

4 September 2009

Question on Notice from the Select Committee on the National broadband Network

Senator IAN MACDONALD—Being a bit parochial, we have had submissions from the Torres Shire Council stating that they cannot get high-speed broadband and are finding difficulty in getting any sort of reliable connection in the islands, many of which you will recall in the eastern area are quite mountainous. Does CSIRO have solutions for how you might provide high speed or reliable, which is what they are after, communications to those sorts of islands?

Dr Zelinsky—In principle our technology could address those types of situations, but specifically I would have to take that question on notice to go and have a look at the exact configuration. You would need at some point a backhaul point, a transmission tower and so on. If you are transmitting over water there may be other challenges associated with that. Off the cuff, I think there is some potential in that space, but in order to say categorically that is the case we would have to take that on notice

Response:

From a technology point of view, the technology that CSIRO is developing should be capable of providing greater coverage, compared to existing and near future standard wireless technologies, such as 3G/4G and WiMAX, by utilising a lower frequency, a higher fixed antenna height both at the base station and a user terminal, and a higher transmitting power, while providing a more efficient use of the frequency bandwidth per base station. The use of lower frequency also implies the capability of extending the radio coverage in difficult radio propagation areas such as valleys in mountainous regions

The Thursday Island broadcasting site is located at Green Hill, on the island. This site currently provides ABC analogue television coverage as shown in the figure below. CSIRO is expecting its new technology to provide similar coverage to existing television coverage by reusing the existing broadcasting tower infrastructure. Installing a base station on top of the broadcasting tower will enable the residents in the area marked yellow and blue (see the attached map) to receive broadband services. Subject to detailed network planning and better understanding of the terrain, it is possible that one base station could provide high performance broadband services to all Thursday Island, Hammond Island, Good Island, Friday Island, and part of Horn Island. Furthermore, CSIRO new backhaul technology could be also used to provide high capacity data pipes to connect all the islands wirelessly.



Figure 1: ABC television coverage from the broadcasting site at Thursday Island. CSIRO technology will cover both the main and adequate coverage areas with the same high data rate.