AUSTRALIAN COMPETITION
& CONSUMER COMMISSION

Domestic Transmission Capacity Service

An ACCC Discussion Paper reviewing the declaration for the Domestic Transmission Capacity Service

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Australian Competition and Consumer Commission

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List of abbreviations

ACCC	Australian Competition and Consumer Commission
AVC	Access virtual circuit
CAN	Customer access network
C&G	Corporate and Government
CBD	Central business district
CCA	*Competition and Consumer Act 2010*
CSA	Connectivity serving area
CSP	Carriage service provider
CVC	Connectivity virtual circuit
DCS	Data Carriage Service
DSL	Digital subscriber line
DSLAM	Digital subscriber line access multiplexer
DTCS	Domestic transmission capacity service
ESA	Exchange service area
FAD	Final access determination
FSA	Fibre serving area
FTTB	Fibre to the building
FTTC	Fibre to the curb
FTTN	Fibre to the node
FTTP	Fibre to the premises
HFC	Hybrid fibre coaxial
Infrastructure RKR	Audit of Telecommunications Infrastructure Assets – Record Keeping Rules
IP	Internet protocol
LTIE	Long-term interests of end-users
Mbps	Megabits per second
MLL	Managed leased line
MNO	Mobile network operator
NBN	National Broadband Network

NBN Co	NBN Co Limited
NNI Link product	Virtual network-to-network interface link product currently being developed by NBN Co
POI	Point of interconnection
POP	Point of presence
RKR	Record keeping rules
RSP	Retail service provider
SAM	Service area module
SAOs	Standard access obligations
SIOs	Services in operation
SSU	Structural separation undertaking
TC-1	NBN Co's highest priority traffic class. It is delivered as a committed information rate with defined latency, jitter and loss characteristics. It is suitable for applications that require highly deterministic traffic parameters such as voice.
TC-2	A traffic class that provides support for latency sensitive, interactive applications such as video conferencing, converged business collaboration, IPTV or gaming. It is delivered as a committed information rate with defined latency, jitter and loss characteristics.
TC-3	A traffic class designed to give priority to transactional data such as business applications running on a WAN. It is delivered as a committed information rate with defined latency, jitter and loss characteristics.
TC-4	A traffic class is designed for browser based applications such as the internet and web browsing. It is delivered in a range of peak speeds that are asymmetric.
TEBA	Telstra exchange building access
VoIP	Voice over internet protocol
WSA	Wireless serving area

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1. About this review

1.1. Purpose

The Australian Competition and Consumer Commission (ACCC) is holding a public inquiry about the declaration of the Domestic Transmission Capacity Service (DTCS), which is set to expire on 31 March 2019. The ACCC is required to conduct this inquiry during the 18 month period preceding its expiry date, pursuant to section 152ALA of the *Competition and Consumer Act 2010* (CCA). The purpose of this inquiry is to determine whether the declaration should be remade, extended, revoked, varied, allowed to expire or extended and then allowed to expire.[1] The inquiry will be held until 31 March 2019 when the current declaration for the DTCS expires.

The purpose of this discussion paper is to seek submissions on the key issues that are relevant to the review of the DTCS declaration. Submissions should address the issues raised in the discussion paper and any other issues that may be relevant to the declaration.

1.2. The ACCC's approach

The ACCC may declare a service if it is satisfied that declaring the service would promote the long-term interests of end-users (LTIE). In order to determine whether the LTIE is promoted, the ACCC must have regard to the extent to which maintaining, varying or revoking the existing declaration is likely to result in:

- the promotion of competition in markets for listed services
- achieving any-to-any connectivity in relation to carriage services that involve communication between end-users, and
- the economically efficient use of, and the economically efficient investment in, the infrastructure by which carriage services are supplied and any other infrastructure by which carriage services are, or are likely to become, capable of being supplied.[2]

These three criteria and the legislative background are discussed further at Appendix 3 to this discussion paper. The ACCC's Guideline to the declaration provisions for telecommunication services under Part XIC of the Competition and Consumer Act 2010 also provides guidance about the declaration process and the ACCC's general approach to declaration decisions.

1.3. Structure of this paper

This discussion paper is structured as follows:

- Section 2 provides a background to the declared DTCS, how it has been regulated to date and the potential impact of the National Broadband Network (NBN) on the DTCS market.
- Section 3 discusses and seeks submissions on the key issues for the review
- Appendix 1 provides a consolidated list of questions that submission should address
- Appendix 2 sets out the current DTCS service description

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1 See subsection 152ALA(7) of the *Competition and Consumer Act 2010* (CCA)

2 See section 152AB of the CCA.

- Appendix 3 provides more detailed information on the legislative framework for declaration and the ACCC's general assessment approach.

1.4. Timetable for the inquiry

The ACCC requests written submissions by **13 April 2018**.

After considering submissions from interested parties, the ACCC will set out its preliminary findings in a draft report. The ACCC may conduct a number of smaller inquiries before making its preliminary findings. The public inquiry will be conducted in two stages. The first stage will determine the appropriate service description for the DTCS while the second stage will consider the competition criteria in line with the revised service description, the state of competition and any other related issues.

The ACCC will provide an opportunity for comment on its preliminary findings before preparing a final report setting out its findings.

1.5. Making submissions

The ACCC encourages industry participants, other stakeholders and the public more generally to consider and make submissions on the issues set out in this discussion paper.

Submissions are preferred in electronic form, either in PDF or Microsoft Word format, a full list of questions is also set out at Appendix A.

To foster an informed and consultative process, all submissions will be considered as public submissions and will be posted on the ACCC's website. Interested parties wishing to submit commercial-in-confidence material to the ACCC should submit both a public and a commercial-in-confidence version of their submission. The public version of the submission should clearly identify the commercial-in-confidence material by replacing the confidential material with an appropriate symbol or 'c-i-c'.

The ACCC has published a guideline[3] with the process that parties should follow when submitting confidential information to communications inquiries by the ACCC. The ACCC-AER information policy: the collection, use and disclosure of information also sets out the general policy of the ACCC and the Australian Energy Regulator (AER) on the collection, use and disclosure of information. Both policies are available on the ACCC website.

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[3] ACCC, *Confidentiality Guideline for submitting confidential material to ACCC communications inquiries*, April 2014.

2. Background

There have been a number of changes to the technological, commercial and regulatory landscape of the communications sector in Australia since an inquiry was undertaken in 2014 to review the declaration of the DTCS. This review will provide an opportunity to examine changes in competition and market dynamics and to determine whether regulation remains appropriate to meet the long-term interests of end-users.

The rollout of the National Broadband Network (NBN) is now well advanced and having a significant impact on the Australian communications sector.[4] The continued consolidation of the telecommunications industry has also created two vertically integrated service provider groups (TPG[5] and Vocus[6]) in addition to Telstra[7] and Optus[8]. Improvements in wireless technologies, such as the introduction of 5G networks, raise the prospect of a viable alternative technology to fibre for the delivery of future high capacity short distance transmission services.

The ACCC notes that competitive transmission services are essential to carry traffic between the NBN points of interconnection (NBN POIs) and the points of presence (POP) on retail service provider's (RSPs) networks for the supply of communication services to end-users. As such, this declaration inquiry will examine, amongst other things, the supply of transmission services to the NBN POIs.[9]

Section 2 (below) examines the regulation of the DTCS and some of the current implications of the NBN on the DTCS market.

2.1. Transmission services

Transmission services underlie almost every telecommunications service. Transmission services are a wholesale input into many retail telecommunications services, including mobile services, residential broadband services and business services. There are both regulated and commercial (unregulated) domestic transmission services.

Transmission services are supplied by transmission network owners to access seekers (such as RSPs or wholesale providers) to carry traffic between two locations. The term 'transmission' refers to high capacity data links that are used to carry large volumes of communications traffic. Types of traffic which may be carried via transmission networks include voice, data or video communications.

Wholesale transmission services essentially allow access seekers to connect their customers in places where they do not own their own transmission infrastructure. Transmission services therefore enable carriers and carriage service providers (CSPs) to connect their core networks with points of service delivery (such as exchanges or customer premises) around Australia.

The type of wholesale transmission services required by an access seeker will depend upon the geographic reach of their core network and the location to which they wish to connect. There are competitive transmission services available along most inter-capital routes, routes to major regional centres and in the more densely populated metropolitan and regional

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4 ACCC, *Communications sector market study – draft report* (Market study draft report), 30 October 2017, p.12.

5 TPG Telecom Limited (TPG).

6 Vocus Communications Limited (Vocus)

7 Telstra Corporation Ltd (Telstra).

8 Singtel Optus Pty Ltd (Optus).

9 Proposed action 9 in the Market study draft report.

areas. However, in areas such as more sparsely populated areas or where a link is required to connect a core network to an end user's premises, competition is less effective. Regulation of transmission services in these areas ensures access seekers are able to provide downstream services.

2.2. The declared DTCS

The DTCS is the regulated transmission service. The declaration of the DTCS is made pursuant to subsection 152AL(3) of the CCA.[10]

The DTCS is a type of high capacity transmission service used by carriers or carriage service providers to carry data between network nodes. Only specific types of transmission services currently fall within the service description for the DTCS. The declared DTCS:

- is symmetric in that it has the same data rate in both directions
- is an uncontended service – which means that the capacity of the service is dedicated to one access seeker and not shared amongst others
- is a point-to-point service – that is, it is provided from one transmission point directly to another transmission point
- may be acquired at different capacities above 2 Megabits per second (Mbps)
- is a wholesale input into the provision of other services (that is, it is not a resale service)
- is identified using broad geographic route categories (discussed below)

DTCS route categories

The ACCC uses broad geographic route categories to identify separate DTCS markets. Following the conclusion of the DTCS final access determination in 2012[11] (2012 DTCS FAD) and last DTCS declaration review in 2014[12] (2014 DTCS declaration) the ACCC recognised transmission services on the following geographic routes:

- inter-capital routes – routes from an exchange service area (ESA) within the boundary of a capital city to an ESA within the boundary of another capital city. Capital cities include Melbourne, Sydney, Perth, Brisbane, Adelaide and Canberra, but not Darwin or Hobart. Capital city boundaries are at Table 3 of the service description.
- regional routes – routes where either or both the beginning (A-end) and end of a route (B-end) are outside the boundary of a capital city
- metropolitan routes – routes where both the A-end and B-end are within the boundary of a capital city
- regional tail-end route – a route wholly within a single ESA outside the boundary of a capital city, and
- metropolitan tail-end route – a route wholly within a single ESA inside the boundary of a capital city.

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10 Subsection 152AL(3A) of the CCA.

11 See ACCC, Final Access Determination No.1 of 2012 (DTCS) and ACCC, *Final Access Determination for the Domestic Transmission Capacity Service Explanatory Statement* (Explanatory Statement to the DTCS FAD), June 2012.

12 See ACCC, DTCS declaration final report, March 2014.

Appendix 2 sets out the full service description of the DTCS.

2.3. DTCS in context

Prior to 1991, the Australian telecommunications landscape was characterised by Telstra as the sole access provider of all telecommunications services including transmission. In 1991, a second network operator was granted a carrier licence. In 1997, the sector was opened to full competition, and new entrants invested in their own equipment to supply end-users with data, voice and broadband services. This has included the construction of competing transmission infrastructure.

Infrastructure-based competition in transmission services commenced in the inter-capital segment including routes between the cities of Brisbane, Sydney, Canberra, Melbourne, Adelaide and Perth. As a consequence, these routes were not declared.

Since then, a number of competing fibre providers such as Optus, AAPT, Nextgen, Pipe Networks and Vocus have entered the long haul and metropolitan (short haul) transmission markets. The Federal Government has established programs to establish long haul fibre infrastructure links via the:

- Regional Backbone Blackspots Program (completed by Nextgen in 2011). This program improved the supply of backhaul transmission links to a number of regional centres in areas where there was a lack of competitive backhaul infrastructure, and
- rollout of the NBN transit network.

The rollout of transmission infrastructure has continued since the ACCC's last declaration inquiry in 2014. Significant investments in transmission infrastructure have been made:

- to mobile sites - TPG has agreed to roll out dark fibre to 3,000 mobile sites owned by VHA,
- at NBN POIs – Vocus, TPG and Optus have connected to almost all of the NBN POIs, and
- within metro areas – some access seekers have invested in relatively short fibre links in the metropolitan CBDs and linking major data centre locations.

Consolidation of transmission service providers

Since 2014, consolidation of transmission providers has continued which has resulted in a number of smaller independent transmission suppliers being acquired by larger vertically integrated operators. As a result, the DTCS market is now dominated by four vertically integrated transmission providers - Telstra, Optus, TPG and Vocus, although they continue to offer wholesale transmission services through some of their subsidiary companies.

Changing technologies

The DTCS service description is technology-neutral; that is, the service description does not specify a particular underlying technology for the provision of transmission services.

Transmission services may be provided over optic fibre, microwave, satellite and copper technologies. Optical fibre is now generally the preferred technology used for transmission services due to its ability to transport large volumes of traffic. It also does not have some of the deployment constraints that face other technologies (such as line of sight difficulties and constraints on the delivery of higher capacities). In many cases, the existing copper network is still used to connect end customer premises to a local exchange normally in conjunction

with a fibre or other service, although some of these links may be replaced as the NBN network is rolled out.

Bandwidth capabilities of optical fibre have also expanded significantly with the ongoing development of dense wavelength division multiplexing. Ethernet technologies have also become more common on transmission networks, particularly with the expansion of fibre networks.

Changing types of transmission services

The rapid increase in mobile and fixed applications and capabilities are causing a rising demand for higher capacity transmission services. The average capacity of all DTCS services increased from 43Mbps in 2011 to 154Mbps in 2014. Backhaul services for mobile services increased in the same period from 2-10Mbps services to 100Mbps services.

In response to demand, transmission service products offered in the market have also changed over the past 5 years with the increasing availability of high capacity services (up to 10Gbps and beyond) between high traffic locations (points of presence, data centres and NBN POIs).

2.4. Why regulate the DTCS?

Issues of access in telecommunications markets generally arise when one or more operators control upstream facilities that provide a service or other input that is necessary for the provision of downstream services. Operators seeking to enter the downstream market must either purchase the upstream input from an operator who provides the good or service or produce the upstream input themselves, in order to be able to offer retail services to end-users.

