

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

**Question No: 1**

**Hansard Ref: Page 7**

**Topic: Value-add to the rollout Broadband**

**Mr Oakeshott asked:**

How is the process going in regard to councils seeking an extension of the fibre network? What is the process for putting a fibre access node as part of network extension trials?

**Answer:**

NBN Co undertook a fibre network extension trial in Tasmania. The trial included selected properties that border the Tasmania stage 2 sites. Only a small number of properties were included in the scope of the trial. Within the scope of the trial, eight requests for quotes were received and one has accepted the quote. The trial was to test a process for extending the fibre network to properties on the edge of the fibre footprint, with a focus on dealing directly with property owners.

Whilst there has been some general interest from Councils in extending the fibre network, NBN Co has not yet established a mechanism for larger network extensions that would require building a fibre access node. It should be noted that the expectation is that NBN Co recovers the incremental cost of extending the network beyond 93%.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

**Question No: 2**

**Hansard Ref: Page 10**

**Topic: Broadband for the Bush Forum**

**Senator Ludlum asked:**

What advice did NBN Co provide at the broadband for the bush forum that Indigenous Remote Communications Association and Desert Knowledge Australia ran in Alice Springs regarding the availability of NBN services?

**Answer:**

A representative from NBN Co provided an overview of the NBN project and the different technologies that are being rolled out across Australia. The representative outlined the distinction between NBN Co's Interim Satellite Service, which commenced in July 2011 and the Long Term Satellite Solution scheduled to commence in 2015.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

**Question No: 3**

**Hansard Ref: Page 13**

**Topic: NBN Migration**

**Mr Fletcher asked:**

When will you get to announcing the first ready-for-service declaration on a fibre serving area module?

**Answer:**

NBN Co is still working through when it will declare the first region ready for commercial service. As a general rule, NBN Co will not declare a region "Ready For Service" and cannot start the disconnection period until NBN Co has passed 90 per cent of premises in the Fibre Serving Area Module (FSAM).

NBN Co also has certain prerequisites it has committed to meeting under the Telstra deal before it can commence the "disconnection regime" in the first FSAM. We expect that NBN Co will be in a position to commence the disconnection regime at a point in 2012.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

**Question No: 5**

**Hansard Ref: Page 21**

**Topic: Satellite Service and rural and remote health**

**Senator Xenophon asked:**

Provide a summary to the Committee on what NBN Co is doing on the long term satellite service to make sure that the special needs of rural health and remote health are being addressed.

**Answer:**

NBN Co is pleased to provide the attached paper which outlines how the Long Term Satellite product requirements and network capabilities can be applied in the delivery of e-health applications.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**



**INFORMATION  
PAPER**

## **e-health Services in Indigenous Communities**

**Issue Date:** 11 October 2011

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**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

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With reference to any NBN speed mentioned in this document, NBN Co is designing the NBN to be capable of delivering these speeds to NBN Co's wholesale customers (RSPs). Speeds actually experienced by retail customers (end-users) will depend on a number of factors including the quality of their equipment and in-premises, the broadband plans offered by their RSP and how their RSP designs its network to cater for multiple end users.

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## **Environment**

NBN Co asks that you consider the environment before printing this document.

### **1. Purpose**

The purpose of this document is to respond to an enquiry raised during the Joint Committee on the NBN (JCNBN) which occurred on the 20th September 2011.

Senator Xenophon raised a question regarding e-health services to Indigenous communities which will have to rely on the NBN Long Term Satellite Service as their primary access method.

"e-health services in indigenous communities will have to rely on satellite. It won't be worth doing unless there is a sufficient quality, not just for telemedicine, but also the exchange of large medical files. Can you take on notice and summarise what you are doing on satellite to ensure the special needs of these communities are taken into account (strongly endorsed by Oakeshott on behalf of the committee)?"

