

Technical Advice on connection charges for the  
ULLS, LSS and WADSL services:  
Initial Report (Replacement  
Public Version)

Australian Competition & Consumer Commission

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## EXECUTIVE SUMMARY

### Background

The ACCC is undertaking a public inquiry to make final access determinations (FADs) for the declared fixed line services. UXC Consulting has been engaged by the ACC to provide technical advice that will assist the ACCC in setting the connection charges for these services.

### Scope

The scope of works requires UXC Consulting to review the original cost models for Line Sharing Service (LSS) and Unconditioned Local Loop Service (ULLS) connections to estimate charges. This has required UXC to:

Update the inputs to the existing cost model by undertaking an update to the original 'time and motion like' study and investigating whether any of the existing assumptions should be updated, such as for new practices or procedures to do this work efficiently; and

Extend the existing model to estimate the costs of connections and disconnections in relation to the wholesale ADSL service.

We have reviewed ACCC documentation and costing information from previous regulatory processes, which has informed:

our consideration of updates and changes to the cost models used to date to determine the ACCC's regulated charges for the ULLS and LSS services; and

the development of an appropriate model to estimate connection charges for the wholesale ADSL service.

We have also reviewed information provided by Telstra both formally by letter and informally in meetings with the ACCC and UXC Consulting. That information has also informed development of the updated model as follows:

revised costs for direct contracting rates for jumpering, travel, vehicle, tool and material costs and associated contractor-related overhead costs [c-i-c starts] [REDACTED] [REDACTED] [c-i-c ends];

retention of the cost structure and costs for Telstra's indirect costs for contract management and back-of-house costs as contained in the original ACCC models; and

use of Australian Bureau of Statistics (ABS) industry-specific indices for escalation of Telstra's back-of-house labour costs from the original models.

We have also relied on our own experience and knowledge of Telstra's networks.

### Outcomes

#### Development of Updated Model

UXC has made a number of revisions to the original modelling, including:

The original individual models for (i) single LSS connections, (ii) single ULLS connections, (iii) LSS Managed Network Migration (MNM) connections and (iv) ULLS connections have been consolidated into a single model. The update has also included models for wholesale ADSL Type A connections, Type B connections and all other types of wholesale ADSL completed connections;

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Telstra has significantly changed its management of external contractors. Those changes are, among other things, intended to materially improve the efficiency of the direct activities involved in connection activities;

the updated model assumes all work activities that UXC considers necessary for the connection of the included services are carried out by contractors;

the model excludes the costs associated with the additional activities as described by Telstra in establishing connection/disconnection charges for ULLS, LSS and wholesale ADSL services;

the model no longer includes single LSS disconnection prices, on the basis that disconnection activities are undertaken as part of contemporaneous connection activities. This approach brings this assumption for single LSS connection activities in line with single ULLS connection activities;

“Wholesale ADSL Type A” simply involves an administrative procedure confined to back of house activities;

“Wholesale ADSL Type B” and “All other (wholesale ADSL) completed installation or transfer requests” are analogous to an LSS service connection;

the updated model provides for band-based pricing for single LSS connections, single ULLS connections and wholesale ADSL connections (except Type A):

- o due to the uniformity of input costs disaggregation across Bands 1 to 4 has not been applied to LSS and ULLS MNM connections; nor has it been applied to Type A wholesale ADSL connections;

given that Telstra is now [c-i-c starts] [REDACTED] [REDACTED] c-i-c ends], UXC Consulting expects that there would be a material reduction in those internal costs. However in the absence of any substantive new information, the 10% uplift on contractor costs in the model to cover the contract management costs incurred by Telstra has been retained; and

A single figure of 8 minutes has been included for single LSS and single ULLS Digital Activation Centre (DAC) activity (previously 4 minutes for LSS DAC activity).

## Model Outcomes

With one possible exception the model outcomes confirm that Telstra’s revised contractor arrangements appear to have resulted in significant efficiencies in the connection of LSS, ULLS and wholesale ADSL services. Specifically:

For each of the LSS and ULLS connection charges (whether single or MNM) the updated model has produced consistently lower estimated prices, ranging from ~9% (single LSS Band 1) to ~26% (LSS MNMs) for the 2015/16 year;

The inclusion of wholesale ADSL services has reduced Type A connection estimated prices by ~8%, with reductions of ~40% (Band 4) to ~46% (Band 1) for Type B and all other connections in the 2015/16 year.

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# 1. BACKGROUND

## 1.1 Introduction and Objective

The Australian Competition and Consumer Commission (ACCC) has engaged UXC Consulting to provide technical advice that will assist the ACCC in setting the connection and disconnection charges for the unconditioned local loop service (ULLS), the line sharing service (LSS) and wholesale asymmetric digital subscriber line (ADSL) services.

UXC Consulting understands that the context of this consultancy work is that the ACCC has commenced a public inquiry to make final access determinations (FADs) for the declared fixed line services.

UXC Consulting understands that the overall objective of the consultancy is to provide technical and costing advice in regard to connection and disconnection charges for these services, as per below (extract from consultancy brief):

### Objective

The main objective is to provide the ACCC technical advice that will assist the ACCC in setting the connection and disconnection charges for the ULLS, LSS and wholesale ADSL services. The ACCC may publish the subsequent report or refer to in its draft or final decision for the fixed line services FAD.


## 1.2 Scope

UXC Consulting understands that the scope of work includes the following requirements:

For the current FAD inquiry, review the cost model developed in 2004/05 to estimate the costs of connection and disconnection work for the ULLS, LSS and wholesale ADSL service.

### Deliverables Required

1. A written report, in draft and final versions, containing:
  - 1.1. Explanation/description of what is technically and operationally involved in connecting and disconnecting ULLS, LSS and wholesale ADSL services.
  - 1.2. Explanation of the technical and operational assumptions used to estimate the costs involved in undertaking connections and disconnections for the ULLS, LSS and wholesale ADSL service.
  - 1.3. Review and update of the previous 'time and motion' study for ULLS and LSS to estimate the time and costs involved in connection and disconnection activities. Extension of this 'time and motion' study to the wholesale ADSL service.
  - 1.4. Description of any new practices or procedures generally adopted within the industry to do this work efficiently since the original model for ULLS and LSS was developed 2004/05.
  - 1.5. Making the necessary modifications to extend the existing model to estimate the costs of connections and disconnections in relation to the wholesale ADSL services.
  - 1.6. Developing inputs to the existing cost model to reflect any changes in the technical assumptions (resulting from the assessment under clause 1.2 above) and the results from the 'time and motion like' study (conducted under clause 1.3 above)



The ACCC subsequently advised<sup>1</sup> that it no longer requires advice on the following charges:

- a 'single disconnection charge' for the LSS; and
- an 'early termination charge' for the Wholesale ADSL service

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<sup>1</sup> by email on 5<sup>th</sup> February 2015



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## 2. INPUT CONSIDERATIONS

### 2.1 Documentation from previous ACCC processes

UXC Consulting has reviewed the ACCC documentation and costing information from previous regulatory processes. These documents, listed in “Attachment A: ACCC References”, have informed:

our consideration of updates and changes to the cost models used to date to determine the ACCC’s regulated charges for the ULLS and LSS services; and  
the development of an appropriate model to estimate the connection charges for the wholesale ADSL connection services.

Where appropriate UXC Consulting has also outlined its considered views on the information provided.

In this regard the cost models used by the ACCC to set the regulated charges for the ULLS and LSS have reflected the following cost components for connection work:

jumpering, travel, vehicle, tool and material costs;  
“jumper over extra” costs, for connections that involve running a jumper (to) a second main distribution frame;  
associated contractor overhead and Telstra indirect contract management costs; and  
back-of-house costs.

The ACCC has previously used third party contract quotes provided by Telstra to estimate the costs of the jumpering, travel, vehicle, tool and material costs, jumper over extra costs and contractor overheads. Telstra also provided estimates for the costs incurred for connection work undertaken by its own staff. Telstra’s contract management costs were estimated by applying a percentage mark-up to the contractor costs. The ACCC used a ‘time and motion’ study by a previous consultant to estimate the back-of-house costs involved in connection and disconnection work.

