May 15, 2011

Committee Secretary
Joint Committee on the National Broadband Network
Parliament of Australia
PO Box 6021
Parliament House
CANBERRA ACT 2600

A submission in relation to NBN, existing fibre deployments and future non-NBN deployments and interoperability with NBN.

The purpose of this submission is to highlight some potential issues in relation to the NBN roll-out and NBN interoperability with existing and future fibre roll-outs by Telstra and others. It potentially could affect 200.000+ homes.

Informal talks with NBNCo, Foxtel, Senator Conroy's office and other interested parties, have exposed an issue with NBNCo in relation to existing and new housing estates with existing fibre deployments.

The issues could cause, at best some inconvenience and additional cost to end users, at worst create an unsustainable situation where end users will be forced to choose between services provisioned over the NBN or other providers including Telstra. These issues could in some instances lead to developers having to roll out dual fibre infrastructure or attempt to change covenants on housing estates for properties and estates already being built or completed.

The following points highlight some facts as they stand.

- NBN decided not to provision for RF Overlay when they designed the network.
- All new and existing fibre deployments in various estates have RF Overlay with FTA and many have Pay TV services like Foxtel.
- One of the biggest suppliers of fibre deployments is Telstra with their Smart Communities offering.
- NBN have made it clear that they will not join any existing fibre network to their network without taking full control of any such existing fibre network, in other words they will replace any existing equipment with their own and re-use the fibre.
- A number of developers are attempting to, or have developed "clean roof" estates where house owners are not permitted to install any satellite dish or antenna that is visible from the street.
- Given the current state of affairs, as listed above, end users could end up being faced with a choice between service providers using the NBN network OR a service from someone who provides RF Overlay and any service provider that may be supplying services through the fibre.

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- Foxtel may be left without a delivery platform for cable services, forcing everybody onto satellite, unless they are in an area covered by the existing HFC network AND Foxtel makes an agreement with Telstra to continue using said HFC network.
- A new estate could be faced with serious issues if they have built a network with RF overlay and have no supplier of basic telephone services, calling for NBN to be a provider of last resort.

Given that Telstra has yet to make an agreement with NBNCo on the use of Telstra assets and the uncertainty surrounding what Foxtel and Telstra will do in relation to the HFC network, there are some difficulties making assumptions about what may happen.

The current state of affairs is certainly not ideal when the desire is to build a "standard" network that works the same for everyone where ever they reside, at least for the part of the network that is based on fibre to the home.

Telstra fibre builds.

Telstra has a large number of end users connected to their fibre deployments through their "Telstra Smart Communities". There will be an immediate problem if Telstra comes to an agreement with NBNCo and decides to merge their fibre networks into the NBN network. It is not likely that NBN would "overbuild" these "Smart Communities" as that would not make sense financially. In simple terms, NBN would replace the ONT (Optical Network Termination) device at the customer premises and the end-user would have access to all service providers using the NBN, however the end-user will loose their Free To Air TV signals as well as any Foxtel service provided through the fibre.

One could argue that Foxtel should find another way of supplying their customers and that it is not, and should not be of concern to an entity like the NBN. And Foxtel can indeed supply customers another way, via satellite, unless the end user happens to be in a location where the HFC network is available and Foxtel and Telstra come to an agreement to continue using this network.

Telstra will obviously need to charge more than now for Foxtel to use the HFC network as Foxtel will be the only user once Telstra have migrated all their Broadband customers to NBN as part of the new regime.

Then there is FTA television. This is a much more sticky point. Many people have FTA TV supplied over fibre infrastructure in estates simply because the antennas required in many areas would be very large to get a usable signal and in some insistences there is no practical way of getting FTA due to the location of an estate. What do these people do?

Some FTA programs (If not all) are carried on satellite, leaving one alternative but who is going to pay for these extra satellite dishes and receivers.

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Other fibre builds.

There are an number of other companies who have deployed fibre networks in various estates. One of the larger builders is Opticom. These networks generally have FTA TV signals distributed on the fibre but no Foxtel as Foxtel only seem to have agreements with Telstra for distribution on fibre outside of the traditional HFC coverage area.

There are some locations using technology where a central satellite dish is used, the signals from Foxtel are then converted from DVB-S to DVB-C and distributed on the fibre, still using RF overlay. Foxtel then supply standard Foxtel set-top boxes for end users. These deployments are not common though.

Common for all builds is that RF overlay is part of the build so as to allow access to FTA TV without requiring an antenna.

Other considerations.

One very important issue will be with house owners who have purchased property in estates where the provision of FTA TV and possibly other services, are part of the purchase contract.

