

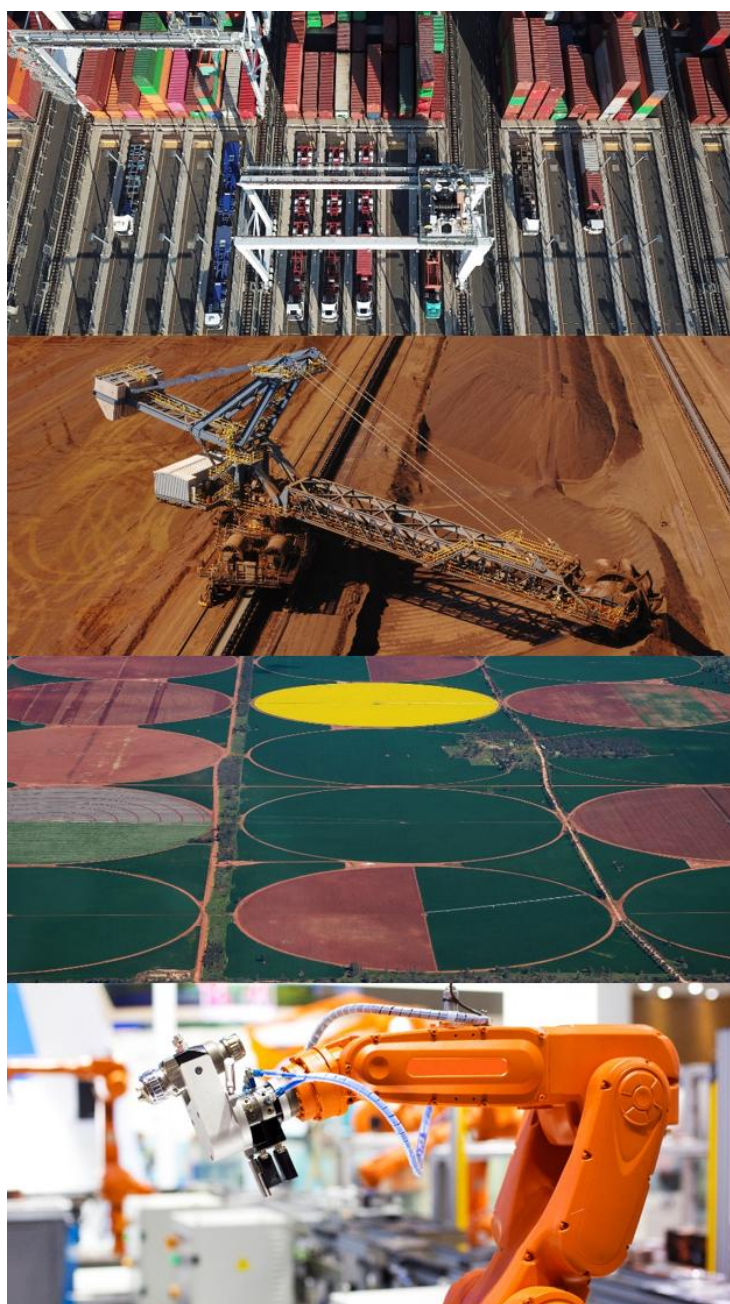


Australian Government

Department of Infrastructure, Transport, Regional Development and Communications

Australian 5G Innovation Initiative—round one—discussion paper

November 2020



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Introduction

The Government is seeking input from all interested stakeholders on the design of the first round of the Australian 5G Innovation Initiative (the Initiative). The Initiative will support investment in 5G trials by supporting emerging commercial use cases.

The testbeds and trials will support rigorous, commercial, and replicable testing of technologies that make use of 5G. The program will create a strong pipeline of trials demonstrating different future 5G uses (including Internet of Things applications), which will help build Australia's 5G ecosystem.

These projects will assist businesses of all sizes to test and develop 5G applications, services and products. Funding recipients will pilot ways of using 5G in their businesses that will help create the commercial incentive for other businesses to adopt 5G solutions and for carriers to accelerate their 5G rollouts.

