DEPARTMENT OF COMMUNICATIONS AND THE ARTS RADIO COMMUNICATIONS BILL 2017 AND SPECTRUM REFORM REVIEW IOTAA SUBMISSION

ABSTRACT

The rapid emergence of IoT represents a significant opportunity for the Australian economy and society – competitive wireless connectivity is an essential component that requires flexible and efficient spectrum management

IoT Alliance Australia

July 2017

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Further information regarding this submission can be obtained from the IoT Alliance Australia www.iot.org.au or contacting Frank Zeichner, CEO IoT Alliance Australia at Frank.zeichner@iot.org.au

1. ABOUT IOT ALLIANCE AUSTRALIA

IoTAA is the peak national body representing Australia's Internet of Things (IoT) industry, with over 250 member organisations, and over 500 individual participants across seven workstreams.

Our vision is to empower industry to grow Australia's competitive advantage through IoT.

Our purpose is to accelerate IoT innovation and adoption by:

- activating and supporting collaboration across industry, government, research and communities;
- promoting enabling, evidence-based policy and regulation; and
- identifying strategic opportunities for economic growth and social benefit.

The IoTAA has seven Work Streams each with a Chair and significant representation from academia, industry and government. They include open data and privacy, security and network resilience, spectrum availability, sectoral engagement (smart cities and industries) and IoT start-up innovation.

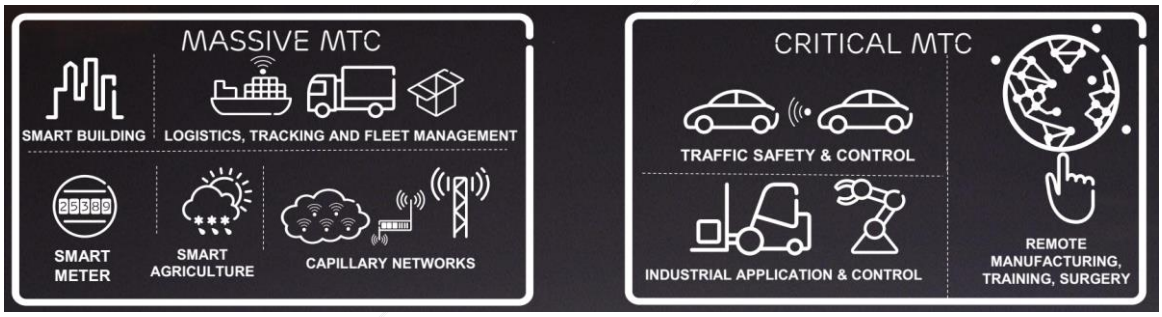
For more details about IoTAA, see www.iot.org.au

2. BACKGROUND – CRUCIAL ROLE OF WIRELESS (AND SPECTRUM) IN THE DEVELOPMENT OF THE ECONOMY THROUGH IOT

The Internet of Things (IoT) promises major technology development that will transform 'vertical' industry productivity, innovation and business opportunities. IoT offers Australia significant and transformational economic benefit through smarter use of infrastructure, efficiency gains and new, more sustainable business growth.

Multiple studies by industry and research organisations put the potential global annual GDP benefit of IoT at up to US$11 trillion. Based on McKinsey Global Institute "The Internet of Things: Mapping the Value beyond the Hype" // June 2015 **the opportunity for the Australian economy of up to AUD$120 billion by 2025[1] – however this is contingent upon Australia increasing its current competitiveness.** Moreover, the IoT economic value share is far greater for industry sector transformed through efficiencies and new business models rather than the wireless service and technology providers.

The majority of IoT device will likely be connected by one form of wireless connectivity or another. The wireless attributes and applications will vary considerably according to many variables. The variables include: latency, battery life, coverage area, cost, fixed or stationary, critical service levels etc. The figure below from Ericsson shows a depiction of segmentation of IoT connectivity into two broad categories: Massive (low cost, non-critical, battery powered) and Critical (low latency, higher cost).

