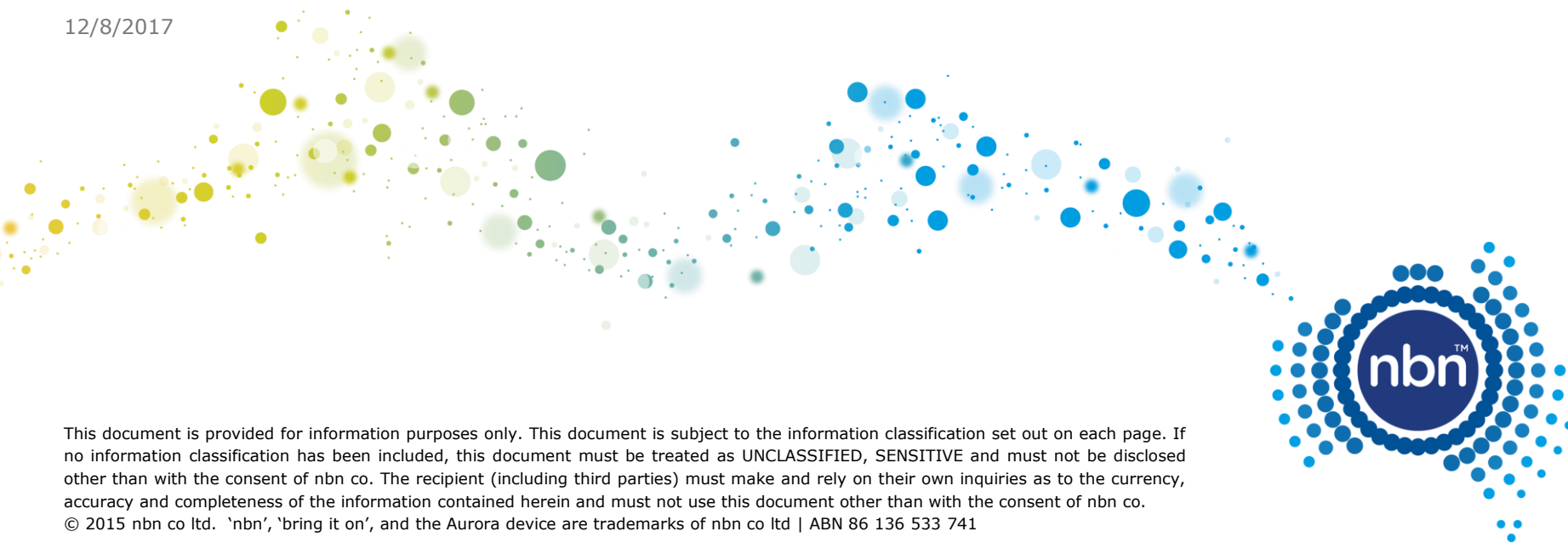


nbn™ HFC Update

nbn Government Relations

12/8/2017



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Agenda

- Introduction to HFC in the MTM
- Components of the HFC network
- Rollout of the HFC Network
- HFC Pause announcement
- 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:

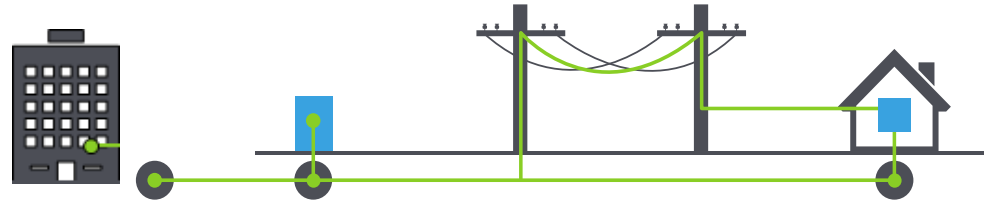
- delivering a minimum wholesale 25/5mbps
- using a mix of technologies best matched to each area
- building the network by 2020

Considerations:

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

Technology allocation – MTM

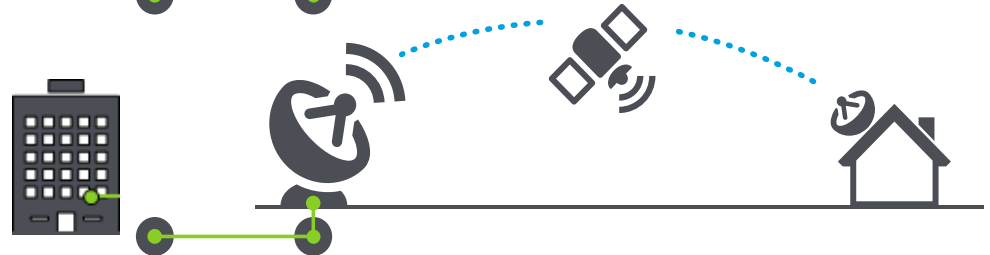
- Fixed line (92%)
FTTP, FTTN/B, HFC, FTTC



- Fixed wireless (5%)



- Sky Muster (3%)



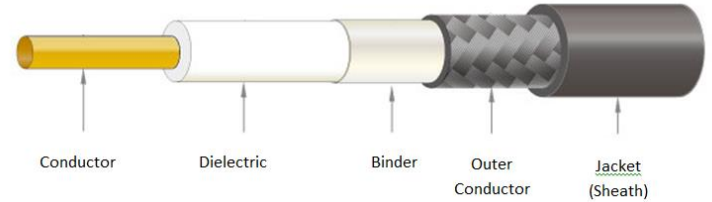
What is Hybrid Fibre Coax (HFC)?

