GENERAL NOTICE

NOTICE 529 OF 2007

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

NOTICE OF INTENTION TO DEFINE RELEVENT END TO END LEASED LINES AND OTHER WHOLESALE MARKETS IN TERMS OF SECTION 67(4) OF THE ELECTRONIC COMMUNICATIONS ACT 36 OF 2005.

1. The Independent Communications Authority of South Africa ("the Authority"/ "ICASA") hereby gives notice and invites written comments in terms of section 4B of the Independent Communications Act of South Africa Act 13 of 2000, as amended, ("ICASA Act") on the definition of various wholesale and retail markets attached in annexure A below.

2. Interested persons or organisations are hereby invited to submit written representations or documentation, including an electronic version in Microsoft Word, on their views in accordance with the provisions of section 4B inquiry by no later than 8 June 2007.

3. Persons or organisations who wish to make any representation or submit any relevant documents must also indicate whether they would like an opportunity to make oral presentation at a hearing, which must not exceed one (1) hour in duration.

4. Written representations or documentation may be posted or hand delivered, for the attention of:

Mr. David Railo
Manager: Policy Research
Private Bag X 10002 or Block A, Pinmill Farm
Sandton, 164 Katherine Street
2146 Sandton, 2146

Where possible, written representations should also be e-mailed to drailo@icasa.org.za and to mnkopane@icasa.org.za

5. All written representations or documentation submitted to the Authority pursuant to this notice shall be made available for inspection by interested persons at the ICASA library and copies of such representations and documents can be obtained upon payment of the prescribed fee.

6. Interested persons or organisations who submit written representations or documentation should indicate, upon submission, whether there is any part thereof which should be treated as confidential. The request and reasons why any part of the representation or documentation be treated as confidential must be submitted at the same time with the written representation.

7. ICASA will consider whether to grant or refuse the request for confidentiality in accordance with the provisions of the ICASA Amendment Act. Where the Authority refuses to treat any part of the representation or documentation as confidential, the person or organisation making such representation may withdraw the representation or documentation in question and the Authority will not take it into consideration when making its findings.

8. In order to provide for a wider basis of representations to be made and documents to be submitted during the inquiry, the Authority has compiled questions pertinent to this issue.

   These questions have been incorporated into the annexure hereto entitled **"Market definition of end to end leased lines and other wholesale services"**

9. The findings and conclusions or recommendations made by the Authority following the enquiry will be published in a Government Gazette as provided for by section 4C of the ICASA Act.

PARIS MASHILE
CHAIRPERSON

ANNEXURE A: MARKET DEFINITION OF END TO END LEASED LINES AND OTHER WHOLESALE SERVICES

1. INTRODUCTION

1.1 The Electronic Communications Act ("ECA") mandates ICASA to engage in market reviews in which a) markets are defined, b) Significant Market Power ("SMP") is identified, c) market competitiveness is evaluated and d) regulations which may be imposed are set out[1] (S67(4)). Market reviews are a consultative process in which stakeholders will have an opportunity to submit comments on ICASA's initial proposals.

1.2 The services considered in this review include: wholesale access to the fixed line local loop, fixed line narrowband exchange line, call origination and call conveyance services; and end-to-end leased lines and associated wholesale segments services.

1.3 ICASA is mindful of the process underway within the Department of Communications to address policy to enable Local Loop Unbundling ("LLU"). The market definitions contemplated in this review are not in conflict with LLU since this is a regulatory remedy and not a market definition. Appropriate market definitions are in fact necessary and a pre-requisite for LLU policy to be effective.

BRIEF SUMMARY OF FINDINGS

MARKET DEFINITION

1.4 A market for fixed line local loop access is defined. The market excludes fixed wireless service, wireless services and other wholesale fixed line services.

1.5 The following fixed line narrowband exchange line, call origination and call conveyance markets are defined.

1.5.1 Wholesale fixed line narrowband exchange line services for residential customers;

1.5.2 Wholesale fixed line narrowband exchange line service for business customers;

1.5.3 Wholesale fixed line call origination over narrowband networks;

1.5.4 Wholesale fixed line local conveyance services over narrowband networks;

1.5.5 Wholesale fixed line trunk call conveyance services over narrowband networks.

[1] Section 67.4 of the ECA requires ICASA to define markets where it intends to impose pro-competitive regulations on licensees with Significant Market Power in cases where ineffective competition is found to exist.

1.6 This following leased line markets are defined (and exclude fixed wireless or wireless services):

1.6.1 Low bandwidth (below 2Mbps) retail end-to-end leased lines for transmission within South Africa.

1.6.1.1 Low bandwidth (below 2Mbps) wholesale symmetric broadband originator ("SBO") services;

1.6.2 High bandwidth (above 2Mbps) retail end-to-end leased lines for transmission within South Africa

1.6.2.1 High bandwidth (above 2Mbps) wholesale SBO services;

1.6.3 Wholesale trunk services for transmission within South Africa;

1.6.4 International leased lines.

SIGNIFICANT MARKET POWER ("SMP")

1.7 Telkom is deemed to have SMP in all the above markets. Telkom currently has a de facto monopoly controlling 100% of these markets, with the exception of retail leased lines. However, even in this case they are likely to have well over 45%, which is the required threshold for determining SMP. These SMP positions are not anticipated to change in the life time of this review.

PRO-COMPETITIVE CONDITIONS

1.8 The following pro-competitive conditions are suggested:

1.9 An access obligation applicable to all markets:

1.9.1 Regarding wholesale local access services, Telkom must grant access, upon reasonable request, to the local loop at varying points and with the appropriate method of interconnection. This will include any co-location facilities which may be required in order to reduce the distance cost of making connection at various points, including co-location in the local exchange.

1.9.2 Regarding exchange services, call origination and call conveyance, Telkom must grant access, upon reasonable request, to all necessary interconnection facilities. Following international best practice, as well as the guidelines set out in the ECA, the access obligation will specifically include a requirement to provide wholesale services that enable Carrier Pre-selection ("CPS") and Carrier Selection ("CS") (indirect access), as well as Wholesale Line Rental ("WLR"), which allows alternative providers to present the customer with a single bill for access plus calls and to decide how the customers call will be routed at a wholesale level.

1.9.3 Regarding leased lines, Telkom must grant access, upon reasonable request to end-to-end retail leased lines and end-to-end wholesale leased lines and Partial Private Circuits ("PPCs") falling under the wholesale SBO and trunk markets.

1.10 That all such access be non-discriminatory, as required by the ECA

1.11 That Telkom be subject to transparency conditions with respect to prices and other key access information, as required by ECA.

1.12 That Cost of Accounting and separation of accounting conditions be imposed on Telkom with respect to all of the above access services.

1.12.1 That explicit cost-based pricing be imposed on all types of access at the local loop referred to above. The appropriate price control to be applied is likely to be long run incremental cost ("LRIC"), calculated on the basis of relevant forward looking economic costs of an efficient operator, including a reasonable cost of capital.2 Where a LRIC determination will take too long, ICASA will issue immediate price caps based on other methodologies including benchmarking, until such time as LRIC can be implemented. Note however, one exception:

1.12.2 Though LRIC will apply to retail end-to-end leased lines, as well as to Partial Private Circuits ("PPCs") falling under the wholesale SBO and trunk markets, retail minus X regulation will be applicable to the wholesale end-to-end leased lines.

2. METHODOLOGY

2.1 The approach the Authority proposes to adopt in the delineation of the relevant markets is that which is consistent with that utilised by the Competition Commission and the Competition Tribunal of South Africa ("The SA Competition Authorities"). Furthermore, the Authority considers that the approach detailed within the Guidelines on market analysis and the assessment of significant market power under the regulatory framework for electronic communications networks and services by the European Commission ("EC") may be of some assistance. The conceptual framework adopted by the SA Competition Authorities, the EC and the United States Department of Justice ("DoJ") and the Federal Trade Commission ("FTC") in defining relevant markets prescribes the "hypothetical monopolist test" which entails the evaluation of the likely competitive consequences emanating from a hypothetical profit-maximising entity imposing a "small but significant non-transitory increase in price" test ("SSNIP test").

