✂], pages 20 and 21.

competence, we note that the project was mainly greenfield and experience on the M1 line is less likely to be comparable to the requirements of future London Underground projects.

Our provisional assessment on Hitachi's brownfield projects

2.87 We assessed further Hitachi's current portfolio of brownfield projects against TfL characteristics and whether Hitachi would have gained further experience sufficient to make it a credible competitor for future complex brownfield projects by the time of any London Underground tender.

2.88 The evidence shows that Hitachi has [✂] brownfield projects which, in principle, appear to satisfy nine or more of TfL's 13 characteristics, which is an indicator that these projects may be towards the more complex end of the spectrum. Of the [✂], only two are complete (Paris Line 3 and Ankara) and the other [✂] projects are in progress (BART, [✂]). As we note in paragraph 2.23, the 13 characteristics are likely to form one part of a wider assessment by TfL that will consider other qualitative factors to test whether suppliers have the requisite capabilities and experience to operate on the London Underground.

2.89 For the reasons set out above in paragraphs 2.79 to 2.86, when considered against other qualitative factors, in particular the size, scope and scale of these projects, we do not consider that Hitachi's experience in Paris and Ankara is likely [✂] to the technical competencies required for future Piccadilly and Bakerloo line projects.

2.90 [✂] and BART appear to satisfy most of TfL's 13 characteristics. [✂] is smaller in scale than either the Piccadilly or Bakerloo lines and we note that Hitachi has faced [✂] in the delivery of this project that has led to [✂]. BART is a very large project that has its own complexities. It is a brownfield project with a mix of suburban and underground systems among multiple lines. We consider that once these projects are [✂] and in operation, Hitachi will likely have increased its overall capabilities and experience in undertaking more complex brownfield projects. Given that TfL requires several years in-service experience, many of these projects may not qualify or may be discounted in part or in full by TfL. Potential delays in project completion dates would add to this risk.

2.91 Taken overall, our view is that Hitachi currently does not have the experience and technical expertise to compete for more complex brownfield projects and will not do so until it has completed its ongoing projects and can demonstrate that they have several years in operation.

Our provisional assessment

2.92 We remain of the view that Hitachi has not provided evidence that clearly demonstrates that it has [✂]. Although there is evidence that Hitachi has not bid for some brownfield projects, there is also evidence that it has continued to pursue challenging brownfield projects since 2019.

2.93 In a bidding market where perceptions matter, other suppliers will observe Hitachi's bidding decisions and draw inferences about Hitachi's capabilities on the projects it participates in and wins. Our analysis of Hitachi's bidding behaviour shows that since BART, Hitachi has [✂] on brownfield tenders that are towards the more complex end of the spectrum. Various reasons have contributed to this. One consistent thread is that transport authorities globally require suppliers to demonstrate their capability through a portfolio of relevant completed projects. The evidence set out above shows that currently Hitachi has [✂] projects in progress that it will complete between [✂] and [✂], assuming current scheduled completion dates are met. Until Hitachi completes its current set of brownfield projects and is able to demonstrate their effective operation over a period of time, it would not be well placed to compete for other complex brownfield projects. This would weaken Hitachi's ability to continue to expand its portfolio and grow its capabilities in undertaking complex brownfield projects.

2.94 Evidence from TfL has provided greater clarity and insight on how it would assess suppliers' capabilities in future London Underground tenders. It requires suppliers to demonstrate a higher level of capability than would be required for other metro systems and for suppliers to demonstrate operational service for several years. Our analysis indicates that Hitachi would over the coming years accumulate a portfolio of brownfield projects that share some complexity with the London Underground, and some may be suitable references. However, based on the further evidence we have collected, including on the likely timing of the Piccadilly and Bakerloo line tenders and the complexity and expected completion dates of Hitachi's projects, our view is that by the time of the tenders, Hitachi would not be able to demonstrate its capability to undertake complex brownfield projects sufficiently to be a credible competitor. Furthermore, we do not believe that for the same reason other suppliers would perceive Hitachi as a credible competitor.

3. Provisional assessment

3.1 In our Provisional Findings, we assessed the closeness of competition between the Parties and whether alternative constraints would offset the loss of competition resulting from the Merger. We remain of the view that this is the most appropriate framework for our competition assessment.

3.2 At Provisional Findings, we concluded that the Parties were close competitors and that alternative constraints would not offset the loss of competition between the Parties. Our assessment at that time was that Hitachi was one of the four major CBTC suppliers globally and that it would have the capabilities to deliver complex brownfield projects by the time of the London Underground tenders. Although we did not consider that Hitachi would be Thales' closest competitor, we concluded that, in a highly concentrated market, the incremental loss of constraint would lead to an SLC in the supply of CBTC systems in the UK.

3.3 We have not received any evidence to suggest that the structural features of the market are different from how we assessed them at Provisional Findings. Hitachi remains one of four global CBTC suppliers, and globally, the Merger leads to a consolidation. However, our investigation is limited to the impact of the Merger on the UK market, and specifically the London Underground, as the only tenders in the UK that are likely to take place in the timeframe relevant to our assessment will be on the London Underground. Following the Parties' representations, we collected additional evidence from TfL and the Parties, and undertook further analysis on Hitachi's capabilities to undertake complex brownfield projects and whether it could compete credibly for London Underground tenders.

