Modifications Included in TEA Version 1.1

Telstra has made several modifications in Release 1.1 of the TEA Model. The net impact of these changes is a reduction in the monthly cost estimate of an unbundled local loop (ULL) in Band 2 of $0.66 from $49.27 to $48.61. Following is a brief description of each of the changes.

COST CALCULATION MODULE

Cost Calculation Main

- One half the cost of the ironwork for the MDF blocks is now assigned to CAN. Previously, 100% was assigned to CAN.

Cost Calculator Distribution

- The calculation of the cost of joints at serving pits (Line 29 Column G) previously added together "# Cables Joined at Each Pit" (Line 21 Column C) and joint "Enclosure Cost Per Pair" (Line 29 Column F). It now adds the "joining Rate" per pair (line 29 Column D) and the joint "Enclosure Cost Per Pair" (Line 29 Column F).
- In previous calculations of the fully loaded cost of placing number 5 distribution pits in normal terrain (Line 38 Column D), the cost of placing a pit in rocky terrain from the Inputs Cost and Rules worksheet (Line 117 Column D) was mistakenly used. The cost of placing pits in normal terrain (Line 117, Column C) is now used.

Investment Summary Worksheet

- The formula for calculating the total cost for "Pair Gain Systems" (Line 22) now includes the cost of the "Fibre Terminating Frame" on Line 21. The original calculation omitted this amount.
- The formula for calculating the total cost for "Copper Cables - Distribution" (Line 35) now includes the cost of the "Air Compressor" on Line 34. The original calculation omitted this amount.

Costs inadvertently omitted from the original model

- The cost of voltage protection cassettes are now added to the cost of the Siemens MDF Block on the Cost Calculator Main worksheet. This was inadvertently omitted from Version 1.0.

- The cost of Customer Lightning Protection (CLP) and the associated guard wire are now incorporated into the costs developed in the Cost Calculator-Distribution worksheet. These were inadvertently omitted from Version 1.0.

Costs inadvertently included in the model

- Version 1.0 of the Distribution Costs worksheet inadvertently included a cost for cable and hauling the cable for a 2-pair lead-in. These costs only apply if the lead-in exceeds 20 metres so they have been removed from the calculation of the cost for 2-pair lead-ins.

Model revisions correcting input references

- In Version 1.0 of the Cost Calculator - Main worksheet the cost for Initial Structure for the Air Compressor and the Joint Enclosure Cost for joints for 24 fibre cables did not reference the correct input. Both these references have been corrected.

SUMIF FUNCTION

In its 8 July 2008 letter to Telstra, the Commission correctly identified an error regarding use of the SumIf function in the Engineering-Main Module of Version 1.0 of the TEA Model. As stated in the Commission's letter: "The effect of the error is that in testing which records to sum on a route identified by 16 digits, only the first 15 digits are tested in the Excel SumIf formula."

This error in the Engineering-Main Module has been fixed. The details of this change are explained in the detailed documentation of TEA Version 1.1.

MAIN CABLE ROUTING

The Commission's analysis of TEA's Main Cable provisioning uncovered a methodological problem, which, when corrected, resulted in a slight reduction in overall costs for the Main Cable Network. The problem and correction are outlined below.

In the past, Telstra's Main Cable Network was constructed with Cabinets, an intermediate cross connect point between Pillars and the Exchange building. These Cabinets serve as points of aggregation between Pillars and the Exchange. In a typical configuration, cables feeding 3 or 4 Pillars are routed to a Cabinet where the cables are aggregated into larger Main Cables on the way back to the Exchange building. At the time this network design was in use, this configuration comprised the most efficient Main Cable Network architecture. As communities grew larger and demand for telephony became more ubiquitous, this intermediate point of aggregation became superfluous. Current and forward-looking network architecture does not make use of intermediate Cabinets in the Main Cable Network.

Telstra's current Main Cable Network includes both Cabinets and Pillars. TEA, on the other hand, provisions a forward-looking network architecture, which does not make use of Cabinets. The TEA Model examines Telstra's entire current Main Cable Network and identifies and provisions a shortest path Main Cable network using this extensive inventory of Main Cable routes. Cabinets are eliminated from the network design during this provisioning process.

The Commission's analysis of TEA's routing, uncovered inefficiency in the TEA Version 1.0 methodology used to eliminate Cabinets. Put simply, for Pillars and building terminals which are currently fed by Cabinets, TEA's Version 1.0 methodology selected the shortest routes from Pillars and building terminals to the Cabinet, which are removed; and combined these routes with the shortest path from the location of the former Cabinet to the Exchange building.

An unintended consequence of this method of incorporating the savings from eliminating Cabinets is that in a few instances the modeled main cable routes serving distribution areas previously served by Cabinets run away from the Exchange building for a short distance until they pass through the location of the former Cabinet. This phenomenon is the cause of the reverse direction routing discovered by the Commission. In these instances, it is possible to design a more efficient route from a formerly Cabinet fed Pillar or building terminal directly to the Exchange building bypassing a portion of the path to the former Cabinet.

We have changed the routing methodology for formerly Cabinet fed Pillars and building terminals to correct this problem in a modified Engineering-Main Module, which is included in TEA Version 1.1.

DISTRIBUTION

As foreshadowed in our previous response to the Commission, we have further scrutinized the TEA Distribution Network design to assure that the distribution cable routes are least distance routes. Our analysis confirms that TEA selects least distance routes in network design. Nevertheless, we have made two changes as a result of further analysis.

The first change, a change to the base data, is minor. We identified a small number of Distribution Areas in our review (233 out of 45,000), all of which are Cabinet fed, as candidates for possible alternate routing scenarios that would convert a few distribution fed customers to a main cable feed. However, given the small cost impact of this change, and to avoid delay, we have chosen a conservative approach, which removes these distribution routes entirely without substituting an alternative serving arrangement. This approach results in an understatement of the cost of serving these Distribution Areas. We have chosen this approach, even though we have not taken the significant time required to evaluate whether a main cable feeding arrangement would be more efficient, to eliminate any semblance of doubt related to the model's efficiency.

The second change, a change to Telstra's default inputs, is more significant. We now believe there are more efficiencies inherent in the TEA Model network design than previously realized. Specifically, the TEA model's network provisioning process incorporates the sharing of trenches between separate, distinct cable routes, when least distance routing allows. We have calculated the total length of trench sharing inherent in the TEA network design, and will increase the amount of sharing included in our default model inputs going forward, so that our proposal reflects the maximum level of potential sharing. Our new default inputs, which are forthcoming, will more completely reflect the efficiencies inherent in the TEA model's network provisioning process.