That cost structure was subsequently incorporated in cost models used by the ACCC to determine indicative connection and (where appropriate) disconnection prices for both the ULLS and LSS for the periods of 1<sup>st</sup> January 2008 to 30<sup>th</sup> June 2008 and from 1<sup>st</sup> July 2008 to 31<sup>st</sup> July 2009<sup>2</sup> (LSS) and for each financial year from 2005-06 to 2008-09<sup>3</sup> (ULLS). The indicative charges were determined for both single services and for MNM process used for the transfer of multiple services.

The cost models included:

estimates of the direct contractor costs incurred for connection activity;  
a 10% mark-up on contractor costs to cover Telstra’s indirect costs;  
estimates of the costs incurred by Telstra’s internal staff in undertaking connection/disconnection jumpering activities (in place of third party contractors) for the LSS ;

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<sup>2</sup> “October 2007 LSS Pricing Principles and Indicative Prices confidential Version”

<sup>3</sup> “June 2008 ULLS Pricing Principles and Indicative Prices Confidential Version”

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an estimate of the proportion of LSS connections/disconnections undertaken by contractors and by Telstra staff; and  
estimates of Telstra's back of house (DAC and IDS) costs.

The ACCC subsequently used the outputs from these models to determine the regulated charges for the ULLS and LSS (both for single services and for MNMs) for the financial years from 2009-10 to 2013-14.<sup>4</sup>

## 2.2 Existing ACCC Pricing Models for connection/disconnection charges

The existing ACCC pricing models for the LSS and ULLS connection charges were last updated in 2007 and 2008 respectively, and used Telstra's contractor rates as advised in its schedule of rates (SORs) for 2008. Four separate models were developed:

Single LSS connection and disconnection model

MNM LSS connection model 2008-09

Single ULLS connection model

MNM ULLS connection model

To determine charges for the 2011 FAD, the ACCC set regulated charges by indexing the charges estimated using the 2007 and 2008 models.

A more detailed description of the models follows in sections 2.3.1 and 2.3.2, along with relevant assumptions and source data.

### 2.2.1 The 2007 LSS and 2008 ULLS Models

#### 1. Single LSS Connection Model

This model includes single LSS connections undertaken by both contractors and by internal Telstra staff. The structure of this model for single LSS connections undertaken by contractors is shown below. The structure for remaining connections (performed by internal Telstra staff) is identical.

[c-i-c]

Table 2.2.1.1

#### KeyFeaturesandAssumptions

Jumpering and travel, jumper over extra<sup>5</sup> and materials costs are derived from Telstra's 2008 SORs for contractor activity, which is undertaken only after Telstra issues the relevant Ticket of Work (TOW). The structure of the model for remaining connections (i.e. connection activity undertaken by Telstra's internal staff) was very similar to that for contractor work, although [c-i-c starts] [REDACTED] [c-i-c ends];

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<sup>4</sup> 2011 FAD indexed ULLS and LSS connection and disconnection charges.xls

<sup>5</sup> Jumper over extra charge is to cover connections that involve running a jumper between two different distribution frames.

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Although the model includes provision for the cost of materials, the cost had been set to zero on the basis that it is already included in contractor charges<sup>6</sup>

The indirect costs margin, DAC and IDS costs are based on Telstra's advised costs reviewed and adjusted by the ACCC's consultant at the time to reflect efficient costs;<sup>7</sup>

Annual labour and material costs were escalated year on year by the latest available Australian Bureau of Statistics (ABS) data for the Information media and telecommunications sector<sup>8</sup>;

The weighting factor for contractor versus other connections activity was 64%/36%<sup>9</sup>; and

The charges estimated by the model apply a single rate for Central Business District (CBD) (Band 1), urban (Band 2) and rural (Band 3) areas. The model contains no charges for other (Band 4) areas (e.g. remote).

## 2. MNM LSS Connection Model

The structure of this model (Table 2) is similar, but not identical, to that for single LSS connections undertaken by contractors.

[c-i-c]

Table 2.2.1.2

The differences are;

- The model is based on a minimum of 20 connections for an individual MNM LSS connection activity;
- The model assumes that all connections are performed by contractors and therefore no allowance is made for non-contractor connections;
- The jumper over extra cost is excluded; and,
- The indirect costs in this model do not include any costs for activities performed at Telstra's DAC or IDS.

## 3. Single ULLS Connection Model

The structure of this model is shown below for single ULLS connections and disconnections undertaken by contractors. Unlike the LSS single connection model it contains no provision for physical connections performed by Telstra staff.

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<sup>6</sup> October 2007 LSS Pricing Principles and Indicative Prices confidential Version.pdf

<sup>7</sup> August 2007 final determination Request and Telstra dispute LSS Confidential Version

<sup>8</sup> Australian Bureau of Statistics publication 6345.0 Wage Price Index, Australia  
Australian Bureau of Statistics publication 6427.0 - Producer Price Indexes, Australia

<sup>9</sup> August 2007 final determination Request and Telstra dispute LSS Confidential Version

[c-i-c]

Table 2.2.1.3

Key Features and Assumptions

Jumpering, travel, vehicle, tools and materials costs are derived from Telstra's 2008 SORs for contractor work;

Although the model includes provision for the cost of materials, the cost had been set to zero on the basis that it is already included in contractor charges<sup>10</sup>

The indirect costs margin, DAC and IDS costs are based on Telstra's advised costs reviewed and adjusted by the ACCC's consultant at the time to reflect efficient costs<sup>11</sup>;

Annual labour and material costs were escalated year on year by the latest available ABS data for the Information media and telecommunications sector<sup>12</sup>; and

The charges estimated by the model apply a single rate for CBD (Band 1), urban (Band 2) and rural (Band 3) areas. The model contains no charges for other (Band 4) areas (e.g. remote).

4. MNM ULLS Connection Model

The structure of this model (Table 2) is similar, but not identical, to that for single ULLS connections.

[c-i-c]

Table 2.2.1.4

The differences are:

No single visit jumpering. In this respect Telstra can have MNM jumpering activity undertaken in one visit or in two separate visits. The ACCC has previously indicated that a two stage MNM process to be the approach more consistent with statutory criteria<sup>13</sup>; and The charges estimated by the model do not provide for geographic pricing per band.

5. Wholesale ADSL

The ACCC first declared the Wholesale ADSL service in February 2012. The ACCC's previous connection model, developed in 2005 did not therefore include connection charges in relation to this service.

The ACCC advised in its final access determination<sup>14</sup> that it had not received any submissions on the proposed level of the connection charges in its March 2013 Draft Report, and also had not received

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<sup>10</sup> October 2007 LSS Pricing Principles and Indicative Prices confidential Version.pdf

<sup>11</sup> March 2008 final determination Chime and Telstra ULLS Confidential Version

<sup>12</sup> Australian Bureau of Statistics publication 6345.0 Wage Price Index, Australia  
Australian Bureau of Statistics publication 6427.0 - Producer Price Indexes, Australia

<sup>13</sup> August 2007 final determination Request and Telstra dispute LSS Confidential Version

any further information during the inquiry process on the underlying costs of these connections. For these reasons the wholesale ADSL FAD maintained Telstra’s wholesale prices that applied at the time, noting that it would reconsider these charges during the next FAD inquiry. The ACCC’s FAD prices terms which were based on Telstra’s then list prices are shown below.

<b>Connection type</b>	<b>Charge per connection</b>
Completed Type A Transfer standard Transfer Request via LOLO/LOLIG	\$22.50
Completed Type B Transfer standard Transfer Request via LOLO/LOLIG	\$80.00
All other completed installation or transfer requests	\$80.00

Table 2.2.1.5

As outlined in Section 1.2 UXC Consulting has updated and extended the ACCC’s existing pricing model for ULLS and LSS charges to estimate the costs of connections for the three wholesale ADSL connections listed above. This update is based on the underlying costs that those charges are expected to recover.

## 2.3 Telstra Information

In response to a formal request from the ACCC dated 5<sup>th</sup> December 2014, Telstra provided information regarding third party contractor costs for connection of ULLS, LSS and wholesale ADSL services. “Attachment B: Telstra References” lists those and other relevant Telstra documents.

