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**5<sup>th</sup> September 2016**

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Mahanagar Door Sanchar Bhawan,  
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New Delhi-110002

**Subject: Verizon response on TRAI CP on Internet Telephony**

Dear Sir,

We welcome the opportunity to submit comments on the consultation paper on Internet Telephony (IP telephony/VoIP) dated 22<sup>nd</sup> June 2016 issued by Telecom regulatory Authority of India (TRAI). As TRAI has rightly noted in the consultation paper that the ICT sector is developing rapidly and the technological advances are making new services and new modes of service delivery possible. VoIP is an example of innovative and disruptive technology and the volume of VoIP traffic is growing rapidly as businesses; enterprise users are embracing the new services for their communication needs to drive productivity and easy and effective communication.

We are a member of industry association ACTO and fully support the response filed by ACTO. In addition to ACTO response we would like to draw your attention to an important aspect that has not been covered by the present consultation i.e. issue of IP-PSTN interconnection as well as unrestricted internet telephony by ISP's and merits your attention. We hope our comments and suggestions would be duly considered by the authority while suggesting policy framework on Internet Telephony.

Regards

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## **Verizon response on TRAI CP on Internet Telephony**

The current licensing framework restricts the provision of unrestricted internet telephony by Internet service providers (ISP's). The licensing framework also restricts IP-PSTN interconnection. TRAI had in its recommendations dated 18<sup>th</sup> August 2008 recommended removing the current restrictions on internet telephony for ISPs. We believe that the recommendations were a step in right direction and reflecting the market & technology evolution, however we note the recommendations haven't been implemented yet and request the same be provided top priority. Additionally we would like to present a few technology trends for your consideration in support of our request for review of the current restrictions related to interconnection of IP-PSTN.

### **A. Technology, Regulatory & Global IPT Trends:-**

#### **✓ Digital evolution- Transition to IP networks**

The rapid technological developments and better quality of voice communications are shaping the future of telecom. The enormous increase in data traffic in international scenario, increasing acceptability of IP networks, adoptability of NGN by many countries, and global liberal regulatory regime for Internet telephony require a fresh review of existing licensing conditions in India.

#### **✓ Current Licensing Regime related to IPT**

The present licensing framework has envisaged different type of access service providers (UASL, BSOs, CMSPs), National Long Distance service providers (NLDs) International Long Distance service providers (ILDs) and Internet Service Providers (ISPs). While access service providers are permitted to provide various services and applications to their subscribers under Unified Access Services License (UASL), the role of other licensees like NLD and ILD is limited to provide long distance services and Internet service providers are permitted to provide access to Internet only . It was expected that access service providers will provide highly popular services like Internet Telephony and boost broadband penetration but it has not come on the ground.

As such users are denied advanced value added services in contrast to global scenario where such Internet based services are popular and offered on unrestricted basis. . ISPs are not permitted to provide unrestricted Internet Telephony though they have IP based Infrastructure. Such regulatory restrictions discourage technological advancements and result is grey market activities to provide these services to common masses.

#### **✓ Imposition of License fee @ 8% across all the licenses including IPT**

One of the key considerations for not allowing unrestricted IPT in the past was the argument regarding non level playing field between the Access operators and the ISP operators in view of

Licensee fee requirements. However with the imposition of 8% of LF on all ISP services the arbitrage on account of license fee is no more in existence.

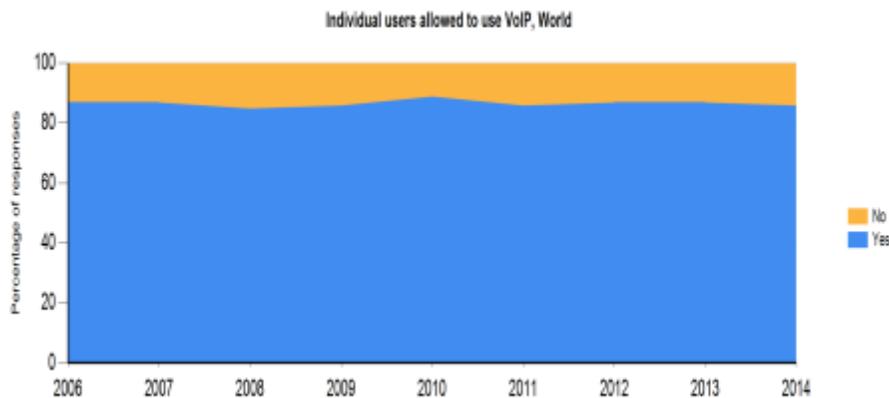
✓ **Global Trends- ITU study on VoIP regulations**

A comparison of the VoIP regulations by ITU in its report i.e. *ITU World Telecommunication/ICT Regulatory Database- 2015* attached as **Annex- 1** shows most of the countries across the globe promote use and deployment of VoIP through an enabling regulatory framework. As per ITU estimates in the ASPAC region out of a total of 40 countries 25 countries allow VoIP to individual users. The regional trends indicate that the regulatory environment in the APAC region is enabling the VoIP use and deployment.

Further any restrictions in the regulatory environment should be suitably reviewed from time to time to align with the market realities.

Similarly India needs to review the current regulatory restrictions on IP-PSTN interconnection to realize its dream of becoming a digital empowered nation that creates opportunities for investments and innovation.

The removal of the barriers on the convergence of IP-PSTN would give India a competitive advantage over other countries such as Philippines vying for foreign investment and this is a welcome signal to global investors who may be looking at India as an attractive investment destination.



Source: ITU Telecommunication/ICT Regulatory Database ITU ICT-Eye

The regulatory environment should be dynamic, enabling, and efficient and encourage competition. Hence regulatory framework for Internet telephony has to be considered in view of digital evolution, convergence and other similar developments taking place across the globe.