NBN took the question on notice.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

This paper outlines how the Long Term Satellite product requirements and network capabilities can be applied by service providers and their customers in the delivery of e-health applications.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

## **2. Background**

As part of the Government's Statement of Expectation (SOE) dated 17th December 2010, NBN Co is to connect 93 per cent of Australian homes, schools and businesses with fibre-to-the-premises technology providing wholesale broadband speeds of up to 100 megabits per second download. All remaining premises will be served by a combination of next generation fixed wireless and long term satellite technologies providing peak wholesale speeds of at least 12 megabits per second downlink.<sup>1</sup>

Satellite is expected to provide wholesale broadband access to approximately the last 3% of premises not covered by fibre or fixed wireless. Given the long lead times associated with the design, procurement and deployment of the next generation satellites the Government directed NBN Co to explore options to bring forward a suitable satellite solution to ensure the availability of improved satellite broadband services for regional Australia, effectively replacing the existing Australian Government Australian Broadband Guarantee (ABG) program.

The NBN product roadmap includes two releases:

### **2.1. Interim Satellite Service**

The NBN Co Interim satellite service was launched on 1 July 2011 utilising existing commercially available, but limited, "Ku Band" satellite capacity and current ground equipment technology. The interim satellite service provides improved wholesale broadband services to residential and small businesses compared with those provided under the Australian Government's Australian Broadband Guarantee.

It is intended that the NBN interim satellite services will be in place until 2015 when the NBN Long Term Satellite Service is planned to be launched.

### **2.2. Long Term Satellite Service**

The NBN Co Long Term Satellite service is currently planned to be a purpose built broadband satellite with multiple spot beams to maximise the available spectrum, and therefore capacity, to remote and rural Australia. Two satellites are planned, dedicated to broadband services, providing a significant amount of capacity not afforded by the current commercially available Ku band, multi-purpose satellites.

This increase in capacity will enable broadband access to residential users, small business and industry verticals, and could allow service providers to offer education and health services.

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<sup>1</sup> NBN Co is designing the NBN to be capable of delivering these speeds to NBN Co's wholesale customers (**RSPs**). Speeds actually achieved by retail customers (end users) will depend on a number of factors including the quality of their equipment and in-premises connection, the broadband plans offered by their RSP and how their RSP designs its network to cater for multiple end users.



**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

The verification of the final product feature set and network capabilities for the Long Term Satellite Service will be determined once the vendor selection and contracts have been finalised.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

### **3. E-Health Application Requirements**

The long term satellite product roadmap will include various features such as increased capacity and return path speeds that are designed to support large file transfers and real time video communications.

The NBN Co network is designed to enable service providers the opportunity to access a national network infrastructure that can unify access and delivery of e-health services. Policy requirements have directed that, where possible, these services should be accessible independent of the access technology. As end-user location is the only determinant of planned long term service eligibility for satellite based services, there should be no eligibility restrictions that would limit service delivery to indigenous communities.

NBN Co expects that a range of e-health services and applications will be offered by service providers in the following health domain areas:

- Referral
- Discharge
- Medicines Management (including the electronic transfer of prescriptions)
- Pathology requests and results
- Diagnostic imaging requests and results
- Care planning
- Clinical notifications to registries.

In solution design by service providers, these services should be accessible using a common approach to ensure that all communications are secure and reliable. The link between organisations could be achieved through direct connections to the end-user or by the use of an independent, third-party secure messaging provider to ensure secure, affordable and reliable communications.

e-health service providers are also exploring more complex connections such as:

- rich content exchange (e.g. imagery, medical sensing data, etc.)
- simultaneous multi-participant contributions
- video conferencing and visual interactivity
- low network latency and high availability.

As NBN Co is a wholesale provider, it can only provide the network access component of an end-to-end service that addresses the above requirements. This means, Access Seekers and e-health service providers will need to construct services based on integrating applications with the NBN Co network, and other network components and providers based on their target market and customer set to provide e-health solutions.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

Whilst, NBN Co does not provide the end-to-end e-health solution, the network is planned to be designed to support application based services such as video conferencing and high-speed data interchange. These core capability requirements are detailed further in this document.