Telstra has provided information formally by letter and email, and informally in meetings with the ACCC and UXC Consulting.

### Written Telstra Information

Telstra supplied two letters to the ACCC in response to its information request:

9 Jan 2015 letter to the ACCC - Connection and disconnection charges as part of the fixed line services FAD inquiry.

- This letter advised that Telstra has moved to a fundamentally different contractor model to the one in place at the time Telstra previously provided data to the ACCC for the purposes of determining regulatory prices for connection of ULLS and LSS. Telstra provide three tables listing the various charges it incurs with these new contractual arrangements, which are discussed further in Section 2.3.1;

4 February 2015 letter to the ACCC – connection and disconnection charges as part of the fixed line services FAD inquiry.

This letter provided the following information:

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<sup>14</sup> Wholesale ADSL Final Access Determination - May 2013



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Telstra also advised that additional tasks are often necessary to complete the specified ULLS/LSS or wholesale ADSL connection activity, and the costs associated with those additional activities are added to the base SOR unit costs.

Section 2.3.3 considers these additional activities in more detail.

In addition to the rates paid directly to [c-i-c starts] ██████████ [c-i-c ends], Telstra pays [c-i-c starts] ██████████ for overhead costs. [c-i-c starts] ██████████ [c-i-c ends]. Telstra pays these overhead costs directly and separately to the agreed SOR.

The SOR data provided by Telstra shows a consistent [c-i-c starts] ██████████ [c-i-c ends] uplift to the SORs to meet the additional overhead costs payable to [c-i-c starts] ██████████ [c-i-c ends].

The SORs also contain cross-references to the 2008 SORs supplied to the ACCC, which were used in the development of the ACCC's 2008 models for determining indicative ULLS and LSS connection and disconnection charges. Those models have been described earlier in more detail in Section 2.2.

### 2.3.2 Further Information Requests

Meetings between Telstra, the ACCC and UXC Consulting were held on 15th and 23rd January 2015. These meetings were held as both (i) information sessions, with Telstra outlining more detail regarding the information provided, and (ii) as a forum for the ACCC and UXC Consulting to request further information from the Telstra representatives. The further information Telstra provided is summarised in **Attachment B: Telstra References**.

Information provided by Telstra in response to those questions included the following:

1. Telstra advised informally that the DAC and IDS (i.e. the back of house costs in the 2008 model) are now known by different terms. The processes and systems contained in the Telstra Wholesale SSU webpage describe Telstra's current back of house processes. However it is unclear from those descriptions what the new terms are, and at the time of writing this report Telstra has not provided any further information on those new terms or how those changes map to the previously named and described DAC and IDS processes or costs.
2. Telstra has supplied advice on the mapping of the relevant items in the SORs to the LSS and ULLS connection charges.
3. With one exception, Telstra has advised<sup>15</sup> that the quantum of the uplift in the SOR costs for additional activities represents less than [c-i-c starts] ██████████ [c-i-c ends] of the total rates paid.
  - o The exception was for SOR item II-12a1 - "Run Jumper Exchange MDF<sup>16</sup> (Non Associated)", where Telstra advised of the unit rates both with and without the additional activities costs across each of Bands 1, 2, 3 and 4. The uplift ranged from

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<sup>15</sup> 4 February 2015 letter to the ACCC – connection and disconnection charges as part of the fixed line services FAD inquiry

<sup>16</sup> Main Distribution Frame

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[c-i-c starts] [REDACTED] [c-i-c ends] for Bands 1 to 3, and [c-i-c starts] [REDACTED] [c-i-c ends] for Band 4. This is broadly consistent with Telstra's advice of an uplift of [c-i-c starts] [REDACTED] [c-i-c ends] across all of the SORs.

4. Telstra has provided all of its SORs disaggregated across Bands 1 to 4.<sup>17</sup> Telstra has not advised of any change to the distribution of services as contained in the 2008 models across those four bands.
5. At the time of preparing this report Telstra had not advised of any material change to the indirect costs.

### 2.3.3 Additional Activities Information

In its letter of 4<sup>th</sup> February 2015 Telstra advised that the additional activities included in the SORs contained in Tables 1 and 2 of that letter<sup>18</sup> comprise:

[c-i-c starts] [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] and  
[REDACTED] [c-i-c ends]

#### UXC Consulting's Views

UXC Consulting has carefully assessed the additional tasks described by Telstra, and has formed the following views:

Based on our experience and knowledge of Telstra's networks, and in particular the customer access network (CAN), the activities described by Telstra are mostly part of regular maintenance activities. The notable exception is the [c-i-c starts] [REDACTED] [c-i-c ends], which is incorporated separately in the modelling.

In this regard UXC Consulting understands that (other [c-i-c starts] [REDACTED] [c-i-c ends]) the need to undertake the activities described above can be, and often are, revealed through other processes unrelated to LSS, ULLS and wholesale ADSL

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<sup>17</sup> Previous cost models only disaggregated connection charges across Bands 1, 2 and 3 for single ULLS connections.

<sup>18</sup> Also included as Attachment C to this report



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connection activities, including but not necessarily limited to customers reporting service difficulties and faults and from routine preventative maintenance;

These activities would typically only be required for some, but not all, connections;

Network maintenance is a normal and ongoing program of work for an efficient operator to ensure that the network remains in good working order for all customers (i.e. both retail and wholesale);

As such, network maintenance costs are incurred on an annual basis, and in our view such costs are more appropriately recovered from recurring charges. In support of our opinion we note that Telstra has an obligation to provide services that are in good working order, and maintenance activities are integral to ensuring that services provided using Telstra's networks continue to operate satisfactorily. Our understanding is that one of the purposes of recurring charges is the recovery of costs incurred from operating and maintaining Telstra's networks.

Further in this regard, UXC Consulting has formed the view that the SOR categories should not dictate the way in which Telstra allocates costs to its various internal cost accounts. By way of additional clarification, Telstra should not allocate its additional costs to internal accounts for connection activities simply because it incorporates the payment of those costs to its contractors as part of a consolidated SOR. In our view consistency in allocation of costs is a far more important consideration. We have also formed the view that the allocation of costs between internal accounts covering connection/disconnection activities and accounts covering regular network maintenance should be straightforward, since Telstra has clearly demonstrated in its description of the allocation of SORs that the payments to contractors to be properly disaggregated for the purposes of allocation to the appropriate accounts.

For these reasons UXC Consulting has formed the view that that it is not appropriate to include the costs associated with the additional activities as described by Telstra in establishing connection/disconnection charges for ULLS, LSS and wholesale ADSL services. We have concluded, therefore, that the subcontractor rates contained in Table 1 of Telstra's letter of 4<sup>th</sup> February<sup>19</sup> be reduced by [c-i-c starts] [redacted] [c-i-c ends] to reflect the removal of those costs for the purposes of estimating charges for all LSS, ULLS and wholesale ADSL connections. We also accept that those adjusted costs should be suitably marked up by [c-i-c starts] [redacted] [c-i-c ends] in a revised version of Table 2 of that letter<sup>20</sup> to cover overhead costs paid directly to [c-i-c starts] [redacted] [c-i-c ends]. UXC Consulting considers that the revised Table 2 most accurately reflects the full direct contracting costs incurred by Telstra, for the purposes of modelling the contractor components of the prices for connection/disconnection activities for the ULLS, LSS and wholesale ADSL services.

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<sup>19</sup> Attachment C to this report contains Telstra's Table 1 SORs reduced by 2%.

<sup>20</sup> Similarly, Table 2 of Attachment C contains the revised Table 1 SORs with the 15.9% uplift .

