General Notices • Algemene Kennisgewings

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

NOTICE 916 OF 2015

PURSUANT TO SECTION 4 (b) OF THE INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA ACT (ACT NO 13 OF 2000),

HEREBY ISSUES A NOTICE REGARDING THE DRAFT INFRASTRUCTURE SHARING FOR CONSULTATION.

1. The Independent Communications Authority of South Africa ("the Authority"), hereby publishes a Notice Discussion Document regarding the draft infrastructure sharing published inviting written representations **i**n terms of Section 4(b) of the Independent Communications Authority of South Africa Act (Act No 13 of 2000),

2. Interested persons are hereby invited to submit their written representations   including an electronic version of the representation in Microsoft Word, of their views on the Discussion Document regarding the Draft Infrastructure Sharing published herewith by the Authority, later than 16h00 on Friday 13th November 2015.

3.   Written representations or enquiries may be directed to:

    The Independent Communications Authority of South Africa (ICASA)

    Pinmill Farm Block A

    164 *Katherine Street*

    South Africa

    or

    Private Bag XI0002

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Sandton

2146

Attention: Mr *Jake Mongalo*.

e-mail: *jmongalo@icasa.org.za*.

Enquiries should be directed to 011 566-3853 between 10h00 and 16h00, Monday to Friday. W*ritten representations should also be e-mailed through.*

4. All written representations submitted to the Authority pursuant to this notice shall be made available for inspection by interested persons from 16th November 2015 at the ICASA Library or website and copies of such representations and documents will be obtainable on payment of a fee.

5. At the request of any person who submits written representations pursuant to this notice, the Authority may determine that such representations or any portion thereof is to be treated as confidential in terms of section 4D of the ICASA Act. Where the request for confidentiality is refused, the person who made the request will be allowed to withdraw such representations or portion(s) thereof.

6. Any person who may submit any representations must indicate in their written representations whether they require an opportunity to make oral representations in the event the Authority may hold a public hearing.

7. A copy of the Discussion Document will be made available on the Authority's website at http://www.icasa.org.za and in the Authority's Library at 164 Katherine Street, Pinmill Farm, (Ground Floor at Block D), Sandton between 09:00 and 16:00, Monday to Friday once published in the Government Gazette.

8. Written representations received by the Authority pursuant to this notice, will be made available for inspection by interested persons at the Authority's library and such copies will be obtainable upon payment of the prescribed fee.

KATHARINA PILLAY
ACTING CHAIRPERSON
ICASA

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DISCUSSION DOCUMENT

REGULATORY FRAMEWORK ON INFRASTRUCTURE SHARING

Table of Contents

1.   Introduction and background

South Africa's broadband policy (SA Connect)[1] envisions "that by 2020, 100% of South Africans will have access to broadband services at 2.5% or less of the population's average monthly income". Furthermore, the national development plan (NDP)[2] envisions that by 2030 "a seamless information infrastructure will be universally available and accessible and will meet the needs of citizens, business and the public sector, providing access to the creation and consumption of a wide range of converged services required for effective economic and social participation at a cost and quality at least equal to South Africa's main peers and competitors."

The deployment of telecommunications infrastructure is capital intensive and has associated risks with regard to return on investment. The high costs of deploying telecommunications networks have been the main deterrent of operators deploying networks to rural and sparsely populated areas, thus perpetuating the problem of underservice to these areas. In order to ensure that telecommunications infrastructure is deployed across the country and that the cost to communicate is significantly reduced, the costs associated with infrastructure deployment would need to be reduced. One way of significantly reducing the costs is through the sharing of existing infrastructure and future infrastructure deployments by the private and public sector stakeholders. The sharing of infrastructure is expected to drive down the capex and opex of the sharing parties.

SA Connect calls on the Authority to encourage the sharing of infrastructure by regulating where necessary in support of coordinated civil works. The envisioned regulations will enable the commercial sharing of infrastructure and pooling of resources, including spectrum, in order to reduce wholesale costs and encourage services-based competition in the market.

The sharing of infrastructure is key in achieving South Africa's broadband goals. According to the World Bank, "broadband has social benefits, connecting consumers, businesses, and governments and facilitating social interaction."[3] Further, every 10 percentage point increase in broadband penetration in low and middle incomes, accelerates economic growth by 1.38 percentage points.

> **Do you agree that infrastructure sharing will encourage the deployment of networks to rural and sparsely populated areas? If not, please provide the reason(s) for your answer.**

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[1] South Africa's Broadband policy , Government Gazette No. 37119 (Notice No. 953 of 2013)
[2] National development plan 2030: our future-make it work, http://www.gov.za/documents/national-development-plan-vision-2030
[3] Kim, Y, Kelly, T & Raja, S. 2010. Building broadband: Strategies and policies for the developing world, World Bank: Global Information and Communication Technologies Department.