✓ **TRAI earlier CP on Issues related to Internet Telephony**

The Authority suo-motu had initiated a consultation process on 12th May, 2008 titled “Issues Related to Internet Telephony”. The Authority has considered regulatory framework which is **technologically neutral, enables developments, innovations and growth of the telecom sector for benefit of common masses while ensuring that business models of access telecom service providers are not adversely impacted**. The end-users in country must be delivered the innovative and cost effective services.

**B. Need for IP-PSTN Interconnection:-**

We would like to submit that similar to unrestricted internet telephony, **IP-PSTN interconnection is equally vital and important for continued growth trajectory for all the users and most importantly for the BPO / Enterprise Data Services sector**. Enterprise / BPOs require this flexibility for their in house captive requirements.

Thus TRAI should continue to recommend the removal of the current restrictions on internet service provider to terminate calls on public network in India. As recommended in the past, TRAI should also continue to permit interconnection by internet service providers with access service providers as well as carriers. The terms of interconnection should be based on mutual agreement between parties. While recommending such steps, TRAI should also consider framing a sustainable numbering regime which conforms to E.164 numbering plans as well as future requirements.

In the absence of such flexibility, there would be unnecessarily investment on duplicating the infrastructure separately on voice and data networks. IP-PSTN interconnection would lead to interconnection of IP and TDM networks. This would necessitate an interconnection regulation, which would be framed by TRAI. The interconnection regime and the ensuing charges will ensure proper payment to the underlying carriers and in turn will ensure that license fee is paid on such revenue by / to the carriers.

**Measures to address Security Concerns**

The security concerns arising out of such an interconnection can be duly addressed by placing suitable compliance requirements on the service providers which will be placed for permitting unrestricted internet telephony. Additionally the following steps can be taken to address security concerns:-

- a. A security audit can be conducted prior to the implementation to fix the potential vulnerabilities.
- b. Hardware/Software equipment such as, Firewall, Intrusion Detection and/or Prevention System (IDS / IPS) can be deployed in addition to the encrypted underlying network that will carry voice traffic.

In fact when the security concerns have been considered and addressed while recommending opening of internet telephony for mass market, it is difficult to comprehend why IP-PSTN interconnection has not been recommended to be allowed. The compliance issues as advised from time to time can certainly be addressed based on discussions.

There are various benefits which will accrue to the industry if the said restriction on IP – PSTN interconnection is removed which are enumerated as below:

### **Benefits of allowing IP-PSTN interconnectivity**

1. Today most of the enterprise, large businesses and SME are looking for operational efficiencies and cost optimizations. Most of the IT/ITES, International call centers today have either a separate system for their domestic requirements or go through the logical partitioning way. Both the options are expensive. Separate systems for domestic and international call centres means the following additional costs:
  - a) Investment in two independent call center infrastructure: Even if each infrastructure can meet the capacity requirements of both international and domestic CC, investment is required to setup two independent setups.
  - b) Maintenance cost associated with the additional system.
  - c) Excess capacity on one system cannot be leveraged by the other.
  - d) Expensive and time consuming integrations ( CTI,CRM etc) needed for both the systems.
  - e) Industry is unable to leverage global CC infrastructure for India sites those need of Domestic & Intl CC processes due to need for isolation of India PSTN & Domestic process. Adversely impacts Indian BPO industry competitiveness.
  - f) Some of the call centers those are using Internet Telephony for International CC environment due to cheaper option are adversely impacting the image of Indian CC/BPO industry due to poor quality of voice delivery.
  - g) Logical partitioning is an option but this option too has the following overheads: Not every Contact center solution supports logical partitioning. Thus it requires investment in expensive CC solutions like Avaya ,Cisco etc.

## **2. India's competitive advantage vis a vis other economies**

If the IP –PSTN connectivity is allowed, the Call centers would save a lot of expenses that they incur today making them cost efficient and competitive to other comparable economies like Philippines which has taken over India in outsourcing business.

## **3. Benefits to the Enterprise sector**

Enterprises today are looking at higher levels of employee collaboration. For this reason they are investing in Unified communication solutions. These solutions are designed to improve the employee productivity. These solutions have the potential to reduce employee work-load as it provides the flexibility for the employee to work from anywhere.

The non-availability of the IP-PSTN interconnection is detrimental to growth and proliferation of digital services in India as the technological innovation and investment is stumbled by these artificial restrictions. Some of the industry user cases are illustrated below to reflect that the restrictions are way behind the market realities and technological innovations. The complete benefits of the unified communication solutions cannot be reaped until and unless the CUG –PSTN interconnect is allowed.

Some of these features include:

- a) Conferencing: Participants from CUG and PSTN cannot be in the same bridge (audio/Video).
- b) Mobility : The following features of Mobility cannot be used :
  - Soft-Phone: Soft-phone users cannot call India PSTN from their Laptops.
  - Call-Forward: A CUG call cannot be forwarded to a local PSTN number.
  - Parallel Ringing: UC solution allow parallel ringing of desk-phones and Hand-phones. This feature cannot be used today.
- c) Voice-Mail: Customers have to maintain separate Voice Mail systems for their CUG and PSTN Phones.
- d) Voice Gateways aggregation: Every customer site with IP Telephony needs separate voice gateways & PSTN lines at each site, Expensive & increases maintenance cost. No voice gateways aggregation possible unless CUG –PSTN interconnection is allowed.
- e) Most of the enterprises have deployed the logical partitioning on their IP telephony solution. The Logical partitioning does not allow the customer to use all the features of their IP telephony solution.

## Conclusion:

TRAI consultation paper may address these anomalies and issues related to **IP-PSTN/Public network interconnection in line with the objectives of NTP 2012**. This will be a key policy enabler for the telecom sector and fuel further growth of this very important sector.

### 1. **India as a digitally empowered nation: An attractive investment destination**

The removal of the barriers on the convergence of PSTN-IP would give India a competitive advantage over other countries such as Philippines vying for foreign investment and this be a welcome signal to global investors who may be looking at India as an attractive investment destination but for these artificial restrictions.