### 3. ACCC COST MODEL UPDATES

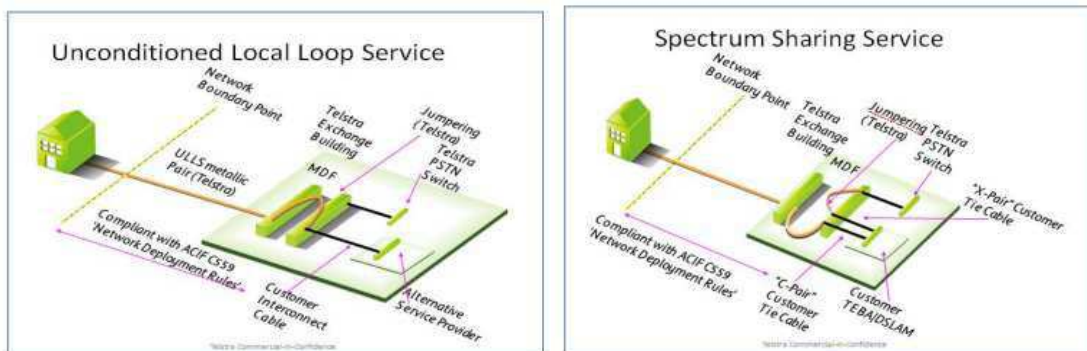
The updated model follows the same structure as those discussed in section 2.2.1 of this report. Included in each main model overview description is a reference to the following Sections that outline UXC Consulting's more detailed analysis:

Third party contractor costs (Sections 3.1 and 3.2), which cover:

- o The direct costs for jumpering (including travel, vehicle, tools and materials costs);
- o An allowance for jumper over extra costs( where that is included in the current models);
- o Contracting overheads; Telstra's

indirect costs (Section 3.3); Telstra's back of house costs (Section 3.4.

The following schematic diagrams provided by Telstra<sup>21</sup> show the respective end-to-end connectivity path for a ULLS and LSS (also referred to by Telstra as the Spectrum Sharing Service, or SSS). These diagrams have informed the more detailed model considerations in Sections 3.1 and 3.2.



#### 3.1 New Third-Party Contractor Arrangements

As outlined in Section 2.3 Telstra has significantly changed its arrangements for managing contractor activities for, but not limited to, connection and disconnection activities for the LSS, ULLS and wholesale ADSL service. Telstra has also mapped individual SOR codes to the types of connections and disconnections<sup>22</sup> for the purposes of determining which SOR charges should be applied to those individual service charges along with a table containing a detailed description of the activities undertaken for each of those SOR types. That mapping table is reproduced below, and the detailed description table in Attachment E.

<sup>21</sup> 4 February 2015 letter to the ACCC – connection and disconnection charges as part of the fixed line services FAD inquiry

<sup>22</sup> *ibid*

Connection/Disconnection Type	Reference SORs – refer to Attachment E for detailed description
LSS Single Connections	II-13a1 or II-13a2.
LSS Single Disconnections	II-12a1 or II-12b3
LSS Managed Network Migration (MNM) connection charges	II-15a3 or II-15a4
ULLS single connection charges : a. In use ULLS (IULL) b. Transfer ULLS (TULL) c. Vacant ULLS (TULL) and d. Enhanced Vacant ULL (eVULL)	For all ULLS single connection types :  II-14b1 or II-14b2
ULLS MNM connection charges	II-15a1 or II-15a2
ULLS cancellation charges	II-14b2

Table 3.1.1: SOR Mapping

It is noted that the above table does not map SOR codes to the wholesale ADSL connection charges. In this regard, Telstra has verbally advised that<sup>23</sup>:

Wholesale ADSL Type A simply involves an administrative procedure confined to back of house activities; and

Wholesale ADSL Type B is analogous to an LSS service connection.

Telstra's advice is consistent with the ACCC's view that "the installation work for the LSS and wholesale ADSL is functionally similar, as each involves the installation of jumpers between a Digital Subscriber Loop Access Module (DSLAM) and Public Switched Telephone Network (PSTN) switch and removal of the existing jumpers on the Main Distribution Frame (MDF). As a result, the efficient, forward-looking cost of connecting the LSS and ADSL services will be similar."<sup>24</sup>

Our own analysis of the activities required to provide Type A and Type B wholesale ADSL services<sup>25</sup> as defined by Telstra also confirms that the procedures involved for "all other completed (wholesale ADSL) installation or transfer requests" (hereinafter referred to in this report as "all other wholesale ADSL connections") are analogous to those for type B wholesale ADSL services i.e. LSS service connections. We have accordingly augmented Table 3.1.1 below to include wholesale ADSL services, showing the same reference SORs as for LSS connections.

<sup>23</sup> Telstra/ACCC/UXC Consulting meeting of 23<sup>rd</sup> January 2015

<sup>24</sup> "October 2007 LSS Pricing Principles and Indicative Prices confidential Version.pdf" p100

<sup>25</sup> Telstra Wholesale Rate Card for Reference Services – Version 6.0 – 19-12-2014

Connection/Disconnection Type	Reference SORs – refer to Attachment E for detailed description
LSS Single Connections	II-13a1 or II-13a2.
LSS Single Disconnections	II-12a1 or II-12b3
LSS Managed Network Migration (MNM) connection charges	II-15a3 or II-15a4
ULLS single connection charges: a. In use ULLS (IULL) b. Transfer ULLS (TULL) c. Vacant ULLS (TULL) and d. Enhanced Vacant ULL (eVULL)	For all ULLS single connection types :  II-14b1 or II-14b2
ULLS MNM connection charges	II-15a1 or II-15a2
ULLS cancellation charges	II-14b2
Wholesale ADSL Type A Connections	No reference SORs (Back of house costs only)
Wholesale ADSL Type B Connections	II-13a1 or II-13a2.
All other wholesale ADSL connections	II-13a1 or II-13a2.

Table 3.1.2: SOR Mapping (including wholesale ADSL)

### 3.1.1 Impact of New Contractor Arrangements

Telstra has advised that its changes to the management of its external contractors are intended to increase flexibility, productivity and efficiency of these arrangements. UXC Consulting has taken this to mean that Telstra expects to achieve lower costs for its LSS, ULLS and wholesale ADSL connection activities (as well as to all other activities undertaken by contractors). In this regard we would expect these new arrangements to be a key driver of lower prices for the associated wholesale service prices.

Telstra has also advised that contractors now also perform all connection activities. The current model for single LSS connections<sup>26</sup> shows that the costs of these activities when performed by Telstra's internal staff are [c-i-c starts] [REDACTED] [c-i-c ends]. UXC Consulting expects that this will also be a key driver of lower prices for LSS connections.

The impact of these drivers on the resulting prices produced by the updated model are outlined in more detail in Section 4.

<sup>26</sup> The models for all other connections do not include any allowance for costs associated with work undertaken by Telstra staff.



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Also previously included were LSS connections undertaken by Telstra's own workforce. Telstra advised verbally on 15th January 2015 and on 5th February 2015 that all such work is now conducted by [c-i-c starts] [REDACTED] [c-i-c ends].

### 3.2.2 Single ULLS Connections

The alternative SOR categories as mapped by Telstra are as follows:

II-14b1 Single Ticket of Work for ULLS

II-14b2 Programmed multiple Ticket of Works in designated exchanges for ULLS

The "jumpering, travel, vehicle, tools" category for the original single ULLS model used a weighted average of single jumpering and multiple jumpering contractor charges. UXC Consulting has taken the SOR categories listed above to be analogous to those original single and multiple jumpering categories, and we have included the associated charges for Bands 1 to 4 in the updated model.

Telstra did not advise of any change to the weighting of the volume of work across the bands. Accordingly we have retained the weightings contained in the original model.

### 3.2.3 LSS Managed Network Migrations (MNM)s

The alternative SOR categories as mapped by Telstra are as follows:

II-15a3 Bulk - SSS Jumper Task completed in single visit

II-15a4 Bulk - SSS Jumper Task completed in two visits

The ACCC has previously determined the process involving two separate visits to be appropriate for estimating its indicative prices LSS MNM connections<sup>29</sup>. Based on the available documentation UXC Consulting can see no compelling reason to vary that determination. Accordingly, we have used SOR category II-15a4 in the updated model.

The SOR rates supplied by Telstra for these categories are identical across Bands 1 to 4. Therefore there is no basis for differentiation of these charges by band in the updated model. The original model also did not contain any differentiation by band.

