NOTICE SEEKING CLEARANCE OF A BUSINESS ACQUISITION PURSUANT TO SECTION 66 OF THE COMMERCE ACT 1986

PUBLIC VERSION

24 OCTOBER 2018

The Registrar Business Acquisitions and Authorisations Commerce Commission PO Box 2351 Wellington

Pursuant to s66(1) of the Commerce Act 1986 notice is hereby given seeking **clearance** of a proposed business acquisition.

1. **EXECUTIVE SUMMARY**

- 1.1 Siemens AG (**Siemens**) and Alstom S.A. (**Alstom**) (together, the **Parties**) propose a global merger of Siemens' mobility business with Alstom by way of a contribution of Siemens' mobility business to Alstom in consideration for newly issued Alstom shares representing no less than 50% of Alstom's share capital on a fully diluted basis (the **Proposed Transaction**).
- 1.2 The Proposed Transaction internationally concerns the rail mobility industry which in general involves the supply of various projects, products and services to owners or operators of rail networks including rolling stock, the associated infrastructure (rail electrification and track equipment), signalling systems (train control systems and services) and services for the maintenance of these products and the supply of spare parts.
- 1.3 In New Zealand the area of potential future competitive overlap is solely in the supply of rail signalling products and projects.
- 1.4 Given the limited scale of New Zealand's national rail network (only Auckland and Wellington have urban rail systems), the rail mobility industry in New Zealand is small. There is in effect a sole customer, infrastructure owner KiwiRail.
- 1.5 Siemens has been an active participant in New Zealand since 1876, and has a small local rail mobility team. Alstom, in contrast, has not been an active market participant. Its involvement is a consequence of its 2015 acquisition of GE's signalling business. It has no office, staff or other physical presence in New Zealand.
- 1.6 As the sole rail network operator, KiwiRail controls New Zealand's rail mobility industry. It determines the performance specifications and technical requirements for its network, the procurement processes and the selection criteria. Its position as a monopsonist purchaser is analogous to that of PHARMAC in the pharmaceutical industry.
- 1.7 KiwiRail's practice has been to use competitive tenders for more significant signalling projects (for example, the signalling components of the Auckland rail electrification project¹) while other signalling projects and individual products are typically procured on a non-contested basis.
- 1.8 Irrespective of the approach taken to market definition (a single market for rail signalling or separate markets for signalling projects and products), the Proposed Transaction does not give rise to any competition concerns in New Zealand.
- 1.9 We have assessed the competition effects of the Proposed Transaction in national markets for:
 - (a) the supply of signalling projects (the **Signalling Projects Market**); and
 - (b) the supply of signalling products on a standalone basis (the **Signalling Products Market**).
- 1.10 In the Signalling Projects Market:
 - (a) more significant signalling projects are typically procured by KiwiRail through competitive tenders;
 - (b) these tenders attract international rail mobility players such as CAF, Thales, Bombardier, Hitachi / Ansaldo, Wabtec, CRSC and others. At Auckland Transport's recent market sounding day for the Auckland light rail project, there were more than 70 companies from more than 20 countries in attendance;

¹ This project began in 2011. KiwiRail has now completed the majority of the work involved to prepare the Auckland rail network for electric trains.

- (c) CAF []. It has won two signalling projects in 2018 through competitive tenders [] and is well placed to expand further. Details of recent signalling projects in New Zealand are set out in Annexure 5;
- (d) in the last five years Alstom has not tendered for or delivered any signalling projects in New Zealand;
- barriers to entry are not significant for large, established international rail mobility players. In particular, a local presence, existing supply arrangements and type approval are not required in order to viably bid for a major project; and
- (f) KiwiRail has complete discretion over which signalling systems are installed on its network. As a monopsonist purchaser, it exercises a high degree of countervailing power and effectively controls the market:
 - (i) it would not be possible for the Combined Entity to raise prices above competitive levels or reduce quality below competitive levels; and
 - (ii) KiwiRail has the ability to support new entry / expansion by altering its procurement strategies.
- 1.11 In the Signalling Products Market:
 - (a) signalling products include axle counters, detectors, interlockings, level crossing equipment, point machines, relays, signals and trainstops which are provided on a standalone basis;
 - (b) these are usually technically less sophisticated goods that are often interoperable and can readily be sourced by KiwiRail from all of the major global signalling suppliers (CAF, Thales, Bombardier, Hitachi / Ansaldo, Wabtec and CRSC);
 - (c) KiwiRail typically appoints a preferred supplier for each category of signalling product, and then purchases those products as required on a non-contested basis; and
 - (d) the competitive overlap in the Parties' supply of signalling products is minimal:
 - (i) [];
 - (ii) Alstom currently supplies only point machines on a standalone basis and []; and
 - (i) while Siemens has previously supplied point machines on the KiwiRail network, Alstom has now been selected by KiwiRail as its preferred supplier.
- 1.12 The counterfactual would be a continuation of the status quo competitive tenders for more significant projects, and other projects and standalone products being supplied to KiwiRail on a non-contested basis. KiwiRail would continue to have complete discretion over its procurement processes.
- 1.13 Accordingly, as further explained in this Notice, the Proposed Transaction is unlikely to have the effect of substantially lessening competition in either the Signalling Projects Market or the Signalling Products Market.

2. APPLICANT AND OTHER PARTIES

Siemens

- 2.1 This notice is given by Siemens Aktiengesellschaft (Siemens)
- 2.2 Details for Siemens are:

Postal address: Physical address: Telephone:	Werner-von-Siemens-Straße 1, 80333 Munich, Germany Werner-von-Siemens-Straße 1, 80333 Munich, Germany +49 89 636-00
Web address:	www.siemens.com
Contact person:	Dr. Andrea Herzog
	Senior Counsel
	[]
	Anna Hintze
	Legal Counsel

- 2.3 Siemens' New Zealand subsidiary is Siemens (N.Z.) Limited (Siemens NZ)
- 2.4 Details for Siemens NZ are:

Postal address:	600 Great South Rd, Ellerslie, Auckland 1051, New Zealand
Physical address:	600 Great South Rd, Ellerslie, Auckland 1051, New Zealand
Telephone	+64 9 580 5500
Contact person:	Emily Madder
·	General Counsel & Company Secretary, Siemens Ltd. Australia
	[]

2.5 All correspondence and notices to Siemens in respect of this application should be directed in the first instance to:

MinterEllisonRuddWatts Lumley Centre 88 Shortland Street Auckland 1010

Dr Ross Patterson Partner +64 9 353 9864 ross.patterson@minterellison.co.nz Kristel McMeekin Senior Associate +64 9 353 9837 <u>kristel.mcmeekin@minterellison.co.nz</u>

Alstom

- 2.6 The other party is Alstom S.A. (Alstom)
- 2.7 Details for Alstom are:

Postal address:	48, rue Albert Dhalenne, 93400 Saint-Ouen, France
Physical address:	48, rue Albert Dhalenne, 93400 Saint-Ouen, France
Telephone:	+ 33 1 57 06 90 00
Web address:	www.alstom.com
Contact person:	Emmanuelle Petrovic
	VP Legal M&A, Litigation and Competition
	[]

2.8 All correspondence and notices to Alstom in respect of this application should be directed in the first instance to:

Russell McVeagh Vero Centre 48 Shortland Street Auckland 1010

Sarah Keene Partner +64 9 367 8133 sarah.keene@russellmcveagh.com Hannah Loke Solicitor +64 9 367 8026 hannah.loke@russellmcveagh.com

3. TRANSACTION DETAILS

The proposed transaction

- 3.1 Siemens and Alstom propose to combine Siemens' mobility business with Alstom, with Siemens receiving newly issued shares in the combined company representing no less than 50% of Alstom's share capital on a fully diluted basis. Following completion of the Proposed Transaction, Siemens will from an antitrust perspective acquire sole control over Alstom.
- 3.2 Pursuant to a Business Combination Agreement (BCA) entered into by the Parties on 23 March 2018, the Proposed Transaction will involve the strategic combination of Siemens' mobility business (including its rail traction drives activities) (Siemens Mobility Business) and Alstom by way of a contribution in kind of the Siemens Mobility Business to Alstom, in consideration for newly issued Alstom shares.
- 3.3 The Proposed Transaction will consist of the following three steps:
 - (a) Siemens will initiate and implement the carve-out of activities related to its Mobility Business from the various Siemens entities which currently hold them.
 - (b) On the closing date, Siemens will transfer to Alstom the carved-out Mobility Business by transferring the shares in existing and / or newly formed entities holding the (carved-out) Mobility Business, or potentially in individual cases by way of a transfer of assets.
 - (c) In consideration for the contributed Mobility Business, Alstom will issue new shares to Siemens on the closing date, representing no less than 50% of the share capital of Alstom on a fully diluted basis. In addition, Alstom will also issue warrants to Siemens, enabling Siemens to subscribe to a number of Alstom shares achieving a 2% point increase of its shareholding in Alstom in the event of an exercise of all warrants, as from four years after closing.
- 3.4 The combined entity will be named Siemens Alstom (the **Combined Entity**), and will remain listed on the Euronext Paris Stock Exchange in France. It will be headquartered in the Paris area, and will have approximately 62,300 employees in over 60 countries.
- 3.5 Figure 1 below shows the ownership structure before and after the Proposed Transaction:

Figure 1



The rationale for the Proposed Transaction

3.6 The Parties' rationale for the Proposed Transaction is to combine two global rail mobility players with unique customer value and operational potential. As the Parties' rail mobility activities in New Zealand are limited in scope, this rationale relates to the Parties' broader international businesses, rather than to New Zealand specifically.