The Initiative is aiming to grow investment opportunities in the sectors that benefit from 5G and realise the benefits of 5G as early as possible. In 2018 the then Bureau of Communications and Arts Research (BCAR) found that 5G could add an additional \$1,300 to \$2,000 in gross domestic product per person after the first decade of the rollout.

Submissions from stakeholders, including responses to the key questions raised within this discussion paper will inform consideration of the methods of allocating funding, so the Initiative best meets the policy objectives and achieves value for money.

Background

As part of the 2020–21 Budget the Government announced the establishment of the \$22.1 million Initiative that will provide two rounds of grants funding, each with \$10 million in funding available.

The first round of funding is anticipated to be available in the first half of 2021. The Initiative will support 5G projects of various sizes. While the Initiative will not require co-contributions from participants, in-kind and co-contributions will support projects in demonstrating value for money.

The second round of funding is expected to be made available in the first quarter of 2022. Depending on the outcomes of round one, there may be additional consultation on the design of the round two guidelines.

The Initiative does not provide ongoing funding for projects. The Government has committed to two rounds of grants.

Objectives of the Initiative

The objective of the Initiative is to support 5G testbeds and trials that will undertake rigorous, commercial, and replicable testing of technologies that make use of 5G. The program aims to create a pipeline of trials demonstrating different 5G applications (including Internet of Things applications) which will help build Australia's 5G ecosystem.

The Initiative aims to support business to try new and innovative technology solutions. The Initiative offers businesses the opportunity to identify problems and technological solutions that take advantage of 5G's capabilities. The Initiative aims to support the testing of 5G applications that bring productivity benefits to Australian businesses.

The Initiative aims to support various projects that demonstrate the wide ranging benefits of 5G. It aims to support projects across a range of industry sectors and across a range of locations. Showcasing 5G across different industries and locations will demonstrate the productivity benefits as widely as possible.

Key program principles

The proposed design of the first round of the Initiative reflects the following principles:

- The program will test innovative use cases for 5G technology.
- Funding will focus on areas where 5G could bring productivity benefits.
- The Initiative will support a mixture of smaller and larger scale projects
- Grants will support the testing and trialling of 5G equipment
- Results of the Initiative will be made publicly available to help share learnings

Testing innovative use cases for 5G

A critical indicator for the success of the proposal is for projects to test and trial new solutions that make use of 5G's capabilities. While 5G phones and home internet solutions are demonstrating 5G's potential as a consumer product, the emphasis of the Initiative is on industrial and enterprise uses.

5G networks and technology have developed to the point where they can be utilised to support new use cases. 5G has three core capabilities around which use cases are built:

- enhanced mobile broadband
- massive machine to machine communications and
- ultra reliable, low-latency communications.

Each of these capabilities take advantage of the properties of 5G to deliver applications in new or better ways than previously enabled by other technologies. Ultra reliable, low latency communications is, for example, designed to enable smart automation of industrial equipment where mission critical communications services are needed. Massive machine to machine communications enables many sensors to be connected, for example in agriculture, the data from which can be analysed in the cloud and returned to help farmers make decisions in real time. There are a range of new products and services coming onto the market that make use of 5G's properties to deliver the promised benefits of 5G. It is these new types of use cases that the Initiative will support.

The type of projects that could be supported to leverage 5G, while not exhaustive, include smart manufacturing solutions, smart farming (including on farm machinery, sensors and drones), telemedicine, robotics and cobotics, augmented reality, retail, freight and logistics management solutions.

While 5G will provide a connectivity platform of greater capability, users, particularly in the commercial sector who best understand their business needs, will play a key role. They can best determine how 5G's capabilities can be employed to innovate to improve production and distribution process and capture savings and productivity gains.

Question 1.

Do you have any comments on the types of use cases that the Initiative is seeking to support?

Question 2.

Are there any technical, regulatory or other barriers to implementing 5G use cases? If you have identified barriers, can you suggest ways these barriers could be overcome?

