

# POSITION PAPER

## Regulation of Voice over Internet Protocol Services

Position Paper No. 1 of 2007

LAU/0504/054

A Position Paper issued by the Telecommunications Regulatory Authority on  
Regulation of Voice over Internet Protocol (“VoIP”) Services

30 May 2007

Issue 1.1

Consolidated with Corrigendum dated 14 June 2007

**Purpose:** To update TRA’s position on the regulation of VoIP services from its first paper on VoIP services dated 17 April 2004.



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### **1 Introduction**

- 1.1 On 17 April 2004 TRA issued a position paper with respect to the regulatory treatment of Voice over Internet Protocol (“VoIP”) services and technologies (Reference MOU/DC/268) (the “2004 VoIP Position Paper”)<sup>1</sup>.
- 1.2 The 2004 VoIP Position Paper dealt with the regulatory treatment of VoIP services provided in the Kingdom of Bahrain under the existing licensing regime under the Telecommunications Law.
- 1.3 The purpose of this paper is to further outline TRA’s position with respect to the regulation of VoIP service providers, including service providers based in jurisdictions beyond the Kingdom of Bahrain, but whose services can be used within the Kingdom of Bahrain (“foreign VoIP service providers”).
- 1.4 TRA wishes to regulate telecommunications networks deployed in the Kingdom of Bahrain and telecommunications services made available to end users in the Kingdom of Bahrain in a technology neutral manner. TRA will, in determining its policy towards the introduction of new network technology or new services, examine its regulatory approach by looking at the functional equivalence of the new elements to existing ones in terms of the end user experience.
- 1.5 This paper is a TRA position paper only. It is a general statement of TRA’s views on this issue based upon the facts available to it. As VoIP technology and use develops TRA’s position may similarly change and TRA reserves its right to amend this paper accordingly.

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<sup>1</sup> See: [http://www.tra.org.bh/en/pdf/VOIP\\_MOU\\_DC\\_268.pdf](http://www.tra.org.bh/en/pdf/VOIP_MOU_DC_268.pdf)

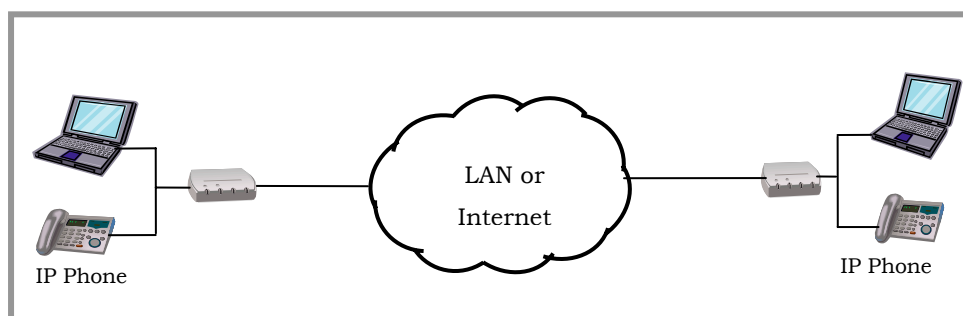
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### 2 Technical Operation of VoIP

2.1 VoIP services generally require the end user to have access to an Internet connection (except those VoIP services used for the internal purposes of the operators of public telephone networks). TRA considers that there are four ways in which VoIP services should be analysed for regulatory purposes:

#### 2.1.1 Internet Only VoIP Services (“Internet only services”)

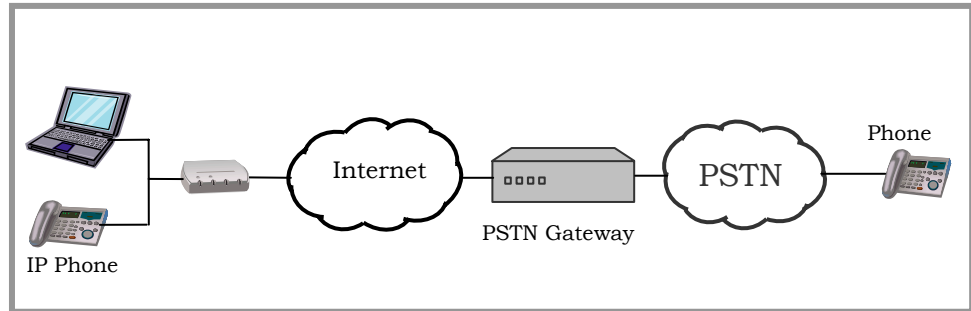


These VoIP services are typically characterised by the provision to end users of a service for the download of proprietary software, which allows the end user to make voice calls to other people using the same, and sometimes other, proprietary software. The software allows end users to participate in a virtual network using virtual switches and connections across the Internet. Whilst VoIP service providers could charge for the provision of their software and connection or other service charges for use of their virtual networks, typically such services are provided free of charge. End users are identified on the VoIP services providers' virtual networks by user names registered with the service provider.

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### 2.1.2 Internet to Public Telephone Networks VoIP Services (“Internet to PTN services”)



These VoIP services are characterised by the ability of the end user to use a service that is substantially the same as the Internet only service, with the key difference that the end user can contact subscribers of public telecommunications networks (“PTNs”) who are identified by some internationally recognised identifier. Currently Bahrain and virtually all other countries have adopted a numbering plan that is consistent with the ITU-T E.164 ‘International Public Telecommunication Numbering Plan’<sup>2</sup> and its associated ITU-T recommendations, as its international public telecommunications network method of identifying end users. As the VoIP service provider must pay a termination charge to the PTN operator whose subscriber is being contacted by the VoIP services’ end user, normally that end user is charged on a “calling party pays” basis for Internet to PTN services.

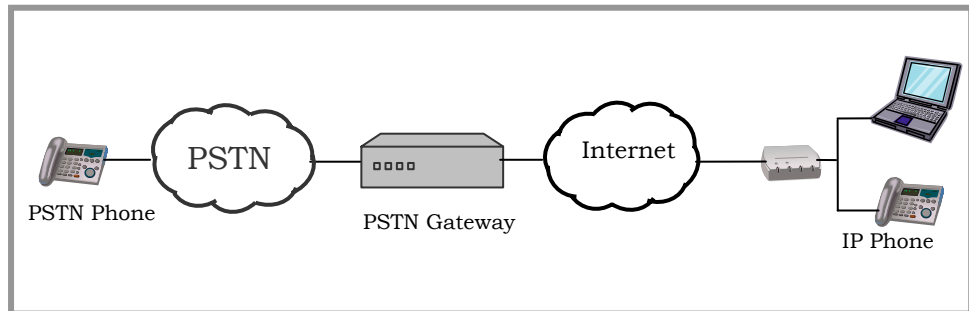
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<sup>2</sup> Updated ITU-T E.164 international public telecommunications numbering plan documents are available at <http://www.itu.int/rec/T-REC-E.164/en>.

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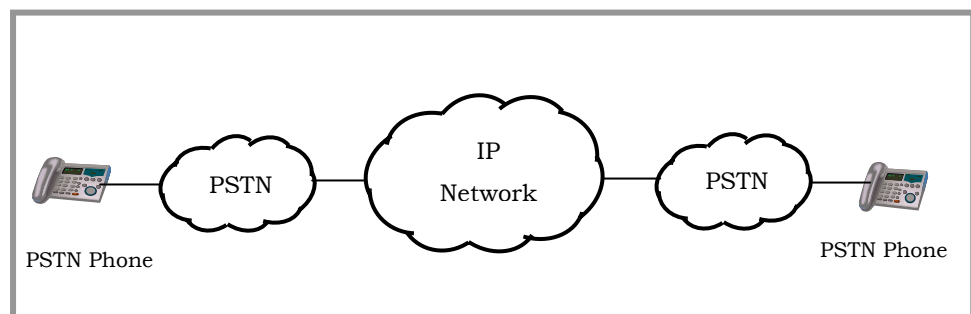
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### 2.1.3 PTN to Internet VoIP Services