Application for clearance

3.7 Siemens seeks clearance for the Proposed Transaction from the NZCC.

Other competition agencies that are being notified

3.8 Table 1 below shows the status of merger control filings as at 22 October 2018.

Table 1

Jurisdiction	Status
Australia	Review pending
[]	[]
Brazil	Review pending
[]	[]
[]	[]
China	Cleared on 19 June 2018
[]	[]
European Union	Review pending
India	Review pending
[]	[]
[]	[]
[]	[]
[]	[]
Montenegro	Cleared on 25 May 2018
[]	[]
[]	[]
[]	[]
[]	[]
Serbia	Cleared on 6 June 2018
Singapore	Review pending
[]	[]
[]	[]
[]	[]
Taiwan	Cleared on 18 July 2018
[]	
[]	[]
[]	

The sale and negotiation process

- 3.9 The Parties entered into a memorandum of understanding on 26 September 2017, at which point they publicly announced the Proposed Transaction. The Parties subsequently entered into the BCA on 23 March 2018.
- 3.10 Alstom's shareholders granted approval for the Proposed Transaction on 17 July 2018.² The Parties currently aim to complete the Proposed Transaction by the end of 2018 or the first half of 2019.³

² See <u>http://www.alstom.com/press-centre/2018/07/general-meeting-17072018/</u>.

³ See <u>http://www.alstom.com/press-centre/2018/06/siemens-alstom-european-commission-notified-of-business-combination/</u>.

4. THE PARTIES

Siemens

- 4.1 Siemens is a German stock corporation listed on the Frankfurt am Main and Xetra stock exchanges with registered seats in Berlin and Munich, and is headquartered in Munich. It is active in more than 200 countries, and as at September 2017, had approximately 377,000 employees worldwide.
- 4.2 Siemens' long-term growth fields are electrification, automation and digitalisation. Its businesses are currently bundled into the following divisions: Mobility; Power and Gas; Power Generation Services; Energy Management; Building Technologies; Digital Factory; Process Industries and Drives; Financial Services; Healthineers (separately managed); Siemens Gamesa Renewable Energy (a separately managed joint venture); and next47, a venture capital unit specialising in startups and disruptive technologies.
- 4.3 Siemens first entered New Zealand in 1876, when it supplied the time ball for the Lyttelton Timeball Station. Siemens' business in New Zealand is now conducted mainly by Siemens NZ through its corporate office in Auckland, with support from its shareholder Siemens Ltd in Australia. Siemens NZ operates in the power, automation, rail mobility and building industries.
- 4.4 Siemens NZ's mobility business involves the supply of signalling projects and standalone signalling products (axle counters, detectors, level crossing equipment, point machines, relays, signals and trainstops), and []:
 - (a) [];
 - (b) [];
 - (c) []; and
 - (d) [].
- 4.5 Siemens does not supply rolling stock or conduct railway infrastructure activities in New Zealand.⁴
- 4.6 [].
- 4.7 Siemens NZ's total revenue for FY 2017 was NZD \$32.5 million, including revenue from its business activities unrelated to the Proposed Transaction.

Alstom

- 4.8 Alstom is a French société anonyme listed on the Euronext Paris Stock Exchange, and headquartered in France. It is present in over 60 countries and employs approximately 32,800 people worldwide.
- 4.9 Internationally, Alstom is a full player in the rail mobility industry, providing a range of rolling stock (from high-speed trains to metros, tramways and e-buses), personalised services (maintenance and modernisation) as well as offerings dedicated to passengers and infrastructure, digital mobility and signalling solutions.
- 4.10 Following an acquisition by General Electric (**GE**) of Alstom's thermal power, renewable power and grid businesses in 2015, Alstom became a non-controlling minority shareholder in three joint ventures with GE: a grid and digital energy joint venture; a renewable energy joint venture; and a global nuclear and French steam joint venture (together the **GE Joint Ventures**). These do not

^{4 [].}

fall within the scope of the Combined Entity. On 2 October 2018, the transfer of Alstom's stakes in all three GE Joint Ventures occurred for a total amount of EUR 2.594 billion.

- 4.11 Alstom's participation in the New Zealand rail mobility industry is limited, and is largely a legacy of its 2015 acquisition of GE's global signalling business. It has no office, staff or other physical presence in New Zealand.⁵ [].
- 4.12 Alstom has supplied the following products / services in New Zealand:
 - (a) signalling products: Alstom has been selected by KiwiRail as the preferred supplier of point machines. []:
 - (i) [];
 - (ii) []; and
 - (iii) []; and
 - (b) [].
- 4.13 [].
- 4.14 [].

Horizontal overlap between the Parties

- 4.15 In New Zealand, there has historically been limited competitive overlap in the supply of only one type of signalling product, point machines, but Alstom has now been selected by KiwiRail as its preferred supplier of point machines. [].
- 4.16 []. [].
- 4.17 [].

Annexures to this Notice

- 4.18 We provide in **Annexures 1 to 9**:
 - 1. a copy of, or link to, the most recent annual report, audited financial statements and management accounts for the relevant business unit(s);
 - 2. the names and contact details for the Parties' main competitors, and any trade or industry associations in which one or both of the Parties participate;
 - 3. the names and contact details for each Party's key customers;
 - 4. a glossary of key terms used in this Notice;
 - 5. a schedule of recent signalling projects in New Zealand;
 - 6. a schedule of pipeline signalling projects in New Zealand;
 - 7. [];

⁵ Alstom does have a 'permanent establishment' in New Zealand in the form of a PO Box managed by PwC.

- 8. an overview of the Parties' signalling products; and
- 9. profiles of major international signalling suppliers.

5. **INDUSTRY OVERVIEW**

- 5.1 The New Zealand rail network consists of approximately 4,000 km of track.⁶ A 2016 study by EY estimated that rail brings around \$1.5 billion in hidden net benefits to New Zealand, including through reduced congestion, road maintenance and emissions, and improved safety.⁷ New Zealand's entire rail network is mainline; there is currently no urban / light rail.⁸
- 5.2 Both Parties are active in the rail mobility industry internationally. The following broad categories make up the rail mobility industry:
 - (a) signalling: Signalling systems provide safety controls on rail networks. They provide incremental levels of safety that minimise or prevent trains from colliding with one another by preventing two trains from meeting on the same section of track. These systems include mainline signalling and urban signalling systems (also known as mass transit, which refers to metro and tram / light rail vehicles (also called LRVs) signalling).

Signalling products are supplied either:

- (i) for signalling projects; or
- (ii) on a standalone basis (outside of a project), for example as replacement parts for previously installed systems (referred to as signalling products);
- (b) **rolling stock:** Rolling stock includes the various vehicles that travel on railway networks and tracks, for example locomotives, metros (commuter trains), and trams / LRVs.

In New Zealand, recent rolling stock procurement has predominantly come from three suppliers: CAF; Dalian Locomotive and Rollingstock Company; and a consortium of Hyundai and Mitsui; and

(c) **infrastructure:** Railway infrastructure includes the construction of the permanent way (the track on the railway), civil engineering and rail electrification. This includes the provision of rail electrification which provides traction power to trains and trams / LRVs.