Focus on areas where 5G can deliver productivity benefits

Funding will be targeted to support emerging commercial use cases in a range of sectors, and demonstrate the value of 5G to businesses in Australia, with a focus on projects that have the potential for positive spill over benefits across the economy over the longer term. The projects will help grow local expertise in the deployment and application of 5G use cases.

Demonstrating 5G's benefits across industry sectors

The Initiative seeks to demonstrate the benefits to productivity of 5G across a range of industry sectors.

It is proposed that round one of the Initiative will encourage proposals from a wide range of sectors. Potential sectors where there may be 5G use cases include, but are not limited to, logistics, manufacturing, medical technology, mining, retail, agriculture and transport. There are a range of 5G use cases that could be demonstrated within these sectors and the guidelines will not seek to limit what could be trialled. Possible 5G use cases could involve:

- 5G sensor nets monitoring farms in providing real-time information about soil moisture or water levels. This data can then be used in decision support to help farmers make data-driven decisions in farm management. In addition, 5G can be used to support automated farm equipment that could spray chemicals or pick fruit more accurately and efficiently.
- Live device monitoring over 5G to predict equipment wear and schedule predictive maintenance in manufacturing and industrial locations and provide real-time feedback on the performance and operation of machinery.
- 5G networks connecting diagnostic imagery to specialists in real-time. Through wearables doctors could have real-time information of patients' conditions.
- 5G connected smart tags providing real-time tracking for goods as well as providing insights on food freshness. Enhanced digital labelling could provide enhanced place of origin information.
- In construction, 5G providing construction workers with building visualisation on site through augmented reality glasses. 5G's enhanced mobile broadband can enable the streaming of 8K video that could be paired with edge computing to scan video footage and keep track of onsite personnel, for example to make sure workers on a site have received health and safety inductions. Sensors can be placed in building components to provide real-time data on construction as well as the ongoing performance of buildings.

Round two may target specific industry sectors if particular sectors are underrepresented in the projects funded under round one. This will assist in meeting the Initiative's objectives to demonstrate use cases of 5G across a variety of sectors and localities.

Demonstrating 5G use cases in different regions

The Initiative will encourage applications from across different locations or geographic regions. It will be important to demonstrate 5G's ability to be used in different regions as well as different industries.

Applicants will be required to identify the location where they will be trialling 5G applications. The spread of locations of projects may be taken into account in the prioritisation of the awarding of grants in the case that the Initiative is oversubscribed with high-quality proposals.

Question 1.

What are your views on the level of maturity of 5G applications available to be trialled, and are there particular sectors which could best demonstrate 5G's productivity benefits?

Question 2.

What locations offer the best opportunities to deliver 5G projects, and are there any barriers to delivering projects in particular locations or geographic regions?

The Initiative to support a range of projects

The Initiative is proposed to support both smaller and larger scale technology solutions. The assessment process will take into account the projected benefits in relation to the size of grants.

For example, small scale projects could support the purchase of a relatively modest piece of 5G enabled equipment as well as the software needed to integrate into a business's operations. Applications would need to demonstrate how a modest investment in 5G would boost the business productivity.

Medium size projects could support businesses making more substantial investments in 5G enabled equipment. For more substantial investments, applications might include multiple pieces of equipment and demonstrations of how equipment would work with their existing systems and processes.

Other countries have already made significant investments in supporting the growth of 5G use cases across a range of sectors. Singapore's 5G Grant program has supported 5G use cases in maritime operations, urban mobility, smart estates, and Industry 4.0. This program is in its early stages and is designed to engage with industry to understand the technical capabilities and performance of emerging 5G technologies.

The UK 5G Trials and Testbeds Programme has funded 24 5G testbeds across the UK, trialling almost 70 different 5G technologies, products and applications. Technologies demonstrated range from augmented reality experiences, using 5G and big data for preventive maintenance of machinery, robotic assembly, reconfigurable product assembly lines and smart agricultural solutions. The UK program has been effective in deploying trial and testbed equipment that can continue to be used following the cessation of grants. Projects have informed the development of regulatory settings and have enabled the investigation and application of new technologies.

