

Sky Muster™ Satellite Update

nbn Government Relations



This document is provided for information purposes only. This document is subject to the information classification set out on each page. If no information classification has been included, this document must be treated as UNCLASSIFIED, SENSITIVE and must not be disclosed other than with the consent of nbn co. The recipient (including third parties) must make and rely on their own inquiries as to the currency, accuracy and completeness of the information contained herein and must not use this document other than with the consent of nbn co.

© 2015 nbn co ltd. 'nbn', 'bring it on', and the Aurora device are trademarks of nbn co ltd | ABN 86 136 533 741



Agenda

- A brief history of **nbn**'s satellites
- Technical capabilities
- Recent upgrades and updates
- **nbn**'s Get Well Program
- Questions

Technology allocation across Australia

nbn uses a set of business rules when determining the technology for an area to meet the key objectives of:

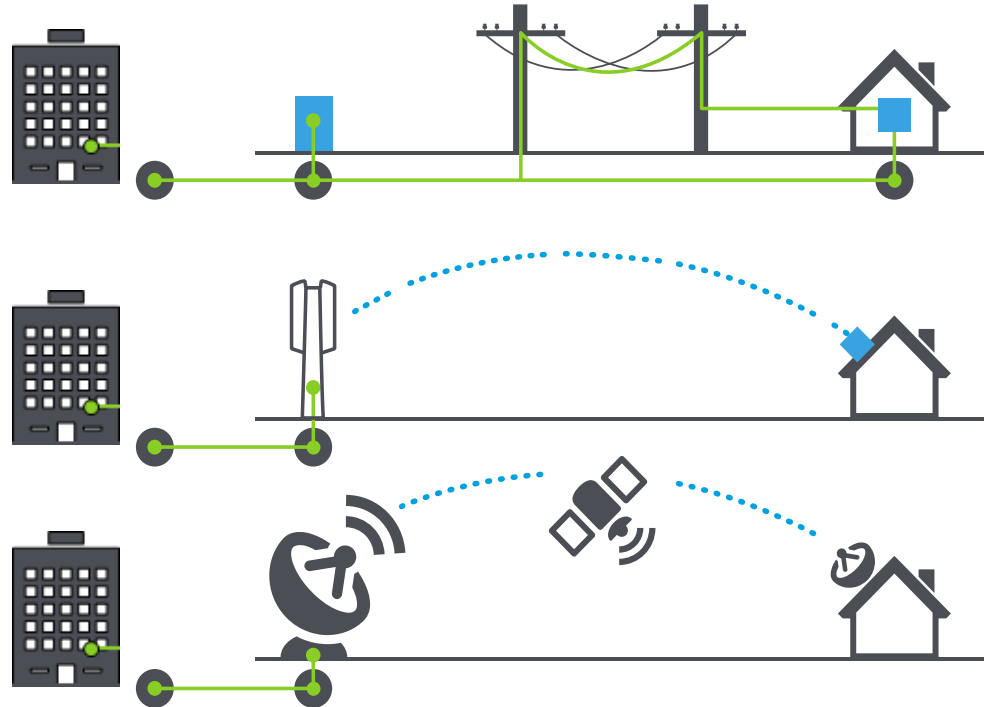
- delivering a minimum wholesale 25/5mbps
- using a mix of technologies best matched to each area
- building the network by 2020

Considerations:

- Density of premises
- Proximity to **nbn** infrastructure – backhaul, transit and exchange availability, etc.
- Existing infrastructure

Technology allocation – MTM

- Fixed line (92%)
FTTP, FTTN/B, HFC, FTTC
- Fixed wireless (5%)
- Sky Muster (3%)





A history of satellite services

- Contracts signed by Government in 2012 to deliver two satellites
- Interim Satellite service was delivered across existing satellites in 2011
 - Limited total capacity and restricted eligibility requirements
 - Retail speeds of 6MBps/1mbps
 - Oversubscribed experience



Sky Muster I under construction

Sky Muster™ launch



- Launched October 2015 and October 2016
- Services on sale from April 2016
- 10 RSPs in market
- 410,000 premises in footprint
- 240,000 assumed take up
- 76,000 premises currently connected