KiwiRail has preferred suppliers for various infrastructure works, including tier one contractors (e.g. UGL and Hawkins) for civil works, consultants (e.g. Aecom and Aurecon) for engineering services and Laing O'Rourke, RCR Tomlinson, O'Donnell Griffin and Electrix for electrification work.

- 5.3 Rail mobility suppliers may also supply ancillary services, including labour and parts required to install and maintain infrastructure and rolling stock, and maintenance services.
- 5.4 Both Parties are suppliers of signalling in New Zealand, but the overlap is limited. Neither Party supplies rolling stock or infrastructure in New Zealand,⁹ and accordingly, these categories are not discussed further in this Notice.

⁶ Ministry of Transport, Annual Report 2016/17 at 2.

⁷ Available at <u>http://www.kiwirail.co.nz/uploads/Publications/The%20Value%20of%20the%20Rail%20in%20New%20Zealand.pdf</u>.

⁸ As discussed in section 8 below, there is an Auckland light rail project in the pipeline. Information is available at https://at.govt.nz/projects-roadworks/light-rail/.

⁹ [].

KiwiRail

- 5.5 Unlike most other jurisdictions where there are typically multiple rail network operators (e.g. mainline / metro), in New Zealand there is a sole entity that owns and operates the national rail network State Owned Enterprise KiwiRail.
- 5.6 As the sole entity responsible for New Zealand's rail operations, KiwiRail is for all intents and purposes the only rail signalling customer. While some larger signalling projects are delivered through project-specific arrangements between KiwiRail and other parties, KiwiRail ultimately determines the performance specifications and technical requirements for its network, including which signalling systems and products are installed.
- 5.7 By way of example of rail mobility projects where KiwiRail works closely with third parties:
 - (a) City Rail Link, an extension of Auckland's existing metro rail network, is being delivered by City Rail Link Limited (**CRLL**). CRLL is a crown entity jointly owned by Auckland Council and central government. KiwiRail has a formal role and is a key stakeholder in the project, and will ultimately own the rail infrastructure; and
 - (b) the proposed Auckland light rail project, delivery of which is to be led by Auckland Transport and the New Zealand Transport Agency.¹⁰
- 5.8 KiwiRail's infrastructure, engineering innovation and network services teams conduct (among other things):¹¹
 - (a) upgrades, renewals and maintenance of the network;
 - (b) major infrastructure projects; and
 - (c) design, installation and maintenance of level crossing warning systems in partnership with the relevant local authority.

KiwiRail self-supply

- 5.9 KiwiRail has the ability to self-supply signalling projects. Its in-house signalling capability is particularly strong for level crossing signalling projects and regional projects involving relay interlocking technology.
- 5.10 In order to self-supply signalling projects, KiwiRail sources individual product components off the shelf from third party suppliers and utilises its in-house engineering capabilities to deliver the project, as well as working with consultants. KiwiRail's 2017 Annual Integrated Report states:¹²

KiwiRail's people are experts in their field and leaders in the rail industry, renowned for their innovative approach to developing solutions that perform in New Zealand's unique and challenging rail environment.

5.11 KiwiRail self-supplied signalling projects worth [] in FY 2017, and [] in FY 2018 to date. [].

¹⁰ Responsibilities of the NZTA and project partners are set out at <u>https://www.nzta.govt.nz/assets/Roads-and-Rail/docs/auckland-light-rail-industry-briefing-slides-31-july-2018.pdf</u>.

¹¹ See <u>http://www.kiwirail.co.nz/infrastructure/infrastructure-and-engineering</u>.

¹² See <u>http://www.kiwirail.co.nz/uploads/Publications/KiwiRail%20Integrated%20Report%202017.pdf</u> at 34.

Signalling

- 5.12 New Zealand has a number of existing legacy signalling systems supplied by a range of suppliers, some dating back more than 80 years. Investment in New Zealand's rail network has been confined primarily to Auckland, and to a lesser extent Wellington and Hamilton. Siemens supplies the overall signalling system in Auckland but, as discussed further below, certain components from other suppliers have been specified for the Auckland City Rail Link project.
- 5.13 Figure 2 below shows the principal elements of signalling systems.

Figure 2



- 5.14 A brief explanation of each category of signalling systems included in Figure 2 is provided below. For more details, see 5.16 below:
 - (a) Automated Train Protection (**ATP**) systems are designed to protect each train. They assist the driver (e.g. with speed information, alarms) and provide fail safe mechanisms in case of human error.
 - (b) Interlockings control the field elements (e.g. point machines, balises, track signals) and set safe routes for trains. They ensure no two trains are on the same section of track by preventing conflicting movements.
 - (c) Level crossings are used where a railway line is intersected by a road or path and there is no bridge or tunnel.
 - (d) Operations and Control Systems (**OCS**) operate interlockings, integrate information from interlockings and ATP, and manage regional and nationwide train services, including passenger, fleet and crew information.
- 5.15 In addition, Communications-Based Train Control (**CBTC**) shown in Figure 2 is an automated train control signalling system that relies on telecommunications to connect with the track equipment and to ensure the safe operation of rail vehicles.

Signalling projects

- 5.16 Signalling projects involve engineering, development and project management, procurement and supply of the necessary equipment, systems integration, installation, testing and, in some cases, a period of maintenance. There are four main categories of systems that can be included in a signalling project:
 - (a) interlockings, which control wayside equipment and set routes for the safe transit of trains / control access to sections of the track to prevent trains from colliding. The interlockings control machines that move the rail at junctions so as to allow trains to transfer from one track to another ("point machines");
 - (b) ATP systems, which protect each individual train by ensuring the train obeys the movement authority granted by the interlocking, often including a permitted line speed (speed limit). There are different types of signalling technology that are often classified in terms of the ATP system used;
 - (c) **level crossing / pedestrian crossing systems**, which protect the railway from road / pedestrian traffic and vice versa. These include elements predicting train arrival as well as barriers and signals; and
 - (d) **OCS**, which are command and control systems designed for the overall management of railway networks and train movements centralised within a region. They operate interlockings, integrate information from interlockings and ATP, and manage regional and nationwide train services, including passenger, fleet and crew information
- 5.17 The ACCC has recently grouped signalling systems and products as follows:¹³
 - (a) interlockings;
 - (b) train protection systems (ATP);
 - (c) operational control systems (OCS); and
 - (d) trackside equipment and other signalling components including interlocking elements such as point machines.

Recent and pipeline signalling projects in New Zealand

- 5.18 Recent signalling projects have been awarded to:
 - (a) Siemens; and
 - (b) CAF.
- 5.19 In addition, KiwiRail has the ability to self-supply signalling projects. It self-supplied signalling projects representing [] in FY 2017, and [] in FY 2018 to date.
- 5.20 Recent signalling projects are discussed further in section 8 below, and details of each project are set out in Annexure 5.
- 5.21 There are a substantial number of pipeline signalling projects, as discussed further in section 8 below, and set out in Annexure 6.
- 5.22 []:

¹³ ACCC "Statement of Issues: Proposed merger of Siemens' rail mobility division with Alstom" (6 September 2018) at [32].

- (a) [];
- (b) [];
- (c) [];
- (d) []; and
- (e) [].
- 5.23 [].
- 5.24 [].
- 5.25 [].
- 5.26 [].
- 5.27 In the last five years, Alstom has not delivered or tendered for signalling projects in New Zealand.

Signalling products

- 5.28 Signalling products are also supplied on a standalone basis (outside of a signalling project), for example as replacement parts for previously installed systems.
- 5.29 [].
- 5.30 Siemens has supplied the following signalling products on a standalone basis in New Zealand in the past four years:
 - (a) point machines;
 - (b) axle counters;
 - (c) detectors;
 - (d) level crossing equipment;
 - (e) relays;
 - (f) signals; and
 - (g) trainstops.
- 5.31 [].
- 5.32 [].
- 5.33 Alstom has supplied only point machines on a standalone basis in New Zealand (see section 9 below).
- 5.34 An overview of the Parties' signalling products is provided in Annexure 8 of this Notice.