VoIP service providers can also provide a service whereby an end user can be allocated an E.164 telephone number, so that any subscriber of a PTN operator can call the end user. The VoIP services' end user is normally not charged for the provision of calls (again, in line with the standard principal that the calling party pays), but is usually charged for the provision of an E.164 telephone number. These telephone numbers should be allocated to the VoIP service provider by an appropriate national regulatory authority or sub-allocated to the provider by a PTN operator to whom the numbers are assigned. A Bahrain end user could therefore be assigned a telephone number from any jurisdiction from which the VoIP service provider can obtain a telephone number.

### 2.1.4 PTN VoIP Services



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PTN VoIP services are call services between subscribers of the PTN operator, where the PTN operator uses an IP network to convey the calls between subscribers for the whole or part of the call path between the subscribers instead of via a traditional switched network.

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### 3 Position Under the Existing Regulatory Framework

3.1 For a VoIP service provider to be required to hold a telecommunications licence under section 24 of the Telecommunication Law promulgated by Legislative Decree No. 48 of 2002 (the “Law”), it must be providing a telecommunications service in Bahrain. Under the Law, the concept of a “telecommunications service” is not explicitly defined. It can, however, be construed by reference to the definition of “Telecommunications” under the Law as the provision of a service which consists in the “conveyance and/or routing of messages, sound, visual images or signals on a Telecommunications Network”.

#### Internet Only services

3.2 There is current ambiguity under the Law over the legal status of Internet only services, which is not explicitly addressed in TRA’s 2004 VoIP Position Paper. The existence of peer-to-peer VoIP is referred to only obliquely in the Introduction to the 2004 VoIP Position Paper, which states:

*“VoIP can be viewed as either a service or a technology. As a service it enables the use of a single Internet connection for the transport of both voice and data. As a technology it enables operators to convert voice traffic into IP packets and deliver the data over data links...”*

3.3 The core offer of Internet only services is the provision of proprietary software to enable the end user to participate in the VoIP service providers’ virtual networks on what is often described as a “peer-to-peer” basis. As such, it could be described as a “service” when considered in light of the wording used in the Introduction of the

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TRA's 2004 VoIP Position Paper. However, TRA is presently minded to consider that the provision of software which may be downloaded by members of the public and which enables Internet users to communicate with each other would not be considered a "telecommunications service" under the Law as it is presently understood that once the end user has downloaded the proprietary software and completed its user registration, the service can be characterised as being self-provided, rather than relying on any other service provided by the VoIP service provider. After the software has been downloaded, the service provider generally has no involvement in the internet communications made by the user, who initiates and maintains these by itself.

- 3.4 A VoIP service offering that comprises provision of a software product with no ongoing provision of a service on the part of the VoIP service provider would therefore not ordinarily fall within the scope of the Law. This is the case despite a product allowing voice communications between users who have obtained the product.
- 3.5 Though the Internet only service might be offered by a VoIP service provider, the carriage of the end users' voice or other data is through the network or capacity owned by an internet service provider or its network services provider based in Bahrain. TRA acknowledges that part of the uncertainty over the licensing position of VoIP services is as a result of the definition of "public voice service"<sup>3</sup> and the

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<sup>3</sup> "Public voice service" is defined in ISP licenses as "real time, two way voice calls provided between members of the public". Batelco's ISP License is different in that it refers to "basic voice service" and not "public voice service". Batelco's ISP license defines "basic voice service" as "a telecommunications service involving two-way real-time speech, excluding (a) any additional service having been provided in respect of the real-



