

# Challenge Networks submission to 5G discussion Paper

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## **Challenge Networks PTY LTD**

### **Challenge Networks submission to 5G submission paper**

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#### **Environment**

Challenge Networks asks that you consider the environment before printing this document.

## 1. Submission details

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Age Group	Male (%)	Female (%)
18-24	~85	~90
25-34	~90	~95
35-44	~85	~90
45-54	~75	~85
55-64	~45	~65
65+	~25	~40

the initiative will only be possible to the consumer network carriers (who currently have an effective monopoly on spectrum in urban areas) - and thus almost guaranteed to fail in the initiatives objectives. .

Australia to date has been quite successful in the area of industrial private LTE networks primarily due to access of band 1 & 3 spectrum in rural/remote areas of Australia. If access to spectrum had been limited to the consumer network carriers then Australia would not have achieved its dominant position in this space. This has been demonstrated and proven globally - countries that have restrictive spectrum/regulatory models have zero or low use of industrial LTE applications. Spectrum licences almost by definition are restricted to use by the carriers. A localised spectrum model (Apparatus licences or similar) is essential for any true benefit to be realised in Australia as part of this program.

The suggestion that consumer mobile network carriers will sublease their spectrum to 3rd parties (as suggested in Annexure A) at a true commercial rate is in our view somewhat unfounded.

### **2.3. Question 3 - Maturity of 5G applications & sectors**

Obviously the use cases of 5G are currently somewhat immature. The main constraint within Australia has been that the private mobile networks (which represent by far the largest innovation segment over the last few years with LTE) have currently no access to appropriate 5G spectrum.

### **2.4. Question 4 - Locations to offer 5G projects.**

From the perspective of Industrial LTE (so mining, energy, manufacturing, etc), the location of 5G activities can be approximately divided into two areas. Where spectrum is possible (generally remote and regional areas) and where it is impossible (urban areas and many of regional areas).

On the basis of the spectrum strategy given in Annexure A, it is highly unlikely that there will be much 5G innovation in urban areas as this will be dominated by the consumer mobile network owners(who are the only party who effectively will have spectrum in urban areas).

Thus for industrial applications, given the likely spectrum restrictions, it is likely that these applications will be restricted to remote areas where it is more likely that spectrum is available. Historical evidence suggests that innovation will not be forthcoming from the consumer network owners.

### **2.5. Question 5 - Funding Quantum**

The funding quantum suggested seems a reasonable compromise. Certainly it's unlikely to fund a complete implementation but that could be considered a positive attribute as it encourages significant 'co-contribution' from the other parties involved in the project. From our point of view, it would seem that the funds would be most logically used to fund the 'actual' case study - not the 5G infrastructure (core and base stations).

### **2.6. Question 6 - other requirements**

Given the focus on industrial applications, it will be critical that the projects be allowed to involve several parties.

There is often some debate regarding what '5G' is (given that 5G is more of a marketing term than a clear definitional one) . We would suggest that 5G, for the purposes of this initiative, be defined as a solution that specifically is associated with the technology defined in 3GPP release 15 and above.

### **2.7. Question 7 - Eligibility requirements**

The most critical potential limitation is that, pending the outcome of suitable spectrum, the initiative may be thus effectively restricted to the consumer network carriers which would severely limit the value of the program. In the discussion paper there seems to be the somewhat surprising expectation that spectrum will be able be 'obtained' from the consumer mobile networks (who will be the dominant spectrum owners).

## **2.8. Question 8 - Time frames**

From the time of the project funding being approved we would expect a final outcome within approximately 6-9 months. We would estimate there will be some form of system procurement/build time (typically in the order of 3-4 months) followed by a period where the use case is practically developed, implemented and tested (another 3-4 months).

## **2.9. Question 9 - Use case sharing**

It is most likely that use cases will be developed in partnership between some form of “technology expert” (a company that has expertise in 3GPP related technologies - which may be the same organisation as the “end user”) and an “end user” (a company, organisation or user group). We believe that the “case studies” will be able to be shared but potentially there may be some sensitivity with regards to the specific technical or commercial details of the solution. It will be important to develop some form of reasonable compromise as especially in the “Industrial” market (so mining, farming, etc) an end user will often only be willing to participate if there is some guarantee as to confidentiality regarding commercial and/or technical details.

The majority of innovative use cases are most likely to come from private networks rather than consumer mobile networks as private networks offer the security, reliability and customisation required to meet industrial demands. As discussed previously these private network solutions will only be viable if there is appropriate spectrum made available to non consumer mobile network industries/players.

## **2.10. Question 10 - Assessment criteria**

The criteria seem quite reasonable.

## **2.11. Question 11 - Limits on technology**

The use case should be clearly related to something that specifically requires the use of 3GPP Release 15 or above technology. It should not be a use case that would work equally well with LTE, Wifi, or related wireless technologies.