2.2 The SSNIP test entails identifying the narrowest possible market, and considers

[2]"The adoption of LRIC as a regulatory costing technique is used widely for example by other national regulatory authorities (NRAs) in Europe, and by the FCC in the US. It has also been identified as the most appropriate methodology to use for setting interconnection charges by the European Commission in its 1998 Recommendation on Interconnection Recommendation 98/195/EC 8 January 1998)." Quoted from an OFCOM report on mobile call termination. May 2003.

whether or not it would be profitable for a hypothetical profit maximising entity to impose a small but significant, non-transitory increase in its price. Assuming that consumers are likely to respond to such a price increase by considering alternative substitutes offered by other entities, the analysis entails the identification of such entities that would serve as competitive constraints to the unilateral increase in price by the hypothetical monopolist. If substitution is considered to be viable, such increase in price is likely to be unprofitable and consequently the market boundary must be expanded to include such constraining entities offering substitute products.

2.3 The Authority is cognisant that the SSNIP test provides a conceptual framework for conducting a market definition exercise. Furthermore, the Authority is also cognisant that there exist numerous quantitative analytical tools which sustain the conceptual framework of the SNNIP test. Such quantitative analysis include among other things: Critical Loss Analysis, Price Correlation Analysis, Price Elasticity Analysis and Diversion Ratio Analysis.

2.4 For supply-side substitution to be relevant for market definition it is commonly considered that it must occur within a relatively short period of time (1 year).[3] If it is likely to occur only in the medium term (1 to 2 years), it is classified as "new entry" and is considered in the context of SMP.[4] Supply side substitution which is dependent on a new technology that is likely to become viable in 2 years or more is not considered relevant to the market review.[5] As ICASA reviews will occur on an ongoing basis these longer term affects can be considered in subsequent reviews.[6]

2.5 Market definition will also take into account the existence of common pricing constraints, such as where a firm cannot price one product differently from another even though they are not substitutes, as well as bundling, such as where two products are sold together in a bundled product.

2.6 This section will be divided into the following categories:

A. Wholesale access to the fixed line local loop;

B. Fixed line narrowband exchange line, call origination and call conveyance services, and

C. End-to end leased lines markets and wholesale segments.

3. MARKET DEFINITION

A. WHOLESALE ACCESS TO THE FIXED LINE LOCAL LOOP

[3] See OFCOM, Mobile Call Termination, Review of Mobile Wholesale Voice Termination Markets: EU Market Review" ("The May Consultation"), 15 May 2003, page 32

[4] *Ibid*

[5] OFCOM also consider the appropriate time frame for a forward looking analysis to be 2 years. A key reason for this is market reviews take place over a similar time period. See OFCOM, "Review of Retail Leased Lines, Symmetric Broadband Origination, and Wholesale Trunk Segment Markets: Final Statement and Notification." 2004, page 20

[6] Section 67(4)(e) of the ECA mandates that ICASA set out the schedule "in terms of which the Authority will undertake periodic review of the markets and market segments"

3.1 Wholesale local access will include various different combinations of facilities and various types of connection within the local exchange (e.g. before and after DSLAM) and (physically speaking) just outside. The precise infrastructure, cables, equipment (including network terminating equipment on end user premises) used in wholesale local access services will be explicitly stipulated in the detailed regulation phase. In all cases, however, it will cover dedicated access to the copper (twisted pair) cables between the end users premise and the local exchange. Enabling services such as power and co-location will also form a part of this market.

RETAIL MARKETS WHICH USE WHOLESALE LOCAL ACCESS AS AN INPUT

3.2 It is necessary to first consider the applicable retail markets in order to analyse the competitive dynamics at the wholesale level. In South Africa, there are three types of services for which the local loop is used:

3.2.1 fixed location access and narrowband only services (for basic voice, dial-up and ISDN);

3.2.2 dual fixed location services, which include access, narrowband *and* broadband services, as is currently provided using ADSL technology; and

3.2.3 symmetric broadband services and leased lines.

3.3 At present, by far the majority of twisted pair copper cables are used for access and narrowband only services.

3.4 In order to supply these services, providers will have to purchase or self-supply various levels of wholesale inputs, depending on the retail service. Some of these wholesale inputs are considered in later sections of this review (for example, call origination, call conveyance, symmetric broadband origination and leased line trunk services) and others are considered in different reviews (for example call termination, asymmetric broadband origination and broadband conveyance). For all the above retail services wholesale local access is required, which goes deepest into a telecommunications network. It is this segment which is considered in this section. Ultimately, the demand for wholesale local access will be driven by the demand for services in these downstream wholesale and retail markets.

3.5 In the retail narrowband services review, a distinction was drawn between mobile and fixed location access services, and between residential and business services. In the asymmetric broadband review, a distinction was drawn between asymmetric broadband and narrowband internet (dial-up) services and symmetric (leased line) services. All markets have been defined as being national in geographic scope. The reasons for the relevant market borders have been explained in the relevant reviews.

Q1. PLEASE COMMENT ON ICASA'S DEFINITION OF THE RETAIL MARKETS WHICH USE WHOLESALE LOCAL ACCESS AS AN INPUT?

PRODUCT MARKET FOR WHOLESALE LOCAL ACCESS

3.6 It follows from the retail market definitions referred to above that fixed line wholesale local access services are also a distinct market. The following sets out why this is the case, by considering fibre, fixed-wireless and mobile technologies as potential substitutes. The issue of a residential and business split is also considered.

3.7 ***Fibre:*** Some local loop connections are partially made of fibre, particularly with respect to the final connection to the user's premise (perhaps from the street box). However, these connections facilitate retail services with far greater functionality, quality and speed than those that can be offered via pure copper cables. These connections are moreover generally significantly more expensive than copper based connections. Therefore, it is unlikely that fibre based connections would constrain a hypothetical monopolist of wholesale local access from engaging in a SSNIP.

3.8 ***Fixed-wireless:*** There may be some potential for fixed-wireless technology such as WiMax to provide local loop connections which can compete with existing wire based ones. There are examples of both asymmetric and symmetric services. The key advantage of fixed-wireless connections is their ability to significantly reduce the cost of establishing these connections relative to the sunk cost of wire based ones. Moreover, similar retail services can be offered using this technology, including voice (over broadband) and broadband.

3.9 Fixed wireless services are currently not proven, however, as only scattered examples of commercial roll out exist.[7] For symmetric broadband applications, speed and reliability are considered significantly lower. For asymmetric services, there are doubts over the ability for fixed wireless services to provide voice services of comparable quality (delay and jitter characterise fixed wireless networks) which may seriously reduce the utility of a call (and local access is mainly used for voice services). It is also noted that the upfront investment that end users have to make in radio receiving equipment is usually substantially more expensive than equivalent wire based services (but this may yield an up-front/ongoing expense trade off).

3.10 Moreover, the potential providers of these services still face an incumbent who has made deep investments in infrastructure over long periods of time, and who has an established user base. Therefore, any entrant has to consider the feasibility of making an adequate return at the post-entry price. The incumbent is likely to respond aggressively to any move in this direction, partly as a signal to deter further entry.

[7] In South Africa, there are scattered examples of these services (notably, Uninet in Knysna) but current penetration is insignificant and no company has yet initiated a large scale commercial launch.

3.11 Overall, the ability for fixed-wireless providers to offer viable competition is not yet proven, even in international destinations, where incumbent providers continue to control the majority of local connections. Given this analysis, fixed-wireless local loops are excluded from the market. It is noted that including them at this stage will not have any significant impact on SMP determinations.

3.12 ***Mobile local loops:*** Using cellular (2G and 3G) technology, mobile providers currently offer local loops which largely match (and stretch beyond) the coverage of Telkom fixed link local loops. However, in the retail review of narrowband services, as well as the retail review of asymmetric broadband services, mobile services were separated out from fixed line services. A primary reason for this distinction is that mobile services (provided over cellular technology) are generally significantly more expensive, and offer significantly increased functionality (mobility) relative to fixed line services. They are therefore unlikely to constrain a hypothetical monopolist of fixed line services to cost based prices. Therefore, a downstream wholesale purchaser of local access would not be able to purchase mobile local loop services for the purposes of providing fixed location services (in a model similar to fixed wireless solutions) because this product would be too expensive relative to the input costs of competitors. Moreover, retail switching (between fixed and mobile services) will not create a viable indirect constraint to a hypothetical monopolist of wholesale fixed location local access services, as these services fall into different markets.

3.13 Finally, it is not considered feasible that supply-side substitutability would be effective in this context, due to the very high sunk costs and economies of scale, scope and density of fixed location local loop provision.

3.14 ***Residential versus business:*** This review does not draw a distinction between residential and business local loop connections. It is noted that the narrowband retail review does draw a distinction between these two customer groups, and that many local loops may service a clear majority of residential or business users (local loops are inherently "local"). However, the economics behind the wholesale provision of these services are not likely to be significantly different, as differentiation between these groups occurs largely at the retail level. Moreover, this distinction will have no significant impact on SMP finding at present, nor will it likely do so during the lifetime of this review.