Other industry participants

CAF

- 5.35 CAF is a Spanish company that designs, manufactures, maintains and supplies rail systems equipment globally.¹⁴ It is a leading incumbent supplier of rolling stock in New Zealand. In 2011, it won a contract to supply 57 electric units for the Auckland commuter network (the contract was reported to be worth up to NZD \$640 million);¹⁵ in 2017 it signed a contract to supply a further 15 units with a value of circa €100 million.¹⁶
- 5.36 The company has more than 100 years of experience and operates in 33 countries. Its global portfolio includes signalling, mainline trains, high speed trains, locomotives, LRVs, metros, services and turnkey projects. CAF has approximately 7,000 employees worldwide, and had revenue of €1.3 billion in 2016.
- 5.37 Siemens regards CAF as its closest competitor in the supply of signalling projects in New Zealand. It is well placed to expand following its recent success in winning two contested signalling tenders.
- 5.38 The signalling projects recently won by CAF concern 15 on-board ETCS L1 signalling systems for new trains for the City Rail Link project, and have estimated values of NZD [] and [] respectively. The contracts were awarded on 1 July 2018. As ETCS compliant products, CAF's on-board signalling systems are compatible with Siemens' ETCS L1 trackside systems in place throughout Auckland. [].
- 5.39 In addition to CAF, there are a number of international suppliers well placed to expand into New Zealand signalling markets. Siemens is of the view that these suppliers would be likely to bid for large signalling projects in New Zealand.
- 5.40 Extended profiles for each supplier are set out in Annexure 9.

Thales

- 5.41 Thales designs and builds electrical systems for the transport, defence, aerospace and security sectors,¹⁷ including ETCS signalling solutions.
- 5.42 Thales has had a presence in New Zealand for the last 20 years, with two offices in Auckland and one in Wellington. Its recent New Zealand transport operations include supplying the Auckland Transport ticketing system.

Bombardier

- 5.43 Bombardier, based in Canada, is one of the largest global companies in rail transport. It has extensive operations in Australia, including a broad range of signalling systems.
- 5.44 Siemens understands that Bombardier has been actively marketing its signalling capability in New Zealand and recently met with KiwiRail, [].

¹⁴ See <u>http://www.caf.net/en</u>.

¹⁵ See <u>https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10756348</u>.

¹⁶ See <u>https://www.caf.net/en/sala-prensa/nota-prensa-detalle.php?e=231</u>.

¹⁷ See <u>https://www.thalesgroup.com/en</u>.

Hitachi / Ansaldo

- 5.45 Hitachi / Ansaldo is active in high speed trains, mainline trains, LRVs, metros, signalling, services and turnkey projects. It has extensive operations in Australia.¹⁸
- 5.46 Siemens understands that Hitachi / Ansaldo has expressed interest in participating in pipeline rail mobility projects in New Zealand, [].

Wabtec

- 5.47 Westinghouse Air Brake Technologies Corporation (**Wabtec**) is a leading global provider of products and services for rail and industrial markets, headquartered in Pennsylvania, USA.¹⁹ Wabtec supplies signalling in Australia.
- 5.48 Siemens understands that Wabtec has expressed interest in participating in pipeline rail mobility projects in New Zealand, [].

CRSC

5.49 China Railway Signal and Communication Cooperation Limited (**CRSC**), a Chinese company, is the largest supplier of signalling systems globally, with revenue of more than RMB29.4 billion in 2016. CRSC has significantly expanded its global presence in recent years. CRSC has clear international plans and is currently pursuing an ambitious internationalisation strategy under the One Belt One Road initiative.

KiwiRail self-supply

- 5.50 As noted at 5.9 5.11 above, KiwiRail's in-house signalling knowledge provides it with strong capability for certain types of signalling projects, particularly level crossing signalling projects and regional projects involving relay interlocking technology.
- 5.51 In order to self-supply signalling projects, KiwiRail sources individual product components off the shelf from third parties and utilises its in-house engineering capabilities to deliver the project, as well as working with consultants. [].
- 5.52 KiwiRail self-supplied signalling projects worth [] in FY 2017, and [] in FY 2018 to date. [].
- 5.53 KiwiRail's ability to self-supply will continue to constrain the Combined Entity post-Transaction. Further, KiwiRail could readily expand its self-supply capability, for example by developing greater expertise in CBI technology which would allow it to self-supply a wider range of signalling projects, particularly in metro areas.

¹⁸ See <u>http://www.hitachi.com.au/products/product-categories/rail-projects.html</u>.

¹⁹ See <u>https://www.wabtec.com/; https://www.wabtec.com/fast-facts</u>.

6. MARKET DEFINITION

- 6.1 The NZCC has not previously defined market(s) for rail signalling in a merger clearance or authorisation determination.
- 6.2 Rail signalling projects involve project specific engineering, development, project management, procurement and supply of the necessary equipment, systems integration, installation, testing and, in most cases, a period of maintenance. Standalone signalling products sales typically relate to spare parts and are not combined with any ancillary services.
- 6.3 We have assessed the competitive effects of the Proposed Transaction in national markets for the supply of:
 - (a) signalling projects (the Signalling Projects Market); and
 - (b) signalling products on a standalone basis (the **Signalling Products Market**).
- 6.4 The Proposed Transaction does not raise competition issues irrespective of the approach taken to market definition.

Product dimension

- 6.5 The ACCC has not previously defined markets for rail signalling, but is currently still exploring appropriate market boundaries in its assessment of the Australian aspects of the Proposed Transaction.
- 6.6 In its recent Statement of Issues, the ACCC took the preliminary view that it is appropriate to consider the Proposed Transaction in the context of "one or more markets for heavy rail signalling projects for passenger rail networks".²⁰ The ACCC noted that customers typically procure signalling systems as integrated projects,²¹ but signalling equipment can also be supplied on a standalone basis.²²
- 6.7 The European Commission (**EC**) has considered rail signalling,²³ and while it has not settled on precise market(s), it has usually distinguished between:
 - (a) signalling projects; and
 - (b) signalling products (standalone sales outside of a project).
- 6.8 In New Zealand, the product market dynamics vary between signalling projects and standalone product sales. In particular:
 - (a) signalling projects:
 - are procured by KiwiRail through a range of commercial strategies to achieve the optimal outcome, which for more significant projects is typically through competitive tenders;

²⁰ ACCC "Statement of Issues: Proposed merger of Siemens' rail mobility division with Alstom" (6 September 2018) at [53].

²¹ At [47].

²² At [52].

²³ Case No. COMP/M.6843 – Siemens/Invensys Rail, Commission Decision of 18 April 2013; Case No. COMP/M.4508 – Alstom UK/Balfour Beatty/JV, Commission Decision of 30 March 2007; Case No. COMP/M.4337 – Thales/Alcatel, Commission Decision of 7 November 2006; Case No. COMPM.2694 – Metronet/Infraco, Commission Decision of 21 June 2002; Case No. IV/M. 685 – Siemens/Lagardère, Commission Decision of 8 February 1996.

- (ii) in the case of more significant projects, are of sufficient commercial value to attract international bidders;
- (iii) can be viably tendered for by suppliers that do not have a local presence; and
- (iv) in some circumstances can be self-supplied by KiwiRail.
- (b) signalling products on a standalone basis:
 - (i) are typically procured by KiwiRail on a non-contested basis;
 - (ii) are usually technically less-sophisticated goods which are interoperable and can be sourced by KiwiRail from all of the major global signalling suppliers;
 - (iii) have lower value than projects;²⁴ and
 - (iv) although interoperable, KiwiRail has been moving towards standardisation with a single supplier at the component level (e.g. Alstom has been selected as the preferred supplier for point machines).
- 6.9 All of the major signalling suppliers are capable of supplying all or most signalling products. While different signalling products have specific functions and are not substitutable from a demand-side perspective, the NZCC has previously combined similar but non-substitutable products into a single product market.²⁵ As explained further in section 9, irrespective of the approach taken to market definition, the Proposed Transaction will not raise any competition concerns.

Geographic dimension

- 6.10 While the EC has left open the question of geographical market, its decisions have indicated broad (at least national) geographic markets.²⁶
- 6.11 In New Zealand, signalling suppliers are willing and able to supply nationally, and KiwiRail procures signalling projects and products throughout New Zealand. Accordingly, the appropriate geographic dimension for each market is national.

²⁴ Although product sales involve lower values, KiwiRail has the ability to make the market more attractive, and sponsor new entry.

²⁵ For example, Food Solutions Limited / Huttons NZ Limited / Best Corporation Limited (Decision 308, 29 September 1997) and Mainland Products Limited / Food Solutions Group Limited (Decision 334, 21 December 1998) concerned "smallgoods" which encompasses a variety of processed meats including sausages, bacon, cold cuts / shaved meats, pastrami, salami and bulk hams. In these determinations, the NZCC defined a single product market for smallgoods without distinguishing between specific smallgoods products, while acknowledging they are not all substitutable.