A number of health applications are delivered today using bespoke satellite network components. Typically they involve a video conferencing capability which could use a range of image quality settings depending on the operating environment. The planned NBN Co capacities across all delivery technologies (using the correct codecs), access speeds and service classes are expected to be capable of supporting foreseeable requirements to enable these services to be delivered.

Content streaming and applications such as training videos could use IPTV and Multicast capabilities (once available) for applications such as remote health certification training.

NBNCo has had various health applications successfully demonstrated over the Interim Satellite Service although current network restrictions will limit commercial deployment in most instances.

In addition it should be noted that the NBN Co network will be a suitable access technology for the delivery of the proposed national Shared Electronic Health Record system.

### **3.1. Key Stakeholder Engagement for Health Industry Vertical**

The National E-Health Transition Authority Limited was established by the Australian, State and Territory governments to develop better ways of electronically collecting and securely exchanging health information.

NBNCo is working with the National E-Health Transition Authority Limited (NEHTA) as the lead commonwealth agency to identify the e-health needs and product requirements for NBNCo in the health sector across fibre, satellite and fixed wireless solution. NBNCo has been working with NEHTA to understand the digital health roadmap and requirement for broadband delivery in the e-health sector. NEHTA has a product roadmap to deliver the personally controlled e-health record, E-Health services, E-Health solutions and to set standards for national infrastructure components.

NEHTA outlines five strategic priorities that define their role in adoption and implementation:

1. Deliver, operate and enhance the essential foundations required.
2. Coordinate the progression of priority e-health initiatives.
3. Manage the delivery of key components of Department of Health and Ageing's program for Personally Controlled Electronic Health Records
4. Accelerate national adoption of e-health.
5. Lead the further progression of e-health in Australia.

NBN Co expects to continue consultation within the health vertical, including Indigenous health workers and providers to further refine future requirements across all technologies and satellite.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

#### **4. Long Term Satellite Product Requirements**

The Interim Satellite Service was launched using existing industry capacity and facilities, principally as a high-speed extension and replacement for the Australian Broadband Guarantee to ensure continuity of services to underserved broadband locations. There are a number of intrinsic restrictions related to capacity and the underlying technology that limit potential application delivery using this platform.

These limitations are planned to be addressed by the Long Term Satellite infrastructure and the access services products. The intended product capabilities have been communicated to Access Seekers and to the Department of Broadband, Communications and the Digital Economy.

These requirements are summarised below as they apply to the two primary market segments - mass market and business market. Services developed for both markets will be used for application delivery, such as e-health depending on the application need.

NBN Co expects the Long Term Satellite Service product requirements to include:

- Increased wholesale speeds offered to service provider customers, starting at 12/1Mbps \* , opening a richer online experience to remote and rural areas
- Faster experience in web-browsing speeds and file transfers
- Significantly improved Monthly Usage
- Increased Consumer Choice of up to four Access Seekers per Network Termination Device (the end user NBN Co equipment)
- Fully managed installations and maintenance expected to reduce the cost barrier to market entry for internet access
- Improved access to web services compared to today's satellite market e.g. Video conferencing, Skype, movie downloads, video streaming
- IP telephony Support
- Multicast to support Interactive Distance Learning
- Managed Private Networks or Closed User Groups (Bandwidth sharing)
- Video Conferencing
- Symmetrical bandwidth capacity
- Enhanced 'business grade' Service Levels

NBN Co is also exploring the potential for transportability for Emergency Services (but not Mobility).

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

## 5. Network Capability Objectives

NBN Co has conducted market research with Access Seekers, End Users and industry equipment vendors culminating in a set of business and technical requirements described earlier. The planned network capabilities have been set using these inputs in conjunction with government policy objectives.