### 2. **Enablement of Advanced & Open IP platform**

Convergence will enable a much Advanced and Open IP platform which will enhance the end-user experience and will efficiently address the growing business needs by leveraging on the best of both worlds (CUG & PSTN).

### 3. **Reap the benefits of latest technology & innovation**

It is relevant to note that traditional telephony networks were designed to deliver only one type of traffic – voice. **IP networks have revolutionized communications** by breaking the link between services and transmission technology, and instead allow multiple services to be provided over each transmission technology. Rather than forcing new IP-based technology to fit into old regulatory models, TRAI may consider developing regulatory frameworks that accommodate the increasing **convergence of services**.

### 4. **Increased investment in IP networks**

Recognize that proliferation of IP telephony solutions and services will spur demand for broadband connections, and consequently encourage more broadband investment and deployment consistent with the goals of the Government to transition India into a digitally empowered knowledge economy .Consider a light touch regulatory approach that can work best for these types of services.

### 5. **Recognize the distinction of IP networks and traditional PSTN**

it should not be assumed that the economic and social reasons that were used to justify consumer protection and QoS regulations for legacy telephony providers also will be broadly appropriate for Internet applications, such as IPT. In many cases these justifications will no longer apply because IP applications, such as IPT, function at the **applications level of the network**, and therefore can be offered by a number of competing providers.

### 6. **Recognize the distinction between needs of enterprise and Consumer mass business users**

While making recommendation TRAI should also recognize **distinction between the enterprise business users** whose requirements and ability to negotiate would be much different from those of the **consumer mass business users** and therefore not apply the consumer protection and QoS regulations on enterprise business services. Where these competitive markets exist, regulators can and should avoid active regulation and instead let consumer choice resolve these issues.

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# IP Telephony

ITU/BDT Classification: Africa

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Angola		Yes <sup>7</sup>				
Benin		No				
Botswana		No <sup>2</sup>				
Burkina Faso		No			No	la reglementation est en cours d'élaboration.
Burundi		No <sup>3</sup>				Nous avons une loi organique générale sur les télécommunications au Burundi. Nous avons tout de même une nouvelle loi organique sur le secteur des TIC en cours d'élaboration. <sup>3</sup>
Cameroon		No				
Cape Verde	Yes	Yes	Decret Legislative 7/2005 du 28 Novembre, et Règlement du Service VOIP sorti dans la Délibération n° 001 /2008 du 03 avril 2008.	<a href="http://www.anac.cv/images/stories/legislacao_tec/VOIP16abr2008.pdf">http://www.anac.cv/images/stories/legislacao_tec/VOIP16abr2008.pdf</a>		
Central African Rep.					No <sup>1</sup>	La fourniture des services VoIP fait l'objet d'une autorisation délivrée par l'organe de Régulation. <sup>1</sup>
Chad						
Congo (Dem. Rep.)		No			No	
Congo (Rep.)	Yes	Yes	Loi n°9 portant reglementation du secteur des communications électroniques, article11 alinéas 3	<a href="http://www.arpce.cg">www.arpce.cg</a>	No	
Côte d'Ivoire	Yes <sup>3</sup>					
Equatorial Guinea	Yes	Yes			Yes	
Eritrea		No <sup>9</sup>				

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Ethiopia		Yes <sup>1</sup>	Telecommunication Fraud Offenses Proclamation No. 671/2012/71/2012 <sup>1</sup>			IP Telephony or voice over IP (VoIP) is allowed for personal and LAN usage. However it is prohibited to use it as service provider and generate income from it. <sup>1</sup>
Gabon		No				
Gambia	No <sup>5</sup>					
Ghana		Yes <sup>1</sup>	Licensed operators are allowed to use VOiP as a technology in their operations. No operator is specifically licensed to provide VOiP services. <sup>1</sup>			
Guinea		No			No	
Guinea-Bissau						
Kenya	Yes	Yes	GUIDELINES ON IMPLEMENTATION AND PROVISION OF VOIP SERVICES	<a href="http://www.ca.go.ke/index.php/sector-guidelines">http://www.ca.go.ke/index.php/sector-guidelines</a>		
Lesotho	Yes	No			Yes	
Liberia	Yes <sup>8</sup>	No <sup>8</sup>			No <sup>8</sup>	There is nothing in place to deal with Voice over IP (VoIP) services at the moment. <sup>8</sup>
Madagascar	Yes <sup>6</sup>	Yes <sup>6</sup>				
Malawi		No				
Mali		No <sup>5</sup>				
Mauritius	Yes	No			Yes	VoIP is offered under the ILD and ITS licences.
Mozambique						
Namibia	Yes	Yes	Communications Act No. 8 of 2009	<a href="http://www.cran.na">www.cran.na</a>	Yes	
Niger						

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Nigeria	Yes <sup>5</sup>	Yes <sup>5</sup>	Guidelines: <a href="http://www.ncc.gov.ng/RegulatorFramework/Guidelines%20on%20International%20Gateway%20Access%20and%20VoIP.pdf">http://www.ncc.gov.ng/RegulatorFramework/Guidelines%20on%20International%20Gateway%20Access%20and%20VoIP.pdf</a> <sup>5</sup>	<a href="http://www.ncc.gov.ng">www.ncc.gov.ng</a> <sup>5</sup>		Voip is not regulated <sup>5</sup>
Rwanda	Yes <sup>5</sup>	No <sup>5</sup>				
S. Tomé & Príncipe	Yes <sup>7</sup>	No <sup>7</sup>			No <sup>7</sup>	La réglementation pour les services de téléphonie IP (VOIP) est en cours d'élaboration. <sup>7</sup>
Senegal	Yes	No			No	
Seychelles	Yes	Yes				Licensed VoIP operators are subjected to the VoIP regulation 2005.
Sierra Leone		No <sup>6</sup>			No <sup>6</sup>	
South Africa	Yes	No			No	
South Sudan						
Swaziland	No <sup>3</sup>	No <sup>3</sup>			No <sup>3</sup>	
Tanzania	Yes	No			Yes	Specific VoIP policy and legislation don't exist and this poses a challenge on how to regulate these services considering that the provider of service (VoIP) operator resides out of the country jurisdiction.
Togo	Yes <sup>5</sup>	No <sup>5</sup>			Yes <sup>5</sup>	Le service VoIP à partir d'un poste téléphonique à destination d'un autre poste téléphonique est soumis à autorisation conformément à l'arrêté n°012/MEMETP/CAB relatif aux conditions de délivrance de l'autorisation d'exploitation de la téléphonie sur IP du 11 mai 2001. Cependant cette licence accordée à un seul opérateur n'a plus été renouvelée en 2010. <sup>5</sup>
Uganda	Yes <sup>6</sup>	No <sup>6</sup>				The technology-neutral licensing framework implies that VoIP is regarded as any other service with no specific regulations. <sup>6</sup>

