Statement of Issues

6 September 2018

Proposed merger of Siemens' rail mobility division with Alstom

Purpose

1. Siemens A.G. (**Siemens**) proposes to combine its Mobility Division with Alstom S.A. (**Alstom**) (the **proposed merger**). Siemens and Alstom are both active in the rail mobility industry globally, and each supplies rail signalling, rolling stock and rail electrification in Australia.

2. This Statement of Issues:

   - provides the preliminary views of the Australian Competition and Consumer Commission (**ACCC**) on competition issues arising from the proposed merger
   - identifies areas of further inquiry, and
   - invites interested parties to submit comments and information to assist the ACCC's assessment of the issues.

Overview of ACCC's preliminary views

3. The legal test which the ACCC applies in considering a proposed merger is set out in section 50 of the *Competition and Consumer Act 2010* (Cth). Section 50 prohibits mergers and acquisitions that would have the effect, or be likely to have the effect, of substantially lessening competition in any market.

4. The ACCC divides its preliminary views into three categories, 'issues of concern', 'issues that may raise concerns' and 'issues unlikely to raise concerns'.

Issues that may raise concerns

5. The ACCC's preliminary view is that the proposed merger may substantially lessen competition for heavy rail signalling projects for passenger rail networks, in particular those involving interlocking systems and/or trackside automatic train protection (**ATP**) systems.

6. The proposed merger would result in the horizontal aggregation of two of the leading suppliers of signalling systems in Australia and reduce the number of

credible suppliers. A combined Siemens-Alstom would be by far the largest supplier of heavy rail signalling in Australia.

7. The reduction in competition may lead to higher prices and/or lower levels of service to customers and/or less innovation.

Making a submission

8. The ACCC is seeking submissions from interested parties, particularly on the following key issues:

   - The closeness of competition between Siemens and Alstom, and between Siemens and Alstom and other suppliers of signalling systems in Australia.
   - The extent to which customers for signalling systems have viable alternatives to Siemens and Alstom in Australia.
   - The extent to which other signalling providers not currently present (or without a significant presence) in heavy rail signalling in Australia could enter or expand if a combined Siemens-Alstom attempted to increase prices and/or decrease service levels.
   - Any advantage that signalling providers with an existing presence on a network may have in relation to future signalling projects on that network.

9. Detailed discussion of these and other issues, along with specific questions, is set out in this Statement of Issues.

10. Interested parties should provide submissions by **5pm on 20 September 2018**. Responses may be e-mailed to mergers@accc.gov.au with the title: *Submission re: Siemens/Alstom – attention Peter Turner-Kerr/Isabelle Arnaud*. If you would like to discuss the matter with ACCC officers over the telephone or in person, or have any questions about this Statement of Issues, please contact Isabelle Arnaud on (02) 6243 1271.

11. The ACCC anticipates making a final decision on **29 November 2018**. However, this timeline can change. To keep abreast of any changes and to find relevant documents, please visit the Mergers Register on the ACCC's website at www.accc.gov.au/mergersregister.

Confidentiality of submissions

12. The ACCC will not publish submissions regarding the proposed merger. It will not disclose submissions to third parties (except its advisors/consultants) unless compelled by law (for example, under freedom of information legislation or during court proceedings) or in accordance with s155AAA of the *Competition and Consumer Act 2010* (Cth). Where the ACCC is required to disclose confidential information, the ACCC will notify you in advance where possible so that you may have an opportunity to be heard. Therefore, if the information provided to the ACCC is of a confidential nature, please indicate as such. The ACCC's *Informal Merger Review Process Guidelines* contain further information on confidentiality.

About ACCC 'Statements of Issues'

13. A Statement of Issues published by the ACCC is not a final decision about a proposed merger, but provides the ACCC's preliminary views, drawing attention to particular issues of varying degrees of competition concern, as well as identifying the lines of further inquiry that the ACCC wishes to undertake.

14. A Statement of Issues provides an opportunity for all interested parties (including the merger parties, customers, competitors, shareholders and other stakeholders) to ascertain and consider the primary issues identified by the ACCC. It is also intended to provide interested parties with a basis for making further submissions should they consider it necessary.

Timeline

Date	Event
19 April 2018	ACCC commenced public review of the proposed merger under the Merger Process Guidelines
9 May 2018	Closing date for submissions from interested parties
26 June 2018	Former provisional decision date of 12 July 2018 delayed until 16 August 2018 to allow ACCC time to consider additional information
8 August 2018	The merger parties requested ACCC delay timeline to allow them to provide further information. The former provisional decision date of 16 August 2018 was suspended pending receipt of the further information
28 August 2018	The ACCC received further information from the parties
6 September 2018	ACCC published a Statement of Issues
20 September 2018	Deadline for submissions from interested parties in response to Statement of Issues
29 November 2018	Anticipated date for ACCC final decision

The proposed merger and the parties

15. The proposed merger involves the combination of Siemens' rail mobility business with Alstom by way of a contribution of Siemens' Mobility Division to Alstom in consideration for newly issued Alstom shares.[1]

[1] https://www.alstom.com/press-releases-news/2017/9/siemens-and-alstom-join-forces-to-create-a-european-champion-in-mobility.