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> **In your opinion, how do you think infrastructure sharing will encourage service based competition?**

2.　Objectives of infrastructure sharing

The objective of infrastructure sharing is to:

a) Promote effective competition,
b) Avoid duplication of investment in infrastructure,
c) Reduce cost of service, and
d) Realise universal access objectives[4].

> **To what extent do you believe that the objectives of infrastructure sharing are reached?**

3.　Purpose of the Discussion Document

The purpose of this discussion document is to solicit input on a regulatory framework that will provide certainty on infrastructure sharing holistically to include facilities leasing, interconnection and other matters relevant to access to broadband services within the Republic.

> **Do you believe that the Authority should deal with infrastructure sharing matters in one regulation?**

4.　Benefits of infrastructure sharing

4.1　Benefits to the network operator

Operators in the emerging or developing markets are looking for economic options for coverage and capacity growth, while operators in more penetrated and mature markets, who are faced with high competition and lower margins, are seeking cost optimisation. It therefore follows that in order for operators to consider infrastructure sharing the financial benefits of sharing need to outweigh any loss of competitive advantage from network coverage at premium sites.

From an operator's perspective the following considerations could encourage the adoption of the concept of infrastructure sharing:

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[4] National Integrated ICT Policy Review Report, March 2015, Department: Telecommunications and Postal Services

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a) Site sharing and mast/tower sharing could lead to a reduction in the total number of sites required for network deployment, thus further reducing capital and operational expenditure.

b) The sharing of infrastructure can spread the investment risks associated with infrastructure deployment among several stakeholders.

c) Incumbent operators can leverage the sharing of their infrastructure as a new source of revenue.

d) Through sharing their infrastructure incumbents can free up some of their capital in order to use it for other strategic investments.

e) The sharing of infrastructure will enable operators to focus on service innovation instead of network deployment.

f) When sharing infrastructure, operators can deploy networks to less populated and unserved areas in a cost effective manner (i.e. avoid duplication) and thus meet universal service policy obligations.

g) Infrastructure sharing will lead to faster network deployments and shorter time to market for new entrants.

4.2   Benefits to the consumer

From a regulatory perspective, telecommunication infrastructure sharing can be seen as a way to:

a) Improved quality of service;

b) Extension of geographic access to underserved areas;

c) Increased access in rural and urban areas; and

d) Possible reduction in the cost to communicate.

4.3   Benefits to the environment

The reduction in duplication of investment in infrastructure, such as masts, through the implementation of infrastructure sharing will result in a decrease in the impact to the environment.

> **Please list other benefits realised as a result of infrastructure sharing.**

5.   Legislative and policy analysis

This chapter sets out the policy and legislative context of infrastructure sharing regulation in South Africa.

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5.1   South Africa's broadband policy

Among others, the South African broadband policy's objectives is to provide policy and regulatory conditions that enable public and private sector players to invest and also contribute in other ways to reaching South Africa's broadband ambitions[5].

The policy states that the Authority will regulate where necessary in support of coordinated 'one-build' civil works and mast erection; and the encouragement of infrastructure sharing more generally. The sharing of infrastructure would include licensees interconnecting their networks and making available their facilities at cost-based rates. Furthermore, the policy states that the Authority is to identify existing essential facilities and ensure the access of competitors to them by enforcing regulations requiring network operators' obligations to meet all reasonable requests for access to infrastructure on a non-discriminatory basis to their physical infrastructure.

> **Do you think that it is necessary for the Authority regulate for 'one-build' civil works and mast erections at this time? Please state your reasons?**

> **In your view, what incentives will encourage infrastructure sharing in general?**

> **In your view, how can the Authority improve on its intervention in terms of non-discriminatory access to infrastructure?**

5.2   The Electronics Communications Act

The Act does not explicitly mention the term 'infrastructure', rather it refers to 'electronic communications facilities'. The provisions of the Act are limited to electronic communications network service (ECNS) licensees.

5.2.1 Deployment of electronic communications facilities

Chapter 4 of Act provides for the formulation of guidelines for the rapid deployment of electronic communications facilities, furthermore, it provides for the following with regard to the construction of electronic communication facilities by ECNS licensees:

   a) entry upon and construction of lines across land and water ways;
   b) underground pipes for the purpose of electronic communications network service;

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[5] South Africa's Broadband Policy (Government Notice No. 953 of 2013, Government Gazette No. 37119)

c) pipes under streets;

d) removal of electronic communications network facilities;

e) fences;

f) trees obstructing electronics communications network facilities;

g) height or depth of electronic communications network facilities; and

h) electrical works.