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Zambia		No				
Zimbabwe	Yes <sup>1</sup>	Yes <sup>1</sup>	Statutory Instrument 262 of 2001 <sup>1</sup>			

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Algeria	Yes	Yes	activité soumise à une autorisation	www.arpt.dz		
Bahrain	Yes	Yes	Regulation of Voice Internet Protocol Services	www.tra.org.bh		TRA Bahrain has also published a report in conjunction with Detecon on the proposed regulatory treatment of OTT applications. The study is also published on TRA website.
Comoros	Yes <sup>5</sup>	No <sup>5</sup>			No <sup>5</sup>	C'est maintenant que nous préparons la réglementation sur la VoIP. Actuellement l'usage de la VoIP à des fins privées n'est pas interdit. C'est la commercialisation qui est interdite. <sup>5</sup>
Djibouti	No <sup>4</sup>	No <sup>4</sup>			No <sup>4</sup>	
Egypt		No			No	
Iraq	No <sup>5</sup>	No <sup>5</sup>			No <sup>5</sup>	
Jordan	Yes <sup>6</sup>	Yes <sup>6</sup>	TRC's Decision regarding the Statement on the Implementation of Voice Communication Services Delivered Using the Internet Protocol <sup>6</sup>	www.trc.gov.jo <sup>6</sup>		
Kuwait	No <sup>8</sup>	No <sup>8</sup>			No <sup>8</sup>	
Lebanon		Yes <sup>1</sup>	VOIP Regulation <sup>1</sup>			The VOIP regulation will be issued for consultation in due time <sup>1</sup>
Libya						
Mauritania		No <sup>5</sup>			Yes <sup>5</sup>	

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Morocco		Yes	Décision de l'ANRT	www.anrt.ma		Le statut réglementaire de services de téléphonie sur IP a été précisé dans la Décision N°04-04 du Directeur Général de l'ANRT, dont l'adresse URL est indiquée ci-dessus. Cette Décision traite des trois principaux cas de l' usage de cette technologie : 1) La fourniture de Service de téléphonie sur IP au public et le transport pour tiers du trafic téléphonique: correspondant à l' exploitation commerciale est autorisée pour tout opérateur détenteur d' une licence de téléphonie publique. 2) L' utilisation de la téléphonie sur IP en privé: est autorisée dans le cadre des réseaux indépendants et des réseaux internes sous réserve du respect des dispositions des articles 14, 19 et 20 de la loi n°24-96 (Rubrique: réglementation, sous rubrique: Lois).
Oman	Yes	Yes	resolution #34/2012			
Qatar	Yes	Yes	Qatar Voice over Internet Protocol (VoIP) Policy	<a href="http://www.cra.gov.qa/en/news/qatar-voice-over-internet-protocol-voip-policy">http://www.cra.gov.qa/en/news/qatar-voice-over-internet-protocol-voip-policy</a>	Yes	Managed VoIP is offered by the Telecommunications Service Providers as part of their regulated Service Portfolio.  Unmanaged VoIP services (i.e. Skype, Viber, ...) are not blocked and available in Qatar.
Saudi Arabia	No	Yes			Yes	fixed facility based providers are allowed to offer IP based services.  CITC is studying the regulations of VOIP services for non-facility based providers, and the details of such a process will be posted on CITC website ( <a href="http://www.citc.gov.sa">www.citc.gov.sa</a> ) when finished.
Somalia		No				

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Sudan		Yes		<a href="http://ntc.gov.sd/index.php/en/regulations">http://ntc.gov.sd/index.php/en/regulations</a>		
Syria		No				
Tunisia	Yes	Yes	“ le décret N° 2000 du 18 Septembre 2012”	<a href="http://www.cnudst.rnrt.tn">www.cnudst.rnrt.tn</a>		
United Arab Emirates	Yes	Yes				
Yemen						

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Afghanistan		No <sup>1</sup>				
Australia	Yes	No			Yes	Telecommunications Act 1997, Telecommunications (Consumer Protection and Service Standards) Act 1999, and related legislation, legislative instruments and standards.
Bangladesh	Yes	Yes	International Gateway (IGW) License, IP Telephony Service Provider (IPTSP) License, VoIP Service Provider (VSP) License	<a href="http://www.btrc.gov.bd">www.btrc.gov.bd</a>		
Bhutan	Yes <sup>8</sup>	No <sup>8</sup>			Yes <sup>8</sup>	VoIP would come under ICT service as per the Bhutan Information, Communications and Media Act 2006. We are still working on VoIP regulation. <sup>8</sup>
Brunei Darussalam	Yes <sup>1</sup>	No <sup>1</sup>			No <sup>1</sup>	
Cambodia	Yes	Yes	Declaration (Prakas) No. 155 dated June 19, 2001			
China		No <sup>1</sup>			Yes <sup>1</sup>	
D.P.R. Korea						