Joint applications

It is proposed that joint applications will be considered for the Initiative. These applications may support larger more complex 5G use cases. Where relevant, applications will need to demonstrate how multiple 5G use cases could work together. These will show the potential benefits of using 5G in a more integrated way.

For joint applications, there would need to be a lead organisation. The lead organisation would be the party that submits the application and enters into the grant agreement with the Commonwealth. The application would also need to identify all other members of the proposed group and include a letter of support from each of the project partners.

Grant agreements

Successful applicants must enter into a legally binding grant agreement with the Commonwealth. Each grant agreement will set out the grantee's obligations. It is proposed that the Initiative will use a standard Commonwealth grant agreement. There is potential for the grant agreement to have specific conditions determined by the assessment process or other considerations made by the decision maker, which would be identified in the agreement and discussed as part of a negotiation process prior to the finalisation of the grant agreement.

Grant value

It is proposed that there will be no minimum or maximum number of projects that the Government is seeking to fund within the limit of each round. The number of grants under each round of the program would be the result of the applications received and the evaluation and prioritisation of those applications. Grants are anticipated to be in the order of \$500,000 to \$1 million. However, smaller and larger grants could also be considered, noting that grants of \$1 million or more are subject to audited financial statements. The economic benefits of the grants will be taken into account when prioritising projects selected under the Initiative.

Payment Structure

It is proposed that for successful applicants the grant would be paid at two to three points during the grant life cycle. The first point would be following the signing of contracts. The last point would be at the completion of the grant following the submission of final reporting. An additional payment point on the completion of an agreed milestone could also be included. This approach is designed to reduce the administrative burden for successful applicants while mitigating the risks around project implementation.

Question 3.

Given the quantum of funding, what type and scale of projects could the Initiative appropriately support?

Question 4.

What are your views of the proposed requirements for joint applications, grant agreements, grant value and the payment structure of the Initiative? Are there other program requirements that should be considered?

Grants are proposed to support the testing and trialling of 5G equipment

Grants are proposed to be used to fund equipment and the cost of installing that equipment. Funding for set-up and administration connected with the Initiative may also be considered. Administration costs should generally not be a significant portion of the funding sought. It is not intended that the grants be used to fund significant investments in land, buildings or equipment not directly related to trialling 5G use cases.

The grant is not intended to include the following activities:

- purchase of land
- costs incurred in the preparation of a grant application or related documentation
- overseas travel
- other activities not relevant to the activities to which the grant has been made

It is not expected that the Initiative's grants will support significant investment in research and development into 5G applications as the focus of the Initiative is on supporting commercial applications. There may however be some need to support limited development costs if applications are pre-commercial or specific software is needed to facilitate 5G use cases.

Funding under the Initiative is non-ongoing, and the ongoing costs for operating 5G use cases should be considered by applicants.

There may be scope for grants to support limited 5G coverage where it is necessary to facilitate the operation of 5G use cases, though it is not the main objective of the Initiative. Where an application seeks to deploy a private 5G network, this could be supported under the Initiative, as it would facilitate demonstrating uses cases enabled by these networks (e.g. in a manufacturing or farming precinct). Such style networks may involve equipment such as radio network access equipment, as well as edge computing capacity that would facilitate ultra-low latency for mission critical services.

Eligibility

The Initiative seeks to encourage businesses to apply for funding to demonstrate the benefits of 5G use cases. Applicants must be able to demonstrate that they have a project that will demonstrate 5G's benefits. Applications will be measured against the assessment criteria in the program guidelines. This consultation will inform the development of those guidelines.

The Initiative is focussed on demonstrating use commercial 5G use cases with productivity benefits from a range of sectors. Applications including businesses that are not traditionally involved in telecommunications projects, and from small to medium enterprises, are encouraged. Eligible projects could also include those implemented by not-for-profit businesses where such use cases may result in productivity benefits, and meet the criteria of the Initiative. This would also serve the program objectives by demonstrating potential commercial use cases.

In addition, to be eligible applicants must meet the following criteria

- Applicants must have an Australian Business Number (ABN)
- Applicants must be registered for the purposes of GST
- Applicants must have an account with an Australian financial institution

- For a joint application, a single lead applicant that will enter into any grant agreement, if successful, must be nominated
- Applicants must demonstrate compliance with all relevant regulatory frameworks, particularly if applicants are looking to deploy private 5G networks.