If there are a reasonable number of upstream providers, each of whom can provide the relevant input, then competition will ensure that potential downstream operators can obtain the input at a reasonable price. Access to an essential input only gives rise to an economic problem if there is inadequate competition at the upstream level. In situations where this occurs, the ACCC can have a role in providing effective economic regulation that will strengthen and supplement competitive market processes to deliver outcomes that will be in the long-term interests of consumers.

The transmission market has very high barriers to entry and network deployment is capital intensive. Facilities-based competitors can face considerable challenges when seeking to compete against an incumbent operator with a ubiquitous network. Requiring a network operator to provide access to bottleneck infrastructure could, by reducing barriers to entry and cost disadvantages for other firms, increase competition and promote the economically efficient investment in and use of infrastructure, and thereby promote the LTIE.

The DTCS was deemed to be a declared service in 1997 because it was recognised to be an essential input for other services that included bottleneck infrastructure. The ACCC has maintained regulation of the DTCS in certain areas for the following reasons:

- It remains economically inefficient for competitors to duplicate existing transmission network infrastructure.
- transmission networks underlie virtually every telecommunications service and are a critical input for the supply of almost all other downstream retail and wholesale telecommunications services, particularly on geographic routes which are considered to be natural monopolies or which are otherwise uncompetitive.

- Telstra remains the dominant supplier of transmission services, particularly in regional areas. Therefore, access to the DTCS on geographic routes, which are considered to be uncompetitive, is critical to ensure that access seekers can achieve end-to-end connectivity to provide downstream services in different locations.
- transmission services are necessary to support the delivery of NBN services. RSPs providing end-users with NBN voice and data services will require transmission services to carry traffic between the 121 POIs and their POPs, usually located in a capital city location.

Where regulated access is available, access seekers are able to extend their core and access networks to provide downstream services. Appropriate pricing of the regulated access service ensures that access seekers are able to compete with incumbent service providers in areas where otherwise efficient entry would not be possible. In such areas, alternative service providers will not be deterred by prohibitive entry costs due to the sunk nature of large scale investments in transmission infrastructure.

The ACCC has maintained regulation of the DTCS in areas where it is not satisfied that there is effective competition or contestability and removed regulation in areas that have been found to be competitive.

Since the DTCS was last declared there has been significant concentration in the industry as the larger providers become more vertically integrated. This has enabled the larger transmission providers to extend the geographic reach of their transmission networks. In addition, the NBN has changed many market factors including concentrating services at locations where traffic is handed over from the NBN to transmission providers. While the market dynamics are constantly evolving it remains likely that there will be a need to maintain some DTCS regulation in areas where competition is less developed. This inquiry will determine whether the DTCS declaration should be remade and, if so, to what extent.

2.4.1. The history of declaring the DTCS

As noted above, the DTCS is a type of high capacity transmission service that is an input into nearly all other telecommunications services. Regulation of the DTCS facilitates competition by allowing access to the transmission provider's network at regulated prices so that access seekers can provide competitive downstream retail and wholesale services.

Since the DTCS was first deemed to be a declared service in June 1997[13] the declaration has been extended or varied in November 1998, May 2001, April 2004, April 2009, September 2010 and March 2014. On each occasion declaration of the DTCS has been found to be in the LTIE because it:

- promotes any-to-any connectivity between networks so that access seekers can provide downstream services in different locations
- promotes competition in downstream markets and ensures that access seekers can gain access to those transmission routes that are not competitive, and
- encourages the economically efficient investment in infrastructure (for example, by avoiding unnecessary duplication).

[13] See ACCC, *Deeming of Telecommunications Services*, June 1997.

2.4.2. The ACCC's approach to declaration

There is no general right to access telecommunications services in Australia and access is usually unregulated, unless an eligible service has been declared. The ACCC may only declare a service, or vary a declaration, after holding a public inquiry under Part 25 of the *Telecommunications Act 1997*, if it is satisfied that declaration would promote the LTIE.

In deciding whether declaration will promote the LTIE and whether the declaration should be extended, varied or revoked, the ACCC must consider the extent to which declaration is likely to result in the achievement of the following three objectives:

- Promote competition in markets for carriage services and services supplied by means of carriage services,
- Achieve any-to-any connectivity, and
- Encourage the economically efficient use of, and investment in, infrastructure by which the services are supplied.

Each of these objectives is discussed in more detail below. Further information on the ACCC's approach to declaration inquiries and the LTIE test is at Appendix 3 to this discussion paper. The ACCC's Guideline to the declaration provisions for telecommunication services under Part XIC of the Competition and Consumer Act 2010 is also available on the ACCC website.

Promoting competition

To assess whether declaration would promote competition in downstream markets, the ACCC will define the relevant markets, assess the level of competition in each of those markets, and assess how declaration might affect competition in those markets in the future.

When identifying the relevant markets, the ACCC considers the market(s) that are relevant to the supply of the service and any downstream markets which may rely upon this service. The ACCC generally gives most attention to the markets for downstream (or retail) services, as these (rather than the upstream or wholesale markets) are usually the markets in which declaration may promote competition.

When assessing whether effective competition exists in a relevant market, the ACCC examines a number of factors in the market including, but not limited to:

- structural factors, including market share and the level of concentration in the market
- the potential for the development of competition in the market, including planned entry, the size of the market and the existence and height of barriers to entry, expansion or exit in the relevant market
- the dynamic characteristics of the market, such as growth, innovation and product differentiation as well as changes in costs and prices over time, and
- the nature and extent of vertical integration in the market.

The ACCC also finds it useful to consider the likely future state of competition in a relevant market (with and without declaration of the service) when considering the effect that declaration would have on competition in the relevant market. Among other things, this will require consideration of whether declaration would establish conditions under which competition will be improved, and whether these conditions are likely to develop in the future without declaration.

Subsection 152AB(4) of the CCA also provides that the ACCC must take into account the extent to which declaration is likely to remove obstacles of access to the service, such as access on unreasonable terms or no access at all.

Achievement of any-to-any connectivity

In terms of the objective of any-to-any connectivity, the ACCC considers whether each end-user is able to communicate with other end-users, irrespective of whether or not they are connected to the same telecommunications network.[14]

Encouraging the economically efficient use of, and investment in, infrastructure

The ACCC will have regard to the factors set out in subsections 152AB(6) and (7) of the CCA when determining whether declaration will provide for the efficient use of existing infrastructure where it is inefficient to duplicate and, encourage investment in networks or network elements where such investment is efficient. These factors include:

- the technical feasibility of providing and charging for the DTCS
- the legitimate commercial interests of DTCS supplier(s), and
- the incentives for investment in infrastructure.

The ACCC takes account of how declaration may impact incentives for investing in existing infrastructure such as maintenance, improvement and extension of this infrastructure, and investment in new infrastructure.

2.4.3. The criteria used to assess competition in transmission markets

The ACCC's competition assessment examines specific transmission routes and ESAs to determine whether there is sufficient evidence of competition on those routes and ESAs in order to remove regulation.

2008 Exemption decision

In 2008 the ACCC used separate competition criteria for capital-regional (or regional) and metropolitan/CBD inter-exchange (or metropolitan) DTCS routes when assessing three exemption applications[15] made by Telstra[16]and deciding whether to remove regulation. The competition criteria took into account:

- the number of fibre providers (either within 1km of a regional town's post office or point of interconnect at a Telstra exchange in a metropolitan ESA), and
- a competitor's proximity to the Telstra CAN and access to a capital city and CBD.[17]

2014 DTCS declaration decision

During the 2014 DTCS declaration inquiry, the ACCC consulted on a revised methodology to assess the state of competition in transmission markets. The ACCC applied the same competition criteria to all geographic routes and ESAs (regulated and deregulated). This assessment was more comprehensive than in 2008 when the competition assessment was limited to the ESAs and routes applied for by Telstra in its exemption applications.

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14 Subsection 152AB(8) of the CCA.

15 Under the now repealed section 152AT of the CCA.

16 See ACCC, *Telstra's domestic transmission capacity services exemption applications - final decision* (Telstra DTCS Exemption Decision), November 2008.

17 ACCC, Telstra DTCS Exemption Decision, November 2008, pp. 3-4.

Under the new methodology, there had to be a minimum of three fibre providers at, or within close proximity to, a Telstra exchange. Once this initial threshold was met, the ACCC applied a number of additional quantitative and qualitative assessments. These included an assessment of:

- whether the three fibre providers were independent of each other
- the presence at, or close proximity of, competing fibre providers to a Telstra exchange
- whether the route was being serviced by at least three of the four largest transmission providers
- whether there was direct connectivity from that exchange to major transmission hubs in, or close to, the CBD of the major capital cities
- whether there was sufficient demand in that area to indicate likelihood of new investment and the potential for competition to develop
- the level of price competition in the area, and
- whether there was evidence of transmission services being supplied from the ESA.[18]

The ACCC used the competition methodology to assess actual levels of service availability on a DTCS route or the potential for existing or new providers to offer a competing service. The methodology also took into account levels of demand and the potential for infrastructure investment to occur. Where there was evidence of sufficient competition, regulation was removed.

In some cases, an ESA may have either marginally failed to meet some aspect of the revised competition assessment or only just met the revised methodology. For example, a competing fibre provider may have been slightly further away from a Telstra exchange but still on a main transmission route. In these cases, the ACCC took into account additional relevant considerations to form a view as to whether the route was competitive. Additional considerations included matters such as the level of urban development in an adjacent area, the likely level of demand or fibre investment close to a particular route. Having considered these additional matters, the ACCC then formed a view on whether the ESA or route should be deregulated or whether continued regulation was appropriate.[19]

2.4.4. Deregulated DTCS routes and exchange service areas

A total of 200 metropolitan exchange service areas (ESAs) and 27 regional routes are now excluded from regulation.[20] The ACCC removed regulation from:

- inter-capital transmission routes between Sydney, Canberra and Melbourne in 1998[21] and, Brisbane, Adelaide and Perth in 2001[22]
- 14 capital-regional routes in 2004[23]

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18 ACCC, DTCS declaration final report, March 2014, p.9.

19 ACCC, DTCS declaration final report, March 2014, p.10.

20 The list of routes that are not subject to regulation is at Appendix 2 to this paper and available on the Regulated Infrastructure page of the ACCC website.

21 ACCC, *Competition in data markets – Inquiry Report*, Chapter 4, November 1998.

22 See ACCC, *A final report examining possible variation of the service declaration for the DTCS* (DTCS declaration final report), May 2001.

23 ACCC, *Transmission capacity service - Review of the declaration for the DTCS – Final Report* (DTCS declaration final report), April 2004.

- nine capital-regional routes, 72 metropolitan/inter-exchange ESAs and 16 central business district (CBD)/inter-exchange ESAs in 2008[24], and
- 112 metropolitan ESAs and eight regional routes in 2014. [25]

As a result of the more comprehensive competition assessment conducted in 2014, the ACCC re-regulated three routes and seven ESAs that had previously been deregulated due to insufficient evidence of competition.[26]

In terms of the 121 NBN POIs, 46 are in ESAs that are currently regulated while 75 are in ESAs that are deregulated.[27]

2.4.5. Assessing the state of competition in the current declaration inquiry

The ACCC proposes to undertake a similar competition assessment during this inquiry. It will review the competition criteria applied in the 2014 inquiry to determine whether it remains appropriate or whether it should be varied in order to test the level of competition.

The ACCC notes that the competitive landscape may have been affected by the recent consolidation of transmission service providers. There are now four large vertically integrated providers (Telstra, Optus, TPG and Vocus) supplying wholesale services as well as downstream retail voice and broadband services.

The ACCC also notes the concerns raised by some service providers during the ACCC's communications sector market study and domestic mobile roaming declaration inquiries with respect to the choice and pricing of transmission services at some NBN POIs and mobile sites in remote and regional areas. Some service providers also made submissions with regards to the availability of dark fibre at the NBN POIs. The ACCC notes that an inquiry on a record keeping rule for dark fibre services is currently proposed in the communications sector market study draft report to monitor the supply of dark fibre services and assist with decisions on whether any regulatory intervention is necessary.[28]

In Section 3.5 of this discussion paper, the ACCC seeks submissions on the state of competition and availability of transmission and dark fibre services at the NBN POIs. The discussion paper also seeks submissions on whether it is appropriate to use the competition criteria used in the 2014 DTCS declaration inquiry for the assessment of current levels of competition on regulated and deregulated routes and if so, whether any aspects of it should be changed.

2.5. Reviewing the DTCS service description

As part of its inquiry, the ACCC is seeking submissions on whether the DTCS service description adequately reflects the way in which the DTCS is currently sold and purchased in the market. In particular, submissions are sought with regard to the service features of the regulated service, whether additional service features should be included in the description, and the geographic routes listed in the current DTCS service description.

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[24] See ACCC, Telstra DTCS Exemption Decision, November 2008. The DTCS declaration was later varied in 2009 to reflect the ACCC's final decision on Telstra's exemption applications

[25] See ACCC, DTCS declaration final report, March 2014.

[26] See ACCC, DTCS declaration final report, March 2014.

[27] ACCC, DTCS declaration final report, March 2014, p.24.

[28] See ACCC, Market study draft report, October 2017, pp. 93-97 and 149.

2.5.1. DTCS service features

The basic transmission service that includes the features set out in the DTCS service description is supplied by transmission providers via a number of different products to meet different access seeker requirements on regulated and deregulated routes. Some of these transmission products are closely aligned with the DTCS service description and regulated pricing, while other products bundle other capabilities and features in addition to the basic (DTCS) service.

Standard access obligations (SAOs)

Under the CCA SAOs, transmission providers that supply the DTCS (either to themselves or other persons) must also supply the DTCS to an access seeker upon request, subject to the conditions set out in section 152AR of the CCA (the supply SAO).

The supply SAO[29] applies to the regulated service that is set out in the DTCS service description (for example, the data carriage service supplied by Telstra). That is, if a transmission product or service meets the features set out in the service description, then the transmission provider has an obligation to supply that service on request by an access seeker. However, if a service includes additional features not covered by the service description, or is a service that is provided on routes or to ESAs that have been deregulated, then the supply SAO does not apply.