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Fiji	Yes <sup>3</sup>	Yes <sup>3</sup>	Telecommunications Promulgation 2008 and Telecommunications regulations <sup>3</sup>	www.taf.com.fj <sup>3</sup>	Yes <sup>3</sup>	VoIP is currently envisaged on the Telecom Promulgation 2008 and its respective regulations. <sup>3</sup>
Hong Kong, China	Yes <sup>1</sup>	Yes <sup>1</sup>	Former TA Statements entitled "Regulation of Internet Protocol (IP) Telephony" issued on 20 June 2005 and "Services-Based Operator (SBO) Licence" issued on 6 January 2006. <sup>1</sup>	http://tel_archives.ofca.gov.hk/en/tas/ftn/tas20050620.pdf and http://tel_archives.ofca.gov.hk/en/tas/ftn/tas20060106.pdf <sup>1</sup>		Local voice telephony service, including VoIP, has always been allowed for local facility-based fixed and mobile carriers on a technology neutral basis. Provision of VoIP service by service providers has been authorised since January 2006. <sup>1</sup>
India	Yes <sup>3</sup>	Yes <sup>3</sup>	"Guidelines & General instructions for grant of licence for operating Internet services" <sup>3</sup>	http://www.dot.gov.in/ispt/Internet%20Services/internetser vices.htm <sup>3</sup>		The above guidelines are applicable to Internet Service Providers only. In addition, Unified Access, Cellular Mobile Telephone Service and Basic Service Licensees can also use VoIP in their network under their existing licence as a technological option. There is no separate guideline/ regulation for these operators. <sup>3</sup>
Indonesia	Yes	Yes	Ministerial Decree No. 23/2002 regarding Internet Telephony Services for Public Use	http://www.mastel.or.id/files/regulasi/KM%20No.%2023%20Tahun%202002%20(ITKP).pdf		
Iran (I.R.)	Yes	Yes	We have some title about this topic as CRC Regulation www.cra.ir, but in Persian.			
Japan	Yes	Yes				
Kiribati	Yes <sup>8</sup>	No <sup>8</sup>			No <sup>8</sup>	
Korea (Rep.)	Yes <sup>5</sup>	No <sup>5</sup>			Yes <sup>5</sup>	
Lao P.D.R.		No <sup>1</sup>				
Macao, China						

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Malaysia	Yes	Yes	Guideline on the Provisioning of VOIP (Voice over Internet Protocol) Service	<a href="http://www.skmm.gov.my/Resources/Guidelines/Guidelines/Guideline-on-the-Provisioning-of-VOIP-(Voice-over.aspx">http://www.skmm.gov.my/Resources/Guidelines/Guidelines/Guideline-on-the-Provisioning-of-VOIP-(Voice-over.aspx</a>		
Maldives	Yes <sup>8</sup>	Yes <sup>8</sup>		<a href="http://www.tam.gov.mv">www.tam.gov.mv</a> <sup>8</sup>		Defined in the Maldives Telecom Policy 2006–2010. Allowed for personal use, not allowed yet for commercial use. <sup>8</sup>
Marshall Islands		No				
Micronesia	Yes <sup>5</sup>	No <sup>5</sup>			Yes <sup>5</sup>	
Mongolia	Yes <sup>3</sup>	Yes <sup>3</sup>	Regulation and tariff policy <sup>3</sup>	<a href="http://ww.crc.gov.mn">ww.crc.gov.mn</a> <sup>3</sup>	Yes <sup>3</sup>	
Myanmar	Yes	No				
Nauru		No			Yes	
Nepal		No <sup>1</sup>			Yes <sup>1</sup>	
New Zealand		No <sup>9</sup>				
Pakistan	Yes	Yes	Clarification on Use of VoIP			There are no Policy/Regulation on the use of VoIP, however, a clarification has been issue by PTA about the use of VoIP services.
Papua New Guinea						
Philippines						
Samoa	Yes <sup>3</sup>	No <sup>3</sup>			Yes <sup>3</sup>	

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>



Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Singapore	Yes	Yes	Framework for IP Telephony	<a href="http://www.ida.gov.sg/Policies-and-Regulations/Industry-and-Licensees/Licensing/Framework-and-Guidelines/IP-Telephony-Framework">http://www.ida.gov.sg/Policies-and-Regulations/Industry-and-Licensees/Licensing/Framework-and-Guidelines/IP-Telephony-Framework</a>		
Solomon Islands						
Sri Lanka	No <sup>6</sup>	No <sup>6</sup>				
Thailand	Yes <sup>1</sup>	Yes <sup>1</sup>	Voice over Internet Protocol and Telephony <sup>1</sup>	<a href="http://www.nbtc.go.th/wps/wcm/connect/dc86ff8041b1ff1ead35efb4bd911774/VoIP.pdf?MOD=AJPERES&amp;CACHEID=dc86ff8041b1ff1ead35efb4bd911774">http://www.nbtc.go.th/wps/wcm/connect/dc86ff8041b1ff1ead35efb4bd911774/VoIP.pdf?MOD=AJPERES&amp;CACHEID=dc86ff8041b1ff1ead35efb4bd911774</a> <sup>1</sup>		n/a <sup>1</sup>
Timor-Leste		No <sup>1</sup>				
Tonga	Yes <sup>7</sup>	No <sup>7</sup>			Yes <sup>7</sup>	
Tuvalu						
Vanuatu	Yes	No			No	There is no specific laws for VoIP but subject to general TRR Act 2009.
Viet Nam	Yes	Yes				