²⁶ Case No. COMP/M.6843 – Siemens/Invensys Rail, Commission Decision of 18 April 2013; Case No. COMP/M.4508 – Alstom UK/Balfour Beatty/JV, Commission Decision of 30 March 2007; Case No. COMP/M.4337 – Thales/Alcatel, Commission Decision of 7 November 2006; Case No. IV/M. 685 – Siemens/Lagardère, Commission Decision of 8 February 1996.

7. COUNTERFACTUAL

- 7.1 Absent the Proposed Transaction, the most likely counterfactual is a continuation of the status quo. In particular:
 - (a) more significant signalling projects would continue to be procured through competitive tenders and other projects would be awarded on a non-contested basis;
 - (b) KiwiRail would continue to have complete discretion over its procurement processes;
 - (c) there would be no material overlap in the Parties' supply of signalling products:
 - (i) [];
 - (ii) []; and
 - (iii) [];
 - (d) [];
 - (e) [];
 - (f) to provide context around the likely timeframes, the Auckland light rail project is currently in the investigation phase: the Auckland Transport Alignment Project has committed to providing light rail between the City Centre and Māngere and to Auckland's northwest within the next ten years (2018-2028). While key decisions are still being made on timing, there is a proposal to accelerate the light rail project to have an operational delivery date of December 2020 (information is available at <u>https://at.govt.nz/projects-roadworks/light-rail/</u>). [].

8. COMPETITION ASSESSMENT – THE SIGNALLING PROJECTS MARKET

- 8.1 Irrespective of the approach taken to market definition (a single market for rail signalling or separate markets for signalling projects and products), the Proposed Transaction does not give rise to any competition concerns in New Zealand.
- 8.2 The Proposed Transaction is unlikely to have the effect of substantially lessening competition in the Signalling Projects Market. The current market dynamics will remain unchanged post-Transaction. In summary:
 - (a) more significant signalling projects are procured by KiwiRail through competitive tenders while other projects tend to be awarded on a non-contested basis;
 - (b) competitive tenders attract a broad range of market participants including CAF, Thales, Bombardier, Hitachi / Ansaldo, Wabtec and CRSC. At Auckland Transport's recent market sounding day for the Auckland light rail project there were more than 70 companies from more than 20 countries in attendance;
 - (c) in the last five years, Alstom has not delivered or tendered for any signalling projects in New Zealand;
 - (d) CAF [], having already won two projects in 2018 through competitive tenders [];
 - (e) barriers to entry are not significant for large, established international rail mobility players. In particular, a local presence, existing supply arrangements and type approvals are not required in order to viably bid for a major project; and
 - (f) KiwiRail has complete discretion over which signalling systems and products are installed on its network. As a monopsonist purchaser, KiwiRail exercises a high degree of countervailing power and effectively controls the market:
 - (i) it would not be possible for the Combined Entity to raise prices above competitive levels or reduce quality below competitive levels;
 - (ii) KiwiRail has the ability to support new entry / expansion by altering its procurement strategies; and
 - (iii) over the last two years KiwiRail has self-supplied some projects by sourcing the individual signalling products required for those projects globally rather than awarding the project to a specialist signalling supplier.

Recent signalling projects

- 8.3 Details of the signalling projects that have been delivered in New Zealand in the last five financial years are set out in Annexure 5.²⁷
- 8.4 [].
- 8.5 In FY 2017, Siemens was awarded signalling projects representing NZD []. KiwiRail self-supplied projects representing NZD [].
- 8.6 In FY 2018 to date:
 - (a) CAF has been awarded signalling projects representing NZD [];
 - (b) KiwiRail has self-supplied signalling projects representing NZD []; and

^{27 [].}

- (c) Siemens has supplied or been awarded signalling projects representing NZD [].
- 8.7 [].

Pipeline signalling projects

- 8.8 Details of pipeline signalling projects which Siemens anticipates over the next five financial years are set out in Annexure 6.
- 8.9 Significant pipeline signalling projects include:²⁸
 - (a) [];
 - (b) [];
 - (c) [] and
 - (d) [].

Alstom has not participated in the Signalling Projects Market

- 8.10 In the last five years, Alstom has not delivered or tendered for any signalling projects in New Zealand.
- 8.11 For completeness, [] the Auckland light rail project, this project given its size is likely to attract significant interest from many international players including CAF, Thales, Bombardier, Hitachi / Ansaldo, Wabtec, CRSC and others. As noted at 8.2(b) above, there were more than 70 companies from more than 20 countries in attendance at the recent market sounding day.

[]

- 8.12 CAF recently expanded its New Zealand business from the supply of rolling stock into the supply of signalling. It won two signalling projects in Auckland worth a combined value of NZD [].
- 8.13 These projects concern 15 on-board ETCS L1 signalling systems for new trains for the City Rail Link Project in Auckland. As ETCS compliant products, CAF's on-board signalling systems are compatible with Siemens' ETCS L1 trackside systems in place throughout Auckland. [].
- 8.14 []. CAF is well placed to continue pursuing signalling opportunities and further grow its New Zealand business.

More significant projects are procured through competitive tenders which attract international rail mobility players

- 8.15 More significant projects are procured by KiwiRail through competitive tenders. KiwiRail is experienced in structuring tender processes to reach the most competitive outcome in terms of price, quality and technology.
- 8.16 The high value of significant signalling projects makes entry commercially viable for international suppliers, justifying the investment necessary to complete the projects. Several major signalling projects are expected to go to competitive tender over the next five years (see 8.9 above).
- 8.17 Projects of this scale are likely to attract significant international interest. At Auckland Transport's recent market sounding day for the Auckland light rail project there were more than 70 companies from more than 20 countries in attendance.

²⁸ [].

- 8.18 CAF, Thales, Bombardier, Hitachi / Ansaldo, Wabtec and CRSC are likely participants in tenders for signalling projects in New Zealand (Thales is already active in other segments in New Zealand). These suppliers' activities are summarised at 5.37 5.49 above, and extended profiles are set out in Annexure 9.
- 8.19 All of these international suppliers are well placed to tender for and supply signalling projects in New Zealand. In particular, they:
 - (a) have sufficient capability and scale to handle any potential pipeline projects in New Zealand;
 - (b) are high-profile suppliers that KiwiRail would be familiar with; and
 - (c) have supplied overseas signalling projects that can serve as references for tenders in New Zealand.

Barriers to entry are not significant

- 8.20 Barriers to entry into the Signalling Projects Market are not significant for international suppliers. In particular:
 - (a) existing supply arrangements and facilities in New Zealand are not required to viably bid for a signalling project. Any physical presence required to complete a project can be established after a supplier is awarded the tender;
 - (b) KiwiRail is willing to award signalling projects to suppliers from outside New Zealand, and will accept overseas projects as references (CAF is likely to have supplied an overseas reference to support its recent successful tender);
 - (c) KiwiRail is increasingly making use of signalling systems with technology which meets international standards, such as ETCS (for example, ETCS systems have already been installed in Auckland);
 - (d) international suppliers are high profile and will not face any reputational barriers to entry (some such as Thales already supply other segments of the New Zealand rail mobility industry); and
 - (e) [].
- 8.21 Bombardier, Wabtec and Hitachi / Ansaldo can be expected to expand their signalling businesses into New Zealand. In Australia, Bombardier is successfully expanding its signalling business having recently won the Melbourne Metro Rail Project and an integrated signalling project in North West WA, and is well placed to expand into New Zealand.