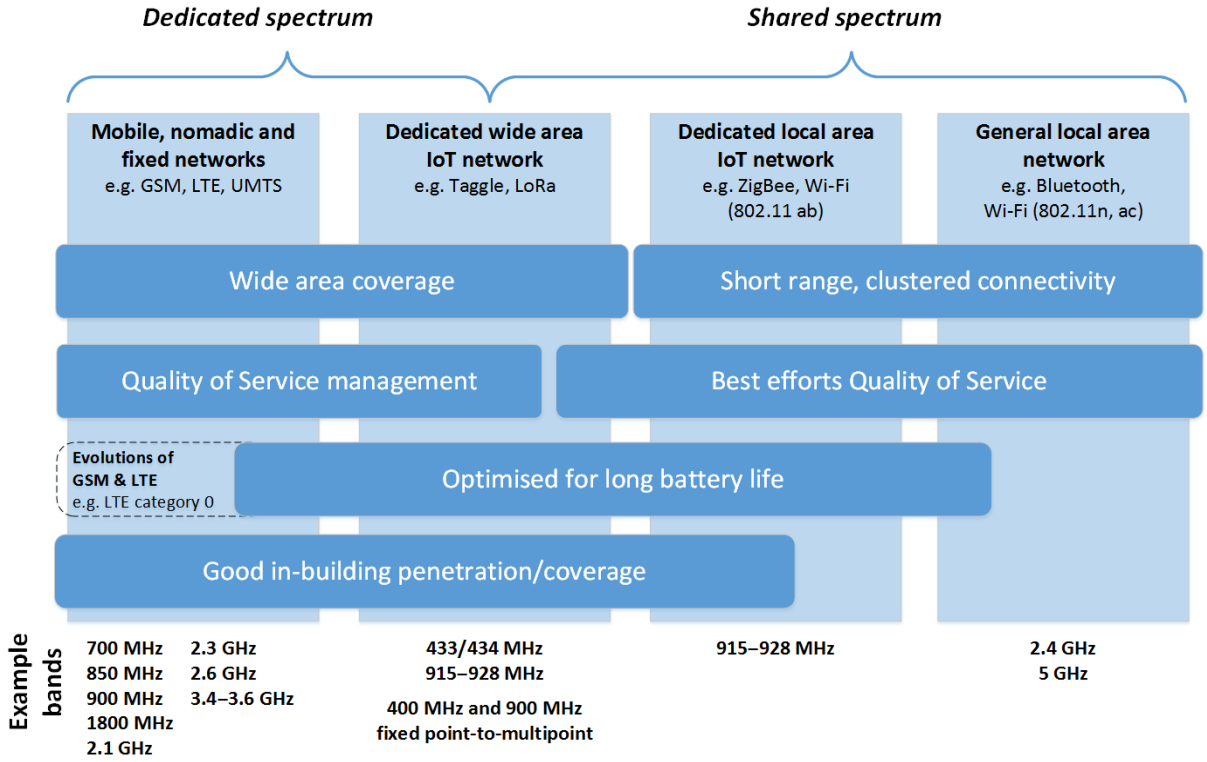


The IoTAA Workstream 4 committee, chaired by ACMA, also released a spectrum fact sheet to show the relationship between spectrum and wireless attributes for IoT.

[1] *Enabling the Internet of Things for Australia*, Communications Alliance, October 2015

It shows a spectrum a mix of licensing arrangements and variety of frequency bands may be required to support different IoT use cases.

Figure 1: Spectrum available for IoT applications



Source: ACMA, based on Ofcom model 2015, updated for Australian spectrum band plans.

The chart is a non-complete representation of spectrum applied for IoT, for example it misses out satellite bands used today.

The wireless technology options for IoT are considerable, especially for local and wide area deployment and relatively fixed sensors. Further there are new technologies being deployed or soon to be deployed that are further optimised for IoT deployment such as LoRaWAN, Sigfox, NB-IoT, LTE-M, 5G, New narrowband satellite technologies (such as that from Myriota) etc.

The figure below also indicates the range of spread of devices across industry sectors.