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Armenia	Yes	No			Yes	
Azerbaijan	Yes		license	<a href="http://mincom.gov.az/">http://mincom.gov.az/</a>		Decree of President – 2002
Belarus	Yes <sup>2</sup>	No <sup>2</sup>			Yes <sup>2</sup>	
Georgia	Yes <sup>1</sup>	No <sup>1</sup>			Yes <sup>1</sup>	
Kazakhstan	Yes <sup>5</sup>					
Kyrgyzstan	Yes	Yes	Government Resolution of Kyrgyz Republic № 265 (7th of May 2003 year)	<a href="http://cbd.minjust.gov.kg/(F1kZZs8ZSKnQpIH6j9TU pCm_hQyPsbIL6HGck2 tD8slG6zGEQileoBVW2d NhrpWtcsBs9yEMrXpKzd BT-sagOPc6iWHYY7MBzYUE l19-AhiRQkfx4YGg4moi33HeTQx9IPLHAsOHafNh56 U32X2vr9MXnVD6BQc-4dZWLXtbHUGWHdZz_t MTMvk1rOZzomGB0))/a ct/view/ru-ru/54404? cl=ru-ru">http://cbd.minjust.gov.kg/(F1kZZs8ZSKnQpIH6j9TU pCm_hQyPsbIL6HGck2 tD8slG6zGEQileoBVW2d NhrpWtcsBs9yEMrXpKzd BT-sagOPc6iWHYY7MBzYUE l19-AhiRQkfx4YGg4moi33HeTQx9IPLHAsOHafNh56 U32X2vr9MXnVD6BQc-4dZWLXtbHUGWHdZz_t MTMvk1rOZzomGB0))/a ct/view/ru-ru/54404? cl=ru-ru</a>		
Moldova	Yes					
Russian Federation						
Tajikistan						
Turkmenistan						
Ukraine	Yes <sup>3</sup>	No <sup>3</sup>				
Uzbekistan						

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Albania	Yes	No			Yes	There are no laws specific to VoIP. If VoIP falls under publicly available telephone service, then is under the same regulation/obligations as all traditional publicly available telephone service, including obligations in 8.1.3 and 8.1.4 below.
Andorra	Yes <sup>3</sup>	No <sup>3</sup>			No <sup>3</sup>	
Austria	Yes					
Belgium	Yes	No			Yes	
Bosnia and Herzegovina	Yes <sup>1</sup>	Yes <sup>1</sup>	Decision on the Telecommunication Sector Policy of Bosnia and Herzegovina (Official Gazettes of BaH, No. 8/09), Fixed Telephony Licences <sup>1</sup>	<a href="http://www.rak.ba/eng/index.php?uid=1272017726">http://www.rak.ba/eng/index.php?uid=1272017726</a> , <a href="http://www.rak.ba/bih/index.php?uid=1267326101">http://www.rak.ba/bih/index.php?uid=1267326101</a> <sup>1</sup>		
Bulgaria	Yes	No			Yes	According to the Law on Electronic Communications public electronic communications shall be provided after submitting a notification to the Communications Regulation Commission. As a public electronic communication, provision of VoIP is also subjected to notification regime, except when an individually assigned scarce resource is needed. Then provision of VoIP requires obtaining right of use.
Croatia	Yes	No			Yes	
Cyprus	Yes	Yes	ΚΔΠ 74/2005	<a href="http://www.ocecpr.org.cy">www.ocecpr.org.cy</a>		
Czech Republic	Yes	Yes	VoIP is subject to the general ICT laws and regulations = YES, laws specific to VoIP = No .The regulatio is technologically neutral (i.e. it is the same both for clasic PSTN telephony and for the VoIP).		Yes	Since VoIP is subject to the general ICT laws and regulations, there are no laws specific to VoIP. Generally, the reulation applied is technologically neutral (i.e. it is the same for both classic PSTN telephony and for the VoIP).

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Denmark	Yes <sup>5</sup>	No <sup>5</sup>				
Estonia	Yes	No				No restrictions for VoIP
Finland	Yes	Yes	APPLICATION OF COMMUNICATIONS LEGISLATION TO VOIP SERVICES IN FINLAND	<a href="http://www.ficora.fi/attachments/suomiry/5v3OYZsC4/VoIP_ohje_eng.pdf">http://www.ficora.fi/attachments/suomiry/5v3OYZsC4/VoIP_ohje_eng.pdf</a>	Yes	
France	Yes	No			Yes	Les indicateurs du service téléphonique sur large bande publiés par l'ARCEP couvrent la voix sur large bande (VLB) quel que soit le support (DSL ...). L'ARCEP a désigné par "voix sur large bande" les services de téléphonie fixe utilisant la technologie de la voix sur IP sur un réseau d'accès à l'internet dont le débit dépasse 128 kbit/s et dont la qualité est maîtrisée par l'opérateur qui les fournit, et par "voix sur internet" les services de communications vocales utilisant le réseau public d'accès à l'internet et dont la qualité de service n'est pas maîtrisée par l'opérateur qui les fournit. Les communications au départ des services de voix sur large bande comptabilisées dans l'observatoire de l'ARCEP correspondent à des services offerts au niveau de l'accès. Ces indicateurs ne correspondent pas à du trafic qui utiliserait le protocole IP uniquement sur le cœur de réseau. Par ailleurs, l'Observatoire n'interroge pas les opérateurs non déclarés offrant des services de voix sur l'internet de PC à PC. Ces opérateurs n'entrent pas dans le champ de l'enquête.
Germany	Yes	Yes			Yes	

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Greece		Yes	Regulation on General Authorizations (EETT Decision no 676/41/20-12-12)	<a href="http://www.eett.gr/opencms/opencms/EETT/Electronic_Communications/Telecoms/MarketAnalysis/Markets/Agora2_3a.html">http://www.eett.gr/opencms/opencms/EETT/Electronic_Communications/Telecoms/MarketAnalysis/Markets/Agora2_3a.html</a>		Managed VoIP has been included in the retail calls markets.
Hungary	Yes <sup>1</sup>	No <sup>1</sup>			Yes <sup>1</sup>	The Act 100 of 2330 on Electronic Communications as a general ICT law deals with Voip issues. <sup>1</sup>
Iceland	Yes	Yes		<a href="http://www.pfs.is/default.aspx?cat_id=112&amp;module_id=210&amp;element_id=999">http://www.pfs.is/default.aspx?cat_id=112&amp;module_id=210&amp;element_id=999</a>		
Ireland	Yes	Yes	Guidelines for VoIP Service Providers on the treatment of consumers	<a href="http://www.comreg.ie/_fileupload/publications/ComReg0550.pdf">http://www.comreg.ie/_fileupload/publications/ComReg0550.pdf</a>		The regulatory framework generally covers electronic communications networks and services, including VoIP.
Israel	Yes	Yes	no specific title		Yes	