Access terms and conditions

In setting the price and (targeted) non-price terms and conditions for the DTCS, the 2016 DTCS Final access determination (FAD) is the fall back set of terms and conditions for the service that is defined in the DTCS service description. In pricing the basic service, the DTCS FAD is intended to provide a reference price for all transmission products that have, at the very least, the basic characteristics of a DTCS service. In this way, the DTCS is the fall-back product for carriers that are unable to reach commercial agreements with regards to their transmission requirements.

2.5.2. Transmission service products with additional features to the DTCS

There are a number of different products currently in the market that offer additional features to the DTCS.

Telstra introduced the managed leased line (MLL) services in August 2012. MLL services include the features of the DTCS and some additional features, including proactive monitoring of faults, access interface protection and point to multipoint functionality (as opposed to the simpler point to point links provided under the data carriage service). Most new transmission services are MLL services acquired under commercially negotiated access agreements. Other transmission providers, including Optus,[30] Vocus and AAPT[31] also offer similar services to the MLL in regulated areas. The ACCC considers it timely to consider whether the DTCS service description still adequately captures the basic service that is generally provided in the transmission market or whether changes should be made to the current service description to reflect changes in the market since the DTCS service description was made.

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29 Sub-section 152AR(3) of the CCA.

30 Singtel Optus Pty Ltd (Optus).

31 AAPT Limited (AAPT) – part of the TPG group.

In Section 3.3 of this discussion paper, the ACCC seeks submissions on whether the current DTCS service description identifies all relevant service features or whether there are other features that should be included.[32]

2.5.3. DTCS geographic routes

The DTCS is supplied in different geographic markets. In Sections 3.2 and 3.3 of the discussion paper, the ACCC seeks submissions on whether the geographic routes identified in the DTCS service description still reflects the geographic markets in which the DTCS is acquired and supplied. The ACCC is also considering whether there are other routes, such as the transmission routes to NBN POIs, and mobile sites in regional and remote areas that should be added and/or considered separately.

Mobile backhaul routes in regional and remote areas

Mobile backhaul in regional and rural areas is a significant cost to extending mobile networks. In many regional areas, low population density and the high costs of infrastructure mean that the economic returns on extending networks may be low. Transmission costs will be incurred by a mobile network operator (MNO) if they decide to improve their mobile networks by either increasing transmission capacity or by establishing new base stations and new transmission links to connect these base stations back to the MNO's core network.

Transmission is generally required from a base tower to the MNO's network. In some cases, this will require a separate link or tail-end between the locations. Where a MNO seeks to co-locate on another MNO's tower, it may still require a transmission link from the shared facility back to its network.

Many transmission routes in regional areas, including those in which regional or remote base stations are located, will be in regulated areas, and subject to regulated prices. However, even if regulated prices are applied to the transmission link in whole or in part, transmission costs remain a significant cost to mobile network expansion and to better mobile coverage in remote and rural areas. The ACCC will examine whether transmission services to mobile base stations or towers in remote and regional areas should be assessed separately from other transmission services given the competitive dynamics of this market (one provider, low levels of demand and low returns from investment).

As part of its consideration of mobile backhaul services, the ACCC is also interested in receiving submissions on the accessibility of transmission services to mobile sites in rural and remote areas and, specifically, whether there are particular obstacles to accessing such prices. The ACCC understands that although transmission services in remote and regional areas are generally declared under the DTCS declaration, some access seekers may be experiencing difficulties when trying to access 2016 DTCS FAD pricing for services between the mobile towers and the nearest POP on their network.[33]

NBN POI backhaul routes

Given the importance of transmission services for the delivery of communication services to end-users on the NBN, the ACCC is also considering whether transmission services to NBN POIs should be examined separately from other DTCS services, including whether a specific NBN POI transmission route classification should be added to the current regional, metropolitan and inter-capital routes.[34]

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[32] See also ACCC, Market study – draft report, 30 October 2017, p.97.

[33] For issues on mobile services in regional areas see also ACCC, *Measures to address regional mobile issues*, October 2017.

[34] See also ACCC, Market study – draft report, 30 October 2017, p.97.

Stakeholder views are also sought on the current impact of the NBN on DTCS markets including whether:

- the DTCS service description should continue to use ESAs during the roll-out of the NBN to identify geographic boundaries of telecommunications services and networks
- the migration of DTCS services on Telstra's copper network to the NBN is having an effect on the DTCS geographic markets
- the DTCS is being acquired on routes that reflect the structure of the NBN, that is from an NBN POI to an RSP's POP (NBN POI backhaul routes).

The impact of the NBN on DTCS markets is discussed further below.

2.6. Impact of the National Broadband Network

The NBN is expected to be completed by 2020 and is now at the half way stage of its roll-out. As at December 2017, RSPs were acquiring a total of 3,467,306[35] NBN access services. NBN access services are from the end-user to one of the 121 NBN POIs. RSPs will then require additional transmission to connect from the NBN POI to their POP, usually in a capital city. RSPs can provide this link using their own networks or by acquiring transmission services from other access providers. [36] As the NBN is rolled out, Telstra is also decommissioning its copper and HFC customer access network (CAN) while progressively migrating its customers onto NBN access services, or other equivalent services in areas serviced by fixed wireless and satellite access technologies.

NBN access technologies

In 2009 the Federal Government established NBN Co[37] to build and operate a wholesale-only, open access NBN. Initially the Government's objective was for NBN Co to build a fibre-to-the premises (FTTP) access network to 93 per cent of Australian premises, with the remainder of premises to be served with fixed wireless and satellite services. In 2014 the Government expanded the technology used to build the access network to include fibre to the node/basement/curb (FTTN/FTTB/FTTC) and hybrid fibre coaxial (HFC). [38] The NBN is currently being rolled out with all of these technologies with the exception of FTTC[39] (although it is currently in the trial stage) and HFC, deployment of which is expected to resume later in 2018.[40] In the 2014 DTCS declaration inquiry the ACCC found the impact of the NBN on DTCS markets to be minimal.[41] The ACCC anticipates that the current impact will be greater although the extent is unclear as the NBN is still being rolled out. The ACCC considers that any future regulatory arrangements for the DTCS should consider:

- the new telecommunications network architecture under the NBN
- the migration of DTCS services on Telstra's copper network
- the availability of transmission products on the NBN, and

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35 ACCC, NBN Wholesale Market Indicators Report, December 2017.

36 In some cases RSPs will buy wholesale aggregation services from an aggregation provider that bundles together NBN access services and transmission services.

37 National Broadband Network Corporation Ltd (NBN Co).

38 Announcement made by the Minister of Communications and the Arts on 9 April 2014

39 NBN Co, Fibre-to-the-Curb (FTTC): Our latest network technology, viewed 2 November 2017.

40 NBN Co media release, 27 November 2017: https://www.nbnco.com.au/corporate-information/media-centre/media-releases/improved-customer-experience.html

41 ACCC, DTCS declaration final report, March 2014, pp.33-34.

- the demand and supply of transmission services on NBN POI backhaul routes to support the delivery of voice and data services over the NBN.

2.6.1. NBN telecommunications network architecture

The existing DTCS service description (and DTCS FAD) uses Telstra ESAs to identify the geographic boundaries of telecommunications services and networks. The ACCC is currently considering whether it remains appropriate to use ESAs or whether NBN service areas are more appropriate in the future.

In Section 3.3 of this discussion paper, the ACCC seeks submissions on whether the DTCS service description should employ ESAs and/or NBN distribution areas to identify the geographic boundary of telecommunications networks for the next DTCS regulatory period.

2.6.2. Migration of DTCS services on Telstra's copper network

On 27 February 2012 the ACCC accepted Telstra's Structural Separation Undertaking (SSU) and Migration Plan outlining how Telstra will progressively migrate voice and broadband services from its copper and HFC networks to the NBN as the fibre network is rolled out across Australia.

On 31 May 2016 NBN Co published a white paper[42] on the development of a service on the NBN network that is equivalent to wholesale DTCS services provided over the copper network (the TC-2 services). The TC-2 is currently available on the FTTP/B/N access technologies.

In addition to the white paper, Telstra issued a notice[43] in February 2017 notifying the ACCC and consumers that it intends to cease providing the DTCS supplied over copper on a national basis (including where copper services are supplied outside the NBN fixed line footprint). These services are currently provided by Telstra as wholesale transmission services on metropolitan, regional and tail-end routes.

Disconnection of DTCS copper services within the NBN footprint will commence, at the earliest, on 31 May 2019 in regions that have passed their rollout regional disconnection date.[44] While there is no firm disconnection date for services outside the NBN footprint, it is anticipated that services will be withdrawn by 2022.

In Sections 3.4.2 and 3.5.3 of this discussion paper, the ACCC seeks submissions on the effect of the migration on the structure of DTCS markets.

2.6.3. Availability of transmission products on the NBN

NBN Co provides Layer 2 bitstream services between an end-user premise and the NBN POI on three different types of traffic classes: TC-1, TC-2 and TC-4. Access seekers purchasing an NBN wholesale service must order a TC-4 AVC. Once this is purchased they may also elect to order a TC-1 and/or TC-2 AVC.[45]

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42 NBN Co, Temporary Special Services White Paper – Megalink and Wholesale Transmission, May 2016. Also at Whitepaper for Special Services accessed 23 February 2018.

43 Telstra Required Measure 5E - Process for disconnection of direct special services and special service inputs – wholesale transmission, 17 February 2017, p.2. Also at Telstra Required Measure 5E Notice , accessed 2 November 2017.

44 Ibid.

45 NBN Co, Wholesale Broadband Agreement NBN Co Ethernet Bitstream Service Product Description, p. 13, accessed 2 November 2017.

While NBN services are not regulated under the DTCS declaration, they are in some cases equivalent to a DTCS service, and could be an alternative for a DTCS service. As such, they may be taken into account in an assessment of the state of competition in an area.

In Section 3.3 of this discussion paper, the ACCC seeks submissions on whether stakeholders consider an NBN access service to be a substitute for the DTCS. Following is a summary of each of the NBN traffic classes.

Traffic Class 4

The TC-4 service is used for residential broadband. It is a contended and asymmetric service which is available at different speed combinations on all NBN access technologies.[46]

In the 2014 DTCS declaration inquiry[47] the ACCC did not consider the TC-4 service as a full substitute to the DTCS on the basis that it did not have a committed information rate and involved a contended component. The ACCC found that while the TC-4 could be offered at high capacities, it might not be able to provide the same quality of service as the DTCS at peak congestion periods. At the time of the decision the ACCC had no data on the performance of NBN Co's residential services as NBN Co had yet to offer these services on a wide scale basis.

Given the large number of NBN services in operation (SIOs), the ACCC is interested in the experience of access seekers with regards to the TC-4 and whether they consider TC-4 services to be a substitute for lower capacity DTCS services.

Traffic Class 1

The TC-1 traffic class service is used for VoIP and data services. It is a symmetric and uncontended service. It is offered at capacities up to 5 Mbps. It is also offered on all NBN access technologies.

The ACCC considers it possible that a TC-1 service on its own or combined with a TC-4 service could be used as an alternative to the DTCS, in particular for small size business. The ACCC is seeking submissions on the extent to which access seekers are acquiring the TC-1 and/or TC-4 services as a substitute to the DTCS inside an NBN serving area.

Traffic Class 2

TC-2 traffic class services were first released in May 2014 by NBN Co. A TC-2 service is designed to provide for business-grade applications such as video conferencing, virtual private networks and similar business connectivity solutions. The targeted market is small to medium sized businesses.

The TC-2 service is symmetrical and uncontended. It is offered on FTTP, FTTB and FTTN technologies at speeds up to 100 Mbps.

While the TC-2 appears to meet the criteria set out in the current DTCS service description, there are a number of limitations to the way it is currently offered. For example, the TC-2 is not offered:

- at capacities higher than 20 Mbps for services on FTTB/N access technologies
- at capacities higher than 100 Mbps for services on the FTTP access technology

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[46] NBN Co, http://www.nbnco.com.au/get-an-nbn-connection/wholesale-speeds.html, accessed 17 May 2013.

[47] ACCC, DTCS declaration final report, 2014, pp.29-30.

- on the HFC access technology although NBN Co has plans to introduce TC-2 HFC services in 2018
- on fixed wireless and satellite technologies, or
- as an input to mobile backhaul services - the NBN is not being rolled out to mobile infrastructure such as mobile base stations or towers.

In Section 3.4 of this discussion paper, the ACCC seeks submissions on whether access seekers consider the TC-2 access service as a substitute to the DTCS that can meet access seeker transmission requirements

Other services

NBN Co has proposed to develop additional fibre products for businesses, which are capable of delivering traffic on a symmetric and committed basis.[48] These products include Fixed Wireless Business Grade services, Enterprise Satellite services, TC-3 and Enterprise Ethernet services. NBN Co is also developing a network-to-network interface (NNI) link product to open new wholesale options for RSPs wanting to connect to the NBN.[49] This product is considered to be a potential complement to transmission services supplied to NBN POIs by other service providers. The ACCC will monitor commercial developments in this area and will assess the competition implications of these products on the DTCS markets when they are made available. However the ACCC welcomes submissions on whether stakeholders anticipate acquiring these services instead of or in conjunction with the DTCS once they are released.

2.6.4. Demand and supply of transmission services on NBN backhaul routes

Transmission services are necessary to support the delivery of NBN services. RSPs providing end-users with voice and data services require transmission services to carry traffic between the 121 listed NBN POIs and their POP, usually located in a data centre in a capital city. RSPs will either use their own transmission network infrastructure for their transmission services or purchase transmission services from other carriers.

As discussed above, the ACCC is seeking submissions to assess the impact of the NBN on DTCS markets, the nature of any investments being made in transmission capacity at the NBN POIs as well as the extent to which transmission traffic is now concentrated on NBN backhaul routes. The ACCC is also interested in the experiences of service providers with regards to accessing transmission services on NBN POI backhaul routes, whether purchased as a standalone service or part of an aggregated service (NBN wholesale and backhaul service).

During the ACCC's communications sector market study, a number of service providers cited concerns about accessing NBN POI backhaul services. In particular, the cost of transmission services to some NBN POIs, the limited choice of active suppliers and the limited choice of transmission services, such as supply options for fully protected (dual path) feeds to all NBN POIs.[50]

The ACCC proposes to explore these concerns further during the inquiry and invites submissions on the availability, choice and pricing of transmission services from the NBN

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48 NBN Co, Integrated Product Roadmap, accessed 2 November 2017.