- HFC networks installed extensively during the 80s and 90s to deliver Cable (Pay) TV services
- Originally downstream service only → growth in broadband
- **D**ata-**O**ver-**C**able **S**ervice **I**nterface **S**pecifications
- Currently available via Telstra and Optus Nationally
- **Nbn** is only using the Telstra



Why HFC?

- **HFC is a leading Broadband delivery method around the world**
- around 140 million subscribers worldwide, **roughly 20%** of total broadband subs.
- DOCSIS 3.0 services are currently delivering **100Mbps+** services in over 30 broadband markets
- Using DOCSIS 3.0 services operators are already offering services of **500Mbps**
- Launch of DOCSIS 3.1 services: **1Gbps**





Key HFC components

Exchange: CMTS
(Cable Modem Termination System)



RF Tap
Aerial tap



Tap in pedestal



RF amplifier
Aerial amplifier

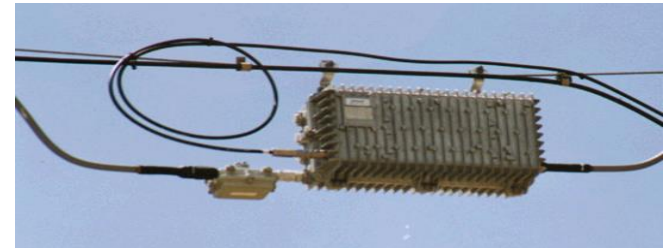


Amplifier in pedestal



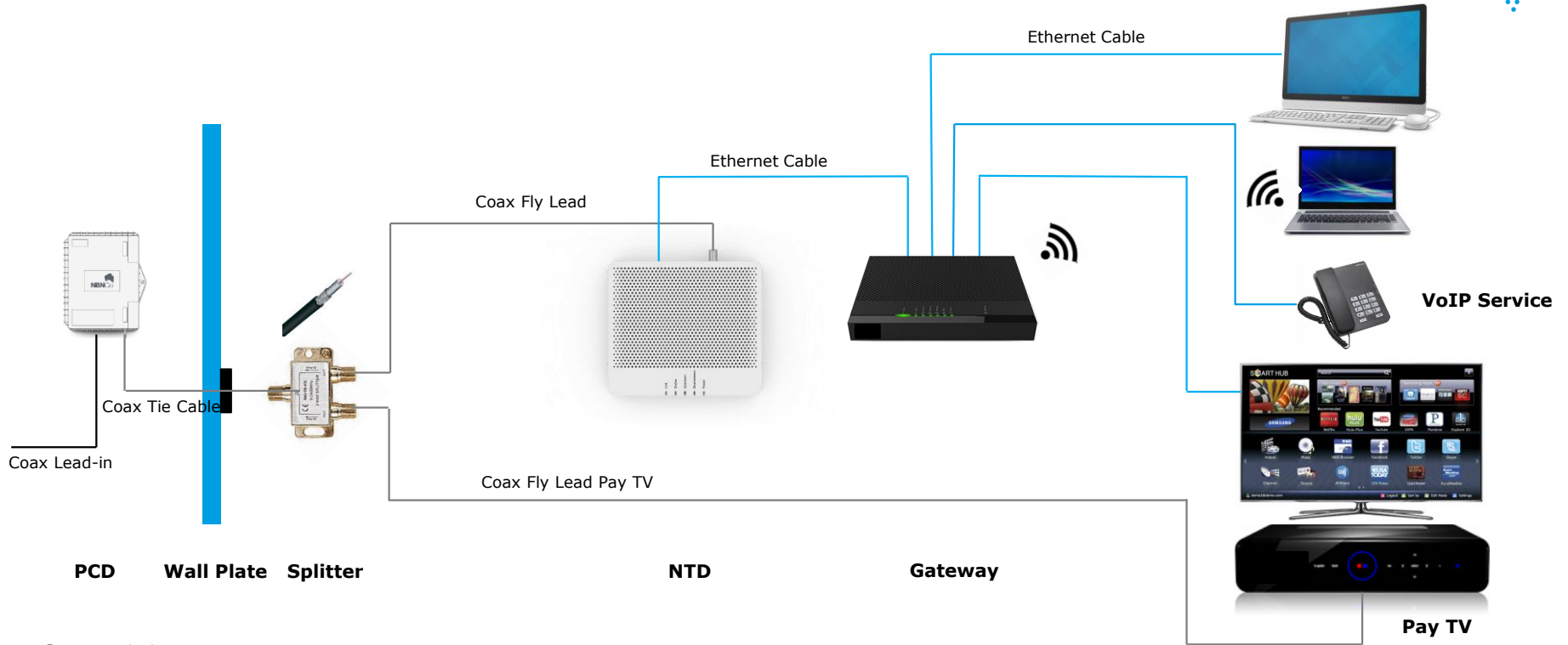
Fibre-optic node / hub

Aerial example





In Home Connection Set-Up



Pause announcement

- Pause on connection, rollout and activation across all HFC areas
- What happens to your constituents:
 - Already connected to the nbn HFC network: no impact
 - In a live area, have not yet connected: No new orders progressed
 - In a construction area: pause applies
 - Construction yet to commence: pause applies
- Redirection of our crews back to live areas
- Correspondence to affected premises
- Rollout remains on target for 2020 completion

Pause announcement

- Pause on connection, rollout and activation across all HFC areas
- Frequency impacted
- Leakage points
- F-Type connectors change out
- Installation of lead-ins where necessary (elimination of SC20 & SC21s)



Questions



Questions