Q2. DO YOU AGREE WITH ICASA'S DEFINITION OF THE PRODUCT MARKET FOR WHOLESALE LOCAL ACCESS?

GEOGRAPHIC MARKET FOR FIXED LOCATION WHOLESALE LOCAL ACCESS

3.15 At present, wholesale local access markets do not exist in South Africa and so pricing information is not available. Overall, Telkom generally sets pricing for its services on a national level. This "common pricing constraint" leads to a general finding of national based wholesale access markets, and this can be extended to the current case. It is noted that part of the reason for a national pricing policy on behalf of Telkom is due to Universal Service Obligations

(USO's). However, these obligations are not subject to change and therefore they are not considered a relevant dynamic in the market for establishing ex-ante regulation. Moreover, other prices of Telkom, which are not subject to USO conditions, such as wholesale prices, are also priced on a national basis. Finally, it would not currently make any difference to SMP determination if alternative geographic slices had to be defined, nor is this likely to change during the lifetime of this review.

3.16 The following European regulators also defined a national market for wholesale local access: RTR (Austria); NITA (Denmark); ARCEP (France); BNetzA (Germany); ComReg (Ireland), AGCOM (Italy); NPT (Norway); ANACOM (Portugal); ANRC (Romania); PTS (Sweden); OPTA (The Netherlands). Of the three regulators who did not define a national market, they defined large regional markets (OFCOM (UK); FICORA (Finland) and NCAH (Hungary).[8]

Q3. PLEASE COMMENT ON THE GEOGRAPHIC MARKET FOR FIXED LOCATION WHOLESALE LOCAL ACCESS?

B. FIXED LINE NARROWBAND EXCHANGE LINE, CALL ORIGINATION AND CALL CONVEYANCE SERVICES

THE RELEVANT RETAIL MARKETS

3.17 Demand for wholesale fixed line narrowband exchange line, call origination and call transit service is a derived demand from retail services. The relevant retail services include traditional voice services provided over fixed lines, dial-up services (for Internet access) and other value added services (such as call waiting and caller ID). The following markets are identified:

3.17.1 *For business customers*:

3.17.1.1 Traditional fixed location access services;

3.17.1.2 Local calls from traditional fixed locations, including Carrier Selection and Carrier Pre-Selection as well as Integrated VOIP offerings;

3.17.1.3 National calls from traditional fixed locations, including Carrier Selection and Carrier Pre-Selection;

3.17.1.4 International calls from traditional fixed locations, including Carrier Selection and Carrier Pre-Selection; and

[8] A summary of EU regulatory decisions can be found in, ERG Work Programme, "Report on Experience with Market Definitions, Market Analysis and Applied Remedies: Experiences Project," 15 July 2005.

3.17.1.5 Fixed-to-mobile calls from traditional fixed locations, including Carrier Selection and Carrier Pre-Selection.

3.17.2 *For residential customers:*

3.17.2.1 Traditional fixed location access services;

3.17.2.2 Local calls from traditional fixed locations, including Carrier Selection and Carrier Pre-Selection;

3.17.2.3 National calls from traditional fixed locations, including Carrier Selection and Carrier Pre-Selection;

3.17.2.4 International calls from traditional fixed locations, including Carrier Selection and Carrier Pre-Selection; and

3.17.2.5 Fixed-to-mobile calls from traditional fixed locations, including Carrier Selection and Carrier Pre-Selection.

Q4: PLEASE COMMENT ON THE DEFINITION OF THE RETAIL MARKETS IN THIS SECTION?

THE WHOLESALE MARKETS

DISTINCT MARKETS FOR EXCHANGE LINE, CALL ORIGINATION, LOCAL CALL CONVEYANCE AND TRUNK CONVEYANCE SERVICES

3.18 It is clear that exchange line services, call origination, local call conveyance and trunk conveyance are not substitutes but rather complements in the production of a call. On the supply side, each service is associated with significant economies of scale and providers of any one of these services will not easily be able to build competing capacity for adjacent services in response to a SSNIP.

3.19 Furthermore, each of these services is characterised by significantly different economies of scale. Although these scale economies are substantial, the further upstream into a fixed line network a new entrant chooses to self-supply, the greater will be the economies of scale. Therefore, we can expect greater competition on local and trunk call conveyance than will likely occur on call origination and exchange line services. However, the extent to which competition will be generated on call conveyance is as yet unproven.

3.20 The complementary segments of a retail fixed line narrowband service are neither demand side substitutes nor supply-side substitutes, and are therefore considered to be in separate markets.

3.21 However, it is noted that at present, defining separate markets will not have a significant impact on SMP determinations due to the overwhelming dominance of the incumbent fixed line operator. For this reason, we do not consider it necessary to define these markets any more finely. For example, we do not in this review draw a distinction between ISDN and traditional voice exchange lines and between various levels of ISDN. It is not anticipated that significantly different competitive dynamics will arise for these exchange line services in the foreseeable future and there is thus limited utility in specifying separate markets. Note, this does not suggest that the same specific regulation will be applicable to these services.

Q5: PLEASE COMMENT ON ICASA'S VIEW THAT EXCHANGE LINE SERVICES, CALL ORIGINATION, LOCAL CALL CONVEYANCE AND TRUNK CONVEYANCE ARE NOT SUBSTITUTES BUT ARE RATHER COMPLEMENTARY SEGMENTS FOR THE TRANSMISSION OF A CALL?

BUSINESS AND RESIDENTIAL CUSTOMERS

3.22 Business and residential customers fall into different retail markets for both access and outgoing calls. This is based on (a) the ability for providers to price discriminate, (b) the different quality of services that are provided and (c) the different economies of scale required to service the business market as opposed to the residential market. The reader is referred to the retail review for a more detailed discussion.

3.23 The finding that residential and business customers fall into separate retail access markets extends to the market for wholesale exchange lines. Business customers generally have more advanced needs relative to residential customers, and business services are generally associated with a price premium. This can be explained by (a) the enhanced services offered to business and (b) due to an ability to discriminate easily between these customer types. Because wholesale demand is derived from retail demand, a supplier of these services will not be able to switch from business to residential wholesale local exchange line services. On the supply-side, business and residential customers are generally located in different destinations and so a provider to one customer type will face substantial investment costs in building out to the other customer type. Therefore, with respect to wholesale exchange line services, given a lack of demand and supply-side substitutability, business and residential customers are considered to fall into two separate markets.

3.24 At a retail level, discrimination between these customer types extends from access into outgoing calls, through the use of different packages targeted and exclusively provided to each segment. Moreover, the supply side argument mentioned above continues to hold here (call origination from a business can not be substituted for call origination from a residential premise). However, there is no price or quality difference for wholesale origination according to customer type. Therefore a common-pricing constraint holds in this market. At the level of conveyance, calls from both residential and business customers

will be aggregated and transmitted over the same infrastructure. Therefore, call origination and call conveyance markets are not split between business and residential users.

Q6: PLEASE COMMENT ON ICASA'S PRELIMINARY CONCLUSIONS THAT BUSINESS AND RESIDENTIAL CUSTOMERS FALL INTO DIFFERENT MARKETS FOR BOTH ACCESS AND OUTGOING CALLS?

EXCLUDING MOBILE SERVICES

3.25 Mobile services are not in the same market as fixed line services at the retail level. The main reasons for this distinction are based on (1) functional differences, especially the mobility advantage of mobile services and the bandwidth advantage of fixed services and (2) cost differences in that fixed line services are generally cheaper. This finding extends to the wholesale level. As demand for fixed location wholesale services is a derived demand, they cannot be substituted for wholesale mobile services which are an input into a different downstream market. Further, the high fixed cost of establishing fixed line services (exchange line, origination, local conveyance or trunk conveyance) render supply side substitution unlikely.

Q7: PLEASE COMMENT ON ICASA'S VIEW THAT MOBILE SERVICES ARE NOT IN THE SAME MARKET AS FIXED LINE SERVICES AT THE RETAIL LEVEL?

EXCLUDING BROADBAND

3.26 Narrowband "dial-up" services, including ISDN, are not in the same market as broadband services, at the retail or wholesale level. VOIP service such as voice over ADSL, voice over leased line, or Internet based VOIP services (such as Skype) are not considered in the same retail market as fixed line voice calls. Fixed wireless services are not in the same retail market as narrowband voice services. The detailed market definitions are located in the relevant retail reviews.