### 3.2.4 ULLS MNMs

The alternative SOR categories as mapped by Telstra are as follows:

II-15a1 Bulk - ULL Jumper Task completed in single visit

II-15a2 Bulk - ULL Jumper Task completed in two visits

As for the LSS MNM connections, the ACCC has previously determined the process involving two separate visits to be appropriate for estimating its indicative prices ULLS MNM connections<sup>30</sup>. Based on the available documentation UXC Consulting can see no compelling reason to vary that determination. Accordingly, we have used SOR category II-15a2 in the updated model.

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<sup>29</sup> "August 2007 final determination Request and Telstra dispute LSS Confidential Version.pdf"

<sup>30</sup> "March 2008 final determination Chime and Telstra ULLS Confidential Version.pdf"

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The SOR rates supplied by Telstra for these categories are identical across Bands 1 to 4. Therefore there is no basis for differentiation of these charges by band in the updated model. The original model also did not contain any differentiation by band.

### 3.2.5 Wholesale ADSL Connections - Type A

As described in Section 3.1 these connections are analogous to LSS connections, albeit without any requirement for jumpering activity. As such, no SOR categories are relevant for this type of service.

### 3.2.6 Wholesale ADSL Connections - Type B

Also as described in Section 3.1 these connections are analogous to LSS connections, but with the requirement for jumpering activity. Accordingly, the appropriate SOR category is II-13a1 for Bands 1 to 4 in the “jumpering and travel” category for the updated model.

### 3.2.7 All Other Wholesale ADSL Connections

As described in Section 3.1, all other wholesale ADSL connections are analogous to those for Type B wholesale ADSL services. Accordingly, the appropriate SOR category is II-13a1 for Bands 1 to 4 in the “jumpering and travel” category for the updated model. For this reason the cost model for these services is incorporated into the model for Type B wholesale ADSL connections.

## 3.3 Telstra’s Indirect Management Costs

As indicated towards the end of Section 2.3.1, Telstra has not advised of any change in its own indirect costs for managing external contractors as a result of the changes in contractual arrangements discussed at section 2.3.1 above. In one respect, given that Telstra is now [c-i-c starts] [REDACTED] [c-i-c ends], UXC Consulting expects that there may be a material reduction in those internal costs. However this could be counter-balanced by extra costs incurred because Telstra has also advised that it [c-i-c starts] [REDACTED] [c-i-c ends]. Taking all factors into consideration we consider that retaining the 10% uplift is reasonable in the absence of further information about the quantum of actual changes.

## 3.4 Telstra Back of House Costs

Telstra advised informally that the DAC and IDS (i.e. the back of house costs in the 2008 model) are now known by different terms. The processes and systems contained in the Telstra Wholesale SSU webpage describe Telstra’s current back of house processes. However it is unclear from those descriptions what the new terms are, and at the time of writing this report Telstra has not provided any further information on those new terms or how those changes map to the previously named and described DAC and IDS processes or costs. UXC Consulting has retained the original names in the updated model for LSS and ULLS connections in the absence of further information.

For wholesale ADSL connections, as described earlier in Section 3.1 the efficient, forward-looking cost of connecting the LSS and ADSL services are considered to be similar. On this basis it is reasonable to assume that the back of house costs for wholesale ADSL connections are also similar to those for LSS connections. This assumption is reflected in the modelling for wholesale ADSL service connections.

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Key input parameters to the back of house components of the models are the hourly labour rates for the DAC and IDS, along with the annual labour rates for the IDS. The original models used rates determined by the ACCC in its final determinations for LSS<sup>31</sup> and ULLS disputes<sup>32</sup>, which were carried through to its published pricing principles for both services<sup>33,34</sup>.

The original model used labour rates for 2005/06, and applied an industry-based ABS labour index<sup>35</sup> to estimate the applicable labour rates for subsequent years. UXC Consulting has used the 2005/06 labour rates as a base, and used the latest ABS communications sector labour price index<sup>36</sup>.

#### UXC Consulting's View

UXC Consulting notes that the original models used different times for the number of minutes of DAC activity for single LSS connections (4 minutes) and single ULLS connections (8 minutes). We also note that the LSS final arbitration determination<sup>37</sup> and indicative prices<sup>38</sup> made under the previous regulatory regime predated the ULLS equivalents<sup>39,40</sup>. In reviewing the supporting reasons given by the ACCC for determining the two figures in the relevant documents, plus the consultants' reports commissioned by the ACCC to assist with those decisions<sup>41,42</sup> we note that the starting premise in the ULLS documents was for a DAC activity time of 4 minutes. However after comprehensive investigation by consultants on this issue the report<sup>43</sup> concluded that 8 minutes was a more appropriate figure for single ULLS connections.

Further in this regard, based on the descriptions of the activities for single LSS connections and single ULLS connections, and in the absence of direct information on DAC activity time for LSS, we have formed the view that it would be reasonable to use the same DAC activity time for single LSS connections for single ULLS and wholesale ADSL connections.

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<sup>31</sup> "August 2007 final determination Request and Telstra dispute LSS Confidential Version.pdf"

<sup>32</sup> "March 2008 final determination Chime and Telstra ULLS Confidential Version.pdf"

<sup>33</sup> "October 2007 LSS Pricing Principles and Indicative Prices confidential Version.pdf"

<sup>34</sup> "June 2008 ULLS Pricing Principles and Indicative Prices Confidential Version.pdf"

<sup>35</sup> ABS 6345 Labour Price Index 'Ordinary time hourly rates of pay excluding bonuses; Australia; Communication services; Private; All occupations'

<sup>36</sup> ABS 6345.0 Table 11a; Financial Year Index ; Ordinary time hourly rates of pay excluding bonuses ; Australia ; Communication services ; Private ; All occupations ;

<sup>37</sup> "August 2007 final determination Request and Telstra dispute LSS Confidential Version.pdf"

<sup>38</sup> "October 2007 LSS Pricing Principles and Indicative Prices confidential Version.pdf"

<sup>39</sup> "March 2008 final determination Chime and Telstra ULLS Confidential Version.pdf"

<sup>40</sup> "June 2008 ULLS Pricing Principles and Indicative Prices Confidential Version.pdf"

<sup>41</sup> "Consultel, Analysis relating to Primus-Telstra LSS Dispute – interim report, February 2006 Confidential Version.pdf"

<sup>42</sup> "Layer 10, Analysis relating to ULLS access disputes—Primus, Chime, Optus, XYZed, Request, Powertel and Telstra, January 2008 Confidential Version.pdf"

<sup>43</sup> *ibid*



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We have also reviewed the analysis of the DAC processes as described in the two consultants' reports, and can find no compelling reason for the DAC activity for single LSS connections to be less than for single ULLS connections. Given that the consultant (and subsequently the ACCC) has seen fit to change its position for the DAC activity time for the ULLS from 4 to 8 minutes, UXC Consulting considers it appropriate to apply the same figure of 8 minutes for single LSS DAC activity. This change has been reflected in the updated model.

### 3.5 Assumptions for Updated ACCC Model

In summary, UXC Consulting has applied the following assumptions in development of the updated pricing model for the ACCC:

All LSS, ULLS and wholesale ADSL connection and disconnection activities are undertaken by contractors. It is noted that disconnection activities to the extent required are considered to occur concurrently with connection, and hence not modelled as a separate charge.

Type A wholesale ADSL connections simply involve an administrative procedure confined to back of house activities. As such the connection costs are assumed to be the same across Bands 1 to 4

Type B wholesale ADSL connections are analogous to LSS service connections

All other types of completed installation or transfer requests for wholesale ADSL are equivalent to a Type B wholesale ADSL connections.

MNM costs are the same across Bands 1 to 4 for LSS connections and ULLS connections. Accordingly the revised model does not differentiate between the Bands for the connection charges for those two services

Two visit process for LSS & ULLS MNMs<sup>44</sup>

The SORs provided in Table 1 of Telstra's letter of 4 Feb 2015 have been decreased by [c-i-c starts] [REDACTED] [c-i-c ends] to remove payments made for additional activities.

The jumper over extra charge in the current model has however been retained to include an allowance for the Multiple Frame Exchange additional activity [c-i-c starts] [REDACTED] [c-i-c ends]

An uplift of [c-i-c starts] [REDACTED] [c-i-c ends] has been applied to the revised SOR Table 1<sup>45</sup> in a (revised) SOR Table 2<sup>46</sup> to meet the additional overhead costs payable to [c-i-c ends] [REDACTED] [c-i-c ends].

