



5 March 2020

Dr David Gillespie MP
Chair
House of Representatives Standing Committee on Communication and the Arts
Parliament House
CANBERRA ACT 2600

Via email: Communications.Reps@aph.gov.au

Dear Dr Gillespie

Thank you for the opportunity for Ericsson representatives to provide evidence to the 19 February 2020 public hearing of the House of Representatives Standing Committee on Communications and the Arts' Inquiry into the deployment, adoption and application of 5G in Australia.

I'd also like to express my appreciation for Committee Members visiting the Ericsson Innovation Centre for an overview of 5G, examples of enterprise and government use cases relevant to the Australian economy, and a display of Ericsson radios that are or will be used to deploy 5G across Australia.

Provided below are responses to questions taken on notice with respect to supply chain, radio waves and health, skills and examples of government approaches to increasing the comprehension on the use and application of 5G.

Supply Chain

Does Ericsson manufacture products in China?

Yes.

Ericsson is proactively increasing the flexibility in its supply chain, sourcing and product development to move production closer to our customers to ensure we can respond quickly to their needs.

We have a flexible global supply chain with production facilities in the United States, Brazil, China, Estonia, Hungary, India, Malaysia, Mexico, Poland, and Romania.

We actively mitigate different types of potential risks related to our supply chain, both in our own manufacturing and in sourcing, to avoid being dependent on one supply site or vendor.

To manufacture in China has Ericsson had to enter a joint venture and establish a joint venture company in China?

Yes. Ericsson operates a manufacturing facility in Nanjing, China, called Nanjing Ericsson Panda Communication Co. Ltd.

Has there been any requirement for Ericsson to undertake technology transfer on the material that's been manufactured in China from Ericsson to the local JV? Are you aware of any requirements made by the local JV to alter your equipment to meet any requests of the JV that would be different to the way you would manufacture elsewhere?

No.

The products Ericsson manufacture in different locations are the same, regardless of the manufacturing site.

Ericsson is a Swedish company, headquartered in Stockholm, with global operations. Wherever we do business we ensure that we can protect our intellectual property and the integrity of our customer's networks and their customer's data.

Is any of the equipment that's being manufactured in China through that joint venture going to be utilised in the local build?

Yes.

Some products that Ericsson supplies to customers in Australia are manufactured in China.

Ericsson leverages its flexible global supply chain - with production facilities in the United States, Brazil, China, Estonia, Hungary, India, Malaysia, Mexico, Poland, and Romania - to provide fast and agile supply of our products to meet customer requirements.

Can you also give us an assurance that any of the material that is manufactured for the 5G rollout that is used here but manufactured in China is secure?

Ericsson has processes in place to ensure the development, production, shipping and deployment of its products, solutions and services meet the security, privacy and regulatory requirements of our customers.

Security is built-in at the design phase of our products and is realised through the coordination of point security and network and operations security controls.

Wherever we do business we work to protect our intellectual property and the integrity of our customer's networks and their customer's data.

5G is the most secure communication technology to date – further improving the security and privacy capabilities of 4G. 5G mobile networks have security built-in from the start as part of the standardisation process. Ericsson has been a leading contributor to 5G standards and is a major holder of essential 5G patents.

The security assurance of our products includes automated testing undertaken as part of our continuous development work, as well as manual activities like penetration testing, manual hacking, protocol and application fuzzing and other tailored tests of an intrusive nature.

In terms of hardware, Ericsson undertakes audits of all our factories on a regular basis, where the site's security is assessed, and risks reviewed and acted upon.

All Ericsson software is verified/secured, signed and distributed centrally from Sweden.



Ericsson also has a dedicated Product Security Incident Response Team (**PSIRT**) which we have operated since January 2004. **PSIRT** is responsible for Ericsson product vulnerability management processes, coordination of customer product security incidents and reported security issues affecting our products, solutions, and services.

Do you have any local manufacture for the rollout here in Australia?

Ericsson does not have a manufacturing facility in Australia.

As for any company operating in a global market, our production strategy must meet the needs of all our customers.

We constantly adapt production capacity to meet customer demand as part of our global production footprint. Ericsson has production facilities in the United States, Brazil, China, Estonia, Hungary, India, Malaysia, Mexico, Poland, and Romania.

When deciding the location of our manufacturing sites, we look at several aspects. That is, production and logistics costs, lead times, availability of skilled staff, and increasing customer satisfaction. With a balance between these factors, we locate our production as close to our customers as possible.

Does Ericsson have any defence contracts in Australia? Do you supply any equipment to defence or other government contractors involved in the national security space?