KiwiRail exercises significant countervailing power

- 8.22 As the sole customer, KiwiRail possesses a high degree of countervailing power. Its position as a monopsonist purchaser is analogous to that of PHARMAC in the pharmaceutical industry.
- 8.23 KiwiRail is a highly sophisticated purchaser with significant experience in managing rail mobility projects. As noted at 5.6 5.7 above, in some instances third parties participate in negotiations with the signalling supplier, but even in these instances KiwiRail determines the performance specifications and technical requirements for its network.
- 8.24 KiwiRail's countervailing power may be exercised by structuring tender processes to reach the most competitive outcome in terms of price, quality and technology. This may be achieved in a number of ways, including by:
 - (a) designing procurement processes with multiple rounds of parallel negotiations;

- (b) requiring "open book pricing" (which essentially restricts the supplier to a transparent cost plus agreed margin model);
- (c) delaying the award of supply for a contract or going back out to market in circumstances where KiwiRail is dissatisfied with the responses to a tender process;
- (d) accepting overseas references for signalling projects to increase participation in tender processes;
- (e) including mandatory contractual obligations in the tender documentation and limiting departures from the tender requirements; and
- (f) packaging works in a way that opens up access to different types of suppliers, e.g. requesting an overall solution or a performance based outcome, rather than specifying the use of a particular type of product or system (if it is considered that this will lead to the most competitive outcome).
- 8.25 []. Accordingly, it is not possible for suppliers to attempt to raise prices to supra-competitive levels including where KiwiRail procures on a non-contested basis.
- 8.26 Indeed, KiwiRail's practice to award many signalling projects on a non-contested basis demonstrates that it is able to achieve its desired commercial outcomes on that basis.
- 8.27 For less significant signalling projects, KiwiRail's countervailing power manifests in additional ways, in particular the ability of KiwiRail to self-supply small projects. As noted above, in FY 2017 the total value of projects self-supplied by KiwiRail was NZD [] and in FY 2018 to date is NZD [].
- 8.28 KiwiRail's significant countervailing power will continue to constrain the Combined Entity post-Transaction.

9. COMPETITION ASSESSMENT – THE SIGNALLING PRODUCTS MARKET

- 9.1 Irrespective of the approach taken to market definition (a single market for rail signalling or separate markets for signalling projects and products), the Proposed Transaction does not give rise to any competition concerns in New Zealand.
- 9.2 The Proposed Transaction is unlikely to have the effect of substantially lessening competition in the Signalling Products Market. The current market dynamics will remain unchanged post-Transaction. In summary:
 - (a) signalling products are axle counters, detectors, interlockings, level crossing equipment, point machines, relays, signals and trainstops which are provided on a stand-alone basis;
 - (b) they are usually technically less-sophisticated goods that are often interoperable and can readily be sourced by KiwiRail from all of the major global signalling suppliers (including CAF, Thales, Bombardier, Hitachi / Ansaldo; Wabtec and CRSC);
 - (c) KiwRail typically appoints a preferred supplier for each signalling product, and then purchases those products as required on a non-contested basis;
 - (d) the competitive overlap in the Parties' supply of signalling products is minimal:
 - (i) [];
 - (ii) Alstom currently supplies only point machines on a standalone basis and []; and
 - (iii) while Siemens has previously supplied point machines on the KiwiRail network, Alstom has now been selected by KiwiRail as the preferred supplier [];
 - (e) barriers to entry or expansion are not significant; and
 - (f) as the sole purchaser, KiwiRail exercises significant countervailing power and effectively controls the market. It has complete discretion over which signalling products it elects to install on its network and has the ability to switch suppliers or sponsor new entry or expansion.

Limited competitive overlap

- 9.3 The competitive overlap is limited to the supply of only one signalling product, point machines.
- 9.4 [].
- 9.5 Alstom has supplied point machines [].

Point machines

- 9.6 []. []:
 - (a) [];
 - (b) []; and
 - (c) [].
- 9.7 []. [].
- 9.8 Accordingly, there is unlikely to be any future competition between Siemens and Alstom in the supply of point machines irrespective of the Proposed Transaction.

- 9.9 []. 9.10 []. 9.11 []. 9.12 []: (a) (b) (c) 9.13 []:
 - [];
 - []; and
 - [].
- []
- 9.14 []:
- []
- 9.15 []:
- []
- 9.16 [].
- 9.17 Interlockings represent one of several components of an overall signalling system. Modern interlockings are electronic CBIs. CBIs are a combination of software and hardware. There are a number of different interlocking technologies installed on the KiwiRail network, including legacy systems that use older technology such as relays.
- 9.18 [].

Alternative suppliers of signalling products

Table 2 below shows Siemens' sales of signalling products (outside of projects) over the last four 9.19 years. It also indicates who Siemens considers to be the leading supplier in New Zealand for each category of signalling product.

Table 2

Product category	2015 (NZD)	2016 (NZD)	2017 (NZD)	2018 (NZD)	Total (NZD)	Believed to be KiwiRail's preferred supplier
[]		[]	[]		[]	[]
[]	[]	[]	[]	[]	[]	[]
[]	[]	[]	[]	[]	[]	[]
[]	[]	[]	[]	[]	[]	[]
[]	[]	[]	[]	[]	[]	[]
[]	[]	[]	[]	[]	[]	[]
[]		[]	[]		[]	[]
Total	[]	[]	[]	[]	[]	

- 9.20 Signalling products are usually technically less-sophisticated goods which are often interoperable. It is technically feasible for KiwiRail to have a range of different signalling products type approved / installed across its network. KiwiRail currently sources standalone signalling products from a range of suppliers and it could readily expand that group of suppliers. For all of the signalling products currently supplied by Siemens and Alstom to KiwiRail, there are alternative domestic or overseas suppliers.
- 9.21 While the value of the supply of standalone signalling products are generally lower than signalling projects, KiwiRail has the ability to attract or 'sponsor' new entry by offering long term framework agreements for the supply of signalling products. Framework agreements with a sole supplier are more likely to attract interest from suppliers that do not currently supply signalling products in New Zealand. [].

Barriers to entry are not significant

- 9.22 KiwiRail could readily sponsor new entry / expansion should there be sufficient benefit in doing so, as evidenced by CAF's recent successful expansion from the supply of rolling stock into signalling.
- 9.23 There is no requirement for a physical presence in New Zealand or existing supply arrangements in order to supply signalling products to KiwiRail.
- 9.24 In addition, type approval does not represent a significant barrier to entry. []. It is in KiwiRail's interest to have a number of different suppliers' products type approved.

KiwiRail exercises significant countervailing power

- 9.25 As a monopsonist purchaser, KiwiRail exercises a high degree of countervailing power. It is responsible for determining the performance specifications and technical requirements for its network, the procurement processes and the selection criteria. It has complete discretion over which signalling products are installed on its network.
- 9.26 If KiwiRail was unhappy with the price (or quality) offered by the Combined Entity for any category of signalling product, it could readily source the product from one of the many alternative signalling suppliers (CAF, Thales, Bombardier, Hitachi / Ansaldo, Wabtec, CRSC).
- 9.27 KiwiRail's significant countervailing power would continue to constrain the Combined Entity post-Transaction.

10. **CONFIDENTIALITY**

- 10.1 Confidentiality is requested of the information in this notice that is contained in square brackets, and the information set out in the Confidential Annexures, on the basis that disclosure would be likely unreasonably to prejudice the commercial position of the parties providing the information.
- 10.2 The Applicant requests that it be notified if a request is made to the NZCC under the Official Information Act 1982 for release of the information for which confidentiality has been claimed.
- 10.3 Confidential and public versions of this Notice have been provided to the NZCC.

DECLARATION

I, Holger Hohmann, have prepared, or supervised the preparation of, this notice seeking clearance.

To the best of my knowledge, I confirm that:

- a) all information specified by the NZCC has been supplied;
- b) if information has not been supplied, reasons have been included as to why the information has not been supplied;
- c) all information known to me that is relevant to the consideration of this notice has been supplied; and
- d) all information supplied is correct as at the date of this notice.

I undertake to advise the NZCC immediately of any material change in circumstances relating to the notice.

I understand that it is an offence under the Commerce Act to attempt to deceive or knowingly mislead the NZCC in respect of any matter before the NZCC, including in these documents.

I am a director/officer of the company and am duly authorised to submit this notice.

Name and title of person authorised to sign:

Signature

Date

I, Jörn Eickhoff, have prepared, or supervised the preparation of, this notice seeking clearance.

To the best of my knowledge, I confirm that:

- a) all information specified by the NZCC has been supplied;
- b) if information has not been supplied, reasons have been included as to why the information has not been supplied;
- c) all information known to me that is relevant to the consideration of this notice has been supplied; and
- d) all information supplied is correct as at the date of this notice.

I undertake to advise the NZCC immediately of any material change in circumstances relating to the notice.

I understand that it is an offence under the Commerce Act to attempt to deceive or knowingly mislead the NZCC in respect of any matter before the NZCC, including in these documents.

I am a director/officer of the company and am duly authorised to submit this notice.

