Telecommunications USO Towards 2030

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About Great Northern Telecommunications

- Great Northern Telecommunications has 31 years Telecommunications Network Planning, Design, Construction & Operations experience in Western Australia.
- Director Andrew Mangano was responsible for the planning and technical management of Telstra's high cost and remote area service connections from 1991 to 2000.

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Background

- Telstra is the current monopoly telecommunications provider of USO services. Most USO services are on long copper, but many on 2 channel radio or HCRC, and some on optical fibre, typically large aboriginal communities.
- Rural copper, 2 channel radio and HCRC at end of life.
- Mobile network coverage of rural and remote areas is highly variable.
- NBN Satellite subject to latency, weather, congestion, and the 2 satellites will need to be replaced in 2030 and 2031.
- Negligible growth in voice traffic, however, data traffic growth continues.
- Higher data throughput is required.

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What should the USO be?

- USO technology must not affected by weather or radio path issues, which result in low availability.
- USO technology should have low power requirement, to minimise battery backup requirement.
- USO technology needs to have acceptable latency for voice, and also data.
- USO technology needs to have high baseline capacity, and scalable for future growth.
- **Need a long term, long lifespan solution that provides voice and data services, that is scalable, and provides equivalent and universal service.**

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Technology options to deliver USO

- Copper – ok for voice, not suitable for data over long distances without many intermediate repeaters.
- Mobile – subject to terrain issues, spectrum limitations, limited coverage per cell, prone to congestion.
- Radio – subject to terrain issues, trees, spectrum limitations, distance attenuation issues.
- Satellite – very limited spectrum, high latency, weather effects, congestion, high power requirements.
- Optical fibre – few technical limitations, but expensive to deploy, predominantly due to trenching costs.
- **Optical fibre is preferred, and is already used by NBN, but how can it be built to every rural customer in Australia at a reasonable cost?**

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It’s been done before.

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Part Privately Erected (PPE) Lines

- PPE lines were introduced to extend services to rural subscribers located far from local rural telephone exchanges.
- The lines consisted of a PMG section constructed from the local telephone exchange out to the prescribed maximum length, which connected to a privately erected section extending to the subscribers.

A 21st Century version of PPE

- In ground optical fibre cable.
- Standardised design.
- Built by accredited contractors.
- Funded by rural customers.
- Each customer funds the build from the upstream customer's property boundary to his/her downstream boundary (i.e. the frontage of his/her property)
- Each customer also funds their own lead-in.
- Gifted to NBN (or other carriers) for long term operations and maintenance.
- **Customers have "skin in the game".**

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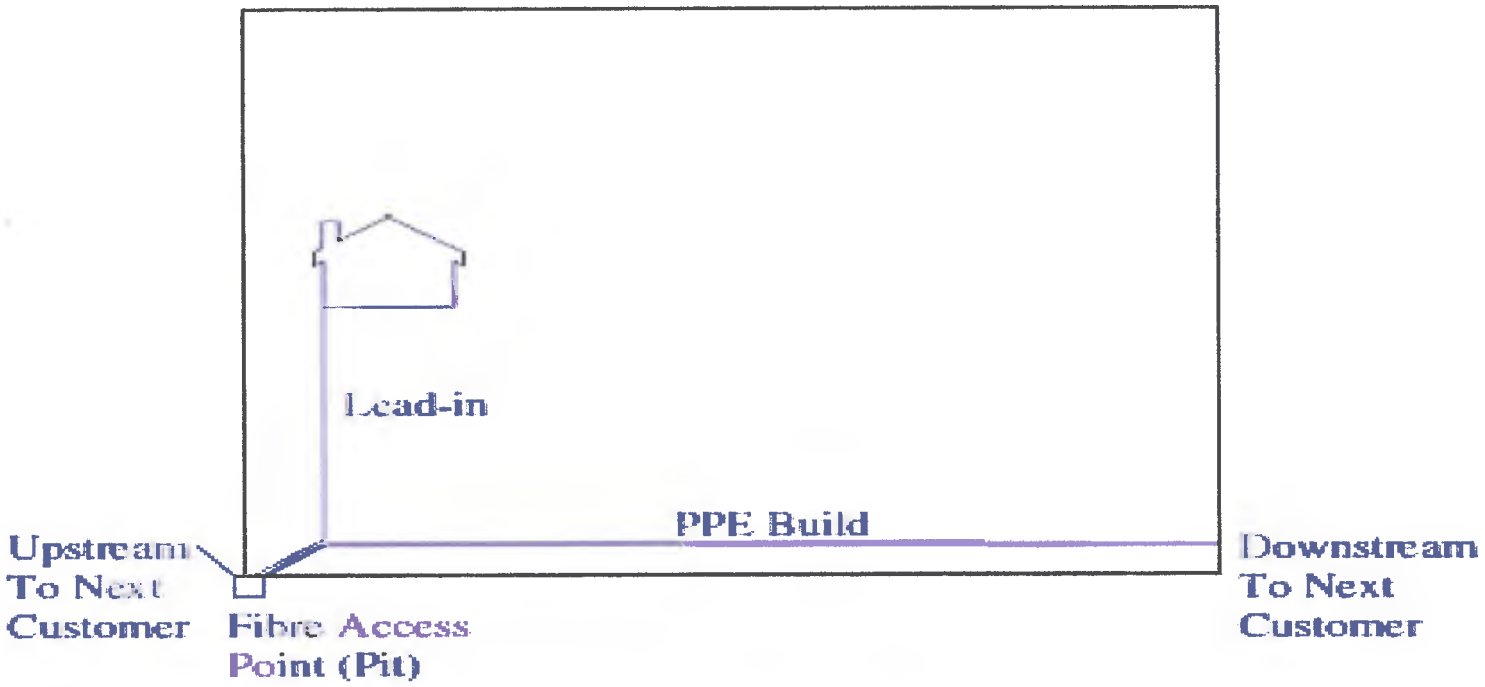
Typical PPE Build



Typical PPE Build

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Benefits of 21st Century PPE

- Significantly less cost to taxpayers.
- Creates local employment.
- Farmers can open trench with own machinery.
- Provides rural customers with equivalent service.
- Highly scalable to allow for future technologies.
- Long lifespan solution – greater than 50 years.
- NBN Satellite can be deloaded.
- **Rural copper, HCRC, 2 channel radio can be retired.**

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Summary

- Optical fibre is the preferred universal service technology.
- 21st Century PPE delivers FTTP in rural areas.
- Rural customers have "Skin in the game".
- Taxpayers are not imposed with a large cost burden.
- Creates local employment. Customers can assist in construction.
- NBN Satellite can be deloaded and only used for the most remote locations (eg Islands), and interim data services.
- **Provides rural Australia with world-class telecommunications and assists Australia to remain globally competitive.**

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