If an end-user has purchased a house where FTA TV is part of the contract, how can the NBN "take over" without supplying RF overlay?

Short of overbuilding the existing network, this is an issue that will need to be looked at. Unless NBNCo changes their policy on RF overlay, they will effectively exclude them selves from supplying services in a number of estates with existing deployments. This in turn means that a number of users will miss out on access to NBN and NBNCo will have less potential customers. This may not be a large issue but NBNCo needs all the customers it can get

Currently many of the fibre deployments, that are not part of a "Telstra Smart Community", lack phone services through the fibre. In these instances Telstra are using copper to supply the standard services.

At this point in time it is unclear how residents in these estates will be guaranteed a phone service once the copper network is decommissioned. The supplier or owner of the fibre network would need to find a way of connecting the network to the public switched telephone network so provisions would need to be made to allow for this to happen, unless NBN can interface with the network.

Where to from here.

It is obvious that these matters are quite complex and that what happens in one area can affect other areas.

Many observers state that the future is IPTV. This is certainly true in a scenario where material like music and videos are sought in an on-demand fashion, not unlike some of the new initiatives like FetchTV and other on-demand services.

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However, IPTV in a broadcast scenario (Multi-casting) is very difficult to do properly and is a very costly exercise. RF overlay is a technology which is well suited to broadcasting of many channels and receivers are readily available at competitive prices. IPTV requires a computer or a TV with built-in IPTV capabilities or a special set-top box that will convert the IPTV to a usable signal for the TV. RF overlay does not take up any bandwidth from the IP network.

When discussing FTA TV, Free TV Australia has made it clear that they do not want an NBN to be a conduit for their broadcast programs. They will certainly not broadcast their programming over IPTV using multi-casting.

Their main argument is that they are a Free To Air broadcasters and any attempt to use a "closed" network like the NBN would take the Free out of Free To Air broadcasting because users of NBN would need to pay something to get access to the programming which is counter-productive to their argument.

That not withstanding, a lot of people are happy to pay to have the convenience of FTA delivered through a cable rather than having to put up their own antenna. We do not see Free TV Australia hunt down suppliers/operators of fibre networks with RF overlay or old fashioned COAX cable networks (HFC) to have the practice stopped. In fact it is claimed that the broadcasters pay Foxtel a fair bit to have their programming carried on the Foxtel satellite service. This is presumably to prevent FTA broadcasters from being "left behind" by viewers who have a Foxtel subscription.

The Commercial FTA broadcasters want as many eyeballs on screens as possible as that is what makes their business viable.

Whether RF overlay should be built into an NBN is, as it stands, a commercial decision as RF overlay has not been mandated by the Government.

The decision not build RF overlay capabilities into the NBN could turn out to cause more problems than what was originally thought.

It is understandable that NBNCo will want to have full control over every network segment that they are responsible for. They have to maintain and run the network and will want to know the equipment used and have full control over it.

Consideration should be given to regulating the use of RF overlay to the point of NBNCo being required to provide RF overlay capabilities in situations where they take over existing fibre infrastructure where RF overlay is in use. This should be without financial penalty for the estate, any body corporate or end users.

Any new estate that wishes to provide a clean roof policy or simply wishes to offer TV signals on cable/fibre, should be able to do so. It is suggested that a reasonable price be paid by a developer to NBNCo for such provisions as a developer would otherwise need to deploy a separate network which is likely to cost more than what NBNCo would charge to provision RF overlay. Should Foxtel want to use the RF overlay to reach customers, there could even be additional business for NBNCo.

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It would be fairly trivial from a technical point of view to simply deploy ONT devices with RF overlay, in fact the early test sites have ONT devices with RF overlay built in, even though RF overlay signals are not present at these deployments.
It is likely that existing RF overlay injection points can be used as is, making the transition very simple.

The reason why this is quite simple is due to the fact that the GPON standard reserves the 1550-1560nm wavelength for RF overlay so there will be no impact on any other part of the NBN distribution. If NBNCo takes over an existing network, all optical losses have already been accounted for as the existing network would be working correctly.

In summary, The Committee may want to make enquiries on some or all of the issues raised here, especially how to handle the RF overlay issues discussed. Some may have been raised by others but for any that have not it would be appreciated if they are included in the Committee work.

A sensible solution would be for NBNCo to do RF overlay, voluntarily or through regulatory intervention, where required to solve the issues raised for existing RF overlay deployments.

It would certainly expand the number of customers that may be reached at a low capital expenditure and could also speed up deployment in some areas. It would solve most, if not all issues raised.

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