Siemens

16. Siemens is a listed German conglomerate headquartered in Munich. Its Mobility Division is one of 11 business divisions. Siemens acquired signalling supplier Invensys Rail in 2013[2] and Perth-based MRX Technologies in 2017.[3]

17. In Australia, Siemens operates its Mobility business largely through its wholly-owned subsidiary Siemens Ltd, which focuses on the supply of heavy rail signalling and rail electrification. It also has a historical presence in the supply of rolling stock.

18. Siemens has operations in more than 200 countries and employs approximately 377,000 people worldwide. In the year to 30 September 2017, Siemens employed approximately 2,200 people in Australia and New Zealand across 16 locations.[4]

Alstom

19. Alstom is a French société anonyme listed on the Euronext Paris stock exchange. Globally, Alstom supplies high speed trains, metros, tramways, e-buses, infrastructure, signalling, digital mobility solutions and maintenance services. In 2015, Alstom acquired GE's signalling business.[5]

20. In Australia, Alstom carries on business through its wholly-owned subsidiary Alstom Transport Australia Pty Limited, and predominantly supplies rolling stock, signalling, electrification and associated products and services.

21. Alstom operates across more than 60 countries and employs approximately 34,500 people (including approximately 400 people in Australia).

Key area of overlap

22. The key area of overlap between Siemens and Alstom in Australia is in heavy rail signalling projects.

23. Rail signalling projects involve one or more signalling elements/systems supplied together with other services such as project specific engineering, development and project management, procurement and supply of necessary signalling equipment, systems integration, installation, testing and maintenance services.

24. Siemens and Alstom also overlap in the supply of rolling stock and rail electrification in Australia. However, this overlap is relatively minor and, as a result, the ACCC's preliminary view is that the proposed merger is unlikely to substantially lessen competition in these areas. This Statement of Issues does not, therefore, consider those aspects further.

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2 https://www.siemens.com/press/en/pressrelease/2012/corporate/axx20121110.htm.

3 https://www.siemens.com/press/en/pressrelease/2017/mobility/pr2017060324moen.htm.

4 https://www.siemens.com/au/en/home/company/about.html.

5 https://www.alstom.com/press-releases-news/2015/11/alstom-refocused-on-rail-transport-with-strong-leadership-positions.

Industry background – rail signalling

25. Signalling systems provide safety and traffic management controls on rail networks. At their simplest, these systems avoid collisions by preventing two trains from meeting on the same section of track.

26. There are broadly two types of signalling systems:

    - *Heavy rail signalling systems* – used on 'mainline' (intercity passenger, freight and private industrial lines) and 'urban/metro' passenger rail networks (see below for more details), and
    - *Tram/light rail signalling systems* – less complex than heavy rail signalling systems and rely predominately on 'line of sight' and existing road traffic signalling.

27. The ACCC understands that the signalling technology used on private industrial/freight rail lines in Australia differs from that used on passenger rail lines and that customers for industrial/freight lines work closely with suppliers to develop bespoke solutions. Passenger rail networks generally deploy more standardised signalling systems that comply with more stringent safety standards.

28. In that light, and given the key area of overlap between the parties in Australia as noted above, this Statement of Issues focuses on 'mainline' and 'urban/metro' heavy rail signalling for passenger rail networks.

Mainline and urban/metro heavy rail signalling

29. Mainline signalling systems provide safety and control systems for rail networks operating between cities and towns and between city centres and suburbs. Modern systems typically allow for interoperability between different lines and/or networks and for trains to run at higher speeds than urban/metro signalling systems.

30. Urban/metro signalling systems provide safety and control systems for dedicated 'closed loop' railway lines that generally do not require interoperability with other lines or networks.

31. In other countries, there is generally a clear distinction between mainline and urban/metro signalling systems. This is particularly true in large, densely populated cities with mass transit systems (such as the Paris Métro and London Underground). However, the distinction between mainline and urban/metro signalling systems does not appear to be as relevant in Australia as it is in other countries. Aside from the recently announced Melbourne Metro Tunnel and Sydney Metro Northwest projects,[6] the ACCC understands that trains operating on 'urban' networks in Australian cities (i.e. in city centres and between city centres and suburbs) typically rely on technology which is similar to that used on 'mainline' networks in other countries.