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Italy	Yes <sup>1</sup>	Yes <sup>1</sup>	Agcom decisions n. 11/06/CIR, n. 128/11/CIR <sup>1</sup>	<a href="http://www.agcom.it/documentazione/documento?p_p_auth=fLw7zRht&amp;p_p_id=101_INSTANCE_kidx9GUnlodu&amp;p_p_lifecycle=0&amp;p_p_col_id=column-1&amp;p_p_col_count=1&amp;_101_INSTANCE_kidx9GUnlodu_struts_action=%2Fasset_publisher%2Fview_content&amp;_101_INSTANCE_kidx9GUnlodu_assetEntryId=766090&amp;_101_INSTANCE_kidx9GUnlodu_type=document">http://www.agcom.it/documentazione/documento?p_p_auth=fLw7zRht&amp;p_p_id=101_INSTANCE_kidx9GUnlodu&amp;p_p_lifecycle=0&amp;p_p_col_id=column-1&amp;p_p_col_count=1&amp;_101_INSTANCE_kidx9GUnlodu_struts_action=%2Fasset_publisher%2Fview_content&amp;_101_INSTANCE_kidx9GUnlodu_assetEntryId=766090&amp;_101_INSTANCE_kidx9GUnlodu_type=document</a> , <a href="http://www.agcom.it/documentazione/documento?p_p_auth=fLw7zRht&amp;p_p_id=101_INSTANCE_kidx9GUnlodu&amp;p_p_lifecycle=0&amp;p_p_col_id=column-1&amp;p_p_col_count=1&amp;_101_INSTANCE_kidx9GUnlodu_struts_action=%2Fasset_publisher%2Fview_content&amp;_101_INSTANCE_kidx9GUnlodu_assetEntryId=643110&amp;_101_INSTANCE_kidx9GUnlodu_type=document">http://www.agcom.it/documentazione/documento?p_p_auth=fLw7zRht&amp;p_p_id=101_INSTANCE_kidx9GUnlodu&amp;p_p_lifecycle=0&amp;p_p_col_id=column-1&amp;p_p_col_count=1&amp;_101_INSTANCE_kidx9GUnlodu_struts_action=%2Fasset_publisher%2Fview_content&amp;_101_INSTANCE_kidx9GUnlodu_assetEntryId=643110&amp;_101_INSTANCE_kidx9GUnlodu_type=document</a> <sup>1</sup>		

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Latvia	Yes	No			Yes	
Liechtenstein	Yes	No			Yes	
Lithuania	Yes <sup>1</sup>	No <sup>1</sup>			Yes <sup>1</sup>	
Luxembourg	Yes <sup>1</sup>					
Malta	Yes	No			Yes	
Monaco	Yes <sup>5</sup>	No <sup>5</sup>			Yes <sup>5</sup>	
Montenegro	Yes	No			Yes	
Netherlands	Yes <sup>8</sup>	No <sup>8</sup>		<a href="http://www.opta.nl">www.opta.nl</a> <sup>8</sup>	Yes <sup>8</sup>	
Norway	Yes	No			Yes	The regulator has published a policy document regarding VoIP where different types of VoIP services are categorized. The document can be found here: <a href="http://www.nkom.no/marked/ekomtjenester/regelverk/prinsipnotat-om-bredb%C3%A5ndstelefonik/">http://www.nkom.no/marked/ekomtjenester/regelverk/prinsipnotat-om-bredb%C3%A5ndstelefonik/</a>
Poland	Yes	No			Yes	
Portugal	Yes	No			Yes	By the Electronic Communication Law, republished at 13 September 2011. Nevertheless by determination of 23 February 2006 about the regulatory approach to voice services using IP technology (VoIP) it was determined to open a new numbering range within the National Numbering Plan ('30') to accommodate 'nomadic VoIP services'. This decision is published at: <a href="http://www.anacom.pt/render.jsp?contentId=342385&amp;languageId=1#.Vd26uH2VP-U">http://www.anacom.pt/render.jsp?contentId=342385&amp;languageId=1#.Vd26uH2VP-U</a>
Romania	Yes <sup>1</sup>	Yes <sup>1</sup>				Termination services for managed or unmanaged VoIP calls, for which numbering is used, have been considered part of the relevant market for call termination on public fixed networks and are regulated accordingly. <sup>1</sup>

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
San Marino						
Serbia	Yes	Yes	RATEL	www.ratel.rs		
Slovakia	Yes	No			No	Retail market of access is not regulated anymore from October 2015.
Slovenia	Yes	Yes	price cap	http://www.akos-rs.si/analize-in-odlocbe-na-reguliranih-upostevnih-trgih	Yes	