49 NBN Co, *ACCC communications market study – nbn submission to the ACCC in response to the Communications Sector Market Study Draft Report issued in October 2017 [public]*, p.14

50 ACCC, Market study draft report, October 2017, pp. 93-94 and 96.

POIs including aggregation services. As part of this inquiry the ACCC is also interested in receiving submissions on the availability of dark fibre services from the POIs.

2.7. Assessing competition

In Section 3.5 of this discussion paper, the ACCC seeks submissions on how the state of competition for transmission services is impacted by the NBN (discussed above) and the recent consolidation of the telecommunications market.

The ACCC also seeks preliminary views on whether the competition criteria used in the 2014 DTCS declaration report should be used to assess current levels of competition on declared inter-capital, metropolitan and regional routes and whether any aspect of the criteria should be changed to take account of changed market conditions. As part of its assessment of the competition criteria, the ACCC is also considering whether it is appropriate to apply the competition criteria in areas where an equivalent NBN access service is available.

2.8. Access to facilities for the DTCS

Carriers must be able to interconnect their network and equipment with other carrier network and equipment so that they are able to provide telecommunications services to consumers. Access to facilities, such as ducts and interconnecting cables in the Telstra Equipment Building Access (TEBA) space, are necessary for service providers to interconnect their equipment and access the DTCS.

Access to facilities for the DTCS is important to ensure that access seekers are able to interconnect their existing transmission infrastructure from the TEBA space to other services.

The ACCC also notes that 111 of the 121 NBN POIs are located in Telstra exchanges and that it is important that access to transmission capacity is not hindered due to the location of these services in Telstra's exchange.

In Section 3.6 of this discussion paper, the ACCC seeks industry views on whether there are problems of access to facilities for the purpose of interconnecting with a transmission network provider and acquiring the DTCS.

3. Issues for consultation

This section identifies and seeks submissions on the key areas that the ACCC considers relevant to its assessment of whether declaring the DTCS would be in the LTIE.

3.1. State of competition in deregulated ESAs and DTCS routes

Since the DTCS was first deemed a declared service in 1997, the ACCC has deregulated routes which it has found to be competitive. As noted earlier, the following standalone transmission routes (that is, without incorporating a tail-end link) have been deregulated:

- inter-capital routes (specified in paragraph (c) and Tables 1 and 3 of the DTCS service description)
- regional routes (specified in paragraphs (d) and Tables 1 and 2 of the DTCS service description), and
- metropolitan routes (specified in paragraphs (e) and Table 1 of the DTCS service description).

The ACCC seeks views on whether the currently deregulated DTCS routes and ESAs continue to remain competitive and whether there have been any issues of access to different types of services in these areas, such as access to particular DTCS capacities.

Questions on which the ACCC seeks views:

1. Has there been any change to the state of competition in the market for the DTCS in the currently deregulated routes and ESAs? If so, what change has occurred?
2. Are there any issues over access to DTCS type services in the deregulated areas?

3.2. Identifying relevant markets for the DTCS

Defining the relevant markets for transmission services allows the ACCC to meaningfully analyse the effectiveness of competition, and determine whether declaration will be in the LTIE.

In most cases, the ACCC will focus on the market in which the eligible service is supplied. The process of market definition, however, also involves determining the market boundaries of transmission or any downstream markets, which can be described in product, geographic and functional terms.[51]

In the 2014 DTCS declaration[52] the ACCC identified the relevant downstream markets for the DTCS as the range of wholesale and retail services that can be supplied using transmission services delivered (at least in part) over optical fibre. DTCS downstream markets included the markets for data services such as business grade services, residential broadband and local, national and international services. The ACCC found that mobile services (including voice and data) were also a relevant downstream market, as continued growth in mobile data usage increased the use of transmission capacity. The ACCC concluded that:

[51] ACCC, *Merger Guidelines,* November 2008, p. 15.

[52] ACCC, DTCS declaration final report, March 2014.

- it remained appropriate to employ the geographic markets identified in the DTCS service description (a combination of particular geographic areas and route category types)
- the product market was the market for data transmission services at varying capacities and distances
- at a functional level, the DTCS was a wholesale input for the provision of communication services, including resale at a wholesale level, and
- the temporal dimension was the period in the foreseeable future sufficient to ensure that the assessment of competition in the relevant market(s) best reflects both actual competitive dynamics present in the market or the potential threat of entry.

In relation to the corporate and government (C&G) market, the ACCC found that it was a distinct downstream market but not a separate upstream market because it used the same transmission inputs as other downstream services. The ACCC did not consider that defining separate product markets according to types of customers served (for example, C&G customers) would significantly contribute to the competition analysis for the purposes of declaration. It also found that markets that required a higher quality of service than others could be provided for through commercial negotiations, rather than through declaration of individual markets.[53]

However, in the 2016 DTCS FAD[54] low capacity and short distance services were accounted for separately from all other services via a dummy variable in the regression model. The ACCC also had regard to the fact that low capacity short distance services represented a significant proportion of 2016 DTCS FAD benchmarking dataset (54 per cent) and were a wholesale input into a specific downstream market, namely the small to medium enterprise and business market.[55] The ACCC is interested in stakeholder views on whether low capacity and short distance services are a downstream DTCS market that should be accounted for separately in the DTCS service description.

The ACCC also seeks submissions on whether there are any additional markets in which the DTCS is an input, such as aggregation services which have a NBN wholesale service component and transmission service component from the NBN POI to an access seeker's POP.

Geographic Markets

The ACCC has previously established the geographic dimensions of the market by identifying whether there are any substitutes for the supply of transmission services in alternative regions. In most cases, it found that access seekers are likely to purchase the DTCS as a point to point route with alternative routes unlikely to be suitable. A high level of demand substitution (that is, switching products in response to price increases) for the DTCS was considered unlikely. The ACCC also found that access seekers were likely to be constrained in their ability to switch to alternative sources of transmission supply in areas that were still primarily dominated by Telstra, such as regional areas. The ACCC identified the geographic markets as including transmission on inter-capital, regional and metropolitan routes and ESAs and, tail-end transmission in regional and metropolitan ESAs.

The ACCC seeks submissions on whether the DTCS geographic markets have changed since 2014 and whether there are any substitutes in any of the geographic markets. As discussed in Section 2.4.3 of this discussion paper, the ACCC is considering whether

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53 ACCC, DTCS declaration final report, March 2014, pp.25-28.

54 ACCC, *A public inquiry to make an access determination for the DTCS – final report* (DTCS access determination final report), April 2016.

55 ACCC, DTCS access determination final report, April 2016, p.57.

transmission services to mobile sites in regional and remote areas should be distinguished from other transmission services given the competitive dynamics of this market (one provider, low levels of demand and low prospect of future investment). The ACCC is also interested in understanding whether access seekers are able to access regulated pricing for declared DTCS services to mobile towers, particularly in regional and remote areas.

In addition to transmission services to mobile sites in remote and regional areas, the ACCC is considering whether transmission services to NBN POIs should be examined separately from other DTCS services in recognition of the importance of these services as an input into telecommunications services to end-users.[56] The potential impact of the NBN on the structure of DTCS geographic markets is discussed further below in Section 3.4.

Questions on which the ACCC seeks views:

3. The ACCC has previously identified that the relevant downstream markets for the DTCS include the markets for data services such as business grade services, residential broadband and local, national and international services, mobile voice and mobile data services. Are these the relevant downstream markets for which the DTCS continues to constitute an input?
4. Have the DTCS geographic markets changed since 2014?
5. Should transmission services that are used for the supply of mobile services in remote and regional areas be distinguished from other transmission services?
6. Are access seekers able to access the DTCS (and regulated pricing under the 2016 DTCS FAD) for services to mobile towers in regional and remote areas?
7. Should transmission services to NBN POIs be examined separately from other DTCS services?
8. Are there any substitutes for the DTCS in any of the geographic markets?

3.3. Clarifying aspects of the existing DTCS service description

The ACCC is considering whether it would be in the LTIE to review some aspects of the current DTCS service description (set out in Appendix 2). The ACCC considers that this may promote clarity and regulatory certainty which may assist carriers and CSPs during commercial negotiations.

3.3.1. Defining geographic boundaries in the DTCS service description

The DTCS service description sets out the geographic boundaries of the deregulated metropolitan areas (Table 1), regional centres (Table 2) and each capital city (Table 3) using ESAs. An ESA is defined in the service description as 'the area served from a traditional local exchange building'.

In the 2014 DTCS declaration, the ACCC decided to retain references to ESAs in the service description to identify the geographic boundary of telecommunications networks while the NBN was still in an early stage of rollout.[57]

In Section 3.4 of this discussion paper, the ACCC seeks submissions on whether the NBN is now impacting the structure of the geographic market for the DTCS. In this section the

[56] See also ACCC, Market study – draft report, 30 October 2017, p.97.

[57] ACCC, DTCS declaration final report, March 2014, p.63.

ACCC seeks submissions on whether the DTCS service description should continue to use ESAs and/or an NBN distribution unit to identify the geographic boundary of telecommunications networks during the transition to the NBN.

The ACCC notes that ESAs are based on the existing copper network which identifies telecommunications regions by those areas served from a telephone exchange while the NBN identifies distribution areas on a less aggregated basis in areas. NBN distribution areas include:

- service area modules (SAMs) – each SAM has approximately 2,000 to 3,000 premises, which may be a small town or part of a suburb.
- fibre serving areas (FSAs) – a geographic region consisting of a number of SAMs which includes premises served by the NBN fibre network.
- wireless serving areas (WSAs) – a geographic region which includes premises served by the NBN wireless network.
- connectivity servicing areas (CSAs) – the area serviced by a single NBN POI.[58]

3.3.2. Reviewing the route categories in the DTCS service description

In the 2014 DTCS declaration, the ACCC adopted the geographic route categories that were used in the 2012 DTCS FAD in order to broadly reflect how transmission services were being sold in the market. The DTCS service description categorised transmission services into the following geographic classifications:

- *inter-capital routes* - routes from an ESA within the boundary of a capital city to an ESA within the boundary of another capital city
- *regional routes* - routes where either or both the beginning (A-end) and end of a route (B-end) are outside the boundary of a capital city
- *metropolitan route* - routes where both the A-end and B-end are within the boundary of a capital city
- *tail-end services*:
    - a regional tail-end route - a route wholly within a single ESA outside the boundary of a capital city, and
    - a metropolitan tail-end route - a route wholly within a single ESA inside the boundary of a capital city.[59]

The ACCC seeks submissions on whether it should maintain the geographic route categories set out above in the service description. The ACCC is also interested in submissions on whether it should add, as a separate route category, transmission services to NBN POIs given the increasing importance of these services to the delivery of broadband services to end-users.

3.3.3. Reviewing DTCS service features

Minimum capacity

The DTCS must be purchased at a minimum of 2 Mbps. The ACCC notes that the DTCS is intended to capture high capacity backhaul services and that increasingly access seekers are acquiring the DTCS at capacities higher than 2 Mbps although many are still purchased

[58] An NBN POI may also serve one or more CSAs.

[59] ACCC, Explanatory Statement to the DTCS FAD, June 2012, p. 16.

at 2 Mbps. The ACCC seeks submissions on whether it is still appropriate to use 2 Mbps as the minimum capacity at which the DTCS may be acquired.

'Contention' and 'symmetry'

In 2010 the ACCC varied the DTCS service description to insert the terms 'symmetry' and 'uncontended'. These terms clarify that declared DTCS services are provided on a symmetric and permanent basis to a particular access seeker and are not shared with other access seekers.[60] While uncontended is defined as 'dedicated and not shared' the term 'symmetric' has not been defined on the basis that it is considered to be widely understood by the telecommunications industry to mean the same data rate in both directions.[61] The ACCC seeks submissions on whether it is still appropriate to continue to describe the DTCS in these terms.

Protection

The DTCS includes both protected and unprotected DTCS services. The 2016 DTCS FAD set prices for a protected service and in doing so, also defines protection as 'the existence of a back-up or redundancy service that is used in the event of a service interruption'.

However, the DTCS service declaration does not define the features of a protected DTCS service. The ACCC notes that services may be protected at different levels, including with geographic and access interface protection. The ACCC seeks views on whether the DTCS service description should include a definition for protection and if so, what type of protection.

3.3.4. Alternative DTCS products

As discussed in Section 2.5.1, there are a number of transmission products that offer other capabilities and features in addition to the basic (DTCS) service. Products such as:

- the MLL service product provided by Telstra
- the ELink+ service product provided by Optus
- the Ethernet service product provided by Vocus
- the Wholesale Ethernet E-Lan service product provided by AAPT[62], which is part of the TPG group.

The additional features that are offered on these products include, but are not limited to, any or all of the following:

- an online ordering tool
- proactive monitoring of faults or technical support
- access interface protection (in addition to other forms of protection), and
- point to multi-point functionality and connections.

The ACCC understands that additional features and capabilities may vary depending on an access seeker's requirements and capabilities that are offered under each product. For example, the ACCC understands that the proactive monitoring and online ordering tools are commonly offered on these types of services, while access interface protection and point-to-

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60 ACCC, *An ACCC Final Report on reviewing the declaration of the domestic transmission capacity service (*DTCS declaration final report), September 2010, p. 16.

61 ACCC, DTCS declaration final report, March 2014, p. 62.

62 AAPT Limited (AAPT).

multipoint functionality are capabilities which are optional and purchased at an additional cost to the basic service.

Overall the additional features appear to provide for a better quality and more efficient service than the regulated service that is set out in the DTCS service description. Proactive monitoring and access interface protection, for example, may provide for a more optimal service delivery. Additional features such as point to multi-point capability, where purchased, may also provide for a more efficient service by enabling the aggregation of traffic before the access seeker's POP. This capability differs from a basic point-to-point service.

The ACCC seeks submissions on whether the DTCS service description adequately captures the service that is generally provided in the transmission market or whether it should be varied to include other service features. The ACCC also seeks submissions on which, if any, additional features and capabilities are not only common features of the DTCS type services being offered and are likely to be acquired in the future.