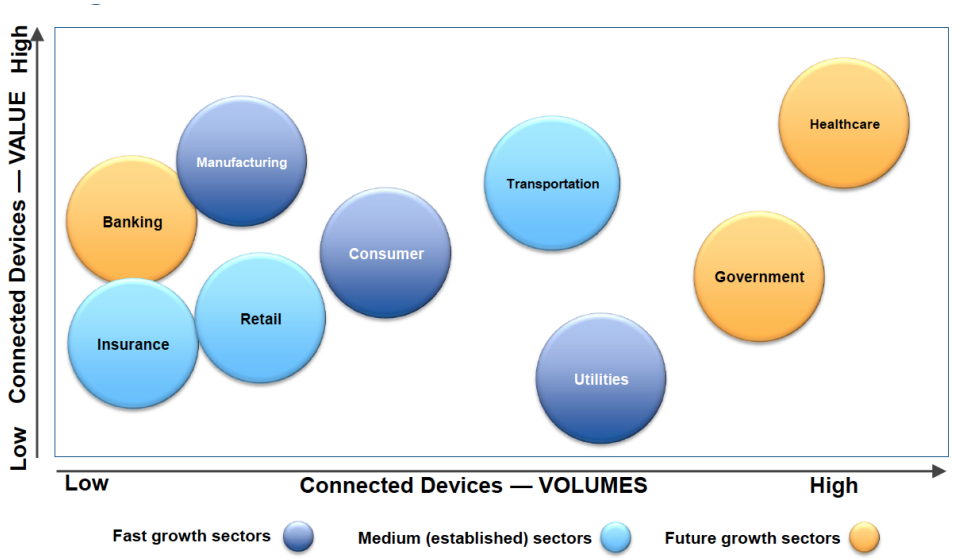


Figure 1: IDC's connected device value versus volume

It is critical for widespread and accelerated deployment of IoT that competitive supply of wireless technologies be enabled by (and not limited) flexible and simple spectrum management. This is particularly apt at this early stage of IoT deployments and with the advent of new wireless technology options.

3. THE RADIOCOMMUNICATIONS BILL 2017

3.1 Fundamental Principles

IoTAA fully supports the policy principles that must underpin the reform process in the Bill, with a few additional comments:

- **Simplicity**
- **Flexibility** – recognition should be given for the opportunity new wireless technologies can enable low-cost citizen and community Internet of Things participation, in much the same way the internet has become readily and inexpensively available to broader society.
- **Transparency**
- **Certainty** – Security of spectrum tenure is vital to underpin industry investment and user confidence
- **Efficiency** - Payment for access to spectrum should be aligned with ability to use the spectrum. Shared spectrum should be managed for best overall outcomes, taking into account best estimates of growth and allocation for non-critical applications, in order to ensure spectrum availability keeps up with IoT adoption.
- **Consistency**

We would also add one additional principle – **Competition.** This could perhaps be considered as an attribute of the above efficiency principle.

It is critical for widespread and accelerated deployment of IoT that competitive supply of wireless technologies be enabled by (and not limited) flexible and simple spectrum management. This is particularly apt at this early stage of IoT deployments and with the advent of new wireless technology options.

Competitive supply should underpin IoT transformation of industries for critical and non-critical applications, urban and rural environments, enable early wireless coverage, adapt to new technology innovation and to facilitate rapid IoT deployment.

3.2 Role of the Minister

IoTAA supports the removal of the Minister from operational decisions.

IoTAA recommends that a consultation process be included in the Bill in relation to Ministerial Policy Statements. Consultation provides transparency and is an important way for industry to be included in the development of Government policy,

3.3 ACMA Work Program

IoTAA supports the introduction of the annual work plan into the Bill, as we believe the work program is an important mechanism to improve agility, accountability and transparency.

Given the anticipated rapid uptake of IoT device deployment and advent of new wireless technologies we believe ACMA should employ a systematic engagement program with stakeholders (industry and spectrum users) to gauge progress against the plan throughout the year. The work plan framework should include a process for making amendments to the plan, so that the ACMA can be agile and flexible in response to changing circumstances.