[6] https://metrotunnel.vic.gov.au/; https://www.sydneymetro.info/northwest/project-overview.

Key elements of heavy rail signalling

32. Heavy rail signalling typically includes four key elements:

a) **Interlockings** are the core safety component of a signalling system. Interlockings set routes for the safe movement of trains by controlling access to sections of track ("blocks"). Most rail networks, particularly the urban commuter networks in Australian capital cities, employ a mix of interlocking technologies provided by different suppliers. Modern interlockings are a combination of computer hardware and software that interface with other elements of a signalling system to issue movement authorities to trains using pre-programmed proprietary software logic patterns. Older 'legacy' (electronic relay and mechanical)[7] interlockings are also commonly found on Australian rail networks, but are being progressively replaced with more modern computer-based interlockings.

b) **Train Protection systems** are designed to protect trains by ensuring that movement authorities issued by interlockings are obeyed. There are different types of train protection systems available. These range from relatively basic automatic warning systems, which sound an alarm when a train is approaching a red signal and can apply an emergency brake if the train fails to stop, to more modern and sophisticated automatic train protection (**ATP**) systems. Train protection systems comprise:

- *On-board components* – including computer systems, which receive signalling information from trackside components and implement necessary safety procedures. This may include driver warning signals and/or automatically slowing or stopping the train.
- *Trackside components* – receive signalling commands from interlockings and transmit this information to the train's on-board components.

ATP systems are becoming increasingly standardised, particularly through the promotion of the European Train Control System (**ETCS**) standard (see the ETCS and CBTC section below for more details).

c) **Operational Control Systems (OCS)** are IT-based platforms that facilitate the overall management of a rail network (or part of a rail network). They enable the integration, control and monitoring of signalling sub-systems and facilitate timetable management, decision support, dispatching, maintenance, security and customer management. In particular, OCS operate networks of interlockings and provide a user interface for the signalling system.

d) **Trackside equipment and other signalling components** are objects installed alongside or near the railway track, which interface with, or form part of, interlockings and train protection systems. The key elements are described in the table below.

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[7] **Electronic relay interlockings** use hard-wired circuitry and electrically operated switches known as 'relays', which enable a degree of automated route setting. **Mechanical interlockings** employ levers to operate switches, signals and other components, which are connected to a 'locking bed' constructed of steel bars. The bars are constructed on the basis of pre-determined logic patterns. If the function controlled by a given lever conflicts with that controlled by another lever, mechanical interference occurs between the bars thereby physically preventing the conflicting lever movement from being made.

Interlocking elements	
Track circuits	Detect trains on a track "block" by creating an electrical current between the rails, which is short-circuited by a passing train's wheels/axles.
Axle counters	Determine track occupancy by detecting the passing of a train between two points on a track; typically the beginning and end of a "block". By comparing the number of axles passing over sensors at the start of a "block" to the number passing over sensors at the end of a "block", it can be determined whether the "block" is occupied or vacant. Axle counters are also capable of determining train speed and direction.
Point machines	Devices that move sets of rails to guide trains from one set of tracks to another, such as at a junction, spur or siding.
Track signals	Coloured lights or mechanical arms that instruct a train driver to pass, stop or proceed cautiously. In some cases, track signals also communicate a speed limit to drivers.
Relays	Electronic switching devices that respond to changes in current or voltage, often to control trackside components.
Object controllers	Devices used to interface between interlockings and trackside components such as point machines, track circuits and track signals.
ATP elements	
Balises (also known as 'beacons', 'coupling units' or 'transponders')	Devices installed between the rails that communicate signalling information directly to a passing train. A 'Eurobalise' is a specific type of balise designed for use with ETCS.
Encoders	Devices that translate movement authorities issued by an interlocking into a form suitable for transmission to a train's on-board unit via a balise.
Other elements	
Level crossings	Control the intersection between a railway line and a road or path at the same level by predicting train arrival and lowering barriers and/or activating signals to prevent traffic from proceeding across a track when a train is approaching.

ETCS and CBTC

33. As noted above, ATP systems are becoming increasingly standardised, particularly through the promotion of the European Train Control System (**ETCS**) standard.

34. ETCS standardises the communication protocol between on-board and trackside ATP equipment. This enables interoperability between rail networks and on-board equipment from different suppliers.

35. The ACCC understands that ETCS is becoming a 'de facto' standard for ATP on mainline rail networks in Australia, with a number of networks currently operating, or working towards deploying, ETCS.