While co-contributions will not be required participants will need to demonstrate their ability to deliver funded projects. Co-contributions could help applicants demonstrate value for money. This might include financial contributions, contributions of equipment, personnel, or other in-kind contributions.

Applications will need to demonstrate that the activities supported under the Initiative are a new activity and are not currently supported by other Commonwealth Grants programs. Applications for projects the Government has previously supported in research and development will be eligible. The aim is to be able to leverage existing research while reducing the risk of duplicating efforts.

Timing

The timing for round 1 of the Initiative is proposed to be:

- November through December 2020—Development of program guidelines
- February 2021—Applications open
- Late March 2021—Applications close
- Mid May 2021—Approval and announcement
- Late May 2021—Contract development and awarding of grants
- May—June 2022—Finalisation of the first round of funded projects and reporting.

Question 5.

Do you have any comments on the eligibility requirements, including the types of applications eligible for funding, the funding of network infrastructure, and whether the criteria will encourage participation from a variety of applicants?

Question 6.

In what timeframe could projects under the Initiative be feasibly implemented?

Learnings and case studies from the Initiative will be shared

The Initiative aims to build awareness of the capabilities and applications of 5G, particularly in commercial and industrial settings. Case studies based on information contained in the reporting from applicants, and supplemented by further research where required, will be published on the Department's website as well as a full list of projects that have been funded. By making this information publicly available it will provide a source of information for businesses on the types of 5G use cases that are available and the benefits that come from them. The development of cases studies will be informed by the reporting that successful applicants will be required to conduct.

Question 3.

What do you consider are the best ways to promote 5G use cases within industry sectors and more widely? Do you anticipate any barriers to sharing case studies?

Proposed Assessment criteria

Each funded project will need to address all of the assessment criteria. The Initiative's assessment criteria will be flexible to allow for a wide range of projects to be considered. While the criteria for the program will be flexible all successful applicants must respond to the criteria and provide sufficient information to allow proposals to be evaluated.

An Assessment Committee made up of Departmental officers and technical advisers (if required) will assess each application.

Criterion 1—Meets objectives of the program

Projects will need to demonstrate how their proposal aligns with the program objectives.

Applicants may wish to consider ways in which their project will have economic, productivity or other benefits that derive from 5G. Applications will be required to demonstrate that the use cases they are proposing are using 5G technologies. Applicants will be allowed flexibility in how they demonstrate that they are using 5G technologies and may choose a number of different approaches, such as demonstrating compliance with a relevant standard.

Additionally applicants will need to provide information on how these benefits will be measured. Applicants should include an evaluation plan for their project that considers both qualitative and quantitative measurements of the benefits and outcomes of the project so that projects will commence with a clear idea of what they are looking to achieve, and have a method of determining whether this has been achieved.

Applicants will be required to submit a final report that must:

- identify the 5G technologies used in the project
- identify whether the initial objectives of the trial were achieved and discuss lessons learned during the trials
- identify the total costs incurred
- be submitted within the time agreed to after completion.

Reporting will be used to evaluate the success of projects that are selected, as well as identify barriers (including technical and regulatory barriers) to the implementation of 5G technologies across a range of sectors. The reporting will be used to raise public awareness of applications of 5G. This could be in the form of publishing the reports in their entirety, or using the reports as a basis for developing detailed case studies.

Criterion 2—Ability to access relevant technology and spectrum

Options to access spectrum

Access to appropriate radiofrequency spectrum and 5G networks is an important consideration underpinning the ability to test and trial technologies that use 5G. Spectrum access should be considered early, and in detail, including consideration of the spectrum needs of a project, and the avenues available for securing the spectrum required.

All three major mobile network operators in Australia have commenced roll out of 5G networks using low- and mid-band spectrum. The Australian Communications and Media Authority (ACMA) is expected to auction spectrum in the 26 GHz band in April 2021, which will provide access to the mmWave spectrum that underpins key use cases of 5G.