3.27 All of these findings extend to the wholesale level.

Q8: PLEASE COMMENT ON ICASA'S VIEW THAT NARROWBAND SERVICES ARE NOT IN THE SAME MARKET AS BROADBAND SERVICES AT THE RETAIL LEVEL FOR THE PURPOSE OF ACCESS THE INTERNET?

C. END-TO-END LEASED LINES AND WHOLESALE SEGMENTS

3.28 The services considered in this section are for leased lines. This includes end-to-end leased lines and the various wholesale segments that go into an end to end leased line service. Leased lines are used as inputs into downstream services such as leased line Internet Access, Virtual Private Networks (VPNs) and Disaster Recovery Services.

3.28.1 Leased line means a service that provides a defined transmission capacity between termination points in a communications network but does not include the routing of messages.

3.29 End-to-end leased lines are **permanent connections** that allow end users, such as companies to connect sites that are spread out (i.e. the sites are non-contiguous). These connections can be used to send voice and data from one site to another. The type of data that can be carried includes customer details, prices or stock levels. For example a supermarket could use a network of leased lines to transfer information between its stores and its central warehouse on inventory levels, accounts payable and prices.

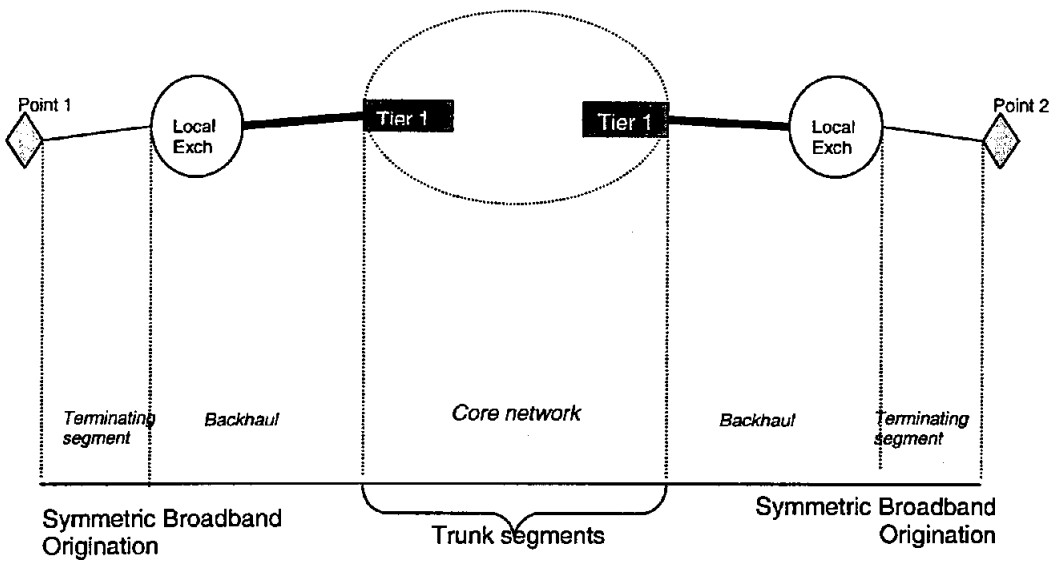
3.30 A feature of leased lines is that they provide **dedicated capacity**,[9] namely that capacity on leased lines is exclusively allocated to a particular end user. This means that leased lines transfer data and voice at consistent speeds. In contrast, when bandwidth is shared with a number of users (the bandwidth is contested) as more users access the service the speed of transmission falls.

3.31 A further characteristic of retail end-to-end leased lines is that the **underlying capacity is symmetric**. This means that leased lines can carry data at a similar rate in both directions between sites. For example symmetric capacity would allow a retailer to transfer similar volumes of data from its stores to the warehouse as from the warehouse to the stores. In contrast when capacity is asymmetric, larger volumes of data can be sent in one direction than in the other. An example of an application that requires asymmetric capacity is accessing the World Wide Web where most of capacity is needed for downloading data from websites rather than uploading information.

3.32 In light of these features of leased lines, this review defines a leased line as a permanently connected communications link between two premises dedicated to the customers exclusive use where the capacity underlying the communications link is symmetric. The underlying infrastructure on which leased line capacity is based may vary from line to line, and indeed on a single line between different times (as the provider distributes data transmission across its core network to achieve maximum efficiency at any given point in time). For this reason, we define end-to-end leased lines in terms of the capacity sold, as opposed to the technology or infrastructure used to provide that capacity.

[9] OFTEL, Office of Telecommunications "Review of the retail leased lines, symmetric broadband origination and wholesale trunk segments markets", Published: 18 December 2003

3.33 At a wholesale level a distinction is drawn between the Symmetric Broadband Origination ("SBO") sections and the Trunk sections. As defined in this review, SBO services include both the terminating and backhaul segment, whereas trunk segments refer to transmission across the core network nodes. Consider the diagram below.



3.34 In the SBO section customers are connected to an appropriate point of aggregation, referred to as a node. An example of a node would be the local exchange where leased lines from a number of companies' are aggregated so that they can be connected to the rest of the network. Nodes can occur at different levels of aggregation. For instance at a regional level a node would connect a number of local exchanges which themselves are classified as nodes. The trunk section transmits data between nodes. For instance a trunk section would connect nodes in Johannesburg and Cape Town.

3.35 Currently, Telkom does not provide separate SBO or trunk segments products. That is, a customer (retail or wholesale) must purchase a complete end-to-end leased line service in order to lease capacity. This is in stark contrast to other jurisdictions, such as the UK where regulatory intervention has mandated that incumbent operators, such as BT, allow communication providers to purchase segments of leased lines (known as Partial Private Circuits (PPC)) which may provide only the trunk segment or only parts of the SBO segment. For example, a PPC may provide a connection from the end user's premises to the local exchange, or some higher aggregated node, and an alternative communication provider may interconnect at this point, and use its own infrastructure for the remaining parts of the leased line. Mandating access to the incumbent's network, as the UK does, generates a number of efficiencies, which is an important recommendation coming out of this review. The Authority is cognisant of the current market dynamics regarding access to the various terminating segments of leased lines and is of the view that while there are currently no distinct markets (such as PPCs), this is a key access

mechanism for new entrants in future and as such is necessary to define the various possible segments of leased lines.

3.36 As stated in 3.35, Telkom does not provide separate SBO or trunk segments products at present. That is, a customer (retail or wholesale) must purchase a complete end-to-end leased line service in order to lease capacity. This means that in order for VANS to connect their POPs with an end user premise, they have to buy a retail (and more recently a wholesale) end-to-end leased line. However, this is likely to be inefficient, as it does not take into account the fact that the VANS provider might service many end users and it is technically feasible to aggregate these circuits (at the Telkom exchange to which the VANS POP is connected) into a higher bandwidth transport link. The VANS operator is then responsible for de-aggregating (and re-aggregating for trunk transmission) the various individual circuits.

3.37 ***Partial Private Circuits ("PPC"):*** In order for entrants to gradually build infrastructure in response to growing demand from their customers, they require that the incumbent complement and provide the missing portions of the entrant's infrastructure, as they climb the "investment ladder." These missing portions are known as PPCs. The essential characteristic of a PPC service is that it establishes a point of interconnection with an alternative provider which differs from the terminating segment of an end-to-end leased line in, amongst others, the following two ways:

3.37.1 A PPC type product aggregates (and then the alternative provider disaggregates) a series of individual circuits over a single higher bandwidth link, called a transport link.

3.37.2 The transport link is usually offered over more transparent technology than an ordinary leased line terminating segment.

3.38 There are detailed descriptions of how PPCs work in the detailed regulation (and operator implementation manuals) of both OFCOM[10] (and BT) and ComReg[11] (and Eircom), who are amongst the leading NRAs in developing regulation around leased line under the EU Telecommunication dispensation.[12] However, the following is noted:

3.39 The point of handover (POH) can occur at the customer site (Customer Site Handover (CSH)) or at an established point between the alternative operators POP and the local exchange (or core network node) of the facilities providing operator. In the latter, known as "In-Span handover", both operators build out to a common point, usually within a short distance of the facilities providing operator's network node.

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[10] See for instance the consultation document by OFCOM (June 2004), "Partial Private Circuits Charge Control" as well as OFCOM's leased line market reviews.