36. There are currently two variations ('levels') of ETCS available:

    a) *ETCS Level 1*: can be overlaid on top of existing legacy interlockings, using trackside equipment (Eurobalises and encoders) to translate signalling information between ETCS compatible on-board equipment and the interlockings.

    b) *ETCS Level 2:* reduces the need for trackside equipment and relies to a greater extent on on-board systems that communicate directly with compatible computer-based interlockings using GSM-R radio based communication.

37. While ETCS is becoming a 'de facto' standard for ATP on mainline rail networks, some 'closed-loop'/self-contained urban/metro networks are adopting proprietary communications-based train control (**CBTC**) protocols, particularly in large, densely populated cities. CBTC systems use radio equipment for communication between trains, trackside equipment and control systems to detect and control train location, speed and direction. CBTC allows for more accurate train detection than conventional signalling systems and increases network capacity and performance by decreasing train intervals. CBTC also enables varying grades of automation, ranging from driver-assisted ATP to fully automated driverless systems. CBTC projects are currently underway in Sydney (Metro Northwest)[8] and Melbourne (Metro Tunnel).[9] Unlike ETCS, CBTC technology varies between suppliers as there is no need for interoperability on closed-loop networks.

Regulatory framework

38. In Australia, rail operators must comply with the *Rail Safety National Law* (**RSNL**), which is administered by the Office of the National Rail Safety Operator. The RSNL includes requirements in respect of occupational health and safety, accreditation and rail safety.[10] The RSNL has been substantially adopted by each State and Territory. Signalling equipment suppliers must ensure that their products meet certain requirements specified by the RSNL.[11]

39. In addition to the requirements of the RSNL, there are competency frameworks at the State and Territory level which govern the performance of certain tasks and provide for the supervision and approval of signalling system designs and data verification.

40. Signalling equipment must also be "type-approved" before it can be deployed on a network. Type-approval is a network-specific certification process through which equipment is certified so as to demonstrate that it meets minimum regulatory, technical and safety requirements.

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8 https://www.sydneymetro.info/northwest/project-overview.

9 https://metrotunnel.vic.gov.au/.

10 https://www.onrsr.com.au/about-onrsr/legislation.

11 Broadly, equipment designers, manufacturers, and suppliers must ensure that rail infrastructure is safe for its intended purpose https://www.onrsr.com.au/__data/assets/pdf_file/0016/10465/Guideline-Major-Projects.pdf.

41. The time and cost associated with type-approving equipment can vary depending on the nature/complexity of the technology in question and any specific requirements imposed by the rail operator. However the time and cost involved in type-approving some equipment can be extensive.

42. The ACCC understands that the type-approval process generally involves the equipment supplier working closely with the network operator, including:

    a) Providing references to show that the equipment in question has operated safely on another network. Australian rail networks typically recognise references from other networks in Australia, Europe and North America.

    b) 'Shadow running' the equipment on the network by integrating it into the network alongside existing equipment to monitor/test its performance.[12] This enables the supplier and network operator to verify that the new equipment is operating correctly and safely by comparing its performance to that of the existing equipment.

    c) Providing ongoing technical support for the equipment throughout the type-approval process to rectify any issues and ensure that the equipment integrates with the network.

Other industry participants

43. There are a number of other suppliers of heavy rail signalling systems worldwide. These include:

    a) Ansaldo STS/Hitachi Ltd (Ansaldo) – supplies signalling systems for mainline (freight, passenger and high speed rail) and urban/metro railways (conventional and driverless). Ansaldo has signalling equipment installed across various networks in Australia. Hitachi Ltd recently acquired a 51% interest in Ansaldo STS.[13]

    b) Bombardier Inc (Bombardier) – supplies signalling systems for mainline and urban/metro rail networks. In Australia, Bombardier supplies a range of signalling equipment. It was also recently awarded a signalling upgrade project on BHP's mine-to-port line in the Pilbara region of Western Australia,[14] and a project involving the supply of an integrated CBTC metro signalling system for the Melbourne Metro Tunnel project.[15]

    c) Thales Group (Thales) – supplies signalling systems for mainline and urban/metro rail networks globally. In Australia, the ACCC understands that Thales' heavy rail signalling offering is limited.

    d) Chinese suppliers such as China Railway Signal & Communication Corporation Limited (CRSC) and Beijing Traffic Control Technology Co.,

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12 The ACCC understands that for some signalling equipment, such as computer-based interlockings, this process can occur virtually without the need for physical integration.

13 http://www.hitachi.com/New/cnews/month/2015/02/150224b.html; https://www.reuters.com/article/us-ansaldo-m-a-hitachi/hitachi-ready-to-buy-elliotts-stake-in-ansaldo-sts-paper-idUSKCN1IM0J9.