Questions on which the ACCC seeks views:

9. Are the current geographic classifications for the DTCS appropriate?
10. Does the service description adequately capture the DTCS markets while the NBN is being rolled out?
11. Should the DTCS service description continue to identify the geographic boundary of telecommunications networks using ESAs? If not, what alternative geographic unit should be used?
12. Do the geographic route categories in the DTCS service description reflect the way the DTCS is sold and acquired in DTCS markets?
13. Should transmission services to NBN POIs be added as a separate route category?
14. Is it still appropriate to use 2 Mbps as the minimum capacity at which the DTCS is acquired? If not, what other capacity should be considered?
15. Is it appropriate to continue to define the DTCS as 'symmetric' and 'uncontended'?
16. Should the DTCS service description be updated to include a definition for protected DTCS services? If so, what is the appropriate form of protection?
17. Does the DTCS service description adequately capture the service that is generally provided in the transmission market? If not, what service features should be changed and/or added?

3.4. Assessing the impact of the NBN on the structure of the DTCS market

Market structure is an important determinant of a competitive market. When examining the DTCS market structure, the ACCC is interested in assessing whether the current number of participants in transmission services is likely to change via new market entry or existing players exiting the market. Competition is promoted when market structures are altered such that the exercise of market power becomes more difficult. This may be because barriers to entry have been lowered (permitting more efficient competitors to enter a market and thereby constrain the pricing behaviour of the incumbents) or because the ability of firms to raise rivals' costs is restricted.[63]

[63] ACCC, *Fixed Services Review, A second position paper – Public version, April 2007*, p. 73.

The NBN is now transitioning from a focus on building its network to operating services over the network. As at December 2017, there were approximately 3.5 million premises connected to the NBN,[64] and 3,467,306 NBN services in operation.[65] All NBN POIs are now active.[66] In light of the progress of the NBN rollout, the ACCC is interested in views on whether the market structure for the DTCS is being impacted by the NBN, and if so, to what extent.

3.4.1. Potential impact of the NBN on the structure of the geographic market

The ACCC considers that the NBN may impact the structure of the geographic market for the DTCS by encouraging competing providers to locate at or near the NBN POIs. This may result in increased volumes of DTCS traffic being generated on major routes to NBN POIs and on NBN POI backhaul routes. Therefore although the ACCC has previously used broad geographic categories to identify the geographic markets for the DTCS, the NBN may change how these geographic markets are identified in the future. The ACCC is interested in stakeholder views on how the NBN may be impacting DTCS geographic markets and whether transmission services to NBN POIs should be added as a separate category to the DTCS service description.

3.4.2. Migration of DTCS services supplied on Telstra's copper network

As discussed in Section 2.6.2 of this discussion paper, Telstra is progressively migrating services on its copper network onto the NBN as the fibre network is rolled out. Disconnection of DTCS copper services within the NBN footprint is expected to commence, at the earliest, on 31 May 2019 in regions that have passed their rollout regional disconnection date.[67] The ACCC seeks submissions on the current and anticipated impact of this migration on the structure of DTCS markets.

3.4.3. Potential substitution between NBN access services and the DTCS

As discussed in Section 2.6.3 of this discussion paper, there are a number of current and future NBN access services that could be considered an alternative to the DTCS. The ACCC seeks submissions on whether access seekers consider any of the NBN access services that are currently available or planned a substitute to the DTCS and whether they are acquiring, or intend to acquire, these services instead of the DTCS.

With regards to the TC-2 services, the ACCC notes that the uptake is currently low. As at December 2017, access seekers purchased less than 5000 TC-2 services.[68] The ACCC seeks submissions on whether the TC-2 is able to meet current access seekers' transmission needs.

In addition, the ACCC welcomes submissions on whether access seekers anticipate acquiring the NNI Link product or other NBN access services such as the Enterprise Satellite Service, TC-3 and Enterprise Ethernet instead of or in conjunction with the DTCS once they are released and/or whether there are current barriers that might limit access to these services.

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64 NBN Co, *Weekly progress report*, 8 February.

65 ACCC, *NBN Wholesale Market Indicators Report*, December 2017 quarter.

66 NBN Co, https://www.nbnco.com.au/content/dam/nbnco2/documents/FY15-annual-report.pdf, p. 17.

67 Telstra Required Measure 5E - Process for disconnection of direct special services and special service inputs – wholesale transmission, p.2.

68 ACCC, *NBN Wholesale Market Indicators Report*, December 2017.

Questions on which the ACCC seeks views:

18. What is the current and likely impact of the NBN on the market structure for the DTCS over the next few years?
19. Are there any NBN access services that are considered equivalent to the DTCS?
20. Can access seeker transmission requirements be met by the NBN access services that are currently available?
21. Do access seekers anticipate acquiring any of the services currently listed on NBN Co's roadmap once they are released to provide transmission services?

3.5. Assessing competition for the DTCS

In the 2014 declaration inquiry, the ACCC found an additional 112 metropolitan ESAs and eight regional routes were competitive and decided to exclude them from regulation. It also found that three regional routes, which had previously been excluded should be re-declared. In total, 200 metropolitan ESAs and 27 regional routes are deregulated (listed in the service description).

In terms of the remaining transmission markets, the ACCC did not consider that there were conditions conducive to effective competition to warrant their removal from the scope of the declaration. The ACCC decided to maintain regulation of all tail-end services, including services which incorporated a bundled tail-end component.

3.5.1. Consolidation of industry

The telecommunications industry has been experiencing a period of consolidation since 2009. The TPG group purchased Pipe Networks in 2009, AAPT in 2013 and iiNet in 2015 while the Vocus group acquired M2 and Nextgen Networks in 2016.[69] This consolidation of the industry has resulted in a number of smaller independent transmission suppliers being acquired by larger vertically integrated operators (such as AAPT, Pipe Networks who were acquired by TPG and Amcom, Primus and Nextgen acquired by Vocus). As a result, the DTCS market is now dominated by four vertically integrated transmission providers (Telstra, Optus, TPG and Vocus).

The ACCC seeks submissions on whether the changes to the DTCS market structure have had an impact on the state of competition in DTCS markets.

3.5.2. Impact of the NBN on the state of competition for the DTCS

The ACCC also seeks submissions on whether the NBN is impacting the state of competition in DTCS markets. The ACCC considers that the NBN has the potential to change the market dynamics in a way which is likely to promote further investment in transmission infrastructure to meet the volumes of traffic expected on the NBN.

The ACCC expects that, while the NBN is in a state of transition, NBN access services will continue to exist alongside the market for the DTCS within the NBN footprint. Access seekers that acquire lower capacity transmission services may prefer to acquire a TC-1 and/or TC-4 service as an alternative to the DTCS. Corporate customers requiring high capacity and high quality services may acquire the TC-2 where available or continue to require DTCS products (particularly products provided over fibre links) until the TC-2 is provided at higher capacities and/or supplied on NBN access technologies such as HFC. Or,

[69] Pipe Networks Pty Limited (Pipe Networks), iiNet Limited (iiNet) and M2 Group Limited (M2).

they may prefer to continue (where possible) to acquire DTCS and transmission service access arrangements instead of NBN access services.

NBN Points of Interconnection

The ACCC expects that future DTCS investment and competition will be concentrated at and around NBN POIs. This is because the DTCS will be necessary to support the delivery of NBN services (both residential and business), particularly by providing transmission from the 121 NBN POIs to RSP POPs. Where there is new market entry, the ACCC anticipates that this may be concentrated at or near NBN POIs, particularly along routes from NBN POIs to capital cities where RSP POPs are located.

The ACCC is interested in receiving submissions on the levels of demand for transmission services at or near NBN POIs and the nature of any investments in transmission capacity being made, or likely to be made, at NBN POIs. Submissions are also sought on whether there is a choice of active suppliers of transmission services at all of the 121 NBN POIs, and the price and availability of different types of transmission services at POIs, including NBN aggregation services. In addition submissions are sought on the availability of dark fibre services to the POIs as an alternative to acquiring a DTCS service.

3.5.3. Competition criteria for assessing the state of competition on declared DTCS routes

As discussed in Section 2.4.3 of this discussion paper, the ACCC previously assessed the state of competition on inter-capital, regional and metropolitan DTCS routes and ESAs using particular competition criteria. Under the 2014 competition methodology there had to be a minimum of three fibre providers at, or within close proximity, to a Telstra exchange. Once this initial threshold was met, the ACCC applied a number of additional quantitative and qualitative assessments. These included an assessment of:

- whether the three fibre providers were independent of each other
- the presence at, or close proximity of, competing fibre providers to a Telstra exchange
- whether the route was being serviced by at least three of the four largest transmission providers
- whether there was direct connectivity from that exchange to major transmission hubs in, or close to, the CBD of the major capital cities
- whether there was sufficient demand in that area to indicate likelihood of new investment and the potential for competition to develop
- the level of price competition in the area, and
- whether there was evidence of transmission services being supplied from the ESA.

Where these criteria were met, the ACCC considered that there was sufficient evidence of competition to be able to withdraw regulation in those ESAs or routes.[70]

The ACCC seeks submissions on whether the competition criteria remains appropriate to assess current levels of competition on declared inter-capital, metropolitan and regional routes. This is discussed further below.

[70] ACCC, DTCS declaration final report, 2014, pp..9-10.

Number of independent fibre providers at, or within close proximity, to a Telstra exchange

The competition criteria requires a minimum of two fibre providers (in addition to Telstra) to be present at, or within close proximity to, a Telstra exchange for a particular route or ESA to be considered sufficiently competitive. The ACCC seeks submissions on whether it is appropriate to maintain this requirement, including in areas where an equivalent NBN access service is available.

Stakeholder views are also sought on whether transmission providers that lease capacity from infrastructure owners should be taken into account when assessing levels of competition on a particular route or ESA. The ACCC notes that in 2014 it did not have sufficient information on leased capacity for it to take it into account in the competition assessment methodology.[71] However recent changes to the Audit of Telecommunication Infrastructure Assets – record keeping rules (Infrastructure RKR) require infrastructure owners to report on leased capacity in their core networks.[72]

The ACCC also seeks submissions on whether the number of non-infrastructure owning RSPs at, or within close proximity, to a point of interconnect (such as an NBN POI) should be counted where other indications of competition are present such as a high concentrated level of demand and price competition.

Independence of fibre providers

The competition criteria includes independent fibre providers in the competition methodology. An independent fibre provider is an entity that is not related to or owned by another fibre provider. For example, Pipe Networks, AAPT and TPG are counted as one entity under the competition methodology.

The ACCC seeks submissions on whether this criterion should be maintained in order to ensure that access seekers have effective choice when purchasing transmission services. The ACCC notes that since the last declaration there have been a number of mergers and acquisitions in the telecommunications industry. The ACCC seeks submissions on whether access seekers encounter product and price differentiation between the entities within the same transmission provider group.

Presence at, or close proximity of, competing fibre providers to a Telstra exchange

In order for a competitor to be included in the fibre count under the competition methodology, the fibre competitor must be located at or be within close proximity (150 metres) to the Telstra exchange. While the ACCC's preliminary view is that this requirement remains appropriate, it seeks submissions on whether a different criterion would be more effective.

Presence of major transmission providers

The competition criteria also require that the non-Telstra transmission fibre owners are major transmission owners. The ACCC considered that routes serviced by the four major transmission infrastructure providers could be assumed to be a relative proxy for service availability. The ACCC confirmed that Telstra, Optus, Nextgen and TPG (which included Pipe and AAPT) were included in the count of independent transmission providers.

While the ACCC's preliminary view is that this requirement remains appropriate, the make-up of some of the entities has changed as a result of industry consolidation since 2014. For example, in 2015 the TPG group acquired iiNet and in 2016 the Vocus group acquired M2

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71 ACCC, DTCS declaration final report, March 2014, p.45.

72 ACCC, *Audit of Telecommunications Infrastructure Assets – Record Keeping Rules 2013*, clause 6(3).

and Nextgen. There has also been the entry of NBN Co in the transmission wholesale market. The ACCC seeks submissions on whether this criterion should be maintained, and if so which transmission providers should be considered.

Direct connectivity from that exchange to major transmission hubs in, or close to, the central business districts (CBD) of the major capital cities

Under the competition methodology the ACCC examined whether each fibre competitor included in the fibre count on a particular route was connected to a capital city ESA (irrespective of whether that route traversed through other exchanges). The ACCC noted that connectivity to capital city ESAs was important as transmission traffic needed to be either handed over to the access seeker's POP (typically in a capital city) or switched at a main transmission hub in a CBD ESA. While the ACCC's preliminary view is that this requirement remains appropriate, it seeks submissions on whether this criterion should be maintained or varied to also include direct connectivity to an NBN POI.

Sufficient demand to indicate likelihood of new investment and the potential for competition to develop

The competition criteria used 5000 fixed line services in operation (fixed line SIOs) and a minimum of two digital subscriber line access multiplexers (DSLAMs) as a proxy for assessing demand at each ESA for the DTCS and an indication of where infrastructure investment was likely to emerge in order to meet demand. The ACCC also considered population density information for each ESA to identify high traffic areas. [73]

The ACCC notes that there has been a steady decline in fixed line SIOs and a roughly equivalent increase in NBN SIOs since December 2014. The number of fixed line SIOs has declined by 2,935,048 while the number of NBN SIOs increased by 3,192,471.[74]

The ACCC's preliminary view is that it should take demand levels into account when assessing the likelihood of new investment and the potential for competition to develop in an ESA or on a transmission route. The ACCC seeks submissions on whether submitters agree and if so, whether there is other information, such as NBN SIOs, that should be considered as a proxy to current and potential future levels of demand.

Level of price competition in the area

The competition criteria had regard to price competition on routes and areas. The ACCC has previously assessed price information from the 2012 DTCS FAD inquiry, access agreements lodged with the ACCC, anecdotal price information received in response to the 2014 DTCS declaration discussion paper and Telstra's price zone classification structure to gauge the level of price competition. The ACCC maintained regulation where an ESA was classified as a Telstra Zone 3 and had actual or likely low levels of demand (based on low DSLAM numbers, fixed line SIOs and low population density). Conversely, where an ESA was classified as Zone 3, but other factors indicated higher levels of demand, consideration was given to deregulating that ESA.[75]

The ACCC seeks submissions on whether this criterion should be maintained and if so, whether the sources of pricing information remain relevant.

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[73] ACCC, DTCS declaration final report, March 2014, p.37.

[74] ACCC, *NBN Services in Operation Record Keeping Rules* and *Customer Access Network Record Keeping Rules*, December 2017 quarter returns.

[75] ACCC, DTCS declaration final report, March 2014, p.38.