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provisions of the Internet Service Providers (“ISPs”) class licence. TRA was previously of the view that a VoIP service is not a “real-time” service so as to be caught by the definition of “public voice service” in the ISP licence. However, TRA now believes that the quality of service available for VoIP services means that the end users’ experience of VoIP calls is increasingly becoming less distinguishable from traditional PSTN voice telephony in this regard. TRA therefore considers that a distinction based on “real time” switched circuit paths and non-real time virtual call paths of VoIP services is no longer tenable and that other criteria should be used to distinguish VoIP. However, TRA does not consider that the technological developments that allow the carriage by ISPs of packet-switched voice traffic or the availability of the services by VoIP service providers over the ISP service of itself amounts to a breach of condition 3.1 of the ISP licences. Condition 3.1 of the ISP licences and the use of the term “facilitate” restricts, as far as TRA is concerned, the active participation of the holder of an ISP licence in the provision of the VoIP service to Bahrain end users.

3.6 TRA also acknowledges that there could be the cases where the business model of an Internet only service provider of VoIP services could be significantly extended beyond mere offering of software that facilitates VoIP communications between users of such software. This would particularly be the case where the service provider charged users of the software per usage (calls/minutes) basis. TRA

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time two way speech conversation; (b) any deliberate removal or addition to the information content of that two-way speech conversation; and (c) mobile radio communications”. For the purposes of this paper TRA treats the effect of these definitions as being the same.

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considers that, taking into account principles of technological neutrality and functional equivalency, such service providers would be considered to be telecommunications service providers subject to licensing by TRA, provided they are covered by the territorial jurisdiction of TRA as explained below.

### Internet to PTN Services or PTN to Internet VoIP Services

3.7 The 2004 VoIP Position Paper states that the Law permits “suitably licensed operators” to use IP as a means of carrying voice traffic over both national and international links. Depending on the proposed service and business model an operator would need either/both a National Fixed or/and an International Services licence to do so. Further, TRA considers that the use of VoIP technology within an operators’ core network does not necessarily change the nature of the services offered to customers, for example the offer of International telephone calls, and therefore ordinary licensing rules will generally apply.

3.8 The 2004 Position Paper also states that:

*“The provision of a dial-up gateway that allows consumers to make a local call and thereby access (using voice over the Internet) an international call is not allowed. Such a service ... would undermine licensed international service providers in Bahrain.”*

3.9 The provision of a gateway by a VoIP provider to enable Internet to PTN services or PTN to Internet VoIP services should, however, be considered a “Telecommunications service” under the Law. At the point where this function is performed by the VoIP services provider it is arguably “routing” the call on a Telecommunications Network

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within the definition of “Telecommunications” provided in the Law. It will also be “conveying” the data to the extent that it is transferring information from one network to another.

3.10 TRA therefore considers that where a VoIP service provider, covered by the jurisdiction of TRA, enables an internet user to terminate a voice call on a PTN, then the VoIP service provider is providing a telecommunications service over a Telecommunications Network (as defined in the Law). For such a call to comply with section 24 of the Law, the VoIP service provider must hold:

3.10.1 an individual international telecommunications services license; and/or

3.10.2 a national fixed licence.

3.11 Foreign VoIP service providers, that are not covered by the jurisdiction of TRA, enabling internet users to terminate voice calls on a PTN within the Kingdom of Bahrain, are subject to the same rules as foreign PTN services providers that provide similar services, enabling their users to terminate calls within the Kingdom of Bahrain. These VoIP service providers shall provide their services via interconnection with an operator holding a licence of the type mentioned in Section 3.10 above.

3.12 Further, for a VoIP service provider to assign a user a Bahraini E.164 telephone number in order for PTN subscribers to terminate voice calls with that user on, for example, the user’s personal computer, whether in or out of Bahrain then, in accordance with

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Convention 2 of the National Numbering Plan of the Kingdom of Bahrain<sup>4</sup>, the VoIP service provider must either:

3.12.1 be a licensed operator in the Kingdom of Bahrain that has been assigned numbers by TRA; or

3.12.2 have had numbers sub-allocated to it from an eligible licensee.