14 https://www.bombardier.com/content/dam/Websites/bombardiercom/countries/supporting-documents/Bombardier-Transportation-CountryBrochure-Australia-en.pdf.

15 https://www.bombardier.com/en/media/newsList/details.bt-20171218-bombardier-wins-contract-to-provide-melbournes-first-high-capacity-signalling-system.bombardiercom.html.

Ltd (Beijing TCT) – have a large presence in Asia (particularly China), but are not currently present in heavy rail signalling in Australia.[16]

e) CAF Signalling (CAF) – has delivered heavy rail signalling projects in a number of countries including in Europe and South America.[17] In Australia, CAF has delivered rolling stock and light rail projects in Canberra, Sydney and Newcastle.[18] The ACCC understands that CAF does not currently supply heavy rail signalling in Australia.

f) Wabtec Corporation (Wabtec) – a leading supplier of Positive Train Control (PTC) technology. PTC is a type of ATP system adopted widely in the United States and Canada. However, the ACCC understands that PTC is not compatible with ETCS.[19]

g) Nippon Signal – an established signalling supplier in Japan, where signalling standards are significantly different to those adopted by rail networks in Australia and other parts of the world.[20]

44. A number of other suppliers offer certain types of signalling equipment in Australia but the ACCC understands that they do not supply signalling systems. These include Western-Cullen-Hayes (level crossing components), Frauscher (axle counters), Compton Greaves (relays), Voestalpine (axle counters, point machines and relays) and PT Hydraulic (point machines).

Market definition

45. The ACCC's starting point for delineating relevant markets in which to assess the competitive effects of a proposed merger or acquisition involves identifying the products/services actually or potentially supplied by the merger parties. The ACCC then considers what other products/services and sources of supply constitute sufficiently close substitutes to provide a significant source of constraint on the merged firm.

46. As noted at paragraph 22 above, the key area of overlap between Siemens and Alstom is in the supply of heavy rail signalling.

Product/service dimension

47. In Australia, customers typically procure signalling systems as integrated 'projects' through a competitive tender process. Signalling systems are a long-term investment for rail networks. The ACCC understands that signalling systems are generally procured with a view to achieving an asset life of 20-30 years and that procurement processes occur relatively infrequently. Customers are typically public or private sector rail infrastructure managers/operators.

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16 http://www.bj-tct.com/en/about/info.aspx?id=3; http://www.crsc.cn/news/tsi_3195_6852_6489.html.

17 https://www.caf.net/en/innovacion-tecnologia/senalizacion.php.

18 https://www.caf.net/en/productos-servicios/proyectos/proyecto-detalle.php?p=248; https://www.caf.net/en/productos-servicios/proyectos/proyecto-detalle.php?p=282; https://www.caf.net/en/productos-servicios/proyectos/proyecto-detalle.php?p=283.

19 https://www.wabtec.com/uploads/annual_report/2017%2010-K%20FINAL%20Filed%20on%202.26.18.pdf.

20 http://www.signal.co.jp/english/aboutus/pdf/corporate_profile.pdf.

48. There are broadly two types of tenders for signalling projects:

- *Dedicated signalling system tenders*, which relate specifically to signalling systems and associated services, and
- *Broader tenders for 'turnkey' rail mobility solutions, w*hich include rolling stock, electrification, civil works and/or other equipment and services in addition to signalling.

49. While signalling suppliers typically bid separately for dedicated signalling tenders, bidding consortia are commonly formed for turnkey projects. The ACCC understands that such turnkey projects are less common in Australia than in other countries.

50. In each case, these projects generally involve comprehensive signalling solutions and one or more signalling elements/systems supplied together with other services such as project specific engineering, development and project management, procurement and supply of the necessary signalling equipment, systems integration, installation, testing and, in most cases, maintenance services. Maintenance and operational services can also be outsourced to a third party provider. Some customers may also perform some services in-house, such as routine 'day-to-day' maintenance.

51. The ACCC understands that customers generally consider the following key factors when awarding contracts for signalling projects:

- Experience/track record (particularly in Australia and other developed countries)
- Reputation
- Existing customer relationship / type-approval(s)
- Knowledge of the network, and
- Financial standing and capacity, and the ability to comply with safety, risk and liability provisions in project documentation.

52. Signalling equipment can also be supplied on a standalone basis. For example, customers may acquire equipment as replacement parts for existing systems, or suppliers that do not manufacture the relevant equipment may source it from original equipment manufacturers (**OEMs**) such as Siemens or Alstom to on-supply. However, the ACCC understands that standalone sales of more complex types of signalling equipment and proprietary systems, particularly interlocking and ATP systems, are rare.