Evidence of transmission services being supplied from the ESA

The ACCC assessed whether there were active transmission services available on a route or ESA once the above criteria was satisfied. Using granular pricing data gathered from the 2012 DTCS FAD inquiry and from access agreements lodged with the ACCC, the ACCC examined whether transmission services were being supplied in an ESA. Where there was evidence of alternative services to Telstra, the ACCC formed the preliminary view that the route or ESA was competitive and could be excluded from regulation.[76]

The ACCC seeks submissions on whether this criterion should be maintained and if so, whether there are other sources of information that should be considered to assess the availability of active transmission services in an ESA or on a particular route.

Other relevant considerations

In addition to the competition criteria, the ACCC also considered matters such as the level of urban development, the geographic terrain or the existence of a major route connecting that town to a capital city destination when deciding to maintain regulation, reregulate or deregulate a route or ESA. While the ACCC's preliminary view is that these factors remain relevant, the ACCC seeks submission on whether it should continue to have regard to them and/or any other factors.

3.5.4. Regulation of tail-end services

As discussed in Section 2.2 of this discussion paper, the tail-end DTCS is a type of declared transmission service. The ACCC has traditionally regarded the tail-end DTCS as a transmission service provided within an ESA between a customer location and a POI on the access seeker's network.

Where Telstra provides the tail-end service, the transmission is between the customer location or POI and the local Telstra exchange. In the 2012 DTCS FAD, the ACCC noted that in practice there are two types of tail-end services offered in the market:

- between a wholesale customer POP and another wholesale customer POP (a POP-to-POP service), and
- between a wholesale customer POP and an end-user location (a POP-to-end-user service).[77]

In the 2014 DTCS declaration the ACCC maintained declaration of tail-end DTCS services (including in CBD ESAs).[78] Tail-end services that are bundled with a metropolitan, regional or inter-capital component were also regulated. That is, where a bundled product contained a deregulated route and a regulated tail-end, the service was regulated.[79] The ACCC seeks submissions on whether it remains appropriate to maintain declaration of tail-end DTCS services. The ACCC is also interested in views on whether a deregulated inter-capital/metropolitan/regional route should continue to be regulated where it is bundled with a tail-end service.

As discussed in Section 2.6.2 of this discussion paper, the process of migrating DTCS services off Telstra's copper network has now commenced. DTCS copper services are expected to be disconnected from 31 May 2019 onwards.[80]

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76 ACCC, DTCS declaration final report, March 2014, p. 38.

77 ACCC, Explanatory Statement to the DTCS FAD, June 2012, p. 30.

78 ACCC, DTCS declaration final report, March 2014, p.48.

79 ACCC, DTCS declaration final report, March 2014, p.70.

80 Disconnection will commence on 31 May 2019 in regions that have passed their rollout regional disconnection date.

The ACCC notes that the migration of tail-end services off the copper network will progress incrementally until the NBN is fully rolled out and, equivalent DTCS services are made available. The ACCC is interested in views on how the migration of tail-end services on the copper network might affect regulation of the DTCS on these routes (and other routes that are bundled with a tail-end service).

The ACCC also seeks submissions on whether there are substitute services to the DTCS tail-end service. The ACCC notes that, similar to the tail-end DTCS, the TC-2 is provided from the customer premise to the NBN POI. However, unlike the tail-end DTCS, the TC-2 is not a POP-to-POP service and it may also extend beyond the boundary of an ESA.

Questions on which the ACCC seeks views:

22. Have changes to the DTCS market structure had an impact on the state of competition in DTCS markets?
23. How has the NBN affected competition and investment in DTCS markets?
24. Is there a choice of active suppliers of transmission services at all of the 121 NBN POIs?
25. To what extent are dark fibre services available at the NBN POIs?
26. Are there any DTCS routes and ESAs which are competitive and could be removed from the scope of the DTCS declaration?
27. Is it appropriate to continue to use criteria for assessing competition on DTCS routes? If so, is it appropriate for the criteria to require:
    - a minimum of three independent fibre providers to be present
    - the presence at, or close proximity of, competing fibre providers to a Telstra exchange
    - the route to be serviced by at least three of the four largest transmission fibre providers
    - direct connectivity from that exchange to major transmission hubs in, or close to, the CBD of the major capital cities
    - sufficient demand in that area to indicate likelihood of new investment and the potential for competition to develop
    - a level of price competition in the area, and
    - evidence of transmission services being supplied from the ESA.
28. If the above competition criteria should not be used to assess competition on declared routes, what should the competition criteria be?
29. Should the ACCC maintain regulation of tail-end services?
30. Should a deregulated inter-capital/metropolitan/regional route be regulated if it is bundled with a regulated tail-end service?
31. What substitutes are available for the tail-end DTCS?
32. What competition criteria should the ACCC use when assessing levels of competition in tail-end markets?
33. Are there any other matters that the ACCC should take into account?

3.6. Access to facilities for the DTCS

As discussed in Section 2.6 of this discussion paper, carriers need to interconnect their network and equipment with other carrier network and equipment in order to provide telecommunications services to consumers. The ACCC considers that competition is promoted in markets for the DTCS where access to the relevant facilities is enabled in a timely and cost effective manner.

Access to facilities for the DTCS is important in accessing NBN services, and any other service that uses the DTCS as an input. For example, access seekers may require access to facilities, such as internal interconnect cables in TEBA space, in order to interconnect transmission infrastructure in TEBA space (either their own, Telstra's or another transmission provider's) with equipment in the NBN Co allocated exchange space in order to access the NBN access service. Similarly, access seekers may require access to internal interconnect cables in order to purchase an unbundled DTCS service whereby one component is acquired from Telstra (such as a tail-end link) and another component (such as a metropolitan or regional link) is acquired from a third party transmission provider (other than Telstra).

The ACCC seeks submissions on whether there are access issues to facilities, such as interconnecting cables in TEBA space, for the purpose of access to the DTCS. The ACCC notes that 111 of the 121 NBN POIs are located in Telstra exchanges. As such, the ACCC considers it important that access to transmission capacity is not hindered due to the location of these services in Telstra's exchange.

Questions on which the ACCC seeks views:

34. Are there barriers to entry for access to facilities relating to the DTCS? If so, what are they?

3.7. Technologies used to provide transmission services

In the 2014 declaration inquiry, the ACCC concluded that optical fibre remained the dominant technology for the provision of transmission services despite the alternate technologies which are sometimes utilised for a similar function. The ACCC also concluded that alternative transmission technologies such as the digital subscriber line, wireless and satellite services and dark fibre services did not provide enough of a competitive constraint to the DTCS to be regarded as an effective substitute in any particular market.[81]

The ACCC seeks submissions on whether alternative technologies to fibre (such as wireless technologies) are becoming more or less viable in the provision of transmission services since 2014.

Questions on which the ACCC seeks views:

35. Have the alternative technologies to fibre-optic cable become more or less viable in the provision of DTCS since the 2014 declaration report? Are they likely to increase or decrease in importance in the future?
36. What are the substitutes for the DTCS?

[81] ACCC, DTCS declaration final report, March 2014, p.29.

3.8. Length of the DTCS declaration

Although the CCA specifies that a declaration should expire between a three and five year period, an expiry date can be either shorter or longer depending on the circumstances.[82] This is intended to enable the ACCC to provide longer-term regulatory certainty, where appropriate, in order to promote competition and investment.[83]

The ACCC has typically set declarations for a regulatory period of five years. However the ACCC is mindful that the telecommunications industry is likely to undergo significant commercial and regulatory changes over the next few years as the NBN finalises its roll out. The ACCC is also of the view that the regulatory length of the next DTCS declaration needs to be appropriate to respond to changes in industry structure while also providing regulatory certainty for industry.

Questions on which the ACCC seeks views:

37. What should be the length of the regulatory period in the event that the DTCS declaration is extended?

[82] See subsection 152ALA(2) of the CCA.

[83] Explanatory Memorandum to the *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act 2010*, p.167.

Appendix 1: Consolidated list of questions

1. Has there been any change to the state of competition in the market for the DTCS in the currently deregulated routes and ESAs? If so, what change has occurred?
2. Are there any issues over access to DTCS type services in the deregulated areas?
3. The ACCC has previously identified that the relevant downstream markets for the DTCS include the markets for data services such as business grade services, residential broadband and local, national and international services, mobile voice and mobile data services. Are these the relevant downstream markets for which the DTCS continues to constitute an input?
4. Have the DTCS geographic markets changed since 2014?
5. Should transmission services that are used for the supply of mobile services in remote and regional areas be distinguished from other transmission services?
6. Are access seekers able to access the DTCS (and regulated pricing under the 2016 DTCS FAD) for services to mobile towers in regional and remote areas?
7. Should transmission services to NBN POIs be examined separately from other DTCS services?
8. Are there any substitutes for the DTCS in any of the geographic markets?
9. Are the current classifications for the DTCS appropriate?
10. Does the service description adequately capture the DTCS markets while the NBN is being rolled out?
11. Should the DTCS service description continue to identify the geographic boundary of telecommunications networks using ESAs? If not, what alternative geographic unit should be used?
12. Do the geographic route categories in the DTCS service description reflect the way the DTCS is sold and acquired in DTCS markets?
13. Should transmission services to NBN POIs be added as a separate route category?
14. Is it still appropriate to use 2 Mbps as the minimum capacity at which the DTCS is acquired? If not, what other capacity should it nominate?
15. Is it appropriate to continue to define the DTCS as ‘symmetric’ and ‘uncontended’?
16. Should the DTCS service description be updated to include a definition for protected DTCS services? If so, what is the appropriate form of protection?
17. Does the DTCS service description adequately capture the service that is generally provided in the transmission market? If not, what service features should be changed and/or added?
18. What is the current and likely impact of the NBN on the market structure for the DTCS over the next few years?
19. Are there any NBN access services that are considered equivalent to the DTCS?
20. Can access seeker transmission requirements be met by the NBN access services that are currently available?

21. Do access seekers anticipate acquiring any of the services currently listed on NBN Co's roadmap once they are released to provide transmission services?

22. Have changes to the DTCS market structure had an impact on the state of competition in DTCS markets?
23. How has the NBN affected competition and investment in DTCS markets?
24. Is there a choice of active suppliers of transmission services at all of the 121 NBN POIs?
25. To what extent are dark fibre services available at the NBN POIs?
26. Are there any DTCS routes and ESAs which are competitive and could be removed from the scope of the DTCS declaration?
27. Is it appropriate to continue to use criteria for assessing competition on DTCS routes? If so, is it appropriate for the criteria to require:
    - a minimum of three independent fibre providers to be present
    - the presence at, or close proximity of, competing fibre providers to a Telstra exchange
    - the route to be serviced by at least three of the four largest transmission fibre providers
    - direct connectivity from that exchange to major transmission hubs in, or close to, the CBD of the major capital cities
    - sufficient demand in that area to indicate likelihood of new investment and the potential for competition to develop
    - a level of price competition in the area, and
    - evidence of transmission services being supplied from the ESA.
28. If the above competition criteria should not be used to assess competition on declared routes, what should the competition criteria be?
29. Should the ACCC maintain regulation of tail-end services?
30. Should a deregulated inter-capital/metropolitan/regional route be regulated if it is bundled with a regulated tail-end service?
31. What substitutes are available for the tail-end DTCS?
32. What competition criteria should the ACCC use when assessing levels of competition in tail-end markets?
33. Are there any other matters that the ACCC should take into account?
34. Are there barriers to entry for access to facilities relating to the DTCS? If so, what are they?
35. Have the alternative technologies to fibre-optic cable become more or less viable in the provision of DTCS since the 2014 declaration report? Are they likely to increase or decrease in importance in the future?
36. What are the substitutes for the DTCS?
37. What should be the length of the regulatory period in the event that the DTCS declaration is extend

Appendix 2: Current DTCS Service Description

The domestic transmission capacity service is a service for the carriage of certain communications from one transmission point to another transmission point via symmetric network interfaces on a permanent uncontended basis by means of guided and/or unguided electromagnetic energy, including services provided on or over:

- inter-capital routes
- regional routes
- metropolitan routes, and
- tail-end routes

except communications between:

(a) one customer transmission point directly to another customer transmission point

(b) one access seeker network location directly to another access seeker network location

(c) in the case of inter-capital routes, a transmission point located at an exchange in a deregulated ESA within one capital city boundary to a transmission point located at an exchange in a deregulated ESA within another capital city boundary

Note: Refer to Table 1 for the exchange serving areas (ESAs) which are deregulated in each capital city and Table 3 for the boundaries of each capital city.

(d) in the case of regional routes, a transmission point located at an exchange in a deregulated regional ESA to a transmission point located at an exchange in a deregulated ESA in Sydney, Melbourne, Brisbane or Adelaide

Note: Refer to Table 1 for the ESAs which are deregulated in Sydney, Melbourne, Brisbane and Adelaide. Refer to Table 2 for the list of deregulated regional ESAs.

or

(e) in the case of metropolitan routes, transmission points located at an exchange between:

1. any of the deregulated metropolitan ESAs in Sydney
2. any of the deregulated metropolitan ESAs in Brisbane
3. any of the deregulated metropolitan ESAs in Melbourne
4. any of the deregulated metropolitan ESAs in Perth, or
5. any of the deregulated metropolitan ESAs in Adelaide.

Note: Refer to Table 1 for the ESAs which are deregulated in each capital city.

The exceptions in paragraphs (c), (d) and (e) do not apply to any service that is comprised of an inter-capital, regional or metropolitan route that is bundled with or incorporates a tail-end route.