Although the deployment of large-scale mobile networks by telecommunications carriers will form an important part of the 5G ecosystem, the Government's policy objectives also seek to support smaller scale applications that may provide fertile ground for more novel applications of 5G technology. Spectrum for these applications can be accessed through the apparatus and class licensing arrangements. ACMA intends to make mmWave spectrum area wide apparatus licences (AWL) available through two major administrative allocation rounds in 2020 and 2021.

- Round 1- 24.7–25.1 GHz and the 27.5–29.5 GHz ranges Australia-wide
 - Nov-Dec 2020 (prior to applications for 26 GHz auction)
- Round 2 –25.1–27.5 GHz in all areas other than those specified for spectrum licensing
 - Mid 2021- after the conclusion of the 26 GHz Spectrum Auction.

Possible spectrum options for 5G in low and mid bands are detailed in the ACMA information paper [Spectrum options optimised for local area wireless broadband services](#) and may also be accessible in partnership with owners of spectrum licences in various bands.

Further detail on options to access spectrum is provided in [Appendix A](#), and at the ACMA website at www.acma.gov.au/radiocommunications-licences. For some radiocommunications licencing matters, you can ask an 'accredited person', who is qualified in radiocommunications, for help. The list of accredited persons can be found at www.acma.gov.au/find-accredited-person. You can also contact ACMA for more information at info@acma.gov.au.

Sharing models

Sharing of both spectrum and other network equipment may assist in lowering the operating costs of projects, and support the efficient use of finite spectrum resources. Sharing can take a number of forms, including:

- Accessing existing spectrum-licenced bands through agreement with the spectrum licensee
- Sharing of passive 5G network infrastructure like transmission, power cables, ducts, cooling systems and towers
- Sharing of active 5G network infrastructure such as antennas, electronic equipment and spectrum
- Projects where multiple 5G applications are trialled using one radiocommunications licence (whether by a single applicant or joint applicants)
- Dynamic spectrum access, which allows access to spectrum that may not be in use in all geographic areas, all the time, by the primary or incumbent user. Dynamic spectrum access involves 'live' decision making informed by a range of tools. These systems of sharing are in their infancy in Australia, and are not yet supported by a formal, ongoing regulatory regime.

Proposals that include trials of different sharing models for both spectrum and network equipment would be welcome under the Initiative.

Criterion

To ensure that projects are able to be delivered, and trial technology that operates using 5G, a proposed criteria will be a demonstration that the applicant has access to the relevant technology and 5G networks.

For access to technology, this would be a demonstration that the applicant has:

- access to technology that utilises 5G OR
- a clear plan for how they will get access to technology that utilises 5G during the period of the project.

For access to 5G networks, this would be a demonstration that the applicant is able to:

- conduct the trial using existing, commercially available 5G networks OR
- work with a telecommunications carrier (for example, a mobile network operator, wireless internet service provider, or others) to access or deploy a 5G network OR
- independently deploy a 5G network (including demonstrating how they will access the necessary spectrum).

Criterion 3—Ability to be delivered

Assessment against this criterion will be based on applicants' ability to deliver A5GII proposals successfully.

Matters to be considered include:

- access to any necessary infrastructure, or ability to gain access to such infrastructure
- ability to meet licensing and regulatory requirements
- track record in delivering similar projects (if any)
- access to personnel and/or partners with the right skills and experience
- readiness to commence the project including availability of key personnel and equipment
- assessment of risk and mitigations
- your financial and operational ability to deliver the proposal
- your contributions (funding, in-kind contributions).

Criterion 4—Value for money

This criterion allows for consideration of value with relevant money in assessing the ability of the application to meet the policy objectives of the grant program or grant opportunity.

The value for money assessment considers all of the factors that applicants are required to discuss in their applications. The value for money assessment also considers these matters in the wider context of the program's objectives, which include innovation and competition, and broader Commonwealth policy. In particular, as part of the value for money assessment, the Department may consider which combination of applications will together best achieve the program's objectives.