Name and title of person authorised to sign:

Signature

Date

PUBLIC VERSION

ANNEXURE 1 – EACH PARTY'S MOST RECENT ANNUAL REPORT AND AUDITED FINANCIAL STATEMENTS

ANNEXURE 2 – COMPETITORS' NAMES AND CONTACT DETAILS, AND ANY TRADE OR INDUSTRY ASSOCIATIONS

Major competitors in overlap markets

Competitor	Contact details
CAF	+64 9 928 0000
KiwiRail (self-supply)	Brent Lancaster and Perry Fon Sing
Major international signalling suppliers likely to b	bid for signalling projects in New Zealand
Thales	+64 9 926 9556 (Thales NZ)
Bombardier	+61 3 9794 2111 (Bombardier Australia)
Hitachi / Ansaldo	+61 7 3868 9333 (Ansaldo Australia)
Wabtec	+61 2 9680 0200 (Wabtec Australia)
CRSC	+86 10 6382 5614 (Beijing head office)

Trade or industry associations

<u>Siemens</u>

Australasian Railway Association +61 2 6270 4501

Railway Technical Society of Australasia +61 2 6270 6555

<u>Alstom</u>

Australasian Railway Association +612 6270 4501

ANNEXURE 3 – NEW ZEALAND KEY CUSTOMER DETAILS

Supplier	Customer	Contact details			
Siemens	KiwiDail	Brent Lancaster and Perry Fon Sing			
Alstom	NiwiKali	brent Lancaster and Felly Foll Sing			
Alstom	[]	[]			

ANNEXURE 4 – GLOSSARY

Term	Definition / explanation
Non-contested	Where the customer procures signalling products or projects by considering only one supplier; the supplier does not face competition from other suppliers for the order. Whether a project is contestable or not is fully based on the customer's decision and assessment and is not related to the number of suppliers in the market.
	For example KiwiRail may opt to approach a particular supplier and negotiate
Onboard equipment	Onboard equipment receives signalling information from trackside components and implements necessary safety procedures. This may include driver warning signals and / or automatically slowing or stopping the train.
Operations control systems (OCS)	OCSs 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. Two OCSs are used in New Zealand: R9000 operates the Auckland network, while Realflex operates the rest of the country. The OCSs are located in Wellington.
Standalone products	Sales of signalling products / components outside of a project. Sales include only the specific hardware (e.g. a point machine) out of box, and do not include the ancillary services required to make the product operational (e.g. engineering, installation, calibration etc).
Trackside equipment	Trackside equipment comprises signalling components installed alongside or near the railway track, which interface with interlockings and train protection systems. Trackside equipment receives signalling commands from interlockings and transmits this information to the train's on-board components.
	 Key trackside components include: track circuits, which 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, which 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, which move sets of rails to guide trains from one set of tracks to another, such as at a junction, spur or siding. track signals, which are 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, which are electronic switching devices that respond to changes in current or voltage, often to control trackside components. object controllers, which are devices used to interface between interlockings and trackside components such as point machines, track circuits and track signals. balises (also known as 'beacons', 'coupling units' or 'transponders'), which are devices installed between the rails that communicate signalling information directly to a passing train.

 issued by an interlocking into a form suitable for transmission to a train's on-board unit via a balise. level crossings, which 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.
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ANNEXURE 5 – RECENT SIGNALLING PROJECTS

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[]	[]	[]	[]	[] ³³	[]	[]	[]	[]	[]
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²⁹ [].

³⁰ [].

³¹ [].

³² [].

³³ [].

³⁴ [].

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ANNEXURE 6 – PIPELINE SIGNALLING PR	ROJECTS IN NEW ZEALAND
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³⁵ [].

	[]	[]	[]	[]
[]	[]	[]	[]	[]
[]	[]	[]	[]	[]
[]	[]	[] ³⁶	[]	[]
[]	[]	[]	[]	[]
[]	[]	[] ³⁷	[]	[]
[]	[]	[]	[]	[]

³⁷ [].

³⁶ [].

ANNEXURE 7 – SIEMENS NEW ZEALAND BUSINESS AND BID APPROVAL STRUCTURE

[]

ANNEXURE 8 – OVERVIEW OF THE PARTIES' SIGNALLING PRODUCTS SUPPLIED INTERNATIONALLY

Siemens	Alstom			
Interlockings ³⁸				
[]				
Train protection				
Legacy ATP				
[]				
ETCS ATP				
[]	[]			
OCS				
[]	[]			
Signalling products/field elements				
	[]			

³⁸ [].

ANNEXURE 9 – PROFILES OF MAJOR SIGNALLING SUPPLIERS

- 1. **CAF**
- 1.1 [].
- 1.2 CAF is a Spanish company that designs, manufactures, maintains and supplies rail systems equipment globally.³⁹ The company has more than 100 years of experience and operates in 33 countries. Its global portfolio includes signalling, mainline trains, high speed trains, locomotives, LRVs, metros, services and turnkey projects. CAF has approximately 7,000 employees worldwide, and had revenue of €1.3 billion in 2016.
- 1.3 CAF Signalling is a subsidiary of the CAF Group based in Madrid that develops, designs, manufactures and maintains signalling systems for high speed, conventional, suburban light rail and metro systems.
- 1.4 CAF is a leading supplier of rolling stock in New Zealand,⁴⁰ and has also recently won signalling projects in Auckland in contested tenders.
- 1.5 These projects concern onboard signalling components for new trains for the City Rail Link project, and have estimated signalling values of NZD [] and [] respectively. [].
- 1.6 Siemens considers that the following suppliers would also be likely to bid for, in particular larger, signalling projects in New Zealand.

2. Thales

- 2.1 The Thales Group is a French company that designs and builds electrical systems for the transport, defence, aerospace and security sectors.⁴¹ In 2016, Thales reported sales of €14.885 billion, including signalling-related sales of €1.6 billion.⁴²
- 2.2 Thales Rail Signalling Solutions is a subsidiary of the Thales Group that provides urban rail CBTC and ETCS signalling solutions. It has applied its CBTC signalling solution on 60 projects in 30 major cities worldwide, and has supplied its ETCS systems to 20 countries.
- 2.3 Thales has had a presence in New Zealand for the last 20 years and has recently opened a second office in Auckland. Thales has the local capability in New Zealand to enable the rapid local deployment of transport technologies, including rail signalling technologies.⁴³ Thales has also been in Australia for 100 years and employs 3,200 people across 35 sites.⁴⁴ Its Australian subsidiary, Thales Australia Holdings Pty Limited, had revenue of AUD \$1 billion in 2014.⁴⁵

3. Bombardier

⁴⁴ See <u>https://www.thalesgroup.com/en/countries/asia-pacific/australia</u> and <u>https://www.thalesgroup.com/en/worldwide/press-</u> release/thales-delighted-dcns-has-been-selected-australia-renewal-its-submarine.

³⁹ See <u>http://www.caf.net/en</u>.

⁴⁰ For example, CAF won a contract in 2011 to supply 57 Auckland commuter train units and signed a contract in 2017 to supply a further 15 units. See <u>https://www.caf.net/en/sala-prensa/nota-prensa/detalle.php?e=231</u>.

⁴¹ See <u>https://www.thalesgroup.com/en</u>.

⁴² See <u>https://www.thalesgroup.com/en/worldwide/press-release/2016-full-year-results</u>.

⁴³ See <u>https://www.thalesgroup.com/sites/default/files/asset/document/Thales_NZ_Profile2010%20web%2020130422.pdf</u>.

⁴⁵ See <u>https://www.thalesgroup.com/en/australia/press-release/thales-gets-board-sydney-metro</u>.

- 3.1 Bombardier Transportation is the rail equipment division of the global Canadian-based company Bombardier Inc., and one of the largest global companies in rail transport. The company is active in high speed trains, mainline trains, locomotives, LRVs, metros, signalling, services and turnkey projects. Currently headquartered in Berlin, Bombardier Transportation has 73 production and engineering sites in 28 countries and 18 service centres across the world.⁴⁶ Bombardier Transportation had revenue of €6.8 billion in 2016.
- 3.2 While Bombardier does not currently have a physical presence in New Zealand, it has extensive operations in Australia and globally. Its Australian subsidiary, Bombardier Transportation Australia Pty Ltd, has been present in Australia for over 60 years and provides the full spectrum of rail solutions. Bombardier Australia is headquartered in Victoria and operates in 22 locations across Australia, employing 1,100 people. It has long-term partnerships with more than 1,500 Australian suppliers. Bombardier Australia supplies a broad range of signalling systems including ETCS and CBTC. In 2014, Bombardier Australia acquired the Australian signalling company Rail Signalling Services.
- 3.3 [].