Definitions

Where words or phrases used in this Annexure are defined in the *Competition and Consumer Act 2010* or the *Telecommunications Act 1997*, they have the meaning given in those Acts

an **access seeker network location** is a point in a network operated by a service provider that is not a point of interconnection or a customer transmission point

a **customer transmission point** is a point at which a service provider delivers a service to its own customers (either wholesale or retail). For the avoidance of doubt, a customer in this context may be another service provider

exchange means a telecommunications exchange and includes the land, buildings and facilities (within the meaning of section 7 of the *Telecommunications Act 1997* (Cth)) that comprise or form part of the exchange

exchange serving area or **ESA** means the area served from a traditional local exchange building

inter-capital route means a route from a transmission point within one capital city boundary to a transmission point within another capital city boundary in Adelaide, Brisbane, Canberra, Melbourne, Perth or Sydney. Capital city boundaries are listed in Table 3

metropolitan route means a route where both the transmission points for the beginning and end of the route are within the same capital city boundary. Capital city boundaries are listed in Table 3

network interfaces include, but are not limited to, Ethernet, Plesiochronous Digital Hierarchy (PDH) and Synchronous Digital Hierarchy (SDH) network interfaces used to provide a transmission rate of 2.048 Megabits per second or above which an access provider provides to itself or others

a **point of interconnection** is a physical point of interconnection in Australia between a network operated by a carrier or a carriage service provider and another network operated by a service provider

regional route means a route where either one or both of the transmission points for the beginning and end of the route are outside a capital city boundary. Capital city boundaries are listed in Table 3.

tail-end route means a route where both the transmission points for the beginning and end of the route are within the same ESA

a **transmission point** is any of the following:

a) a point of interconnection

b) a customer transmission point

c) an access seeker network location

uncontended means dedicated and not shared

Table 1: Deregulated ESAs in each capital city

Deregulated Metropolitan Areas	ESA names
Sydney	Ashfield, Balgowlah, Balmain, Bankstown, Baulkham Hills, Blacktown, Bondi, Botany, Burwood, Campbelltown, Campsie, Carlingford, Carramar, Castle Hill, Chatswood, City South, Coogee, Concord, Cremorne, Cronulla, Dalley, Dee Why, Drummoyne, East, Eastwood, Edensor Park, Edgecliff, Engadine, Epping, Erskine Park, Frenchs Forest, Glebe, Granville, Guildford, Harbord, Haymarket, Homebush, Hornsby, Hunters Hill, Hurstville, Ingleburn, Kensington, Kent, Killara, Kingsgrove, Kogarah, Lakemba, Lane Cove, Lidcombe, Liverpool, Manly, Maroubra, Mascot, Miller, Minto, Miranda, Mosman, Newtown, North Parramatta, Penrith, North Ryde, North Sydney, Parramatta, Peakhurst, Pendle Hill, Pennant Hills, Petersham, Pitt, Pymble, Randwick, Redfern, Revesby, Rockdale, Rose Bay, Rydalmere, Ryde, Seven Hills, Silverwater, Sutherland, St Leonards, St Marys, Undercliffe, Wahroonga, Waverley, Wetherill Park, Willoughby
Brisbane	Acacia Ridge, Albion, Alexandra Hills, Bulimba, Browns Plains, Charlotte, Chermside, Chapel Hill, Capalaba, Coorparoo, Edison, Eight Mile Plains, Everton Park, Goodna, Inala, Lutwyche, Mitchelton, Mount Gravatt, Nundah, New Farm, Paddington, Petrie, Salisbury, Slacks Creek, South Brisbane, Spring Hill, Sunnybank, Tingalpa, Toowong, Valley, Woolloongabba, Wynnum, Yeronga, Zillmere
Melbourne	Ascot, Batman, Berwick, Blackburn, Brooklyn, Brunswick, Bundoora, Burwood, Camberwell, Canterbury, Carlton, Caulfield, Cheltenham, Coburg, Collingwood, Croydon, Dandenong, Deepdene, East Kew, Elsternwick, Epping, Exhibition, Flemington, Footscray, Glen Iris, Hawthorn, Heidelberg, Highett, Kooyong, Lonsdale, Malvern, Mitcham, Moreland, North Balwyn, Northcote, North Essendon, North Melbourne, Oakleigh, Port Melbourne, Preston, Richmond, Ringwood, South Melbourne, St Kilda, Sunshine, South Yarra, Tally Ho, Thomastown, Thornbury, Toorak, Tullamarine, Wheelers Hill, Windsor, Wantirna
Perth	Bateman, Bulwer, Cannington, Cottesloe, Doubleview, Hilton, Maylands, Pier, South Perth, Subiaco, Victoria Park, Wellington
Adelaide	Brighton, Croydon, Gepps Cross, Flinders, Golden Grove, Norwood, Salisbury, Stirling, St Peters, Unley, Waymouth, West Adelaide, St Marys
Canberra	Civic

Table 2: Deregulated Regional ESAs

State	Deregulated Regional Areas/Routes	ESAs included
New South Wales	Albury	Albury, Lavington
	Bathurst	Bathurst
	Lismore	Lismore
	Newcastle	Mayfield, Hamilton, Wolfe, New Lambton, Charlestown
	Grafton	Grafton
	Wollongong	Wollongong, Unanderra, Corrimal, Dapto
	Taree	Taree
	Dubbo	Dubbo
	Gosford	Gosford
	Coffs Harbour	Coffs Harbour
	Goulburn	Goulburn
	Orange	Orange
	Wagga Wagga	Wagga Wagga
Victoria	Ballarat	Ballarat
	Bendigo	Bendigo
	Geelong	Geelong, North Geelong
	Shepparton	Shepparton
Queensland	Ipswich	Ipswich
	Toowoomba	Toowoomba
	Gold Coast	Southport, Nerang, Merrimac, Arundel, Bundall, Surfers Paradise, Robina, Mudgeeraba, Oxenford
	Moreton Bay	Rothwell, Narangba
	Logan	Beenleigh, Loganholme
	Sunshine Coast	Caloundra, Mooloolaba, Maroochydore
	Townsville	Townsville
South Australia	Murray Bridge	Murray Bridge
	Port Augusta	Port Augusta
	Smithfield	Smithfield

Table 3: Capital City Boundaries

Adelaide	A 25 km radius from the Waymouth ESA including the ESAs of: Balhannah, Blackwood, Brighton, Brooklyn Park, Chain of Ponds, Clarendon, Coromandel Valley, Croydon, Edwardstown, Elizabeth, Flinders, Gepps Cross, Glenelg, Glenunga, Golden Grove, Greenwith, Hahndorf, Hampstead, Henley Beach, Inglewood, Lenswood, Lonsdale, Modbury, Montacute, Morphett Vale East, Mylor, North Adelaide, Norwood, Osborne, Paradise, Port Adelaide, Prospect, Reynella, Salisbury, Scott Creek, Semaphore, St Marys, St Peters, Stirling, Summertown, Unley, Waterloo Corner, Waymouth, West Adelaide, Woodville
Brisbane	A 25 km radius from the Edison ESA including the ESAs of: Acacia Ridge, Albany Creek, Albion, Alexandra Hills, Ascot, Ashgrove, Aspley, Bald Hills, Brisbane Airport, Brookfield, Browns Plains, Bulimba, Camp Hill, Capalaba, Cashmere, Chapel Hill, Charlotte, Chermside, Closeburn, Coorparoo, Darra, Edison, Eight Mile Plains, Everton Park, Ferny Hills, Goodna, Highvale, Inala, Jamboree Heights, Kallangur, Karalee, Lutwyche, Lytton, Mitchelton, Moggill, Mount Crosby, Mount Gravatt, Mount Nebo, New Farm, Newmarket, Nudgee, Nundah, Paddington, Petrie, Pinkenba, Redcliffe, Salisbury, Samford, Sandgate, Sherwood, Slacks Creek, South Brisbane, Spring Hill, Strathpine, Sunnybank, The Gap, Thornlands, Tingalpa, Toowong, Valley, Wacol, Warner, Wellington Point, Woolloongabba, Wynnum, Yeronga, Zillmere
Canberra	A 15 km radius from the Barton ESA including the ESAs of: Barton, Belconnen, Civic, Crace, Deakin, Fyshwick, Jerrabomberra, Kambah, Manuka, Mawson, Melba, Monash, Queanbeyan, Scullin, Tralee, Tuggeranong, Weston Creek
Darwin	A 10 km radius from the Nightcliff ESA including the ESAs of: Berrimah, Casuarina, Darwin, Nightcliff
Hobart	A 6 km radius from the Bathurst ESA including the ESAs of: Bathurst, Davey, Glenorchy, New Town, Sandy Bay
Melbourne	A 45 km radius from the Kooyong ESA including the ESAs of: Altona, Arthurs Creek, Ascot, Balaclava, Batman, Baxter, Bayswater, Bayswater North, Beaconsfield Upper, Beaumaris, Belgrave, Bentleigh, Berwick, Berwick South, Blackburn, Boronia, Box Hill, Brighton, Broadmeadows, Brooklyn, Brunswick, Bulla, Bulleen, Bundoora, Camberwell, Campbellfield, Canterbury, Carlton, Carrum Downs, Caulfield, Chelsea, Cheltenham, Clayton, Clyde, Coburg, Cockatoo, Coldstream, Collingwood, Craigieburn, Cranbourne, Cranbourne North, Croydon, Dandenong, Dandenong North, Dandenong South, Deepdene, Deer Park, Derrimut, Devon Meadows, Diamond Creek, Diggers Rest, Dixons Creek, Doncaster, Doncaster East, East Kew, Eden Park, Elsternwick, Eltham, Elwood, Emerald, Endeavour Hills, Epping, Exhibition, Fawkner, Ferntree Gully, Ferny Creek, Flemington, Footscray, Frankston, Gardenvale, Glen Iris, Glenroy, Greensborough, Greenvale, Gruyere, Hallam, Hartwell, Hawthorn, Heatherton, Heidelberg, Highett, Hurstbridge, Ivanhoe, Jordanville, Kalkallo, Kangaroo Ground, Karingal, Keilor, Kew, Keysborough, Kings Park, Kooyong, Laverton, Laverton South, Lilydale, Lonsdale, Lyndhurst, Lysterfield, Maidstone, Malvern, Melton, Mernda, Mitcham, Monbulk, Montrose, Mooroolbark, Mordialloc, Moreland, Mornington, Mount Cottrell, Mount Eliza, Mount Evelyn, Narre Warren, Narre Warren

	North, Newport, North Balwyn, North Essendon, North Melbourne, Northcote, Oakleigh, Officer, Olinda, Ormond, Pakenham Upper, Panton Hill, Pearcedale, Point Cook, Port Melbourne, Preston, Research, Reservoir, Richmond, Ringwood, Rockbank, Rowville, Sandringham, Scoresby, Seaford, Seaford North, Silvan, Somerton, Somerville, South Melbourne, South Morang, South Oakleigh, South Yarra, Springvale, St Albans, St Andrews, St Kilda, Sunbury, Sunshine, Sydenham, Tally Ho, Tarneit, Templestowe, Thomastown, Thornbury, Toorak, Tullamarine, Wandin, Wantirna, Warrandyte, Warranwood, Werribee, Werribee South, West Essendon, Wheelers Hill, Whittlesea, Williamstown, Windsor, Wollert, Wonga Park, Woori Yallock, Yarra Glen, Yarrambat, Yellingbo
Perth	A 30 km radius from the Wellington ESA including the ESAs of: Applecross, Armadale, Ascot, Attadale, Balcatta, Ballajura, Bassendean, Bateman, Beechboro, Bulwer, Burns, Canning Vale, Cannington, Carmel, City Beach, Cottesloe, Currambine, Darlington, Doubleview, Ellenbrook, Forrestdale, Forrestfield, Fremantle, Girrawheen, Glen Forrest, Gosnells, Greenmount, Hamersley, Herne Hill, Hilton, Jandakot, Jandakot South, Joondalup, Kalamunda, Kelmscott, Kewdale, Kingsley, Landsdale, Lesmurdie, Maddington, Maida Vale, Manning, Maylands, Midland, Morley, Mount Hawthorn, Mullaloo, Munster, Nedlands, Ocean Reef, Palmyra, Parkerville, Pickering Brook, Pier, Pinjar, Riverton, Roleystone, Scarborough, South Coogee, South Perth, Spearwood, Subiaco, Tuart Hill, Victoria Park, Wanneroo, Wellington, Wembley
Sydney	A 50 km radius from the City South ESA including the ESAs of: Ashfield, Austral, Avalon Beach, Avoca Beach, Balgowlah, Balmain, Bankstown, Baulkham Hills, Berkshire Park, Berowra, Berrilee, Blacktown, Blakehurst, Bondi, Botany, Bringelly, Brooklyn, Campbelltown, Campbelltown South, Campsie, Canoelands, Carlingford, Carramar, Castle Hill, Cattai, Chatswood, City South, Como, Concord, Coogee, Cranebrook, Cremorne, Cronulla, Dalley, Dee Why, Drummoyne, Dural, East, Eastwood, Ebenezer, Edensor Park, Edgecliff, Elderslie, Engadine, Epping, Erskine Park, Fiddletown, Five Dock, Frenchs Forest, Galston, Glebe, Glenorie, Granville, Guildford, Gunderman, Harbord, Haymarket, Helensburgh, Holsworthy, Homebush, Hornsby, Horsley Park, Hunters Hill, Hurstville, Ingleburn, Kariong, Kellyville, Kemps Creek, Kensington, Kent, Kenthurst, Kenthurst North, Killara, Kincumber, Kingsgrove, Kogarah, Kurnell, Lakemba, Lane Cove, Leppington, Lidcombe, Lindfield, Liverpool, Llandilo, Luddenham, Manly, Maraylya, Maroota South, Maroubra, Mascot, Matraville, Menai, Miller, Minto, Miranda, Mona Vale, Mooney Mooney, Mosman, Mount Kuring-gai, Mount White, Narellan, Narrabeen, Newtown, North Parramatta, North Ryde, North Sydney, Northbridge, Orchard Hills, Palm Beach, Parramatta, Patonga Beach, Peakhurst, Pendle Hill, Pennant Hills, Penrith, Petersham, Pitt, Pitt Town, Pymble, Quakers Hill, Ramsgate, Randwick, Redfern, Revesby, Riverstone, Rockdale, Rooty Hill, Rose Bay, Rouse Hill, Rydalmere, Ryde, Saratoga, Sefton, Seven Hills, Shalvey, Silverwater, South Strathfield, Spencer, St Helens Park, St Leonards, St Marys, Sutherland, Sylvania, Terrey Hills, Undercliffe, Vaucluse, Wagstaff Point, Wahroonga, Waverley, Wetherill Park, Wilberforce, Willoughby, Windsor, Woy Woy

Appendix 3: Legislative Framework

Part XIC of the CCA sets out a telecommunications access regime. The access regime aims to promote the LTIE of telecommunications services by promoting competition through connectivity of any user to any other user no matter whose infrastructure is utilised for that purpose. The ACCC may declare an eligible service, making it subject to regulation under the Part XIC access regime.