The value for money assessment takes into account the total cost of the proposal, including both the funding sought from the Commonwealth and applicants' own contributions to the costs of their trials.

Additional criteria if oversubscribed

In addition to the four criterion, an assessment will also be undertaken to consider which of the applications best support the program objectives in the case that there are a greater number of suitable applications than the total grant funding pool can support.

This assessment will have regard to the key program priorities of demonstrating the benefits of 5G across a range of sectors and across different locations.

Question 4.

Do you have any comments on the proposed assessment criteria, including their ability to support a variety of projects from diverse applicants?

Question 5.

Should the program have any specific limits on what qualifies as 'technology that operates using 5G'? If so what would these limits be?

Questions

Question 1.

Do you have any comments on the types of use cases that the Initiative is seeking to support?

Question 2.

What are the technical, regulatory or other barriers to implementing 5G use cases? If you have identified barriers, can you suggest ways these barriers could be overcome?

Question 3.

What are your views on the level of maturity of 5G applications available to be trialled, and are there particular sectors where it will be possible to demonstrate 5G's productivity benefits?

Question 4.

What locations offer the best opportunities to deliver 5G projects, and are there any barriers to delivering projects in particular locations or geographic regions?

Question 5.

Given the quantum of funding, what type and scale of projects could the Initiative appropriately support?

Question 6.

What are your views of the proposed requirements for joint applications, grant agreements, grant value and the payment structure of the Initiative? Are there other program requirements that should be considered?

Question 7.

Do you have any comments on the eligibility requirements, including the types of applications eligible for funding, the funding of network infrastructure, and whether the criteria will encourage participation from a variety of applicants?

Question 8.

In what timeframe could projects under the Initiative be feasibly implemented?

Question 9.

What do you consider are the best ways to promote 5G use cases within industry sectors and more widely? Do you anticipate any barriers to sharing case studies?

Question 10.

Do you have any comments on the proposed assessment criteria, including their ability to support a variety of projects from diverse applicants?

Question 11.

Should the program have any specific limits on what qualifies as technology that operates using 5G? If so what would these limits be?

Next steps

Preparing submissions

All interested stakeholders wishing to have their views considered on possible implementation of the Initiative are invited to provide a submission to the Department. All submissions must include the name and contact details of the person making the submission and the organisation they represent (if applicable).

All submissions and comments, or parts thereof, will be treated as non-confidential information unless specifically requested, and acceptable reasons should accompany each request. Email disclaimers will not be considered sufficient confidentiality requests.

Respondents lodging a submission should be aware that submissions (excluding any information agreed to be treated as confidential information) will be made publicly available, including on the Department of Infrastructure, Transport, Regional Development and Communication's website. Submissions and comments will be subject to freedom of information provisions. Despite a submission being identified as confidential or sensitive, submissions may be disclosed where authorised or required by law, or for the purpose of parliamentary processes.

Questions raised in this Discussion Paper are intended as a guide only. Respondents are welcome to provide more general comments on the issues raised in this paper.

Lodging submissions

Submissions can be sent to the following email address: 5GInitiative@communications.gov.au.

The closing date for lodging submissions is 5:00pm (AEST) 11 December 2020.

Stakeholder forum

The Department will also hold a forum to engage with peak bodies that represent sectors where 5G use cases have economic and productivity potential, with the Minister for Communications, Cyber Safety and the Arts to attend. The Forum will be used to understand the opportunities and barriers for the successful implementation of the Initiative. The forum is anticipated to be held in late November, and the Department will contact relevant peak bodies to arrange attendance. If there is a peak body that you think should be included, please provide details to the Department via the above email address. Details of the forum will be made available on the Department's website at www.communications.gov.au/5GInitiative.

Contact us

For further information about the Initiative or to discuss any elements of this Discussion Paper, please contact the Department via the above email address.

Appendix A—Spectrum availability and allocation

Spectrum Allocation in Australia

Spectrum is a finite resource. In Australia, you cannot use radiocommunications equipment without an appropriate licence. Spectrum allocation in Australia is managed by the Australian Communications and Media Authority (ACMA).