[11] See for instance ComReg (2005) "Market Analysis: Retail Leased Lines and Wholesale Terminating and Trunk Segments of Leased Lines (National)

[12] See, for instance, the working document by the Commission of European Communities (June, 2002), "Public consultation on a draft Commission Recommendation On Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services "Brussels"

3.40 A PPC will span the SBO portion, the trunk segment portion, or both, and there will be varying combinations. A PPCs service will include the transport link and any other associated equipment and services, and charges will be based on covering these costs. But these charges will be independent of the amount of end users that the alternative operator chooses to pass through that transport link.[13] PPC services may include terminating segments, backhaul segments and trunk segments.[14]

3.41 The barriers to entry in the SBO (origination) and Trunk section are different. In order to supply an SBO service, an electronic communications licensee needs to connect its customers to a local exchange (and then to higher levels of aggregation). To do this cost effectively an entrant needs to connect many customers in the same area. In other words, it has to achieve economies of density. This makes entry into SBO (origination) difficult with fixed line technology. In contrast it is easier to enter the Trunk section as a single line, say connecting Johannesburg to Cape Town, is able to aggregate a large number of users' demand (those users in Johannesburg and Cape Town). As a result we consider that entry is more likely in the Trunk section than in the SBO (origination) section.[15]

PRODUCT MARKET FOR LEASED LINES

3.42 This section considers the product markets for end-to-end leased lines. The analysis begins with retail end-to-end leased lines provided over traditional fixed location infrastructure. The following issues are considered:

3.42.1 Bandwidth distinctions of various types of leased lines;

3.42.2 National trunk versus SBO portions

3.42.3 Symmetric versus asymmetric services;

3.42.4 Downstream services (including leased line Internet access and Virtual Private Networks);

3.42.5 New technologies that could provide the SBO portion: fixed wireless alternatives and wireless local loops;

3.42.6 International leased lines.

[13] Though it will have to be expanded as the number of customers increase, this is the responsibility of the alternative operator.
14 A PPC may also provide capacity on the trunk segment only. For example, a provider may be able to bypass the incumbents local loop (and associated terminating segments) but not find it economically feasible to build trunk capacity in all relevant directions. Instead of purchasing an end to end leased line for this purpose (between base stations) they may utilise PPCs. The efficiency gain here is not necessarily in the ability to aggregate individual circuits (which the alternative operator would do even with a end-to-end leased line) but because of the ability to bypass Telkom's terminating segment and backhaul fees, as well as the benefit of more transparent (lower protocol) technology transmission capacity.
[15] Note that in Telkom's current retail leased offering, the distance dependent segment is defined as being based on the radial distance between the "two end exchanges" for ATM and Megaline and between the "terminal multiplex sites" for Diginet services. There are also distant independent charges (including port charges), which fall under the SBO portion as drawn above. However, under this pricing structure, the backhaul segment is subsumed within the distance dependent trunk segment.

Q9: PLEASE COMMENT ON ICASA'S DEFINITION OF THE RELEVANT PRODUCT MARKET FOR END TO END LEASED LINES

BANDWIDTH DISTINCTIONS OF VARIOUS TYPES OF LEASED LINES

3.43 Separate markets exist for retail leased lines of different bandwidths. Low speed leased lines (2Mbps and less bandwidth) are in a separate market to high speed leased lines (greater than 2Mbps bandwidth). The relatively high price of low speed lines means that they cannot cost effectively substitute for high speed lines at current price levels. This same effect demonstrates that high speed lines are not constraining low speed line prices.

3.44 Table 1C below shows the cost of leasing a 2Mbps Diginet circuit and a 34Mbps circuit over distances ranging from 1 kilometre to 1,000 kilometres. It demonstrates that the cost of purchasing multiple (16) 2Mbps leased lines is far higher rate than the cost of purchasing a single 34Mbps line. Therefore, it is unlikely that a supplier of 2Mbps leased lines could constrain the price of 34Mbps lines through a consumer purchasing multiple 2Mbps circuits. Similarly, given that a 34Mbps circuit is significantly cheaper than sixteen 2Mbps circuits it is implausible that the prices of 2Mbps circuits are constrained by the prices of 34Mbps circuits.

	1 km	10 km	50 km	100 km	300 km	500 km	800 km	1,000 km
Diginet 2048Mbps	R7,619	R9,181	R16,121	R19,331	R28,003	R30,985	R33,166	R34,620
The cost of sixteen Diginet 2048Mbps lines (i.e. the cost of using 2048Mbps circuits to replicate the bandwidth of a 34Mbps circuit)*	R121,902	R146,889	R257,941	R309,288	R448,046	R495,756	R530,652	R553,916
Silver 34Mbps	R25,463	R43,931	R126,011	R169,103	R290,621	R340,091	R382,493	R410,761

Table 1C: The price of purchasing one 34Mbps line compared to the cost of purchasing sixteen 2Mbps lines

3.45 A similar analysis was conducted to compare 34Mbps versus 144Mbps circuits and 2Mbps circuits versus combinations of circuits with lower bandwidth. These analyses come to the same result – multiples of the lower bandwidth circuits are not cost effective substitutes for higher bandwidth circuits. Nevertheless, there is limited practical relevance to defining further splits at different bandwidth levels as the only distinction with relevance to the SMP arguments is that between high and low speeds bandwidth.

3.46 We note that this analysis is provisional as it has been limited by necessity to analysing the prices currently charged by Telkom. As these prices may be inflated this opens the possibility that the conclusion of this section (high and low bandwidth lines are in different markets) may change if cost based prices were used. However, at this stage, we have no reason to believe that our conclusion will change in this manner. We note that the European Union has

placed high (more than 2Mbps bandwidth) and low speed (2Mbps bandwidth and below) lines in separate markets on the basis of cost-based prices.

THE TRUNK AND SBO SECTION OF THE LEASED LINE SERVICE

3.47 We note that the SBO and Trunk sections of the leased lines service are not in the same market as the trunk section is a complement to the SBO section rather than a substitute.

Q10a: PLEASE COMMENT ON ICASA'S VIEW THAT SBO AND TRUNK SECTIONS OF THE LEASED LINE SERVICE ARE NOT IN THE SAME MARKET?

Q10b: PLEASE COMMENT ON ICASA'S VIEWS REGARDING THE BANDWIDTH DISTINCTION AND SUCH A DISTINCTION SERVING TO SUSTAIN THE FURTHER SEGMENTATION OF THE PROPOSED RELEVANT MARKET DEFINITION FOR LEASED LINES?

END-TO-END LEASED LINES VERSUS OTHER SERVICES

3.48 This review now turns to the question of whether asymmetric broadband and other symmetric data services such as Virtual Private Networks (VPNs) are in the same market as end-end leased lines. The finding of this section is that neither asymmetric broadband nor VPNs are in the same market as retail end-to-end leased lines.

ASYMMETRIC BROADBAND SERVICES

3.49 Asymmetric broadband services (ABS) are not considered a viable substitute to retail leased lines. There are various reasons for this, including:

3.49.1 Asymmetric services are usually contended, and are not associated with guaranteed speeds;

3.49.2 Asymmetric services do not provide the degree of flexibility offered by leased lines, in that certain applications/usages perform more poorly over asymmetric services as currently provided through ADSL;

3.49.3 Leased lines typically offer transmission channels that are more secure than asymmetric services; and

3.49.4 Leased lines offer a relatively large amount of customer care, and are associated with detailed and relatively easily enforceable Service Level Agreements ("SLAs").

3.50 The fact that leased lines are symmetric, flexible and dedicated means that they offer an essentially different service to the shared and asymmetric ADSL service. For this reason the two services are allocated into separate markets.

3.51 The difference in the nature of these two services is reflected in the large price differentials between the two. According to sales figures provided by MWEB sales staff[16] for a Silver class[17] 128 Kbps leased line service the end user will pay R6, 633 (if they are within 5km of a MWeb exchange). For a Bronze class[18] service, which is the bottom of the range service that provides international connectivity, a 128 Kbps line will cost R5, 383. By comparison an ADSL 1024/ 4096 Kbps line costs R2,315 for 30Gigs and R695 for 3Gigs. Therefore even the low speed (128 Kbps) Diginet connection is far more expensive than the 1024 Kbps ADSL line. Given these large price differences it is unlikely that leased line connections to the Internet are constraining the price of retail ADSL services or vice versa.

DOWNSTREAM SYMMETRIC BROADBAND SERVICES

3.52 Virtual Private Networks ("VPN") and leased line Internet access provide a cost effective means for many consumers to emulate the connectivity that companies achieve with point-to-point leased line connections. This section considers whether either service is in a position to constrain the prices or quality of leased lines.