DAC and IDS cost structure from the original model, have been retained.  
(Note: Telstra did advise informally that the names have changed.)

The original 2005/06 DAC & IDS labour rates have been escalated from 2005/06 to 2013/14 by the ABS 6345 Labour Price Index 'Financial Year Index ; Total hourly rates of pay excluding bonuses ; Australia ; Private and Public ; Information media and telecommunications'

A consistent 8 minutes has been applied for DAC activity for single LSS and ULLS connections

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<sup>44</sup> Sections 3.2.3 and 3.2.4 refer

<sup>45</sup> Contained in Attachment C

<sup>46</sup> *ibid.*

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Geographic distribution is based on number of lines in place for the original ACCC model, for estimating average single LSS and ULLS connection charges across Bands 1 to 4.

Telstra indirect (contract management) costs included as a 10% mark-up on the adjusted [c-i-c starts] [REDACTED] [c-i-c ends] SOR rates, which is consistent with the existing ACCC model.

### 3.6 Updated ACCC Model

UXC Consulting has consolidated the original individual models for (i) single LSS connections, (ii) single ULLS connections, (iii) LSS MNM connections and (iv) ULLS connections into a single model, and included models for wholesale ADSL Type A, and Type B connections. Since all other types of wholesale ADSL are considered to be analogous to Type B connections no model has been developed for those connections. The updated model estimates prices from 2015/16 to 2018/19; however it can readily be extended to future years.

The consolidated model is contained in the embedded Excel workbook below.

[c-i-c]

## 4. UPDATED MODEL PRICES

Estimated prices from the updated consolidated model are shown in separate sub-sections below for 2015/16 to 2018/19. For comparison, the most recent connection charges from the Telstra Wholesale Rate Card (which reflect the current regulated charges) are included to show the impact of the new SORs and model changes as described in this report.

### 4.1 Single LSS Connections

Table 4.1 below shows the comparison between the current prices for single LSS connections, as shown in the Telstra Wholesale Rate Card, with the estimated forward-looking prices from the updated price model for single LSS connections. Because there is no differentiation in the current price across Bands 1 to 4 that single current price is shown for all four bands.

Per connection	Current Prices – Telstra Wholesale Rate Card	Updated Model Prices			
	Jul 2013 to Expiry Date	July 2015 to June 2016	July 2016 to June 2017	July 2017 to June 2018	July 2018 to June 2019
Band 1	\$47.55	\$43.33	\$44.38	\$45.45	\$46.03
Band 2	\$47.55	\$44.42	\$45.50	\$46.60	\$47.20
Band 3	\$47.55	\$45.51	\$46.62	\$47.74	\$48.38
Band 4	\$47.55	\$48.01	\$49.17	\$50.36	\$51.06
Average	\$47.55	\$44.58	\$45.94	\$47.05	\$47.66

Table 4.1

### 4.2 Single ULLS Connections

Table 4.2 below shows the comparison between the current prices for single ULLS connections, as shown in the Telstra Wholesale Rate Card, with the estimated forward-looking prices from the updated price model for single ULLS connections. There is no current price for Band 4, so the Band 3 price is shown in its stead.

Per connection	Current Prices – Telstra Wholesale Rate Card	Updated Model Prices			
	Jul 2013 to Expiry Date	July 2015 to June 2016	July 2016 to June 2017	July 2017 to June 2018	July 2018 to June 2019
Band 1	\$55.60	\$47.90	\$49.06	\$50.25	\$50.94
Band 2	\$58.58	\$48.63	\$49.81	\$51.02	\$51.72
Band 3	\$63.66	\$59.41	\$60.84	\$62.32	\$63.30
Band 4	\$63.66	\$66.71	\$68.33	\$69.98	\$71.15
Average (Bands 1 to 4)		\$51.98	\$53.24	\$54.53	\$55.32

Table 4.2

### 4.3 MNM LSS Connections

Table 4.3 below shows the comparison between the current prices for MNM LSS connections, as shown in the Telstra Wholesale Rate Card, with the estimated forward-looking prices from the updated price model for MNM LSS connections. Because the direct contractor connection costs are identical across all four bands<sup>47</sup> the forward-looking price is independent of those bands.

<sup>47</sup> “4 February 2015 letter to the ACCC – connection and disconnection charges as part of the fixed line services FAD inquiry”

	Current Prices – Telstra Wholesale Rate Card	Updated Model Prices			
		July 2015 to June 2016	July 2016 to June 2017	July 2017 to June 2018	July 2018 to June 2019
Per connection	Jul 2013 to Expiry Date				
Fixed amount (per MNM)	\$154.56	\$168.14	\$172.21	\$176.38	\$180.64
Variable Amount (per connection)	\$35.52	\$23.52	\$24.09	\$24.67	\$25.27
Minimum Exchange Charge (per exchange)	\$865.04	\$638.47	\$653.92	\$669.75	\$685.96

Table 4.3

#### 4.4 MNM ULLS Connections

Table 4.4 below shows the comparison between the current prices for MNM ULLS connections, as shown in the Telstra Wholesale Rate Card, with the estimated forward-looking prices from the updated price model for MNM ULLS connections. Because the direct contractor connection costs are identical across all four bands<sup>48</sup> the forward-looking price is independent of those bands.

<sup>48</sup> "4 February 2015 letter to the ACCC – connection and disconnection charges as part of the fixed line services FAD inquiry"

	Current Prices – Telstra Wholesale Rate Card	Updated Model Prices			
		Jul 2013 to Expiry Date	July 2015 to June 2016	July 2016 to June 2017	July 2017 to June 2018
Per connection					
Fixed amount (per MNM)	\$152.25	\$168.14	\$172.21	\$176.38	\$180.64
Variable Amount (per connection)	\$27.58	\$19.88	\$20.36	\$20.85	\$21.36
Minimum Exchange Charge (per exchange)	\$703.86	\$565.75	\$579.44	\$593.46	\$607.82

Table 4.4

#### 4.5 Wholesale ADSL Type A

Table 4.5 below shows the comparison between the current prices for wholesale ADSL Type A connections, as shown in the Telstra Wholesale Rate Card, with the estimated forward-looking prices from the updated price model for wholesale ADSL Type A connections. Because there are no direct contractor connection costs for these types of connections and the back of house costs are assumed to be unchanged across the bands (Section 3.2) the forward-looking price is independent of those bands.

	Current Prices – Telstra Wholesale Rate Card	Updated Model Prices			
		Jul 2013 to Expiry Date	July 2015 to June 2016	July 2016 to June 2017	July 2017 to June 2018
Per connection					
	\$22.50	\$20.66	\$21.16	\$21.68	\$22.20

Table 4.5

#### 4.6 Wholesale ADSL Type B and all other wholesale ADSL connections

Note: Also covers all other wholesale ADSL connections, for the reasons outlined in Section 3.2.7.

Table 4.1 below shows the comparison between the current prices for wholesale ADSL Type B connections, as shown in the Telstra Wholesale Rate Card, with the estimated forward-looking prices from the updated price model for wholesale ADSL Type B connections. Because there is no

differentiation in the current price across Bands 1 to 4 that single current price is shown for all four bands.

Per connection	Current Prices – Telstra Wholesale Rate Card Jul 2013 to Expiry Date	Updated Model Prices			
		July 2015 to June 2016	July 2016 to June 2017	July 2017 to June 2018	July 2018 to June 2019
Band 1	\$80.00	\$43.33	\$44.38	\$45.45	\$46.03
Band 2	\$80.00	\$44.42	\$45.50	\$46.60	\$47.20
Band 3	\$80.00	\$45.51	\$46.62	\$47.74	\$48.38
Band 4	\$80.00	\$48.01	\$49.17	\$50.36	\$51.06
Average	\$80.00	\$44.58	\$45.94	\$47.05	\$47.66

Table 4.6

## 4.7 Assessment of Model Outcomes

### 4.7.1 Improved Efficiencies

As foreshadowed in Section 3.1.1, UXC Consulting expects lower prices to result from two key drivers of connection activity efficiency improvements:

1. changes to the management of Telstra’s external contractors; and
2. the use of those contractors for all connection activities.