Different frequencies have different characteristics that enable different uses. Spectrum in specific frequency bands may only be available during specific allocation periods. Some frequency bands may be fully subscribed.

Applicants should carefully consider the specific spectrum requirements of their proposed use case and identify whether they are able to gain access to their required frequencies.

Ways to access spectrum

Licence categories

ACMA defines a range of licence types to enable access to spectrum. ACMA provide an overview of different radiocommunications licensing arrangements on their website:

www.acma.gov.au/radiocommunications-licences.

There are three main categories of radiocommunications licensing which are summarised briefly below. Each of these licence categories may have sub-types for specific uses.

- [Spectrum Licences](#) allow the licence holder to use a range of radiocommunications devices in a specific geographic area and frequency band.
- [Apparatus Licences](#) typically permit use of a specific device/transmitter in a nominated location. However, ACMA has defined a new sub-type referred to as Area wide apparatus licences. These authorise use over a defined area and are capable of authorising a variety of fixed and mobile services, uses, applications and technologies. This licence type is explained further below
- [Class Licences](#) let users operate common radio equipment on shared frequencies. Class licences have significant limitations for innovative applications as they restrict the precise device, frequency, and application of devices.

ACMA has also defined a subcategory of apparatus licence referred to as Scientific Licences which are designed for research, teaching, demonstration or trial purposes.

Partnership with an existing spectrum holder

ACMA also allows parties wishing to access spectrum through an existing spectrum holder's licence, subject to:

- the agreement of the licence holder (the licence holder may set terms including costs to access the licence)
- compliance with the conditions of the original licence.
- compliance ACMA conditions.

Upcoming spectrum allocations suitable for 5G applications

ACMA will re-allocate spectrum in the 26 GHz and 28 GHz bands through the combination of a competitive auction process and administrative allocation in November-December 2020 and the first half of 2021.

Spectrum licences in the 26 GHz band—ACMA currently plans to conduct a competitive auction for spectrum licences in the 25.1–27.5 GHz frequency of the 26 GHz band in April 2021. The 26 GHz band auction will allocate spectrum licences in 29 cities and major regional centres.

Apparatus licences in the 26 GHz and 28 GHz Bands will be available for locations areas outside these areas in the 26 GHz band and across the 28 GHz band Australia wide. ACMA will allocate apparatus licences through an administrative process in late 2020 and mid-2021.

ACMA will offer a new apparatus licence type in the 26 GHz and 28 GHz bands, called an ‘area-wide apparatus licence’ (AWL) capable of authorising a variety of fixed and mobile services, uses, applications and technologies. AWLs differ from other forms of apparatus licence types, which typically align with specific uses and purposes. ACMA’s use of the AWL apparatus licence type is designed to address the spectrum requirements of potential new entrants and smaller players in the market, by making it more likely that they can acquire spectrum and to support innovative use cases.

ACMA intends to allocate AWLs in two main administrative allocation rounds:

- **Round 1**
 - Allocate spectrum in the 24.7–25.1 GHz and the 27.5–29.5 GHz ranges Australia-wide.
 - Applications open 4 November 2020 with AWLs to be allocated from December 2020.
- **Round 2**
 - Allocate spectrum in the 25.1–27.5 GHz frequency in all areas other than those specified for spectrum licensing.
 - Applications to mid-2021, after the conclusion of the 26 GHz Spectrum Auction.

Details of applying on applying for AWLs in the 26 GHz and 28 GHz bands, including allocation criteria are available from ACMA’s website.

www.acma.gov.au/area-wide-apparatus-licensing-26-and-28-ghz-bands.

After these rounds have concluded, interested parties will have the opportunity to apply to ACMA for AWLs from any remaining spectrum through a first in time application system.

Accessing spectrum in other frequency bands

As noted above some 5G applications (especially mmWave) may require support from other frequencies, including mid or low band spectrum. Spectrum in these frequencies is already heavily subscribed.

If applicants require spectrum in these bands they should contact ACMA to identify what access options are available and/or seek partnership arrangements or access from an existing licence holder in the relevant band. You can email ACMA at info@acma.gov.au.