3.53 Leased line Internet access and end-to-end leased lines are not sufficiently functionally equivalent to place the two in the same market. Internet services are inherently contended (on the Internet, not the access, portion) and so while they provide connectivity to overseas networks they offer substantially lower functionality to the dedicated and guaranteed capacity offered on end-to-end leased lines. Therefore a company connecting two premises together through the public Internet (via two leased lines to an ISP point-of-presence ("POP")) would not be able to generate the same guaranteed speed, transparency, security as occurs on end-to-end leased line services.

3.54 VPNs are created in a number of ways including the use of VANS providers' networks and by using the Internet. By sharing capacity with other users, either by using the Internet or the VANS providers' network the cost of connecting dispersed sites is reduced for end users. A VPN is "virtually private" in that the VANS provider ensures that each user's service is secure even though the user does not have access to dedicated capacity.

3.55 As OFCOM notes for some consumers, VPNs are not substitutes for leased lines as VPNs cannot replicate *all* of the following features of a leased lines:

3.55.1 dedicated transparent transmission capacity between two points;

3.55.2 guaranteed bandwidth, namely, the bandwidth is not contended, not shared with other users;

[16] By telephone, 27 September 2006

[17] This is aimed at customers who require a fair blend of local and international bandwidth, offering 100% local bandwidth access and 25% guaranteed international bandwidth, with capability to burst to 100% of the line speed.

[18] This is best suited to customers who access mainly local websites and web services, and very occasionally international content. It offers 100% local bandwidth access and 12,5% guaranteed international bandwidth, with capability to burst to 100% of the line speed.

3.55.3 leased lines are transparent; and

3.55.4 secure communication channel.

3.56 As VPNs cannot replicate all of these features of leased lines there are some consumers for whom VPNs are not substitutable for leased lines. For these consumers these VPNs fall into a separate market to leased lines as customer by customer price discrimination is possible.

3.57 Technological advances mean that VPNs[19] have become more useful and have been adopted by many leased line end-users. However, the providers of these VPNs continue to use leased lines both in the access portion and in the trunk segment portion. As a result VPN providers cannot substitute away from leased lines in response to a 5%-10% increase in the price of leased lines. This means that these VPNs cannot constrain a hypothetical monopolist of leased lines. This places VPNS into a separate market to leased lines.[20]

3.58 Leased lines are an input into VPNs, this combined with the existence of consumers for whom VPNs do not offer sufficient service levels and the possibility (indeed the existence) of price discrimination mean that for the vast majority of consumers VPNS do not provide a constraint on the prices of leased lines.

Q11: PLEASE COMMENT ON ICASA'S VIEW THAT NEITHER ASYMMETRIC BROADBAND NOR VPNS ARE IN THE SAME RELEVANT MARKET AS RETAIL END TO END LEASED LINES?

NEW TECHNOLOGIES: WIRELESS ALTERNATIVES TO SYMMETRIC BROADBAND ORIGINATION BY LEASED LINES

3.59 It is possible that fixed wireless technology like WiMax and the wireless services offered by the mobile operators may be used to provide the local loop in any end-to-end connection or may be used as a substitute for a leased line over short distances.

3.60 **Fixed wireless services:** Current indications are that the fixed-wireless offerings such as those provided by Sentech and Uninet (in Knysna) are not able to replicate the guaranteed speed and reliability of symmetric leased lines. Overall, the ability for fixed-wireless providers to offer viable competition is not yet proven, even in international destinations, where incumbent

[19] As ComReg have noted, "dedicated capacity can also be provided in other ways, where the management functions can be employed to allow the customer the experience of a dedicated circuit without that being assigned exclusively and permanently to that customer for their use....for example, an IP network can be dimensioned such that there is capacity available to the IP platform to meet all customer requirements; however the capacity used by a customer does not have to be specifically dedicated to that customer." ComReg, "Market Analysis: Retail Leased Lines and Wholesale Terminating and Trunk Segments of Leased Lines (National)," document no 05/03, January 2005.

[20] We note that the same argument also applies to leased line internet access. As leased lines are an input into leased line internet access a user of leased line internet access cannot substitute away from leased lines in order to constrain a leased line monopolist from raising prices.

providers continue to control the majority of local connections. In South Africa, there are scattered examples of these services but current penetration is insignificant. Therefore, we find that they are not in the same market as leased lines. We note that these technologies are only now being introduced. This means that they are currently only playing a limited role in the marketplace. As such, including these technologies in the market would not have a material impact on our conclusions for SMP.

3.61 **Wireless services:** The mobile operators now offer mobile data services based on "3G" technology. However, these services are asymmetric which means that they are not a demand-side substitute for symmetric leased lines. Currently, we are not aware of the mobile operators offering any dedicated and symmetric services. However, were these services to become available, it is likely that they would be significantly more expensive relative to fixed location services, and issues of quality, reliability and security would remain. For these reasons, wireless data services are not considered demand-side substitutes for leased lines.

Q12: WHAT ARE YOUR VIEWS ON THE IMPACT OF NEW TECHNOLOGIES?

INTERNATIONAL LEASED LINES

3.62 International capacity is used for a range of retail services including international calls from fixed locations, international calls from mobiles, residential and business Internet connectivity (including VOIP services), and other general data transfer services for medium and large sized businesses.

INTERNATIONAL VERSUS NATIONAL LEASED LINES

3.63 It is clear that from a demand perspective, international leased lines are not substitutes for national leased lines. A business that wants to connect to a premise in an international jurisdiction cannot substitute this service for a connection to local premises.

3.64 From a supply side, it is clear that additional international leased line capacity cannot be built within a year. Moreover, a supplier of international leased lines will not easily enter the supply of national leased lines due to the substantial economies of scale involved in building a national network.

Q13: PLEASE COMMENT ON ICASA'S VIEW THAT INTERNATIONAL LEASED LINES ARE NOT SUBSTITUTES FOR NATIONAL LEASED LINES?

SATELLITE VERSUS UNDERSEA CABLE

3.65 Currently, there are two ways in which voice and data communications from South Africa can reach international destinations: through the SAT-3/WASC/SAFE submarine cable ("SAT-3"), and through satellite technology. In general, though satellites are often used as a back-up, they do not present a viable alternative to submarine cables. Satellites are generally more

expensive; have limited capacity and are associated with transmission interruptions which limits use to certain data applications.[21] Therefore, we find that international leased lines and satellite fall into separate markets. This places international leased lines in their own market.

Q14: PLEASE COMMENT ON ICASA'S VIEW THAT INTERNATIONAL LEASED LINES AND SATELLITE FALL INTO SEPARATE MARKETS?

GEOGRAPHIC MARKET FOR ALL IDENTIFIED MARKETS

3.66 The markets for all identified leased lines are considered to be national in scope. At present, this finding would not impact on SMP determinations. In the future, different competitive conditions may develop in different areas, and between different areas, as alternative operators build competition infrastructure along specific routes. However, even at that stage, the sheer complexity of defining localised markets may counter the regulatory benefit from so doing. Moreover, typically, nationally based common pricing constraints may facilitate defining national markets. Developments in this space will be considered in the next review.

Q15: PLEASE COMMENT ON ICASA'S DEFINITION OF THE RELEVANT GEOGRAPHIC MARKET FOR ALL IDENTIFIED LEASED LINES?

21 ibid.

4. SIGNIFICANT MARKET POWER AND MARKET COMPETITIVENESS

ICASA DECLARATION ON SIGNIFICANT MARKET POWER ("SMP")

4.1 SMP is defined in the ECA as an instance where, in a given market, a licensee:

- is dominant;
- has control of essential facilities; or
- has a vertical relationship that the Authority determines could harm competition in the market or market segments applicable to the particular category of licence.[22]

4.2 The ECA states that "dominant" has the same meaning as section 7 of the Competition Act, which in turn implies that a firm is dominant in a market if:

- it has at least 45% of that market;
- it has at least 35%, but less than 45%, of that market, unless it can show that it does not have market power; or
- it has less than 35% of that market, but has market power.

4.3 Telkom is currently the only active supplier in all the markets identified above, except perhaps retail leased lines, where alternative providers can resell an end-to-end leased line purchased from Telkom. However, given that this is a relatively new model, it is likely that Telkom has well over 45% in the market for retail leased lines, and is likely to have over 90%. In all other markets, Telkom has 100% of the market. Telkom therefore has SMP in all the identified markets.

Q16: PLEASE COMMENT ON ICASA'S DECLARATION THAT TELKOM HAS SMP IN ALL THE ABOVE MENTIONED RELEVANT MARKETS?