The first driver is common to all LSS, ULLS and wholesale ADSL connections, while only LSS connections previously involved the use of higher cost internal Telstra staff.

In the absence of any further information on Telstra’s indirect and back of house costs, no conclusions could be drawn concerning any additional efficiencies that may have been achieved in these areas.

UXC Consulting observes that these efficiencies in managing direct connection activities have been reflected in the resulting prices produced by the updated model. In this respect the comparison of:

the current wholesale prices (July 2013 to expiry) as contained in the Telstra Wholesale Rate Card with

the model outcomes

shows that for each of the LSS and ULLS connection charges (whether single or MNM) the updated model has produced consistently lower prices than the current regulated prices. These consistently lower prices have also been observed for the wholesale ADSL connections.

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## 5. SUMMARY OF FINDINGS AND CONCLUSIONS

### 5.1 Development of Updated Model

The original individual models for (i) single LSS connections, (ii) single ULLS connections, (iii) LSS MNM connections and (iv) ULLS connections have been consolidated into a single model. The update has also included models for wholesale ADSL Type A connections, Type B connections and all other types of wholesale ADSL connections;

Telstra has significantly changed its management of external contractors. Those changes are, among other things, intended to materially improve the efficiency of the direct activities involved in connection activities;

the updated model assumes all work activities for the connection of the included services are carried out by contractors;

the model excludes the costs associated with the additional activities as described by Telstra in establishing connection/disconnection charges for ULLS, LSS and wholesale ADSL services;

the model no longer includes single LSS disconnection prices, on the basis that disconnection activities are undertaken as part of connection activities. This approach brings this assumption for single LSS connection activities in line with single ULLS connection activities;

“Wholesale ADSL Type A” simply involves an administrative procedure confined to back of house activities;

“Wholesale ADSL Type B” and “All other (wholesale ADSL) completed installation or transfer requests” are analogous to an LSS service connection.

the updated model provides for band-based pricing for single LSS connections, single ULLS connections and wholesale ADSL connections:

- o due to the uniformity of input costs disaggregation across Bands 1 to 4 has not been applied to LSS and ULLS MNM connections; nor has it been applied to Type A wholesale ADSL connections;

given that Telstra is now [c-i-c starts] [REDACTED] [REDACTED] [c-i-c ends], UXC Consulting expects that there would be a material reduction in those internal costs. However in the absence of any substantive information, the 10% uplift on contractor costs in the model to cover the contract management costs incurred by Telstra has been retained; and

A single figure of 8 minutes has been included for single LSS and single ULLS DAC activity (previously 4 minutes for LSS DAC activity).





## 5.2 Model Outcomes

With one possible exception the model outcomes confirm that Telstra's revised contractor arrangements appear to have resulted in significant efficiencies in the connection of LSS, ULLS and wholesale ADSL services. Specifically:

For each of the LSS and ULLS connection charges (whether single or MNM) the updated model has produced consistently lower estimated prices, ranging from ~9% (single LSS Band 1) to ~26% (LSS MNMs) for the 2015/16 year;

The inclusion of wholesale ADSL services has reduced Type A connection estimated prices by ~8%, with reductions of ~40% (Band 4) to ~46% (Band 1) for Type B and all other connections in the 2015/16 year.

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## Attachment A: ACCC References

### Documents

August 2007 final determination Request and Telstra dispute LSS Confidential Version

Consultel Confidential version of Comments on Telstra Response Regarding LSS Undertakings Interim Report, Feb 2006

Consultel, Analysis of ULLS and LSS undertakings and subsequent submissions – final report, February 2006 Confidential Version

Consultel, Analysis relating to Primus-Telstra LSS Dispute – interim report, February 2006 Confidential Version

Consultel, Analysis relating to Primus-Telstra ULLS Dispute – interim report, March 2006 Confidential Version

Consultel, Small scale MNMs between Wholesale ADSL, ULLS and LSS –Interim report, March 2007 Confidential Version

Consultel, Transferring Services between ULLS and LSS – Draft report, August 2006 Confidential Version

June 2008 ULLS Pricing Principles and Indicative Prices Confidential Version

March 2008 final determination Chime and Telstra ULLS Confidential Version

October 2007 LSS Pricing Principles and Indicative Prices confidential Version

Layer 10, Analysis relating to ULLS access disputes—Primus, Chime, Optus, XYZed, Request, PowerTel and Telstra, January 2008 Confidential Version

Final decision - LSS connection disconnection charge undertaking April 2006

Final report - FAD for wholesale ADSL - public version

Wholesale ADSL Final Access Determination - May 2013

### Models

2011 FAD indexed ULLS and LSS connection and disconnection charges.xls

Single LSS connection and disconnection model 2008-09.xls

MNM LSS connection model 2008-09.xls

Single ULLS connection model.xls

MNM ULLS connection model.xls

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## Attachment B: Telstra References

Telstra Wholesale Rate Card for Reference Services – Version 6.0 – 19-12-2014

“9 Jan 2015 letter to ACCC - ULLS LSS and WDSL charges from TIs”, accompanied by:

- Information from TIs re ULLS LSS and WDSL contractor rates 9 January 2015.xls

“4 February 2015 letter to the ACCC – connection and disconnection charges as part of the fixed line services FAD inquiry”

Additional information provided in Telstra letter of 4 February 2015 and during meetings with the ACCC, UXC and Telstra on 15th and 23rd January 2015.

a link to the Telstra Wholesale - Structural Separation Undertaking (SSU) webpage, with reference to the processes and systems for service qualification, service activation & provisioning and fault rectification for the services relevant to this paper.

Schematic diagrams showing the end-to-end connectivity path for a ULLS and LSS respectively.

A description of the additional activities undertaken under contract and paid as an uplift to the original SORs for specific connection activities (contained in Table 1 of letter of 9 January 2015).

The current SORs paid for the relevant work items involved in the connection of LSS, ULLS and wholesale ADSL services, along with associated fees paid for the contractor’s overhead costs (contract management and management fees). It also provided a mapping of those SORs to each type of connection activity for ULLS, LSS and wholesale ADSL services.

At the time of preparing this report Telstra had not provided information about whether its back of house costs had fundamentally changed and the quantum of any such change.

### Attachment C: Telstra Schedule of Rates (Adjusted)

UXC Consulting has adjusted Tables 1 and 2 in Telstra's letter of 4<sup>th</sup> February 2015 as shown below to remove the additional charges component. Section 2.3.3 of this report refers.

[c-i-c]

## Attachment D: 2011 ACCC Indexed ULLS and LSS Connection Model

[c-i-c]

## Attachment E:Description of SOR Tasks

(Reference:Telstra's 4 February 2015 letter to the ACCC- connection and disconnection charges as part of the fixed line services FAD inquiry.)

SOR	Description of tasks
<p>11-12 Run Jumpers Exchange MOF (Non Associated)</p>	<p>All work necessary to run jumpers at the exchange Main Distribution Frame (MDF) where this activity is not included in other SOR Items.</p> <p>This would require the running of jumpers for residential or multiple segment business orders, new or change of U requests and may include any number of work orders at a single exchange site.</p> <p>Includes removal of any redundant jumper wire from the frame where possible providing it will not damage any existing services.</p> <p>This SOR includes where required and approved by the cable assigner, the transfer or change of pairs within the exchange.</p> <p>Note: 11-12a1 may only be claimed where a Contractor is issued, at an individual exchange, 3 or less jumpering orders in the course of a day in an Exchange.</p>
<p>11-12a1 Run Jumpers Exchange MDF (Non Associated)</p>	<p>Refer to 11-12</p> <p>Note: 11-12a1 may only be claimed where a Contractor is issued, at an individual exchange, 3 or less jumpering orders in the course of a day in an Exchange.</p>
<p>11-12b3 Programmed multiple Ticket of Works in designated exchanges for PSTN</p>	<p>Refer to 11-12</p> <p>Multiple Ticket of Works SOR applicable to jumpering orders completed in exchanges of close proximity and/or within a reasonable travelling time of each other as determined and agreed between Telstra &amp; the Contractor regional representative.</p>
<p>11-13 Run Jumpers Exchange MDF (ADSL Only)</p>	<p>AU work required to run jumpers at the Exchange for connection of a Customer ADSL service.</p> <p>This item includes testing of ADSL Jumpers and Completion of Ticket Of Work in relevant database, including OATS testing.</p> <p>Using (NPAMS) the contractor will be accountable to update all associated records in NPAMS where a single pair change or transfer is made during completion of TOW. Includes removal of any redundant jumper wire from the frame where possible providing it will not damage any existing services.</p>