In the latter case TRA is of the view that this does not exempt an undertaking being sub-allocated the numbers from the requirement to obtain the licences necessary to engage in the relevant licensable activities.

### PTN VoIP services

3.13 As with Internet to PTN services or PTN to Internet VoIP services, the 2004 VoIP Position Paper does not explicitly consider the situation whereby a call is made from a PTN subscriber to another PTN subscriber using interconnection across the Internet or other network based on IP protocol. A PTN VoIP service provider would therefore need either:

3.13.1 an individual international telecommunications services licensee, where the call is terminated on a non-Bahrain PTN; or

3.13.2 a national fixed licence where the call is terminated on a Bahrain PTN.

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<sup>4</sup> The English and Arabic version of the National Numbering Plan can be found at <http://www.tra.org.bh/en/Marketnumbering.asp>.

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### Private Network VoIP Services

- 3.14 It is clearly stated in TRA's 2004 VoIP Position Paper that there are no licensing obligations when IP is used to deliver calls within a private network. There would therefore, for example, be no restrictions on the use of VoIP services inside a company, for the sole use of that company i.e. it is not offering the Telecommunications service to the public.

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### 4 TERRITORIAL JURISDICTION OF TRA

- 4.1 Providers of VoIP services, in particular in Internet only, Internet-to-PTN and PTN-to-Internet scenarios, could be established in various jurisdictions with a view to target global consumer base. The Internet allows users to access and use services that could be provided through an establishment located anywhere in the world. On the other hand, these developments avail service providers with the opportunity to access the global customer base.
- 4.2 The business models enabled by the Internet i.e., the possibility to reach a global customer base from the single establishment, would be completely undermined if a respective undertaking had to comply with the laws of every jurisdiction from which its services could be accessed. It would imply that the undertaking has to comply with the different sets of rules applied in circa. 200 jurisdictions around the world (current number of the Member States of the United Nations is 192, but it should also be remembered that number of jurisdictions is greater than this because of the federal structure of a number of countries). The requirements of different jurisdictions could even be contradictory in some cases.
- 4.3 One of the approaches taken in the international practice is that in order to establish jurisdiction of a specific territory regarding a specific undertaking it should be determined if an undertaking effectively, deliberately, and purposefully directs (targets) its activities to a specific country<sup>5</sup> (or an activity has a substantial, direct, and

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<sup>5</sup> see: <http://cyber.law.harvard.edu/home/uploads/204/2003-03.pdf>.

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foreseeable effect within the state<sup>6</sup>). The mere ability to access the services via the Internet does not confer jurisdiction to a specific country from which such access is possible. Such an approach is taken to some extent by the United States as well as Australian courts.<sup>7, 8</sup> Canadian case-law requires there being a “real and substantial link” between the proscribed conduct and the jurisdiction seeking to apply and enforce its law.<sup>9</sup> It has also been established that the mere location of the technical equipment used to provide the services does not determine applicability of a specific jurisdiction to these services<sup>10</sup>.

- 4.4 TRA considers that it is appropriate to apply the above mentioned international practice and that this is consistent with the general legal framework of the Kingdom of Bahrain. Therefore TRA would not consider telecommunications service providers covered by its jurisdiction (and therefore obliged to be licensed according to the Law and comply with the relevant obligations) only because their services could be accessed by the residents of the Kingdom of Bahrain utilising the Internet services. However TRA would consider that the Law applies to all the service providers irrespective of the place of their establishment and location of their technical

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<sup>6</sup> see: [https://www.law.suffolk.edu/highlights/stuorgs/jhtl/docs/pdf/JHTL\\_Brenner\\_Koops\\_Article1.pdf](https://www.law.suffolk.edu/highlights/stuorgs/jhtl/docs/pdf/JHTL_Brenner_Koops_Article1.pdf)

<sup>7</sup> World-Wide Volkswagen Group v. Woodson, 444 U.S. 286 (1980); Hansen v. Denckla, 375 U.S. 235, 253 (1985); Compuserve Inc. v. Patterson, 89 F. 3d 1257 (6th Cir. 1996).