These high-level capabilities are summarised following:

- Dual Ka Band satellites for In-orbit redundancy optimised for broadband services
- Over 200,000 fixed premises to be served
- Premises include homes, small business, corporate and government agencies such as schools and health
- Typical antenna sizes of 0.8, and 1.2m maximum
- Basic Wholesale Layer 2, 12Mbps download and 1Mbps upload peak speeds<sup>2</sup>
- 4 UNI-D ports each supporting 12/1Mbps peak speed wholesale service
- IPTV and Multicast for business applications
- Four traffic classes specifically designed for the following business and mass market services:
  - Business Multicast Services
  - Video Conferencing
  - Higher return path or upload speeds
  - IP Telephony
  - Committed Information Rates for data services
  - Higher monthly usage service plans that are anticipated to be available after 2015.

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<sup>2</sup> NBN Co is designing the NBN to be capable of delivering these speeds to NBN Co's wholesale customers (**RSPs**). Speeds actually achieved by retail customers (end users) will depend on a number of factors including the quality of their equipment and in-premises connection, the broadband plans offered by their RSP and how their RSP designs its network to cater for multiple end users.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

## **6. Conclusion**

NBN Co is working with key stakeholders to develop specific products for industry verticals. For the Health vertical one key stakeholder is the National E-Health Transition Authority Limited which was established by the Australian, State and Territory governments to develop better ways of electronically collecting and securely exchanging health information.

NBNCo has also had various health applications successfully demonstrated over the Interim Satellite Service, which give confidence that such applications will be able to be supported on the NBN Long Term Satellite platform to the benefit of remote, rural and Indigenous communities.

Currently NBN Co is undergoing a tender process to select the Long Term Satellite and ground segment vendors.

The Long Term Satellite product roadmap will include various features such as increased capacity and return path speeds that are expected to support large file transfers and real time video communications as detailed in this paper. The verification of the final product feature set and network capabilities will be determined once the vendor selection and contracts have been finalised.

NBN Co expects to continue consultation over the next few years within the health vertical, including Indigenous health workers and service providers to further refine future requirements across all technologies including satellite.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

**Question No: 6.1**

**Hansard Ref: In writing**

**Topic: Private Equity**

**The Committee asked:**

When will the NBN begin to provide a financial return on the Government's investment?

**Answer:**

Refer to NBN Co's Corporate Plan 2011-13, pages 133-134.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

**Question No: 6.2**

**Hansard Ref: In writing**

**Topic: Private Equity**

**The Committee asked:**

When do you expect that private sector investment in the NBN will be enabled?

**Answer:**

NBN Co expects to raise debt from the private sector from FY2015; this option becomes feasible as NBN Co will be in volume roll-out mode and will have established a proper 3-4 year financial track record by FY2015.



**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

**Question No: 8.4**

**Hansard Ref: In writing**

**Topic: Regional and Remote Issues**

**The Committee asked:**

Mr Wilson noted that about 50 per cent of the Northern Territory (NT) will be served by satellite or wireless, and that there is already a problem with the availability of satellite bandwidth in the Territory.

Does NBN Co agree with these views? If not, why not?

**Answer:**

NBN Co does not agree with the estimated figure of 50%.

The percentage of premises in the Northern Territory fibre footprint will be substantially higher and is likely to approximate the national average.

Given NBN Co intends to launch two KA Band satellites to provide NBN wholesale broadband services, current constraints on bandwidth are not relevant.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

**Question No: 8.5**

**Hansard Ref: In writing**

**Topic: Regional and Remote Issues**

**The Committee asked:**

Witnesses at the Broken Hill hearing in July 2011 believed that the region would be connected to the NBN fibre network in September 2011.

- What is the timeframe for connection to NBN for Broken Hill and surrounding region?
- If this deadline will not be met, when might the connection occur?
- What steps have been taken to inform the Broken Hill region about the current timetable for the connection of fibre?

**Answer:**

At the Broken Hill hearing, there had been some initial confusion between the Regional Backbone Blackspots Program (RBBP) —which was scheduled for completion in Broken Hill in 2011—and the NBN rollout. This confusion was cleared up following further information from NBN Co.