SOR	Description of tasks
<p>II-13a1 Run Jumpers Exchange MDF for ADSL (Simplex)</p>	<p>Where ADSL is to be installed on an existing PSTN service. terminate required jumpers at the CMUX/ASAM MDF block.</p> <p>Includes : Synchronisation of customers line by testing through an ADSL modem.</p> <p>Note: II-13a1 may only be claimed where a Contractor is issued, at an individual exchange, three or less ADSL Simplex jumpering orders in the course of a day in an Exchange.</p>
<p>II-13a2 Run Jumpers Exchange MDF for ADSL (Complex)</p>	<p>Where ADSL is to be installed and required to reuse existing disconnected ADSL ports.</p> <p>Includes: Removal of old jumpers from disconnected ADSL Port. and running of a new PSTN jumper on existing customer's service.</p> <p>Installation of an ADSL service as per Ticket Of Work, terminate required jumpers at the CMUX/ASAM MDF block.</p> <p>Synchronisation of customer's line by testing through ADSL modem.</p> <p>Note: II-13a2 may only be claimed where a Contractor is issued, at an individual exchange, three or less ADSL Complex jumpering orders in the course of a day in an Exchange.</p>
<p>II-13a6 ADSL Simplex</p>	<p>Programmed multiple Ticket of Work in designated exchanges for Simplex ADSL</p> <p>Multiple Ticket of Work's SOR applicable to jumpering orders completed in exchanges of close proximity and/or within a reasonable travelling time of each other as determined and agreed between Telstra &amp; the Contractor regional representative</p> <p>Note : II-13a6 is to be claimed where a Contractor is issued, at an individual exchange, four or more ADSL Simplex jumpering orders in the course of a day in an Exchange.</p>
<p>II-13a9 ADSL Complex</p>	<p>Programmed multiple Ticket of Work in designated exchanges for Complex ADSL</p> <p>Multiple Ticket of Work's SOR applicable to jumpering orders completed in exchanges of close proximity and/or within a reasonable travelling time of each other as determined and agreed between Telstra &amp; the Contractor regional representative.</p> <p>Note : II-13a9 is to be claimed where a Contractor is issued, at an individual exchange</p>

SOR	Description of tasks
<p>II-14a1 Vacant Unconditioned Local Loop (VULL) Jumper Task at Exchange MDF</p>	<p>four- or more ADSL Complex jumpering orders in the course of a day in an Exchange.</p> <p>Provide and prove jumpers from the exchange and all CCU's up to the NBD. Includes:</p> <ul style="list-style-type: none"> <li>• Tagging of circuit</li> <li>• Prove dial tone and arrange for testing to NBD and advise the access seeker of completion</li> <li>• Required testing with the access seeker via the Data Activation Centre</li> <li>• Using NPAMS access the contractor will be accountable to update AU associated records in NPAMS where a single pair change or transfer is made during an installation TOW</li> </ul> <p>This item includes where required and approved by the cable assigner, the transfer of pairs from the exchange to the NBD up to 3 transfer attempts per service.</p> <p>Provision of services to MultiLevel Developments.</p> <p>All work required to diagnose, locate and repair a faulty pair within the Customer Access Network</p> <p><b>Note</b> When installing a VULL service in a multiple frame exchange that requires two or more jumpers to be run then contractor can claim II-13a3 for the second and subsequent jumpers</p> <p>Contractor to indicate on TOW that additional jumpers are required due multiple frame exchange</p>
<p>II-14b1 Unconditioned Local Loop (ULL) Jumper Task at Exchange MDF</p>	<p>All work necessary to run jumpers at the exchange Main Distribution Frame (MDF) for this activity is not included in other Schedule 2 Item 3.</p> <p>This would require the running of jumpers where a single existing PSTN service is migrating to U or where an existing ULL service is transferring to another U Access Seeker.</p> <p>The Contractor is required to contact the DAC via SMS or phone to initiate activation of U TOW. Refer to Work Instruction 011147 for procedure on "When DACs to be contacted"</p>



SOR	Description of tasks
	<p>This item includes where required and approved by the cable assigner, the transfer or change of pairs within the exchange</p> <p>Includes removal of any redundant jumper wire from the frame where possible providing it will not damage any existing services.</p> <p>Note:</p> <p>Note -II-14b1 may only be claimed where a Contractor is issued at an individual exchange, 3 or less jumpering orders in the course of a day in an Exchange.</p> <ul style="list-style-type: none"> <li>● When installing a ULL service in a multiple frame exchange that requires two or more jumpers to be run then contractor can claim II-13a3 for the second and subsequent jumper</li> <li>● Contractor to indicate on TOW that additional jumpers are required due multiple frame exchange</li> </ul>
<p>II-14b2 Programmed multiple Ticket of Works in designated exchanges for ULL</p>	<p>Multiple Ticket of Works SOR applicable to jumpering orders completed in exchanges of close proximity and/or within a reasonable travelling time of each other as determined and agreed between Telstra &amp; the Contractor regional representative.</p> <p>Note: SOR II-14b2 may only be claimed where a Contractor is issued at an individual exchange, 4 or more jumpering orders in the course of a day in an Exchange.</p>
<p>11-15 ULLSSS Bulk Access Seeker Jumper Tasks at Exchange MDF</p>	<p>AU work necessary to run jumpers at the exchange Main Distribution Frame (MOF).</p> <p>This would require the running of jumpers where existing PSTN services are migrating to a ULL/555 Access Seeker.</p> <p>This code includes the following:</p> <ul style="list-style-type: none"> <li>● Receive tasks from Web Client</li> <li>● Complete Pre Jumper prior to TCD on the task</li> <li>● Complete cutover in conjunction with OAC on due date as per Web Client (ULL only) one call per 10 jumpers</li> <li>● Contact the OAC when no dialtone present on SSSIULICutovers</li> <li>● Complete work off in Web Client as per standard process</li> </ul> <p>This includes the required testing with the access seeker via the Data Activation Centre IOAC wherever applicable</p>

SOR	Description of tasks
	<p>This item includes where required and approved by the cable assigner, the transfer or change of paJrs within the exchange</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• This schedule should only be used for Bulk Access Seeker Jumpers</li> </ul>
II-15a1	ULL Jumper Task (II-15) completed in a single visit
II-15a2	ULL Jumper Task (II-15) completed in two visits
II-15a3	SSS Jumper Task (II-15) completed in single visit
II-15a4	SSS Jumper Task (II-15) completed in two visits

## Attachment F: Glossary of Terms and Acronyms

Term	
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ADSL	Asymmetrical Digital Subscriber Loop
ADSL Type A	analogous to LSS connections
ADSL Type B	analogous to LSS connections without any requirement for jumpering activity
CAN	Customer Access Network
CBD	Central Business District
DAC	Digital Activation Centre
DSLAM	Digital Subscriber Loop Access Module
eVULL(S)	enhanced Vacant ULLS
FAD	Final Access Declaration
IDS	Integrated Deployment Solutions
IULL(S)	In-use ULLS
Jumper	Copper wire connection between the two sides of a distribution frame or between distribution frames
jumper over extra	connection activity that involves running a jumper (to) a second main distribution frame
LSS	Line Sharing Service
MDF	Main Distribution Frame
MNM	Managed Network Migration
PSTN	Public Switched Telephone Network
SOR	Schedule of Rates
SSS	Spectrum Sharing Service (alternative name for LSS)
TOW	Ticket of Work

ULLS	Unconditioned Local Loop Service
VULL(S)	Vacant ULLS
WADSL	Wholesale ADSL