**N.B copper phone lines maintained in satellite (and fixed wireless) areas



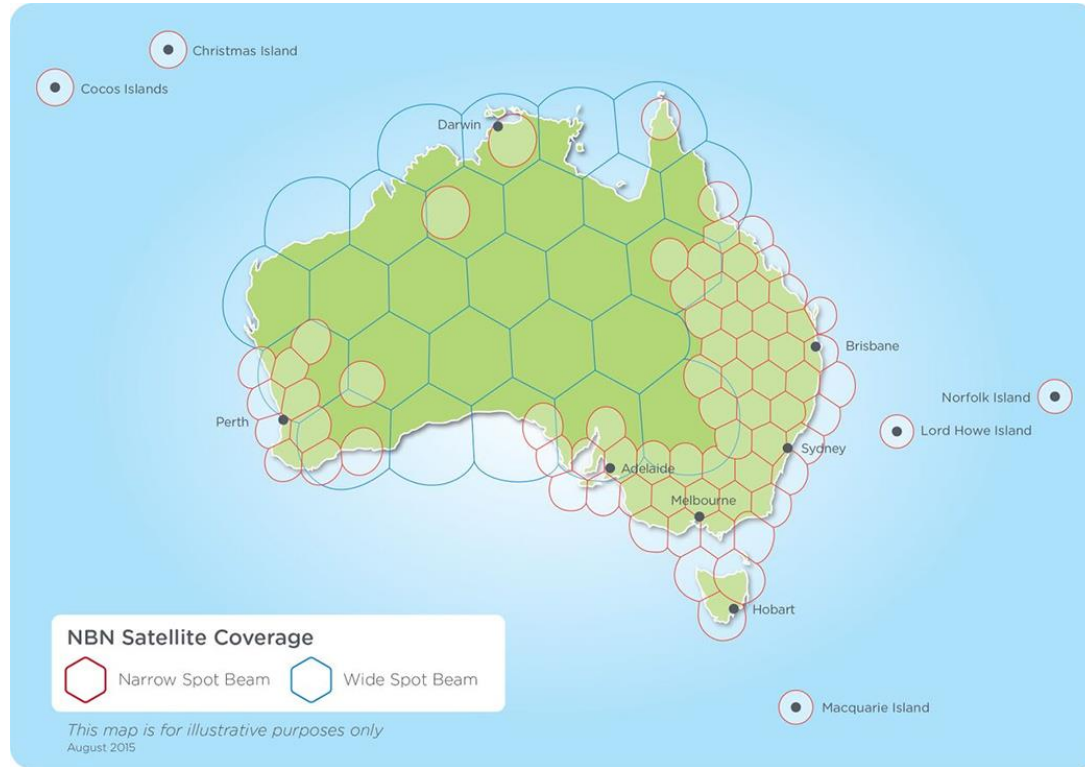
Sky Muster I launch in
French Guiana

Technical capabilities of the Sky Muster™



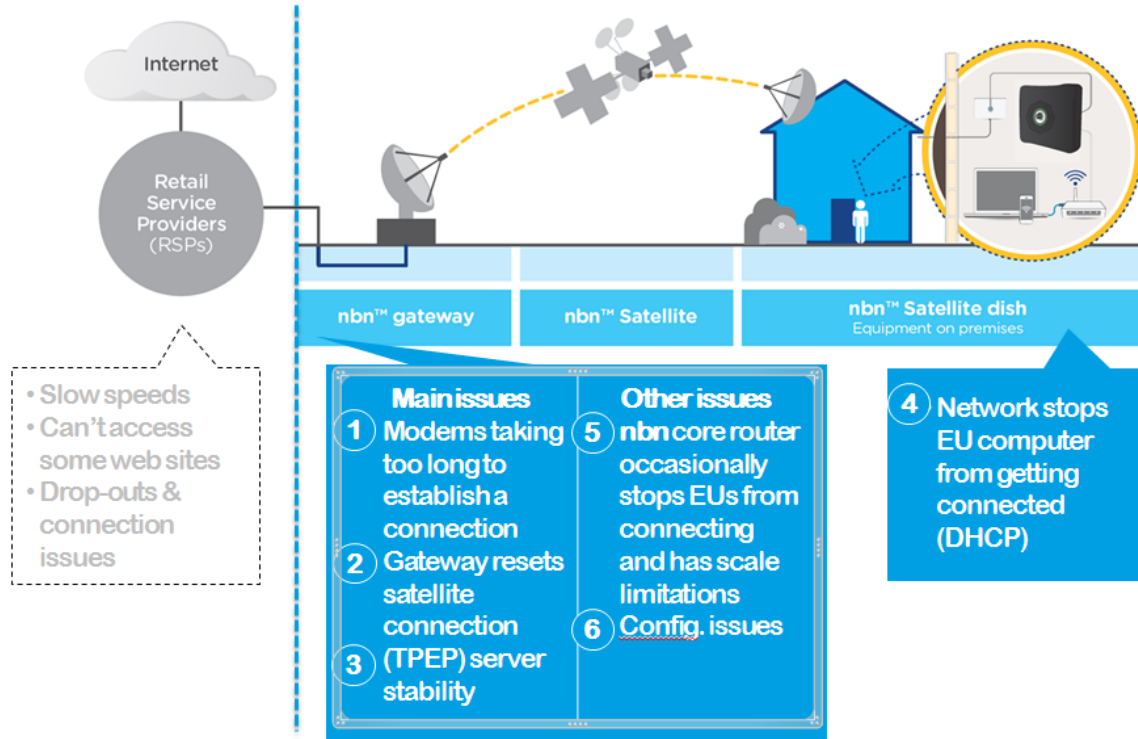
- Largest commercial satellites in orbit
- Located 36,000km above earth
- 410,000 premises in footprint
- Two speed tiers: 12/1mbps & 25/5mbps
- Beam divisions provide focus
 - Use 101 electromagnetic Ka-band beams to focus the service geographically
 - Tailored capacity distribution: smaller beams in higher population areas
- 10 x ground stations located in regional Australia – e.g. Bourke, Kalgoorlie & Roma