<sup>8</sup> Dow Jones & Company, Inc. v. Gutnick (2002) 194 A.L.R. 433, [2002] H.C.A. 56.

<sup>9</sup> R v Libman [1985] 2 SCR 178.

<sup>10</sup> Pres-Cap v. System One, Direct access, Inc. 626 So. 2d, 1351, 1353 (Fla. Dist. Ct. App.. 1994); State v. Maxwell, 767 N.E.2d 242, 248-50 (Ohio 2002).

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equipment who effectively, deliberately, and purposefully direct their activities to residents of the Kingdom of Bahrain.

- 4.5 In order to determine jurisdiction in the specific instance, TRA will take into account the marketing practices of the respective undertaking. Provision of services that offers receiving calls using numbers from the National Numbering Plan of the Kingdom of Bahrain or that include services physically provided by personnel of a service provider or its agent located in the Kingdom of Bahrain would presume the jurisdiction of TRA over such services.
- 4.6 The positions outlined above do not preclude TRA or any other public authority of the Kingdom of Bahrain from taking necessary steps to restrict access to services materially infringing the laws of the Kingdom of Bahrain.



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### **5 TRA and Consumer Protection**

- 5.1 TRA is keen to ensure that consumers of telecommunications services within the Kingdom of Bahrain are able to fully avail themselves of the latest telecommunications services, and where appropriate that they are able to enforce their legal rights as necessary and possible, and equally, that they understand when this is not possible.
- 5.2 There are clear issues of extra-territorial jurisdiction in the case of unlicensable VoIP services provided from outside the Kingdom of Bahrain but that are accessible to end users within the Kingdom of Bahrain. This presents difficulties for end users wishing to dispute a matter with a foreign VoIP service provider not licensed and regulated by TRA in Bahrain.
- 5.3 In some cases the foreign VoIP service provider may require the end user to submit to a foreign legal system and jurisdiction for the resolution of disputes between the foreign VoIP service provider and end user. Bahrain end users may be subject to the forum for dispute resolution chosen by the service provider and the service provider's choice of law.
- 5.4 Submitting to a foreign jurisdiction and legal system may not be desirable for end users for many reasons, such as the difficulty in accessing the foreign legal system, the difficulty and cost of obtaining legal advice and representation and the cost of enforcement.
- 5.5 End users of a foreign VoIP service provider may have an opportunity to appeal to the body responsible for regulation of telecommunications in the foreign VoIP service provider's

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jurisdiction. However, such an avenue of appeal will depend upon the regulatory regime of that jurisdiction. While TRA might petition such a regulator (if one exists per se or it is possible to determine where the VoIP service provider is domiciled) TRA cannot guarantee that it will be able to represent the aggrieved end user.

- 5.6 As such end users wishing to utilise a foreign VoIP service provider's services must ensure that they understand the terms and conditions of the service provider. End users must accept that there are some risks attendant in utilising a foreign VoIP service provider that is not licensed in the Kingdom of Bahrain.

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### **6 Conclusions**

- 6.1 TRA believes that VoIP services should be regulated as any other form of telecommunications services in a technologically neutral way. TRA will therefore apply its licensing and consumer protection policies to these services in a non-discriminatory manner.
- 6.2 TRA will review the consumer experience to determine how a particular service should be regulated. VoIP services that are Internet-based will therefore be regulated as Internet services, whereas VoIP services that are a technological development of or that emulate “traditional” publicly available telecommunications services will be regulated as ordinary voice services.