NBN Co will be releasing a 12-month rollout plan in the very near future and a three-year indicative rollout plan early next year.

We understand that communities—not only in and around Broken Hill, but right around Australia—want to be connected to the NBN as soon as possible. NBN Co cannot commence the rollout simultaneously across the country and has estimated that the fibre rollout will take nine and a half years.

NBN Co focuses its community engagement activities around the rollout of the network. It is committed to providing communications and stakeholder engagement activities, particularly for each Fibre Servicing Area Module (FSAM) prior to, during and after the physical roll-out of the NBN.

NBN Co also makes information available through a regularly updated website, media announcements, community-run forums, ongoing liaison with key stakeholders, and speaking engagements.

NBN Co also runs a Solutions Centre and a 1800 number to answer people's questions.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

**Question No: 8.6**

**Hansard Ref: In writing**

**Topic: Regional and Remote Issues**

**The Committee asked:**

At the Broken Hill hearing, several witnesses referred to the lack of community consultation by NBN Co.

- Is the company aware of this situation?
- What is it doing about it?

**Answer:**

NBN Co is aware of the comments made at the Broken Hill hearing and has made direct contact on this issue to ensure any confusion between the Government's RBBP program and NBN Co's network rollout have been resolved.

Please refer to the answer to Question 8.5 for further details of NBN Co's methods of stakeholder engagement.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

**Question No: 9**

**Hansard Ref: In writing**

**Topic: Consultation**

**The Committee asked:**

At the public hearing on 20 September 2011, Mr Quigley gave details of the education programs NBN Co will conduct. Can NBN Co provide details of the consultation programs it has held in regional and remote areas. Specifically:

- a) What consultations has NBN Co held with communities likely to be affected by the rollout of the NBN?
  - i) across Australia?
  - ii) in the Broken Hill region?
- b) What issues were raised with NBN Co representatives at these consultations?
- c) Were any communities concerned about the transition to the NBN, and a possible decline in existing services during its rollout?
- d) What measures has NBN Co taken to deal with any concerns that were raised during consultation sessions?
- e) Could details be given of the timing and locations of the range of education programs to which Mr Quigley referred on 20 September?

**Answer:**

a) NBN Co is undertaking communication and stakeholder engagement activities prior to, during, and after the roll out in each area in line with the Government requirement to provide Public Information on Migration (PIM). This is augmented more broadly through NBN Co's regularly updated website, media announcements, community-run forums, call centre, ongoing liaison with key stakeholders, and speaking engagements.

b) and c) A wide range of issues have been raised with NBN Co as it engages with stakeholders across the country. These have included the timing of the rollout, what actions property owners need to take, and the benefits of the NBN.

d) NBN Co seeks to deal with issues during the course of consultation sessions. Where appropriate, NBN Co has made direct contact with people who have raised issues after the event.

**Joint Committee on the National Broadband Network**  
**Answers to Questions on Notice**  
**Public Hearing 20 September 2011**  
**Broadband, Communications and the Digital Economy Portfolio**  
**NBN Co Limited**

In other instances, particularly in trial sites, NBN Co has incorporated lessons learned from consultations and other mechanisms into future rollouts.

(e) At the 20 September 2011 hearings, Mr Quigley referred to the PIM activities. As requested by government, NBN Co is undertaking these activities primarily to enable the smooth migration of customers to the NBN. The activities will be developed in consultation with the government, with Telstra, and with the wider industry. The PIM will cover fundamental questions relating to continuity of service, such as:

- when and how to migrate services from the copper network to an NBN based service
- what equipment and wiring (if any) is needed, and
- the nature of services available and what these will enable.

This is a major undertaking and a core activity for NBN Co. It will inform more than 13 million premises from now until the rollout is completed. Further details of these activities are still the subject of discussions among NBN Co, the Government, and industry stakeholders.