An eligible service is a carriage service or a service that facilitates the supply of a carriage service.[84] A carriage service is defined in the *Telecommunications Act 1997* as a service for carrying communications by means of guided and/or unguided electromagnetic energy.[85] This includes communications services, such as telephone and internet services, that are provided using fixed-lines, satellite-based facilities, mobile towers and certain radio communications links. The unconditioned local loop service is an example of a carriage service, while services providing access to facilities (such as ducts and exchange space) are examples of services that facilitate the supply of carriage services.

Once a service is declared, an access provider (typically an infrastructure operator) that supplies the declared service to itself or others must also supply the service, upon request, to service providers (or access seekers) in accordance with the standard access obligations set out in section 152AR of the CCA. The ACCC must also commence a public inquiry into making an access determination for that service. The access determination may include a broad range of terms and conditions but must specify price or a method of ascertaining price.[86]

Declaration inquiries

Section 152AL(1) allows the ACCC to declare a specified eligible service if it:

- holds a public inquiry about its proposal to make a declaration
- prepares a report about the inquiry
- publishes that report within a 180 day period before any declaration is made, and
- is satisfied that the making of the declaration will promote the LTIE of carriage services or of services provided by means of carriage services.

Prior to commencing a public inquiry about a proposal to declare a service that is not already declared, the ACCC must consider whether to hold a public inquiry for an equivalent service that is supplied or capable of being supplied by a specified NBN Corporation.[87]

Where a service is already declared, under section 152ALA(7), the ACCC must commence an inquiry during the 18 months prior to the expiry of the declaration and determine whether to:

- extend, revoke or vary the declaration
- allow the declaration to expire without making a new declaration
- allow the declaration to expire and then make a new declaration under section 152AL, or

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84 Where the service is supplied, or capable of being supplied, by a carrier or carriage service provider (whether to itself or other persons). CCA, subsection 152AL(1).

85 *Telecommunications Act 1997*, section 7.

86 CCA, subsections 152BC(3) and 152BC(8).

87 CCA, subsections 152AL(3), 152AL(3B) and 152AL(8A).

- extend the declaration by a period of not more than 12 months and allow the declaration to expire without making a new declaration.

The ACCC can combine two or more public inquiries about proposals to declare services.[88]

Declaration ensures service providers have access to the inputs they need to supply competitive communications services to end-users on terms and conditions that promote the LTIE.

In deciding whether declaring the service would promote the LTIE, under section 152 AB(2), the ACCC must have regard to the extent to which declaration is likely to result in the achievement of the following three objectives:

- promoting competition in markets for listed services (which includes carriage services and services supplied by means of carriage services)
- achieving any-to-any connectivity (the ability of end-users on a particular network to communicate with end-users on any other network), and
- encouraging the efficient use of and investment in infrastructure by which the service is supplied, or are capable of being supplied.[89]

Once a service is declared:

- an access provider supplying the declared service to itself or another person must also supply the service, upon request, to service providers in accordance with the standard access obligations set out in section 152AR, and
- the ACCC must commence a public inquiry within 30 days regarding making an access determination for that service.[90] Access determinations can cover a broad range of terms and conditions but must specify price or a method of ascertaining price.[91]

The ACCC's approach to the LTIE test

The test under subsection 152AL(3) of the CCA is that the ACCC is satisfied that the making of the declaration will promote the LTIE. The subsection does not require the ACCC to be satisfied to a particular standard or require there to be an overwhelming case for declaration.

Consistent with previous declaration decisions, in deciding whether declaring the service would promote the LTIE, the ACCC will have regard to:

- the promotion of competition
- achieving any-to-any connectivity, and
- encouraging efficient use of, and investment in, infrastructure.

Promoting competition

Competition is the process of rivalry between firms, where each firm is constrained in its price and output decisions by the activity of other firms. Competition benefits consumers (the end-users) through lower prices, the level of service quality preferred by end-users, and a greater choice of services.

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88 CCA, section 152AN.

89 CCA, subsection 152AB(2). In determining the extent to which a particular thing is likely to result the achievement of promoting competition and encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure, regard must be had to other matters listed in subsections 152AB(4), (6) and (7) CCA.

90 CCA, subsection 152BCI(1).

91 CCA, subsections 152BC(3) and 152BC(8).

Competition may be inhibited where the structure of the market gives rise to market power. Market power is the ability of a firm or firms to constrain or manipulate the supply of products from the levels and quality that would be observed in a competitive market for a significant period of time.

An access regime such as Part XIC addresses the structure of a market, limiting or reducing the sources of market power, by allowing third parties to negotiate access to certain services on reasonable terms and conditions. Competition is promoted when market structures are altered such that the exercise of market power becomes more difficult. For example, barriers to entry may have been lowered (permitting more efficient competitors to enter a market and thereby constraining the pricing behaviour of the incumbents) or because the ability of firms to raise rivals' costs is restricted.

Subsection 152AB(4) of the CCA provides that, in determining the extent to which declaration is likely to result in the objective of 'promoting competition', regard must be had (but is not limited) to the extent to which declaration will remove obstacles to end-users of listed services gaining access to listed services.

Denying service providers access to necessary wholesale services on reasonable terms is a significant obstacle to end-users gaining access to services. Declaration can remove such obstacles by facilitating the entry of service providers, which promotes competition in markets supplying end-users.

When conducting a declaration inquiry, the ACCC is required under subsection 152AB(2) of the CCA to consider whether declaration of a service is likely to promote competition in relevant markets. The ACCC's approach to assessing this objective involves defining the relevant markets and assessing the level of competition in those markets. These concepts are explained below.

Identifying relevant markets

Section 4E of the CCA provides that the term "market" means a market in Australia for the goods or services under consideration, as well as any other goods or services that are substitutable for, or otherwise competitive with, those goods or services. The ACCC's approach to market definition is discussed in the ACCC's 2008 merger guidelines.[92]

Section 4E of the CCA provides that a market includes any goods or services that are substitutable for, or otherwise competitive with, the goods or services under analysis. Accordingly, substitution is key to market definition. The ACCC's approach to market definition in the 2008 merger guidelines focuses on two dimensions of substitution – the product dimension and the geographic dimension.[93]

Substitution involves switching from one product to another in response to a change in the relative price, service or quality of the product that is the subject of the inquiry. There are two types of substitution:

- demand-side substitution, which involves customer switching, and
- supply-side substitution, which involves supplier switching.

There may be associated switching costs or difficulties which, if significant, can impede the substitutability of products.

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92 ACCC, *Merger guidelines*, November 2008.

93 ibid, pp. 15–19.

When considering whether a product is substitutable, the ACCC may consider customer attitudes, the function or end use of the technology, past behaviours of buyers, relative price levels, and physical and technical characteristics of a product.[94]

Delineation of the relevant geographic markets involves the identification of the area or areas over which a carrier or carriage service provider (CSP) and its rivals currently supply, or could supply, the relevant product.

Part XIC of the CCA does not require the ACCC to precisely define the scope of the relevant markets in a declaration inquiry. The ACCC considers that it is sufficient to broadly identify the scope of the relevant market(s) likely to be affected by the declaration. Accordingly, a market definition analysis under Part XIC should be seen in the context of shedding light on how declaration would or would not promote competition and the LTIE in those markets.

Assessing the state of competition

Once the relevant markets have been defined, the next step in the analysis is to assess the state of competition in relevant markets. If competition is determined to be effective, then declaration of the eligible services is generally not likely to have an effect in terms of promoting further competition or the LTIE. In assessing the state of competition, the ACCC considers dynamic factors such as the potential for sustainable competition to emerge and the extent to which the threat of entry (or expansion by existing suppliers) constrains pricing and output decisions.

At the theoretical level, the concept of 'perfect competition' describes a market structure in which no producer or consumer has the market power to influence prices. Economic theory suggests that perfectly competitive markets have a large number of buyers and sellers, goods or services are perfect substitutes, all firms and consumers have complete knowledge about the pricing/output decisions of others and all firms can freely enter and exit the relevant market. In reality, these conditions are rarely found in any market or industry, even those where competition between rival firms is relatively intense.

The concept of 'effective competition' recognises the practical limitations of the theory of perfect competition, especially when applied to telecommunications markets. Some characteristics of effective competition are that it:

- is more than the mere threat of competition – it requires that competitors are active in the market, holding a reasonably sustainable market position[95]
- requires that, over the long run, prices are determined by underlying costs rather than the existence of market power
- requires that barriers to entry are sufficiently low and that the use of market power will be competed away in the long run, so that any degree of market power is only transitory
- requires that there be 'independent rivalry in all dimensions of the price/product/service [package]',[96] and
- does not preclude one party from holding a degree of market power from time to time but that power should 'pose no significant risk to present and future competition'.[97]

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94 A useful list of information the ACCC may consider when identifying close substitutes to the relevant product is contained in the 2008 Merger Guidelines, p. 19.

95 Olivier Boylaud and Biuseppe Nicoletti, *Regulation, market structure and performance in telecommunications*, OECD Economics Studies, no. 32, 2001/1.

96 Re Queensland Co-operative Milling Association Ltd and Defiance Holding Ltd (1976) *25 FLR 169*.

97 This is not intended to be an exhaustive list of the characteristics of effective competition.

These five factors are indicators of the extent to which competition constrains market participants to supply products and services of a given quality at prices that are based on efficient costs.

When assessing whether effective competition exists in a relevant market, the ACCC examines certain structural and behavioural factors in the market, including but not limited to:

- structural factors, including the level of concentration in the market
- the potential for the development of competition in the market including planned entry, the size of the market and the existence and height of barriers to entry, expansion or exit in the relevant market
- the dynamic characteristics of the market, including growth, innovation and product differentiation as well as changes in costs and prices over time, and
- the nature and extent of vertical integration in the market.

Our assessment of the current state of competition during this review will be used to assist us in determining whether declaration would promote the LTIE.

Assessing the impact of the declaration on relevant markets

The next step is to assess the likely effect of the proposed declaration on competition in each relevant market. As noted above, subsection 152AB(4) requires regard to be had to the extent to which a particular thing will remove obstacles to end-users gaining access to listed services.

The ACCC generally considers it helpful to apply the future with and without test as one way to determine whether the LTIE will be promoted by declaration. The test will compare the likely future situation if the service was declared and the likely future situation without the service declaration before deciding which situation will promote the LTIE.

Any-to-any connectivity

The objective of any-to-any connectivity is achieved when each end-user is able to communicate with other end-users, whether or not they are connected to the same telecommunications network.[98]

The any-to-any connectivity requirement is particularly relevant when considering services that require interconnection between different networks. When considering services which do not require user-to-user connections (such as carriage services that are inputs to an end-to-end service or distribution services, such as the carriage of pay television), this criterion is generally less of an issue.

Efficient use of and investment in infrastructure

In determining the extent to which declaration is likely to encourage the economically efficient use of, and investment in, infrastructure, subsections 152AB(6) and (7) of the CCA provide that regard must be had (but is not limited) to the technical feasibility of providing and charging for the services, the legitimate commercial interests of the supplier(s) of the services, and the incentives for investment in infrastructure.

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[98] CCA, subsection 152AB(8).

Economic efficiency has three components:

- *Productive efficiency* refers to the efficient use of resources within each firm to produce goods and services using the least cost combination of inputs.
- *Allocative efficiency* is the efficient allocation of resources across the economy to produce goods and services that are most valued by consumers.
- *Dynamic efficiency* refers to efficiencies flowing from innovation leading to the development of new services or improvements in production techniques. It also refers to the efficient deployment of resources between present and future uses so that the welfare of society is maximised over time.

Facilitating access plays an important role in ensuring that existing infrastructure is used efficiently where it is inefficient to duplicate the existing networks or network elements. An access regime must not discourage investment in networks or network elements where such investment is efficient.

Paragraph 152AB(6)(a) requires the ACCC to have regard to a number of specific matters in examining whether declaration is likely to lead to achievement of the objective in paragraph 152AB(2)(e).

Technical feasibility

In assessing the technical feasibility of supplying and charging for a service, the ACCC considers:

- the technology that is in use, available or likely to become available
- whether the costs that would be involved are reasonable or likely to become reasonable, and
- the effects or likely effects of supplying and charging for the service on the operation or performance of telecommunications networks.

The ACCC assesses the technical feasibility of supplying the relevant service by examining the access provider's ability to provide the service and considering experiences in other jurisdictions. The ACCC will look to an access provider to assess whether it is technically feasible to supply the relevant service, and will also consider experiences in other jurisdictions.

The legitimate commercial interests of the supplier

An infrastructure operator's legitimate commercial interests relate to its obligations to the owners of the firm, including the need to recover the costs of providing services and to earn a normal commercial return on the investment in infrastructure. Allowing for a normal commercial return on investment provides an appropriate incentive for the access provider to maintain, improve and invest in the efficient provision of the service.

Paragraph 152AB(6)(b) of the CCA also requires the ACCC to have regard to whether providing access may affect the infrastructure operator's ability to exploit economies of scale and scope. Economies of scale arise from a production process in which the average (or per unit) cost of production decreases as the firm's output increases. Economies of scope arise where it is less costly for one firm to produce two (or more) products than it is for two (or more) firms to each separately produce the relevant products.

Declaration may be more likely to impact on an infrastructure operator's ability to exploit economies of scope than economies of scale. A limit in the capacity available to the owner may constrain the number of services that the owner is able to provide using the infrastructure and thus prevent the realisation of economies of scope associated with the

production of multiple services. In contrast, economies of scale derive from the use of the capacity of the network and can be realised regardless of whether that capacity is being used by the owner or by other carriers or carriage service providers. The ACCC assesses the effects on an infrastructure operator's ability to exploit both economies of scale and scope on a case-by-case basis.

Incentives for investment

Infrastructure operators should have the incentive to invest efficiently in the infrastructure by which the services are supplied (or are capable, or likely to become capable, of being supplied). In determining incentives for investment, regard must be had (but is not limited) to the risks involved in making the investment.[99]

Access regulation may promote efficient investment in infrastructure by avoiding the need for access seekers to duplicate existing infrastructure where duplication would be inefficient. It reduces the barriers to entry for competing providers of services to end-users and promotes efficient investments by these service providers in related equipment required to provide services to end-users.

Firms should have the incentive to invest efficiently in the infrastructure by which the services are supplied (or are capable, or are likely to become capable, of being supplied).

[99] CCA, subsections 152AB(7A) and (7B).