53. On the basis of the above, the ACCC is of the preliminary view that it is appropriate to consider the competitive impact of the proposed merger in the context of one or more markets for heavy rail signalling projects for passenger rail networks.

54. Heavy rail signalling projects may be segmented on the basis of:

- *System type/technology* – the ACCC is considering whether there may be separate markets for projects involving the supply of CBTC technology, ETCS technology and 'legacy' signalling system technologies (for example, those that use older electronic relay-based and mechanical interlockings).

- *Project size (value)* – the ACCC is considering whether there may be separate markets for major heavy rail signalling projects (such as a network-wide signalling system upgrade or a signalling system for a new line) and less significant heavy rail signalling projects (such as upgrades to part of a network or expansions).

55. In particular, the information before the ACCC indicates that the competitive dynamics differ for the following types of projects:

    - *Major heavy rail signalling projects* – for example, a network-wide interlocking overhaul or signalling for a new rail line. These types of projects may involve the supply of newer technologies such as ETCS or CBTC.
    - *Less significant heavy rail signalling projects* – for example, a minor upgrade to interlockings or other signalling equipment, or a small expansion to an existing rail network (or part of a network). These types of projects may involve the supply of older 'legacy' signalling technologies.

56. The ACCC is continuing to explore these issues.

Geographic dimension

57. The ACCC has not reached a conclusion on the geographic dimension of the markets identified above.

58. While the merger parties, like other leading providers of heavy rail signalling, operate globally, in Australia rail operators are required to comply with the RSNL (a national regulatory regime) as well as State and Territory based competency frameworks. Equipment must also be "type-approved" for use on each network. While the ACCC understands that steps have been taken towards harmonising the type-approval process across Australia (or at least towards mutual recognition between networks), this has not yet been achieved.

59. Despite this, the ACCC's preliminary view is that the geographic scope of the relevant market may be national. However, it is considering whether there may be narrower geographic markets.

The ACCC invites comments from market participants on the relevant market(s). In particular market participants may wish to comment on:

- The extent to which customers would switch to a signalling provider without installed equipment ("an installed base") and/or relevant type-approval(s) in the event of a 5 to 10 per cent price rise, and, if so, which providers are likely to be credible alternatives and why.
- The extent to which the regulatory framework (including type-approval) limits a network's options or influences a supplier's decision regarding the supply of heavy rail signalling systems.
- Whether it is appropriate to distinguish between major and less significant heavy rail signalling projects.
- Whether a customer's credible alternatives change depending on the size (value) of the project and/or the signalling technology involved. Please explain your answer.

- Whether any other distinctions may be relevant to assessing the competitive impact of the proposed merger.

Issue that may raise concerns: reduction in competition for heavy rail signalling projects on passenger rail networks

60. The ACCC's preliminary view is that the proposed merger may substantially lessen competition for heavy rail signalling projects for passenger rail networks, in particular those involving interlocking systems and/or trackside ATP systems.

Market concentration

61. The supply of heavy rail signalling in Australia is characterised by a small number of large providers.

62. The parties have submitted market share estimates based on order intake data for signalling projects awarded in Australia between 2012 and 2017. However, the ACCC considers that such data is subject to considerable uncertainty. In particular, order intake data can be distorted by one or more projects of significant value. In order to obtain a clearer picture of concentration, the ACCC is continuing to gather data, including tender and customer acquisition data.

63. The ACCC's market inquiries have revealed that there are three main suppliers with a presence on heavy rail passenger networks in Australia:

    a) Siemens

    b) Alstom

    c) Ansaldo

64. Information obtained during market inquiries suggests that Siemens is the market leader and that Alstom and Ansaldo are the next strongest providers, with a significant installed base across networks in Australia.

65. While Bombardier and Thales also have a presence on some passenger networks in Australia, the ACCC understands that their presence is limited.

66. In that light, the ACCC's preliminary view is that the proposed merger will reduce the already limited number of suppliers for heavy rail signalling projects in Australia.

Alternative suppliers

67. The ACCC's inquiries indicate that the degree of interest from signalling suppliers for individual projects can vary depending on the size/value of the project.

Less significant heavy rail signalling projects

68. For less significant heavy rail signalling projects, such as an upgrade to part of a network or an expansion, market feedback suggests that the viable signalling providers are, in most cases, likely to be limited to those with an existing

presence on the relevant network. This is partly due to the risks involved in engaging a new supplier with limited knowledge of the network and the need to interface with signalling on other parts of the network, as well as the time and cost of tendering for such projects relative to their value (including in relation to type-approvals).

69. Market feedback indicates that customers may have up to three suppliers on their network(s), particularly in the case of interlockings, in order to ensure a degree of ongoing competition. Even though a customer may deal with the incumbent supplier on a given line or section of the network, customers have indicated that the presence of other suppliers on a network imposes a competitive constraint on the incumbent supplier.