EFFECTIVENESS OF COMPETITION

4.4 The ECA only mandates the imposition of additional pro-competitive market conditions in markets where ineffective competition appears to exist

[22] Section 67.5 of the ECA

(S67(4)).[23] To determine the effectiveness of competition, we first considered the issues as made mandatory by the ECA for this analysis.[24] This section explores the effectiveness of competition and finds that the identified markets do not have the characteristics of effective competition.

4.5 ***Market shares and current competition:*** Telkom's overwhelming dominance in all the relevant markets means that consumers currently have little alternative but to use Telkom's services. Even if fixed-wireless operators were to be included in the market their low penetration rates, as well as low coverage, renders them unlikely to be able to constrain the price of the relevant services on Telkom's fixed line network.

4.6 ***Barriers to entry:*** The creation of fixed line *local loop infrastructure* (used for wholesale local access, call origination, call termination and SBO) is associated with highly significant investment requirements. These include building thoroughfare in the local environment which is suitable for wire ducts to be passed through, the wires themselves, street boxes, and local exchanges, including all relevant equipment.

4.7 Many of these costs are sunk, and cannot be recovered if an entrant decides to exit. There are furthermore significant economies of scale, scope and density such that providers have to secure a sufficient customer base per area to justify the investment in street boxes, local exchanges and backhaul circuits. For example, the wires of many users will utilise the same ducting, street box and capacity on the backhaul circuit.

4.8 Barriers to entry are lower for *trunk segments* (used trunk segments of leased lines and trunk call conveyance) than for local loop infrastructure. While the entry of the SNO, the right to self-provision (by mobile operators), or more general infrastructure rights (VANS) means that some regulatory barriers to entry have or may be removed, economic barriers to entry still remain high. Although the right to self-provide or lay infrastructure may enable these operators to pressure Telkom into lowering their wholesale prices, it will not ensure that these prices will be lowered to competitive levels. Rather, Telkom will be able to lower them only to the point where the "build or buy" decision balances in favour of buying.

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[23] Section 67.4 states: The Authority must prescribe regulations defining the relevant markets and market segments, as applicable, that pro-competitive conditions may be imposed upon licensees having significant market power *where the Authority determines such markets or market segments have ineffective competition."(own emphasis)*

[24] In this regard, ICASA is required to determine the effectiveness of competition in defined markets taking into account:

- non-transitory entry barriers (structural, legal and regulatory) and other dynamic characteristics
- market shares
- forward looking assessment, over a "reasonable period," of market power of each participant, taking into account
- actual and potential existence of competitors,
- the level, trends of concentration, and history of collusion, in the market,
- the overall size of each of the market participants,
- control of essential facilities,
- technological advantages or superiority of a given market participant,
- the degree of countervailing power in the market,
- easy or privileged access to capital markets and financial resources,
- the dynamic characteristics of the market, including growth, innovation, and products and services diversification,
- economies of scale and scope,
- the nature and extent of vertical integration,
- the ease of entry into the market, including market and regulatory barriers to entry.

4.9 Entry into the provision of *international leased lines* requires either Greenfield investment in undersea cables or purchasing capacity and landing rights from existing consortiums. Greenfield investment is associated with highly significant economies of scale. An alternative is purchasing bandwidth from existing consortiums. However, Telkom is currently the only operator with access to South Africa's only undersea cable, SAT3, which means that other operators are effectively blocked from doing this.

4.10 Vertical linkages also increase entry barriers as they enhance Telkom's market power and their ability to defend against entry, including the potential to bundle an array of different products (e.g. access and international calls) sourced further downstream. For example, their market power on wholesale local access services can be used to keep competitors out of trunk service by (a) denying trunk competitors access to wholesale local access services or (b) bundling retail access with local and national trunk calls such that the trunk competitor cannot compete. A similar argument exists for the relationship between SMP in trunk markets relative to international markets.

4.11 ***Potential competition***: Even with the licensing of Neotel, the mobile operators (who can self-provide and resell spare capacity) and potentially other operators, it is doubtful that these potential entrants will be able to effectively constrain Telkom to competitive levels. This finding is in keeping with the experience of international jurisdictions, where stringent price regulation has been implemented in order to facilitate entry. The introduction of LLU regulation, as required by this review, may help entrants into leased lines or exchange line services share in the advantage of large economies associated with the local loop, and this in turn would help facilitate competition downstream. However, there is no evidence at present that this would generate sufficient downstream competition within the period of this review.

4.12 ***Countervailing power***: Buyers of the products in the above mentioned relevant markets will not wield countervailing power of any significance, at least within the time scale of this review. Potential buyers will likely find it difficult to develop sufficient economies of scale and economies of density to justify building their own networks, and Telkom will be able to price above cost without the risk of losing this demand. Furthermore, as Telkom will likely continue to play in the relevant downstream markets, they will have the potential to margin squeeze on buyers of these wholesale markets so as to increase concentration (and therefore prices) in the downstream market. This extends to the ability to frustrate or completely deny access.

Q17: PLEASE COMMENT ON THE EFFECTIVENESS OF COMPETITION IN THESE MARKETS?

5. PRO-COMPETITIVE CONDITIONS

BASIC REMEDIES

5.1 The wholesale services considered in this review are for facilities leasing and/or interconnection and the relevant sections in the ECA apply. The finding of SMP automatically implies that the regulatory principles as laid out in the ECA cannot be set aside. This implies that the following four regulatory remedies will apply to SMP operators, as appropriate:

i. ***obligation to provide access*** upon reasonable request by another licensee or by a service provider operating under a license exemption (43(1), 44(3)(l) and (37(1));

ii. ***obligation not to discriminate*** between the buyers of their call termination services (43(7) and (37(6));

iii. ***price transparency***, which is achieved by the requirement for interconnection agreements to be filed at ICASA, which the regulator can use to provide copies of the agreement to any person (45(1-4) and 39(1) and 39(3)).)

iv. In addition, ICASA is mandated to establish a framework in which the ***structure of fees*** is determined (47).

PRICE CONTROLS AND ACCOUNTING SYSTEMS

5.2 The ECA also mandates that ICASA may set out further remedies which may include but are not limited to:

v. ***price controls*** (67(7)(h) and 43(7))

vi. an obligation to maintain ***separate accounting systems***[25] using specified accounting methods, which are available for inspection by the Authority (67(7)(f) and 67(7)(g) and 67(7)(j));

vii. obligations concerning matters relating to the ***recovery of costs*** and cost orientation (67(7) (i)).

5.3 The primary question that needs to be asked is whether the conditions (i) to (iv) are sufficient for limiting the negative impact of SMP in above mentioned relevant markets or whether the additional controls (iv-vi) should be imposed.

5.4 There are two main problems that arise from Telkom's SMP in the markets identified above:

5.4.1 ***The ability to increase prices:*** This negatively impacts on output and the retail prices that end users face and is sufficient cause for regulatory concern and intervention.

[25] For example, between matters relating to 1) access, 2) interconnection and 3) facilities leasing; the provision of 4) electronic communications network services, 5) electronic communications services or 6) any other service offered by the licensee applicable to the relevant market or market segments at issue; and 7) retail and 8) wholesale prices;

5.4.2 ***Margin squeeze/ foreclosure:*** This potential abuse has two negative consequences. First, it can lead to increased concentration in the downstream retail markets and this may allow all remaining participants to raise the price of the final retail service to higher than what it would have been in the presence of more retail competition. Moreover, the elimination of alternative retail and/ or intermediate suppliers would reduce the incentive for such (potential) providers to expand their infrastructure in order to take advantage of cost based wholesale services. In this regard, various European NRAs have noted that competition has been slow in developing even in international jurisdictions where competition at the wholesale level has opened up (NPT (Norway), ANRC (Romania) and ANACOM (Portugal), RTR (Austria), AGCOM (Italy)).

5.5 The first issue can only be resolved through price regulation – access requirements, transparency and non-discrimination are alone insufficient to prevent Telkom from simply raising the price. Moreover, although the latter requirements can help alleviate problems of margin squeeze and foreclosure, they cannot prevent Telkom from raising prices at the wholesale level (to itself as well) whilst lowering them (or not raising them equivalently) at the retail level thereby effecting a margin squeeze. The basis for remedies is discussed in more detail below in reference to each of the broad service areas:

5.6 ***Wholesale local access market:*** The further into Telkom's network other providers are allowed access; the greater will be their ability to construct their own product offerings. Wholesale local access services, which are provided through Local Loop Unbundling (LLU), are the deepest into the incumbent's network that can be reached. The intention of regulating at this level is to resolve the problems around SMP which occur at this level of the network, as well as to enhance competition downstream, which reduces the need to impose strict regulations at retail levels. LLU regulation will also encourage investment in infrastructure up until the local loop, which facilitates facilities-based competition further downstream. Once economies of scale and density have developed to a sufficient degree, incumbents may even decide to build their own local loops. It is noted that the full suite of remedies (including price control) were imposed by all European NRAs who had finalised their market reviews in this area, except for BnetzA (Germany), who did not impose an accounting separation obligation.[26]

5.7 ***SBO markets:*** It is likely that certain operators will build appropriate infrastructure such that they are able to purchase SBO without needing to also purchase the trunk segment. However, unless Telkom is obligated to grant these operators access to SBO at cost-base prices, Telkom will have an incentive to frustrate meaningful access either through non-price means or by charging high prices. Moreover, no regulation further upstream will be sufficient to eliminate this opportunity or incentive. For example, LLU will not be economically viable for many operators who want to expand into leased line offerings. Furthermore, operators that do purchase LLU will still require certain SBO products such as LLU backhaul.