5.2.2 Leasing of electronic communications facilities

Chapter 8 of the Act obliges ECNS licensees, unless exempted to do so by the facilities leasing regulations, to lease on request, their electronic communications facilities to any other person licensed in terms of the Act and persons providing services pursuant to a licence exemption in accordance with the terms and conditions of an electronic communications facilities leasing agreement entered into between the parties, unless such request is unreasonable. Furthermore, the chapter provides for the following in addition to stipulating the Authority's role in handling disputes arising from facilities leasing agreements:

a) the formulation of the electronic communications facilities leasing regulations;

b) filing of electronic communications facilities leasing agreements;

c) notification of electronic communications facilities leasing agreement disputes; and

d) facilities leasing pricing principles

5.3   Facilities Leasing Regulations

In the spirit of the Act, the facilities leasing regulations refer to electronic communications facilities' instead of 'infrastructure', except in Regulation 13(c) where infrastructure sharing and co-location are stipulated as items that are to be addressed by electronic communications facilities leasing agreements.

The regulations provide for the following:

a) the conclusion of electronic communications facilities leasing agreements by stipulating:
   i.   agreement principles;
   ii.   timeframes and procedures to be followed by parties; and
   iii. the procedures for the submission, review and filling of agreements.

b) the requirements for the leasing of electronic communications facilities; and

c) dispute resolution processes and timeframes for lodging disputes.

> **Would you say that the facilities leasing regulations adequately cater for infrastructure sharing needs in South Africa? If not, please state the areas that have not been covered.**

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6.   Infrastructure sharing models

The main types of infrastructure sharing models are passive and active sharing. The models are applicable to both fixed and mobile electronic communications networks.

6.1   Passive infrastructure sharing

Passive infrastructure sharing refers to the sharing of space, electrical and civil engineering elements of an electronic communications network

Passive infrastructure that can be shared includes, but is not limited to:

a) *Sites*. The sharing of sites is the simplest form of passive infrastructure sharing. It refers to the co-location of network operators on the same real estate, however, their masts, antennas, cabinets and backhaul are kept separate, although equipment shelters, power supply and air conditioning may be shared. Site sharing is suitable for densely populated areas with limited space availability or rural areas.

b) *Masts/Towers*. Masts/Towers sharing refers to the sharing of the same physical mast or structure, such as a third party roof top by network operators, however, their antennas, cabinets and backhaul are kept separate.

There are three models for tower sharing:
   i.   Inter-operator tower sharing, where network operators share each other's towers either through lease agreements or swaps.
   ii.   Joint venture between operators, where network operators form a joint venture that is responsible for the construction of new towers, and the management of the new and existing towers that the operators may have pooled together, which the operators will co-locate.
   iii. Tower companies (Vendor led sharing), where network operators co-locate on towers that belong to a third party such as a specialist tower company.

        In an effort to raise capital for other strategic investments, operators sometimes monetise their assets by selling their towers to a specialist tower company and then lease the towers from the tower company. This act is referred to as a 'sale-and-leaseback' deal. The tower company can also lease-out the acquired towers to other operators including incumbents and new entrants.

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d) *Access transmission.* The sharing of access transmission, such as leased lines, optical fibre and microwave links between the operators' base stations and their controllers is ideal especially in the case of rural areas where user traffic is low in the initial stages.

e) *Ducts.* The sharing of ducts minimises the environmental impact of repeated trenching in the same areas.

Do you agree with the Authority on the definition of passive infrastructure? If not, please provide an alternative definition.

Please state other passive infrastructure that you consider essential for sharing.

Please state the advantages and disadvantages of passive infrastructure sharing.

6.2 Active infrastructure sharing

Active infrastructure sharing refers to the sharing of active or intelligent elements of an electronic communication network.

Active infrastructure that can be shared includes, but is not limited to:

a) Network elements, viz.:
    i. Base stations
    ii. Switches
    iii. Microwave Radio Equipment

b) Networks, viz.:
    i. *Radio Access Networks.* Multi-Operator Radio Access Network (MORAN) sharing involves the sharing of all physical elements of the access network, however, the operators maintain separate logical access networks. The physical separation of the operators happens at the point of connection to the core.

    In MORAN sharing, each operator maintains control over their traffic quality and capacity, and dedicated radiofrequency spectrum. Furthermore, MORAN sharing is not visible to subscribers.

    ii. *Core Networks.* In a Multi-Operator Core Network (MOCN), core logical entities of electronic communications networks are shared.

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MOCN sharing makes it possible for operators who lack the relevant licences, spectrum and network resources for entering certain technology markets to do so, however, the operators do not maintain full control on their traffic quality and capacity.

iii.   *Transmission Backbones*. In transmission backbone sharing, network operators share infrastructure that interconnects various pieces of a network, thus providing a path for the exchange of information between different Local area Networks (LANs) or subnetworks over a long-distance.