Major heavy rail signalling projects

70. For major heavy rail signalling projects – for example, a network-wide interlocking system overhaul or signalling for a new rail line – the ACCC's market inquiries suggest that there may be a greater number of credible supplier options including, in particular, Bombardier and Thales, the other main OEM providers of heavy rail signalling systems globally. This is mainly because the value of the project increases the incentives for potential suppliers to bid and lowers the relative cost of bidding. In addition, the incumbency advantage enjoyed by existing suppliers may be more limited for such projects. The ACCC notes that Bombardier recently won a tender for a major heavy rail signalling project on a passenger network in Australia, the Melbourne Metro Tunnel project.[21]

Other participants in signalling

71. There are a number of other suppliers of signalling equipment, including particular components such as track circuits and point machines. However, market feedback indicates that such suppliers do not, and are not able to, deliver complex heavy rail signalling projects in Australia, particularly where interlocking and/or ATP systems are involved.

72. Similarly, although large suppliers of civil engineering services such as John Holland Group, Thiess, Downer Group and UGL Limited (part of CIMIC Group)[22] may take part in rail tenders and be awarded contracts to supply and manage the overall delivery of large 'turnkey' rail infrastructure projects that involve signalling, the ACCC understands that these suppliers generally partner with a signalling OEM to deliver the signalling element(s) of the project and do not have capability themselves to provide all of the necessary elements.

73. Accordingly, the ACCC's preliminary view is that other suppliers of signalling equipment and suppliers of civil engineering services are unlikely to constrain a combined Siemens-Alstom in relation to heavy rail signalling projects.

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[21] https://www.bombardier.com/en/media/newsList/details.bt-20171218-bombardier-wins-contract-to-provide-melbournes-first-high-capacity-signalling-system.bombardiercom.html.

[22] The ACCC understands that in 2005 UGL acquired Alstom's transport business in Australia and New Zealand and Alstom ceased to supply rail projects in Australia for a period. The parties have indicated that UGL continues to manufacture some signalling products under a non-exclusive licence from Alstom and using its own technology and that it has experience in the delivery of integrated signalling projects. The ACCC is continuing to evaluate the extent to which UGL may impose a competitive constraint on a combined Siemens-Alstom.

Preliminary conclusion

74. On the basis of the above, it appears that alternative suppliers may not sufficiently constrain a combined Siemens-Alstom, in particular in relation to less significant signalling projects on heavy rail passenger networks in Australia. As identified above, there may be greater options in relation to major projects. The ACCC invites further feedback from market participants.

Potential new entrants and barriers to entry and expansion

75. As set out in paragraph 43 above, the ACCC is aware of a number of other heavy rail signalling suppliers in other countries. These include:

    a) CAF

    b) Wabtec

    c) Nippon Signal

    d) Mitsubishi Electric

    e) Chinese suppliers such as CRSC and Beijing TCT.

76. However, none of these suppliers have a presence in providing heavy rail signalling projects in Australia.

77. There appear to be significant barriers to new entry/expansion into Australia, which include:

- Regulatory compliance and type-approval processes and associated costs (see paragraphs 38 to 42 above). Market feedback indicates that the type-approval process for interlockings, for example, can cost up to several million dollars and take between 12 and 30 months. Customers also incur costs associated with type-approving new equipment, which may result in potential suppliers (other than those already present on the network) not being considered for less significant signalling projects. The ACCC notes that these may be less of a barrier for major heavy rail signalling projects, in particular because the value of such projects can create the incentive for potential suppliers and rail networks to engage in the type-approval/regulatory process.
- Other costs, including those associated with preparing bids, participating in tender processes and establishing oneself in Australia as a credible alternative.
- Safety assurance requirements for new signalling equipment, which can present a significant barrier for new entrants. In particular, the ACCC understands that safety cases can take many years to prove following the development of new signalling solutions.
- The requirement for knowledge of rail networks in Australia and demonstrated experience in implementing similar projects in Australia and/or other developed countries.
- Incumbency advantages: some market participants have submitted that the presence of large incumbents discourages potential suppliers from participating in tenders if they do not consider that there is a reasonable chance of success, other than for major signalling projects where the benefits of winning are more likely to justify the investment.

- High customer switching costs associated with engaging a supplier that is not already present on the customer's network, including the time and cost of type-approvals and the risks involved in engaging a new supplier with limited knowledge of the network and the need to interface with signalling on other parts of the network.
- Relatively small project sizes in Australia (particularly in the case of upgrades and expansions to existing rail networks) that may not justify the significant investment required to participate in tender processes, in particular when competing with incumbent providers with the advantages referred to above.
- Onerous risk and liability provisions in project documentation for heavy rail signalling projects, which can mean that only large, well-resourced signalling suppliers are in a position to bid.
- The opportunity costs relative to other projects globally and associated resourcing considerations (including the availability of relevant technical expertise).