4. Hitachi / Ansaldo

- 4.1 Hitachi Rail is the rail transport division of Japanese group Hitachi. Hitachi is active in high speed trains, mainline trains, LRVs, metros, signalling, services and turnkey projects. Hitachi had revenue of more than €4 billion in 2016.
- 4.2 Hitachi / Ansaldo was formed in 2016 when Hitachi acquired 100% of AnsaldoBreda (manufacturing rolling stock) and 40% of Ansaldo STS (Ansaldo's signalling and integrated transport business) (Hitachi subsequently bought further shares in Ansaldo STS securing a total of just over 50% in the company). Hitachi / Ansaldo has a broad portfolio of signalling products.⁴⁷ It has extensive operations both globally and in Australia. Its Australian subsidiary, Hitachi Australia Pty Ltd, has participated in the Australian rail industry for more than 40 years and is headquartered in North Ryde, NSW. Hitachi Australia provides full rail system solutions and integration of its products with external suppliers and legacy systems.⁴⁸
- 4.3 [].

5. Wabtec

- 5.1 Westinghouse Air Brake Technologies Corporation (Wabtec) is a leading global provider of products and services for rail and industrial markets, headquartered in Pennsylvania, USA.⁴⁹ Wabtec employs more than 18,000 people⁵⁰ and in 2016 had sales of approximately US\$2.9 billion.⁵¹ Wabtec provides a range of signalling projects, which it strengthened with the 2015 acquisition of the Railroad Controls L.P, a subsidiary of RCL Services Group specialising in railway signal construction services to freight and passenger railroads.⁵²
- 5.2 In 2015, Wabtec also acquired Trackside Intelligence, a specialist manufacturer and supplier of wayside located vehicle defect detection equipment to the global railway industry. The company

- ⁴⁹ See <u>https://www.wabtec.com/; https://www.wabtec.com/fast-facts</u>.
- ⁵⁰ See <u>https://www.wabtec.com/fast-facts</u>.

⁴⁶ See <u>https://www.bombardier.com/en/worldwide-presence.html</u>.

⁴⁷ See <u>http://www.hitachi-rail.com/products/signalling/index.html</u>.

⁴⁸ See <u>http://www.hitachi.com.au/products/product-categories/rail-projects.html</u>.

⁵¹ See <u>https://www.wabtec.com/uploads/annual_report/2016%20Wabtec%20Annual%20Report.pdf</u> at 3.

⁵² See <u>https://www.wabtec.com/press-releases/5733/wabtec-acquires-railroad-controls-lp-provider-signal-construction-services</u>.

has contracts worldwide, with in excess of 150 systems installed. In 2016, Wabtec acquired majority ownership of Faiveley Transport S.A., a leading global provider of value-added, integrated systems and services for the railway industry with annual sales of about US\$1.2 billion.⁵³

- 5.3 Wabtec does not currently have a presence in New Zealand. However, it does in Australia (Wabtec Australia Pty Ltd), which is headquartered in Sydney and employs approximately 50 people.⁵⁴ In 2014, Wabtec acquired Perth-based signalling design company C2CE which had \$35 million annual sales, to strengthen its regional presence in Australia.⁵⁵
- 5.4 [].
- 6. **CRSC**
- 6.1 China Railway Signal & Communication Corporation Limited (CRSC) is a major supplier of signalling systems in China and the largest supplier of signalling systems in the world. It designs, manufactures and implements rail signal and communication technology, products and services. CRSC has 19 first level subsidiaries and employs a total of 15,000 people.⁵⁶ In 2016, CRSC had revenue of RMB29.4 billion.⁵⁷
- 6.2 CRSC specialises in China Train Control System 3 high speed train control technology and CBTC urban rail transit control technology. These are currently implemented on ten rail lines throughout China.⁵⁸
- 6.3 CRSC is actively expanding internationally through mergers, partnerships, joint ventures and cooperation to facilitate exports and localised manufacturing. CRSC has provided signalling products and system implementation in ten overseas countries including Argentina, Ethiopia, Tanzania, Vietnam and Pakistan.⁵⁹

7. **CRRC**

- 7.1 CRRC Corporation Limited, a Chinese company, was created in 2015 through a merger between the two largest state-owned Chinese rolling stock suppliers: China North Rail (CNR) and China South Rail (CSR). CRRC is by far the largest supplier globally, with revenue of more than €30 billion in 2016, and an 8.1% EBIT margin.
- 7.2 Although China has traditionally been CRRC's home market, the company has with its 46 subsidiaries⁶⁰ significantly expanded its global presence in recent years. CRRC intends to increase the weight of international sales to 35% of total revenues by 2025 (currently 11%).⁶¹ CRRC has been following a staggered approach in its international expansion, starting with

- 54 See https://www.wabtec.com/business-units/wabtec-australia.
- ⁵⁵ See <u>https://www.wabtec.com/press-releases/5729/wabtec-acquires-c2ce-leading-provider-railway-signal-design-servicesaustralia.</u>
- ⁵⁶ See <u>http://www.crsc.cn/3175.html</u>.
- ⁵⁷ See <u>http://www.crsc.cn/Portals/21/Uploads/Files/2017/5-2/636293161337664791.pdf</u> at 2.
- ⁵⁸ See <u>http://www.crsc.cn/3196.html</u>.
- ⁵⁹ See <u>http://www.crsc.cn/3226.html</u> and <u>http://www.crsc.cn/4362.html</u>.
- ⁶⁰ See <u>http://www.crrcgc.cc/g5141.aspx</u>.
- ⁶¹ IRC, Railway Competitors 2016 Update, July 2016, at 25; <u>http://www.scio.gov.cn/32618/Document/1534501/1534501.htm</u>.

⁵³ See <u>https://www.wabtec.com/press-releases/7426/wabtec-acquires-majority-ownership-faiveley-transport-updates-2016-guidance</u>.

emerging markets and progressively making its way towards developed markets such as the US and Europe, as well as Australia (its Australian subsidiary, CRRC Changchun Australia Rail Pty Limited, was incorporated in July 2012 and has its headquarters in Melbourne).

7.3 In terms of signalling, CRRC has an electric product platform called Zhuzhou CRRC Times Electric Co. Ltd that provides CBTC signalling systems. In June 2017, CRRC won its first big CBTC signalling contract with Changsha Metro Line in China for RMB300 million.⁶²

8. Beijing TCT

- 8.1 Beijing TCT is a leading supplier of signalling and CBTC systems in China, founded in 2009. Its portfolio focuses on traffic control technologies and facilities for high-speed railways, urban mass transit and magnetic levitation trains.⁶³
- 8.2 Beijing TCT has independently designed signalling systems currently in operation on the Yizhuang line⁶⁴ which could serve as a reference to support bids in New Zealand.

9. Nippon Signal

9.1 Nippon Signal is a well-established signalling player from Japan, which was founded in 1928 to develop domestic technologies for signalling systems. It has undertaken international projects in China, Taiwan, Korea, Vietnam, India, UAE, Iran, Turkey, Brazil, and Argentina and has undertaken both CBTC and light rail projects.⁶⁵ It would be well-placed to enter New Zealand.

10. Mitsubishi Electric

- 10.1 Mitsubishi Electric, a Japanese company, is one of the world's leading names in the manufacture and sales of electrical and electronic products and systems used in a broad range of fields and applications. In the field of urban signalling, Mitsubishi has developed its own CBTC specification.
- 10.2 Mitsubishi Electric has supplied equipment for transportation applications in Australia since 1970 including over 1500 electric multiple units and 60 electric locomotives as well as components for traction substations and diesel electric locomotives.⁶⁶

11. KiwiRail self-supply

- 11.1 In addition, KiwiRail has increasingly elected to self-supply signalling projects. KiwiRail's in-house signalling knowledge provides it with strong capability for certain types of signalling projects, particularly level crossing signalling projects and regional projects involving relay interlocking technology.
- 11.2 KiwiRail self-supplied signalling projects worth [] in FY 2017, and [] in FY 2018 to date. [].
- 11.3 KiwiRail also has the ability to expand its self-supply capability, for example developing greater expertise in CBI technology.

- ⁶⁴ See <u>http://www.bj-tct.com/en/product/info.aspx?id=38</u>.
- ⁶⁵ See <u>http://www.signal.co.jp/english/projects/</u>.
- ⁶⁶ See <u>http://www.mitsubishielectric.com.au/69.htm</u>.

⁶² See <u>http://www.timeselectric.cn/sddgen/s/1423-4833-2446.html</u>.

⁶³ See <u>http://www.bj-tct.com/en/</u>.