In general, Ericsson does not directly contract with Australian Government agencies, including defence and national security agencies, for the supply of equipment.

We do not have any current contracts with defence or national security agencies in Australia.

Questions on the supply of telecommunications equipment should be directed to the Department of Defence and other national security agencies.

Radio Waves and Health

Can Ericsson provide additional citations to establish the safety of 5G networks, including testing in Australia?

Ericsson's radio products, including those for 5G mobile communication networks, are designed and tested for compliance with independently derived radio wave exposure limits.

This includes, accredited laboratory testing of our radio products against the IEC 62232¹ standard - from the International Electrotechnical Commission (**IEC**) - to determine EME levels for all products. This information is referenced when products are installed to ensure EME levels are below international limits.

¹ IEC 62232:2017, "Determination of RF field strength, power density and SAR in the vicinity of radiocommunication base stations for the purpose of evaluating human exposure", International Electrotechnical Commission, 2017



In Australia, Ericsson products comply with the *Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency Fields - 3 kHz to 300 GHz*² developed by the Australian Radiation Protection and Nuclear Safety Agency (**ARPANSA**).³ The ARPANSA standard is based on the International

Commission on Non-Ionizing Radiation Protection (**ICNIRP**)⁴ that set exposure limits for radio waves based on all available research and is endorsed by the World Health Organization (**WHO**).

A number of national authorities have provided fact-based information about the safety of 5G networks with citations available on the Ericsson website 'radio waves and health' at <http://www.ericsson.com/health>.

In Australia, Ericsson has supported Telstra in its testing of 5G network infrastructure using commercially available 5G devices on a live 5G network. Telstra has provided public details of test results⁵ that concluded:

"Firstly, our 5G technology produces electromagnetic energy (**EME**) levels at around 1000 times below the safety limits in many cases. Secondly, all our testing has found 5G EME levels to be similar to 3G, 4G and Wi-Fi."^{6 7}

Skills

Provide the reference to an article of 5G related technician skill shortage in the United States.

The article referred to was in relation to a hearing of the United States Senate Commerce Committee in early January 2020⁸ that discussed activity undertaken by the Federal Communications Commission to support a dedicated program to address 5G related skills shortages.⁹ Recent initiatives under this program include a US\$6m grant to the Wireless Infrastructure Association to support 5G related apprenticeships.¹⁰

Provide examples of government, industry and civil society working together to increase comprehension on the use and application of 5G

There are some common themes to government's approach to support the deployment of 5G networks, broadly, these are: providing the community with independent scientifically based research on the safety of 5G networks; increasing whole of government comprehension of 5G and its role in enabling the

² <https://www.arpansa.gov.au/regulation-and-licensing/regulatory-publications/radiation-protection-series/codes-and-standards/rps3>

³ <https://www.arpansa.gov.au/regulation-and-licensing/regulatory-publications/radiation-protection-series/codes-and-standards/rps3>

⁴ <https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf>

⁵ <http://1u0b5867gsn1ez16a1p2vcj1-wpengine.netdna-ssl.com/wp-content/uploads/2019/07/5-Surveys-of-5G-flyer-A4.pdf>

⁶ <https://exchange.telstra.com.au/5-surveys-of-5g-show-eme-levels-well-below-safety-limits/>

⁷ <https://exchange.telstra.com.au/5g-electromagnetic-energy-eme-and-your-health-here-are-the-facts/>

⁸ <https://thehill.com/policy/technology/479388-senators-fret-over-lack-of-manpower-to-build-5g>;
<https://www.google.com.au/amp/s/www.politico.com/amp/news/2019/12/29/big-barrier-trump-5g-america-089883>

⁹ <https://www.fcc.gov/document/commissioner-carr-announces-5g-jobs-initiative>

¹⁰ [https://www.lightreading.com/5g/labor-department-grants-\\$6m-to-wia-for-5g-workforce-training/d/d-id/757638](https://www.lightreading.com/5g/labor-department-grants-$6m-to-wia-for-5g-workforce-training/d/d-id/757638)



transition to industry 4.0; ensuring there is sufficient spectrum for 5G; assessing whether deployment rules are fit for purpose; and considering whether sector specific regulatory impediments exist.

Some governments have also provided funding to support the development of 5G test beds and trials for early adopter industries where there is limited, or no network roll out. For example, the UK Government's recently announced £65 million package for 5G trials.¹¹

Please let me know if I can provide further information or clarification on responses provided above as the Committee progresses to finalise the Inquiry's report.

Yours Sincerely



Michelle Phillips
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Australia and New Zealand

¹¹ <https://www.gov.uk/government/news/new-65-million-package-for-5g-trials>