78. As discussed above, in the case of major heavy rail signalling projects these barriers may be less significant, particularly for major providers of ETCS or CBTC technology globally.

79. Market feedback indicates that the likelihood of entry by Chinese suppliers such as CRSC and Beijing TCT is lower than for others, as these suppliers do not currently meet the safety and reliability standards required by Australian customers, and do not have acceptable signalling project references. Similarly, Nippon Signal does not appear to be a viable option since Japanese signalling standards differ significantly to those adopted by networks in Australia.

80. On the basis of the above, the ACCC's preliminary view is that the threat of timely entry by other signalling suppliers may not be sufficient to constrain a combined Siemens-Alstom, with the possible exception of major projects.

Countervailing power

81. Countervailing power exists when buyers have special characteristics that enable them to credibly threaten to bypass the merged firm, such as by vertically integrating into the upstream market, establishing importing operations or sponsoring new entry, such that this constrains any attempted increase in market power by a supplier.[23]

82. Countervailing power is more than the ability of one large buyer to negotiate favourable terms and price relative to other buyers. A significant proportion of customers must be shielded from the effects of market power if countervailing power is to prevent a substantial lessening of competition in the relevant market(s).

83. The ACCC acknowledges that customers for signalling systems are typically sophisticated purchasers such as government departments or public bodies with some ability to structure tender processes to promote competitive outcomes. In particular, information obtained during market inquiries suggests that some

[23] See ACCC *Merger Guidelines*, November 2008, at paras. 7.48-7.51, https://www.accc.gov.au/system/files/Merger%20guidelines.pdf.

customers can and do take additional steps to encourage new entry by facilitating type-approval processes for potential suppliers before or during tenders. However, the ACCC understands that this may only occur in relation to major projects, where the value justifies the investment and risk, both for the rail network(s) and potential suppliers. The ACCC is continuing to explore this issue.

The ACCC invites comments from market participants in relation to concerns of a potential post-merger reduction in competition for heavy rail signalling projects for passenger rail networks. In particular, market participants may wish to comment on the following:

- The credible options for rail networks in Australia when procuring (i) major and (ii) less significant heavy rail signalling projects.
- The importance of experience, type-approval(s), reputation, relationships, existing presence in Australia, financial standing and other factors considered by customers when awarding contracts for heavy rail signalling projects.
- The nature and extent of any 'incumbency advantage' that providers with an installed base and/or existing type-approval(s)/relationship with a network have in respect of tenders for (i) major and (ii) less significant heavy rail signalling projects.
- The extent to which not having an existing presence on/relationship with a given network is a barrier for prospective suppliers of future heavy rail signalling projects, particularly less significant projects.
- The extent to which having more than one supplier on a network imposes a competitive constraint on the 'incumbent(s)' by creating competitive tension.
- The extent to which the merger affects any incumbency advantage of existing suppliers.
- The risks involved in switching to a new supplier, in particular for less significant projects, including requirements to interface with existing signalling on the network.
- The likelihood of new entry (other than by acquisition) by suppliers of signalling systems in other countries such as CAF, Nippon Signal, CRSC and Beijing TCT.
- The extent to which customers can take steps to promote new entry and assist potential suppliers to overcome barriers to entry, for example, by facilitating type-approvals, bundling a number of less significant signalling projects into a larger project to attract wider interest, or adopting a newer type of signalling technology.
- Any discretion that customers have in relation to the requirement for signalling equipment to be type-approved and, in particular, the extent to which the requirement for type-approval is a barrier to entry.
- The extent to which OEMs such as Siemens and Alstom currently on-supply signalling technologies and equipment to other signalling suppliers in Australia.
- Whether there are any concerns in relation to the supply of particular signalling systems/equipment on a standalone basis.

ACCC's future steps

84. As noted above, the ACCC now seeks submissions from market participants on each of the issues identified in this Statement of Issues and on any other issue that may be relevant to the ACCC's assessment of this matter. Submissions should be e-mailed to mergers@accc.gov.au by **5pm on 20 September 2018**.

85. The ACCC will finalise its view on this matter after it considers submissions invited by this Statement of Issues.

86. The ACCC intends to publicly announce its final view by **29 November 2018**. However the anticipated timeline may change in line with the *Informal Merger Review Process Guidelines*. A Public Competition Assessment for the purpose of explaining the ACCC's final view may be published following the ACCC's public announcement to explain its final view.