



Network & Technology
Fundamental Planning

Procedure

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Measure of TEA Model Efficiency

ULLS Band 2

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1. PURPOSE

The purpose of the study is to assess the efficiency of the TEA Network Model design relative to the existing Telstra Network through comparing the quantities of actual plant deployed in the Telstra Network to those modelled in the TEA Network Model.

2. SCOPE

The scope of this study is restricted to

- ULLS Band 2 ESA's
- TEA Model V1.2

3. METHODOLOGY

The following steps are undertaken to assess the efficiency of the TEA model.

1. Measure Telstra's CPR2 Inventory records using each of the metrics defined in Section 3.1 of this document.
2. Measure the TEA Model output using each of the metrics defined in Section 3.1 of this document.
3. Compare the TEA and Inventory version of each measure to determine the efficiency gain using the following formula:

$$efficiency(\%) = \frac{Inventory - TEA}{Inventory} \times 100(\%)$$

3.1. ESA Base Metrics

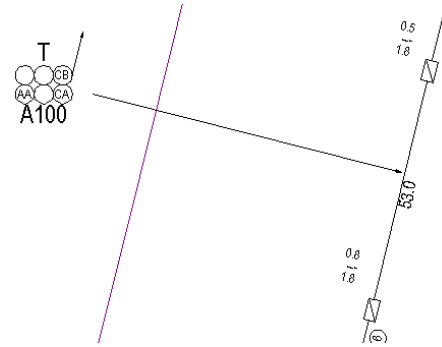
The following metrics are used to assess the existing network.

Metric	Definition	Unit of Measure
Trench km	Sum of distances between structure points	km
Manholes	Count of Manholes	Manholes
Pits	Count of Pits	Pits
Cable Sheath km	Total length of cable sheath sections	s.km

3.2. Example (Part of Network)

The following example illustrates the calculation of the metrics defined above.

c8:M1-1800 1800 CPIUT MB (AA)
c5:M1-1800 1800 CPIUT MB (CA)
c17:M801-1200 400 CPIUT MB (CB)
c3006:AAF-AAS/1-24 24F/- SIMOF FNPEHJ (CB)
CBN CABLE (CB)



For between the two manholes shown above:

- Trench km = $53/1000 = 0.053\text{km}$
- Manholes = 2
- Pits = 0
- Cable Sheath Km = $3 \times 0.053\text{km} = 0.159 \text{ s.km}$

4. RESULTS

The following table provides a summary of the measures from both the TEA model and the CPR2 Inventory system as well as the calculated efficiency of the TEA model for each of the metrics defined above.

Metric	TEA Measure	Inventory Measure	Efficiency
Trench km	111,516	170,291	34.5%
Manholes	28,320	168,933	83.2%
Pits	3,057,743	3,860,630	20.8%
Cable Sheath km	162,276	375,482	56.8%

5. DEFINITIONS

The following words, acronyms and abbreviations are referred to in this document.

Term	Definition
TEA Model	Telstra Efficient Access Model
ESA	Exchange Service Area
CPR2	Cable Plant Records version 2. Telstra's geospatial inventory database for all external plant.