3.4 We described in our Provisional Findings that the London Underground is a highly complex metro system and that entry barriers are likely to be high. We remain of the view that Thales and Siemens, as existing London Underground suppliers, would likely benefit from strong incumbency advantages. TfL told us new entrants would be able to compete if they could demonstrate a high level of capability and experience in undertaking similarly complex brownfield projects. While there are not many metro systems that share the same complexity as the London Underground, suppliers would be able to demonstrate their capabilities through case studies. As set out in paragraph 2.25, TfL told us that suppliers would have to illustrate their experience and technical competencies on completed projects that have been operational for several years.

3.5 TfL provided more clarity on the timings of future London Underground tenders. TfL told us that the Piccadilly and Bakerloo line procurements would likely take place in 2030, which is five years earlier than we had anticipated in our Provisional Findings. The implications of earlier procurement dates are that for Hitachi to be a credible competitor, it would need to have completed most of its more complex brownfield projects within the next two to three years to be able to demonstrate its technical capabilities to TfL. We have reconsidered Hitachi's portfolio of projects with this timeframe in mind.

3.6 Our analysis of Hitachi's recent bidding decisions shows that Hitachi has competed for a project in [✂] and recently for a project in [✂], which by contract value and against TfL's 13 characteristics, indicate a higher level of complexity. However, Hitachi was not successful in either tender. One of the reasons, among others, for its lack of success was that Hitachi [✂]. Since winning the BART tender in 2019, Hitachi has not won any of the more complex brownfield projects it has bid for in the intervening period.

3.7 Recent bidding decisions indicate that Hitachi has not pursued [✂]. While the evidence does not support Hitachi's submission that it has introduced or implemented [✂], it does show that Hitachi is [✂] about which projects it pursues. Its internal assessments of CBTC opportunities noted, among other factors, that [✂].

3.8 Overall, our analysis of Hitachi's recent bidding on the more complex brownfield projects shows that Hitachi [✂]. In a bidding market where perceptions matter, Hitachi's [✂] in tenders for the more complex brownfield projects may act as a signal of its overall capabilities and its ability to compete for particularly complex brownfield projects in the near to medium term.

3.9 Our review of Hitachi's brownfield projects shows that Hitachi has grown in capability since DTUP. When assessed against TfL's 13 characteristics, Hitachi has won [✂] brownfield projects that appear to satisfy nine or more of the criteria indicating a higher level of complexity. As we note in paragraph 2.23 , the 13 characteristics are likely to form one part of a wider assessment by TfL that will consider other qualitative factors to test whether suppliers have the requisite capabilities and experience to operate on the London Underground. Of the [✂] projects, only two are currently complete – Ankara and Paris Line 3 – and [✂] are currently under construction: BART, [✂]. We summarise our considerations on each of these projects below.

3.10 [✂] is a resignalling project for four lines, in which three are greenfield and one brownfield – [✂]. The scope, scale and size of the brownfield component is considerably smaller than the Piccadilly and Bakerloo lines and is unlikely to be directly comparable. Hitachi's responsibilities [✂] were limited to the installation of the wayside equipment and the scope, scale, and size of these projects differ materially from the likely scope of future Piccadilly and Bakerloo line tenders. While the [✂] projects demonstrate Hitachi's capabilities to win and undertake CBTC projects on a complex metro system, we consider that Hitachi's experience in the [✂] metro, given the more limited scope of Hitachi's work on these CBTC projects, may not be directly transferable to the technical competencies required for future Piccadilly and Bakerloo line projects. BART is the largest project by value and potentially the most complex of Hitachi's brownfield projects. However, Hitachi has only recently

started the project and is not expected to complete until [✂]. As noted above, given the expected procurement dates and TfL's requirements to assess suppliers' capabilities on completed projects, Hitachi may be restricted in using its experience on BART to demonstrate its capabilities. As set out above, the [✂] project – which is expected to complete by the end of [✂] – has many dimensions of complexity, but we note that Hitachi has [✂].

3.11 Based on the evidence above, our revised assessment is that while Hitachi is developing its capabilities in undertaking complex brownfield projects, it is unlikely to have the portfolio of completed brownfield CBTC projects or the relevant experience to compete credibly for London Underground CBTC contracts within the relevant timeframe. Our assessment is that Hitachi's references are likely still to fall some way short of the three other strong global suppliers. On this basis, we consider that the Parties are not likely to be close competitors for future London Underground tenders, given the likely timings of these tenders.

4. Provisional conclusion

4.1 For the reasons set out in this addendum, our revised provisional conclusion is that the Merger is not likely to result in a SLC in the supply of CBTC systems in the UK.

5. Responses to this Addendum

5.1 Any interested person is invited to provide the Inquiry Group with its reasons in writing as to why the addendum provisional findings in relation to the supply of CBTC systems in the UK should not become final (or, as the case may be, should be varied).

5.2 In addition, any interested person is invited to provide the Inquiry Group with its views in writing as to the impact of this addendum provisional findings on the appropriateness of the remedies proposed in the Notice of Possible Remedies and on the remedies proposed by the Parties in their response to the Notice of Possible Remedies.[141]

5.3 These reasons should be provided by email to hitachi.thales@cma.gov.uk and received by the Inquiry Group no later than **17:00 (UK time) on Thursday 31 August 2023**. The Inquiry Group will take all submissions

[141] CMA, Notice possible remedies (publishing.service.gov.uk), 8 June 2023. Parties' response to the Notice of Possible Remedies, 22 June 2023.

received by this date into account in reaching its final decisions on the statutory questions and any consequential actions.