Spot beams across Australia





Recap: Sky Muster™ network issues





Focus areas of Get Well Program

- Activations
 - Same day activation of service – 8.3/10 for connect experience
 - Aged orders
 - 92% orders now done right first time
- User experience:
 - Network stability – from 60 outages/week to 1-2/week.
 - Delivery of 147 software upgrades to limit outages and improve experience
- Fixing problems once installed
 - Missed appointments → technicians turning up on time
 - Still some work to do

Sky Muster™ upgrades



- Previous FUP was determined before the satellites were launched
- Engineering improvements = total capacity increase from 130Gbps to 180Gbps
- Peak data doubled from 75Gb to 150Gb
- Total monthly data doubled from 150Gb to 300gb
- **= average user should see plans increase by ~50%**
- **nbn** has not increased the wholesale price to RSPs - encourage constituents to check with their RSP
- Where to next...
 - Business and education products over next 12 months

Challenges on Sky Muster™



- Finite capacity: Fair Use Policy
 - In place to help ensure fair access to the services over the new satellites – especially during peak-usage times.
- Pricing structure of plans
- Two speed tiers
- Latency → distance

Changes to nbn communications

Released under FOI Act - nbn.1718/62



- Regional Support team in call centre – 1800 687626
- Social media and community engagement optimised
- Improved outage notification
 - Voice recording
 - Outage webpage
- Marketing

Two posters from nbn. The left poster, titled 'High speed satellite internet has launched', features a night sky with a starry pattern and a small house with a satellite dish. The right poster, titled 'Thank you for your patience', features a person walking on a dirt road towards a sunset, with a satellite dish visible in the background. Both posters include the nbn logo and text about the Sky Muster satellite service.

High speed satellite internet has launched

The new nbn™ Sky Muster™ satellite service has arrived. Designed to deliver high speed broadband to regional and remote Australia, it boasts wholesale download speeds of up to 24Mbps. That's fast enough for you to enjoy a video call in one room, while someone surfs the net in another. This will revolutionise the way you do business, entertain and socially, and stay connected with friends and family. With Sky Muster™, the sky really is the limit.

Thank you for your patience

At nbn, we're committed to delivering high speed internet to rural and remote Australia. That's why we've now launched our second custom built broadband satellite, Sky Muster™ II. We acknowledge there have been some issues following the launch of our first satellite. We've worked tirelessly to resolve them and hope you agree we've come a long way - so every corner of Australia has access to a fast and reliable broadband network.

To learn more about how we've improved the Sky Muster™ satellite service, visit nbn.com.au/skymuster

Contact a Sky Muster™ service provider today

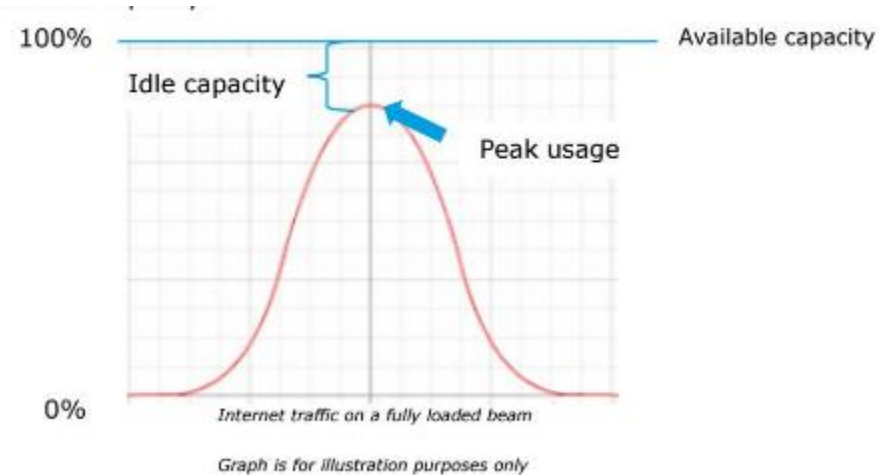
For more information visit nbn.com.au/skymuster

Partnership may vary depending on a range of factors including past broadband speed, service, signal quality and equipment.



How does the Qantas trial fit in ?

- **nbn** working with Qantas to provide inflight WiFi
- Opportunity for quick product development, without diverting **nbn** resources
- Purpose is to develop a mobility product with future uses
 - Nomadic services
 - Royal Flying Doctors
- **nbn**'s #1 priority is bona fide Sky Muster users on the ground
- However, there is idle capacity in each beam





Questions