> **Do you agree with the Authority on the definition of active infrastructure? If not, please provide an alternative definition.**

> **Please state other active infrastructure that you consider essential for sharing.**

> **Please state the advantages and disadvantages of active infrastructure sharing.**

7.   Infrastructure sharing practices in South Africa

At present infrastructure sharing is taking place through commercial agreements, such as electronic communications facilities leasing agreements. The main facilities that are being shared are masts/towers and equipment rooms.

> **Please provide examples of how active and passive infrastructure is being shared in South Africa.**

8.   International infrastructure sharing practices

8.1   *The regulation of the practice of infrastructure sharing*

Table 8.1 Examples of infrastructure sharing regulation globally[6]

	Passive RAN Sharing	Active RAN Sharing	Geographical Split	Frequency Pooling/Trading
Austria	Admissible	Admissible	No Comment	Not Admissible
Germany	Admissible	Admissible	Admissible	Not Admissible

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[6] Infrastructure sharing and shared operations for mobile network operators by T. Frisanco, P. Tafertshofer & R. Ang, BOCRA & TRAI

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UK	Admissible	Admissible	Admissible	Not Admissible
Sweden	Admissible	Admissible	No Comment	Together with core network sharing
Switzerland	Admissible	Admissible	Partly Admissible	Not Admissible
India	Admissible	Admissible	No Comment	No Comment
Botswana	Admissible	No Comment	No Comment	No Comment

8.2   Infrastructure sharing by network operators

Table 8.2 Examples of infrastructure sharing arrangements globally[7]

Country	Date	Operators	Details
Sweden	March 2001	Tele2 and Telia	The two operators agreed to set up a joint venture company and deploy a nationwide 3G network. As of 2005, they had one of the largest shared 3G networks in the global telecom industry.
Sweden	May 2001	Hi3G and Europolitan	The joint venture was tasked to deploy a 3G network covering the 70 percent of population outside

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[7] Booz & Company, Press releases

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			major cities. Orange later joined the joint venture.
Germany and the United Kingdom	June 2001	BT and Deutsche Telekom	The two operators agreed to share parts of their 3G networks. The main outcome was a roaming deal in the UK between BT Cellnet and One2One in small cities and rural areas.
Spain	October 2003	Telefónica and Yoigo	The two operators agreed on an infrastructure-sharing deal for both urban and rural areas.
Australia	August 2004	Hutchison 3G Australia and Telstra	The two operators agreed on network sharing and committed to joint ownership and operation of H3GA's existing 3G radio access network.
Spain	November 2006	France Telecom (Orange) and Vodafone	The agreement focused on rural areas with fewer than 25,000 inhabitants. The agreement is expected to reduce costs by as much as 40 percent.
India	February 2007	Hutchison Essar and Bharti Airtel	Vodafone (Hutch Essar) and Bharti entered into an MOU covering a

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			comprehensive range of infrastructure-sharing options in India. A regulatory proposal to further share infrastructure throughout India followed in April 2007.
United Kingdom	February 2007	Orange and Vodafone	The two operators announced plans to share their radio access network across the United Kingdom.
International	February 2007	T-Mobile	T-Mobile indicated intent to focus on network sharing as a growth strategy but excluded the United Kingdom from its plans.
Spain	July 2007	Telefónica and Yoigo	Five-year renewal of the 2003 contract.
India	2007	Barti group (Airtel), Vodafone group and Aditya Birla group (Ideal Cellular)	formed the company Indus Towers as a joint venture

9.   Summary of consultation questions on infrastructure sharing

9.1   Do you agree that infrastructure sharing will encourage the deployment of networks to rural and sparsely populated areas? If not, please provide the reason(s) for your answer.

9.2   In your opinion, how do you think infrastructure sharing will encourage service based competition?

9.3   To what extent do you believe that the objectives of infrastructure sharing are reached?

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9.4   Do you believe that the Authority should deal with infrastructure sharing matters in one regulation?

9.5   Please list other benefits realised as a result of infrastructure sharing.

9.6   Do you think that it is necessary for the Authority regulate for 'one-build' civil works and mast erections at this time? Please state your reasons?

9.7   In your view, what incentives will encourage infrastructure sharing in general?

9.8   In your view, how can the Authority improve on its intervention in terms of non-discriminatory access to infrastructure?

9.9   Would you say that the facilities leasing regulations adequately cater for infrastructure sharing needs in South Africa? If not, please state the areas that have not been covered.

9.10   Do you agree with the Authority on the definition of passive infrastructure? If not, please provide an alternative definition.

9.11   Please state other passive infrastructure that you consider essential for sharing.

9.12   Please state the advantages and disadvantages of passive infrastructure sharing.

9.13   Do you agree with the Authority on the definition of active infrastructure? If not, please provide an alternative definition.

9.14   Please state other active infrastructure that you consider essential for sharing.

9.15   Please state the advantages and disadvantages of active infrastructure sharing.

9.16   Please provide examples of how active and passive infrastructure is being shared in South Africa.

10.   References

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