[26] A summary of EU regulatory decisions can be found in, ERG Work Programme, "Report on Experience with Market Definitions, Market Analysis and Applied Remedies: Experiences Project," 15 July 2005.

5.8 ***Trunk segments markets:*** If effective regulation at the SBO level resulted in larger scale build up of trunk segments, it may be possible to remove regulation at the trunk portion if that portion was found to be effectively competitive. However, it is highly unlikely that SBO regulation will encourage sufficient infrastructure-based competition at the trunk level to justify this within the time scale of this review. Moreover, alternative operators may begin to offer origination services through new fixed-wireless technologies, but will not yet have sufficient economies to build long distance trunk segments. Therefore, if only the SBO portion were subject to price regulation, Telkom would still have an incentive to frustrate access or margin squeeze through charging high prices for the trunk segment. For this reason, it is considered appropriate for the trunk segment to be subject to price regulation.

5.9 ***Retail leased lines markets:*** We are cognisant that regulations applied upstream will have an impact on downstream markets. Indeed, it is the preference of ICASA to regulate at wholesale levels wherever possible. On the other hand, it is also apparent that providing upstream wholesale services requires operators to build sufficient infrastructure of their own. Their ability to do this at present and in the near future to a sufficient degree to exert a constraining impact on retail downstream markets, is not known. We suggest that regulation at the wholesale level does not remove Telkom SMP at the retail level. Therefore it remains necessary to impose retail regulation for both low and high bandwidth leased lines.[27]

5.10 ***Exchange line, call origination and call conveyance markets:*** Similar arguments to those above hold for these intermediate service markets. Services markets further upstream – for example, wholesale local access – are not expected to be taken up sufficiently so as to remove competition concerns downstream. Telkom has the incentive to both raise prices to make higher profits as well as to exclude competition from the downstream retail voice market, so long as it has a dominant position in these intermediate service markets.

5.11 It is further noted that ex ante regulation (as opposed to reliance on competition authorities ex post) is usually warranted when there is a market failure such that competition cannot develop (as opposed to abuse of market power in the presence of competition), where compliance solutions are complex (e.g. require detailed regulatory accounts); where monitoring is required and where legal certainty will enhance investment. We believe that these markets all satisfy these criteria.

5.12 It will therefore be appropriate to impose conditions (i) through (vii) on Telkom.

Future products and services

27 It is also noted that these competition problems have the potential to impact on market beyond retail leased lines, such as Internet Access and Virtual Private Networks. Firstly, it can lead to increased concentration in the downstream retail markets and this may allow all remaining participants to raise the price of the final retail service to higher than what it would have been in the presence of more retail competition. Moreover, the elimination of alternative retail and/ or intermediate suppliers would reduce the incentive for such (potential) providers to expand their infrastructure in order to take advantage of cost based wholesale services.

5.13 It must be emphasised that any proposed pro-competitive conditions will apply not only to the specific products and services which currently exist, or which are currently called leased lines, but with all potential products, which fall under the above markets. For example, LLU operators often require what is known as LLU backhaul, which consist of transmission capacity from a LLU operator's co-location facility to one of their core network nodes. In this case, only the backhauls segment is provided (including associated equipment).[28] LLU backhaul clearly falls under the SBO portion, but may also include trunk segments as well. Radio base station backhaul services ("RBS") are leased line links between mobile operator's base stations. These may also include both SBO and trunk segment portions.

5.14 New services may be made exempt from time to time from certain obligations for certain periods of time, if this was in the interest of generating increased product diversification and investment.

Obligations on Telkom

5.15 If required, the specifics of pro-competitive conditions will be stipulated in detail following consultation with industry stakeholders and all interested parties. However, the following provides an outline of the fundamental proposals for pro-competitive conditions:

5.16 Telkom would be required to grant access in terms of the relevant clauses in the ECA for any reasonable service or product falling under any of the markets identified above. ICASA will evaluate the reasonableness of any disputed request. In the interest of creating legal certainty and reducing regulatory burden, certain products and services would be specifically directed as falling under the access obligations, as well as the other obligations discussed below:

5.16.1 For wholesale local access, the obligations cover local loops, at varying points. These would include any co-location facilities that may be required in order to reduce the distance of cost of making connection at various points, including co-location in the local exchange.

5.16.2 For exchange line, call origination and call conveyance services, these obligations cover CP, CPS and WLR, as well as all interconnection facilities and services that are required to deliver these services.

5.16.3 For leased lines services, these obligations would cover products and services under the SBO and trunk segments such as wholesale end-to-end leased lines, PPCs, LLU backhaul and RBS, as well as any reasonable requests for products and services, including more transparent wholesale services (such as transmission capacity that does not include ATM protocol). For PPCs, access must be made available at a range of points and a range of bandwidth levels, as is

[28] The LLU operators secure the terminating segment through LLU as opposed to regulation considered in this review (i.e.: terminating segments of leased lines under SBO regulation) and builds/rents the infrastructure for its own core network

reasonable. This obligation includes access to any associated facilities and equipment required for access (such those associated with In-Span handover and Customer Site Handover ("CSH")), and any co-location facilities (including co-location in the local exchange and core network nodes). A specific additional obligation would include Telkom landing facilities for international leased lines. These would have to be made available for other operators to access capacity on SAT 3, even if this capacity is not purchased from Telkom.

5.17 Telkom would be required to grant access in a ***non-discriminatory*** manner, as required by ECA

5.18 Telkom would be required to comply with ***transparency conditions*** regarding prices and other key access information, as required by the ECA. These conditions would include publication of reference offers, advance notification periods for changes to existing products and introduction of new products (including price and other relevant terms) and publication of technical access requirements and procedures.

5.19 COA/CAM and separation of accounting conditions would be imposed on Telkom with respect to all of the above mentioned services. Such systems are critical for the regulator to enforce non-discriminatory and cost-based pricing.

5.20 Explicit cost-based pricing would be imposed on Telkom for all the above services. The appropriate price control to be applied, given that large economies of scale and scope characterise the industry, is long run incremental cost ("LRIC"), calculated on the basis of relevant forward looking economic costs of an efficient operator, including a reasonable cost of capital.[29] Note that this type of regulation is often implemented by European NRA's. For example, for wholesale local access, LRIC was used by the following European NRAs: RTR (Austria); ComReg (Ireland); PTS (Portugal); OFCOM (UK) and NITA (Denmark). Where LRIC determinations will take too long, ICASA will issue immediate price caps based on other methodologies including benchmarking, until such time as LRIC can be implemented. Note, however, one exception:

5.20.1 Though LRIC will apply to retail end-to-end leased lines, as well as to Partial Private Circuits ("PPCs") falling under the wholesale SBO and trunk markets, retail minus X regulation would be applied to wholesale end-to-end leased lines. As there is no retail equivalent of PPCs it will be necessary to use full LRIC price regulation for these products and services. With respect to wholesale end-to-end leased lines, it is considered more appropriate to price these services on retail minus level. This is because it would be disproportionate and unnecessary to apply LRIC pricing regulation to both retail and wholesale end-to-end leased line. The retail minus methodology,

[29] "The adoption of LRIC as a regulatory costing technique is used widely for example by other NRAs in Europe, and by the FCC in the US. It has also been identified as the most appropriate methodology to use for setting interconnection charges by the European Commission in its 1998 Recommendation on Interconnection Recommendation 98/195/EC 8 January 1998)." Quoted from an OFCOM report on mobile call termination. May 2003.

however, avoids the main problem (margin squeeze) that might occur given retail regulation.

Q18: PLEASE COMMENT ON THE PROPOSED PRO COMPETITIVE CONDITIONS TO BE IMPOSED ON TELKOM?