3.4 Radiofrequency Plans

IoTAA supports the simplification of the radio communications planning framework.

3.5 Operation of radio communications devices

IoTAA supports removal of licence requirements for receivers. This is critical for the widespread deployment of IoT devices.

3.6 Licences

IoTAA supports the simplification of existing licencing arrangements.

IoTAA supports flexibility for ACMA, through introduction of Licence Issue Schemes (LIS). This provides ACMA with the ability to evolve the licensing regime with technology and the requirements of industry. We point out that the industry should be considered to include the industry "vertical" sectors and their needs for timely and cost-effective wireless connectivity.

IoTAA support the proposed approach under the draft Bill that allows the ACMA to set licence issue limits following consultation with the ACCC.

IoT supports third party authorisation (sections 41 to 45) as a mechanism to enable earlier new IoT technology introduction.

IoTAA supports the ability for ACMA to vary licences which is in line with the goal to increase the flexibility of ACMA to deal with changing circumstances.

3.7 Spectrum Authorisations

IoTAA would emphasise that considerable growth for IoT devices is expected to occur in shared bands, under spectrum authorisations (just as for Wifi). It is critical that the sharing conditions within these authorisations take account of optimal use and sharing through tight conditions.

An example is in the use of the ISM bands where LPWAN connected devices are expected to proliferate. In the view of the IoTAA spectrum workstream, the existing ISM is too loosely managed which will limit its use for widespread IoT deployment. While this is being addressed in the new ISM extension band, the latter's late availability and the former's loose management put Australia at a potential disadvantage in widespread LPWAN deployment.

3.8 Certified Operators

3.9 Interference Management

IoTAA suggests it may be beneficial for industry to have access to independent third parties who can perform interference analysis, in a transparent process.

3.10 Equipment

IoTAA recognises and supports the modernisation of ACMA's approach to equipment rules.

3.11 Emergency Orders

3.12 Accreditation

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3.13 Industry Codes

IoTAA support the flexibility of using Industry Codes as a useful tool in spectrum management

3.14 Information Gathering Powers

3.15 Enforcement

IoTAA supports the enforcement arrangements included in the Bill.

3.16 Spectrum Access Charges

3.17 Delegation

IoTAA supports the use of third parties in assisting in the management of spectrum management tasks.

3.18 Review of Decisions

3.19 Provisions extending the concept of radio communications

3.20 Exemptions

3.21 Miscellaneous

4. TRANSITION ARRANGEMENTS

4.1 A Proposed Approach – Consultation Paper

IoTAA favours a hybrid approach in transitioning to the new Radio communications Bill.

This will enable flexibility in transitioning near term IoT enabling technologies, such as the early use of the extended ISM band, for example.

Transition for high IoT activity areas should commence as soon as practicable

4.2 Proposed Implementation

Question 7: Removal of licences for receivers should begin at commencement

4.3 Licencing

Question 10: Licence transition of 12 months should be sufficient

4.4 Class Licences

Question 11: Class licences could become Spectrum Authorisations at commencement – however review and amendment of conditions may take longer

4.5 Spectrum Licences

4.6 Transition of Existing licence types

Question 17: removing the current hard barriers that exist between licence types and the rigid manner in which licences are designed within the framework will enable the new licencing system to better respond to new technologies and service innovations.

5. SPECTRUM PRICING

6. BROADCASTING SPECTRUM

IoTAA believe that reform of the spectrum management framework must include broadcasting spectrum, whose demand will decrease over time. This will enable possible use by wireless technologies that support IoT deployment.

7. GOVERNMENT SPECTRUM HOLDINGS

8. OTHER ISSUES – STAMP DUTY

IoTAA suggests that another clause be added to the Bill in relation to the imposition of stamp duty on trades of spectrum licences, as several State/Territory jurisdictions continue to apply stamp duty to these transactions.

10.2

We propose that the Bill should include following provision:

"No stamp duty or other tax is payable under a law of a State or a Territory in respect of, or in connection with, any licence, authorisation, permission, accreditation or certificate that is required under this Act in order to operate radio communications devices."