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>



Spain	Yes	Yes	<p>RESOLUCIÓN de 30 de junio de 2005, de la Secretaría de Estado de Telecomunicaciones y para la Sociedad de la Información por la que se atribuyen recursos públicos de numeración al servicio telefónico fijo disponible al público y a los servicios vocales nómadas, y se adjudican determinados indicativos provinciales.</p>	<p><a href="http://www.boe.es/diario_boe/txt.php?id=BOE-A-2005-14233">http://www.boe.es/diario_boe/txt.php?id=BOE-A-2005-14233</a></p>	<p>En España básicamente existen dos modalidades de servicios de VoIP:</p> <ol style="list-style-type: none"> <li>1. La primera consiste en la prestación del servicio telefónico fijo disponible al público (STDP) mediante el empleo de tecnologías de VOIP, esta modalidad se sustenta en la neutralidad tecnológica que debe regir la regulación. En consecuencia, le es de aplicación todas las restricciones, obligaciones y requerimientos (numeración, portabilidad, encaminamiento a número de emergencias, contribución a los costes del servicio universal, calidad, etc.), que le son de aplicación a los operadores que prestan el servicio telefónico disponible al público a través de otro tipo de tecnologías como la red conmutada.</li> <li>2. La segunda corresponde al servicio vocal nómada, el mismo se define como aquellos servicios de comunicaciones electrónicas disponibles al público que ofrecen comunicaciones vocales bidireccionales en tiempo real desde puntos de acceso a los que los usuarios pueden conectarse de forma remota y permiten tanto el establecimiento como la recepción de llamadas, pudiendo incluir suplementariamente otro tipo de capacidades, como la de comunicación multimedia. Los servicios vocales nómadas tienen rangos de numeración propios y diferenciados de los del servicio telefónico fijo disponible al público, soporta requerimientos de encaminamiento al 112, y permite a los usuarios individuales realizar llamadas telefónicas a través de Internet, asimismo contribuyen al servicio universal puesto que en España contribuyen todos los prestadores de servicios de comunicaciones electrónicas siempre que superen un umbral de facturación.</li> </ol> <p>La repuestas del presente cuestionario se centra en el sevicio vocal nómada (servicio VoIP) nativo. En españa además de ese servicio y en amplicación del principio de neutralidad tecnológica existen operadores que prestan el servicio telefónico tradiciona utilizando la teconología de VoIP. en este caso le son de aplicación</p>
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las mismas obligaciones y requisitos que si lo prestara mediante medios conmutados.

Sweden	Yes <sup>1</sup>	No <sup>1</sup>			
Switzerland	Yes	Yes	Voice over IP	<a href="http://www.bakom.ch/themen/internet/01356/index.html?lang=fr">http://www.bakom.ch/themen/internet/01356/index.html?lang=fr</a>	
TFYR Macedonia		Yes	Market analysis and RIO on market 5 – termination of voice calls in fixed networks for residential and business consumers	<a href="http://www.aec.mk">www.aec.mk</a> and <a href="http://www.t-home.mk">www.t-home.mk</a>	
Turkey	Yes	No			Yes VoIP is subject to general ICT laws and regulations
United Kingdom	Yes <sup>1</sup>	Yes <sup>1</sup>	Regulation of VoIP Services: Access to the Emergency Services <sup>1</sup>	<a href="http://stakeholders.ofcom.org.uk/binaries/consultations/voip/statement/voipstatement.pdf">http://stakeholders.ofcom.org.uk/binaries/consultations/voip/statement/voipstatement.pdf</a>	VoIP is covered in a number of other areas of regulation, but the above is an example of regulation explicitly regarding VoIP. <sup>1</sup>
Vatican	Yes <sup>1</sup>	No <sup>1</sup>			Yes <sup>1</sup>

**ITU/BDT Classification: The Americas**

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Antigua & Barbuda	Yes <sup>2</sup>	Yes <sup>2</sup>	Telecommunications (Prevention and Prohibition of Unauthorized Use and Services) <sup>2</sup>	<a href="http://laws.gov.ag/Acts/2003a2003-1.pdf">http://laws.gov.ag/Acts/2003a2003-1.pdf</a> <sup>2</sup>		The 2003 telecommunications and Prohibition of Unauthorized Use and Services) (Amendment) Act states that VoIP if used to bypass licensed international gateway is illegal. With the introduction of competition in International telephone service in 2012, licensed operators can provide service using VOIP. <sup>2</sup>
Argentina	Yes <sup>5</sup>	No <sup>5</sup>			Yes <sup>5</sup>	
Bahamas	Yes <sup>1</sup>	No <sup>1</sup>			Yes <sup>1</sup>	
Barbados	Yes <sup>1</sup>	Yes <sup>1</sup>	Babados Voice over Internet Policy <sup>1</sup>	<a href="http://www.telecoms.gov.bb">http://www.telecoms.gov.bb</a> <sup>1</sup>		
Belize		Yes <sup>1</sup>	VOIP POLICY GUIDELINES 2006 <sup>1</sup>	<a href="http://www.puc.bz">www.puc.bz</a> <sup>1</sup>		
Bolivia						

Year: 2015 or latest available data.

<sup>1</sup>2014. <sup>2</sup>2013. <sup>3</sup>2012. <sup>4</sup>2011. <sup>5</sup>2010. <sup>6</sup>2009. <sup>7</sup>2008. <sup>8</sup>2007. <sup>9</sup>2005.



Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Brazil	Yes	No			Yes	VoIP is not regulated in Brazil. Anatel regulates telecommunications services, not technologies. In some cases, it is necessary to obtain multiple service licences in order to explore VoIP based services. In others, such as VoIP communication computer to computer, no licenses are necessary.
Canada	Yes	Yes	Regulatory framework for voice communication services using Internet Protocol, Telecom Decision CRTC 2005-28-1, 30 June 2005	<a href="http://www.crtc.gc.ca/eng/archive/2005/dt2005-28-1.htm">http://www.crtc.gc.ca/eng/archive/2005/dt2005-28-1.htm</a>		
Chile	Yes	Yes	Reglamento del servicio público de voz sobre Internet	<a href="http://www.subtel.gob.cl/transparencia/marcomorativo.html">http://www.subtel.gob.cl/transparencia/marcomorativo.html</a>		Esta reglamentación específica está en proyecto para eliminarse
Colombia	Yes <sup>1</sup>	No <sup>1</sup>			Yes <sup>1</sup>	Se sugiere consultar la Ley 1341 de 2009 y la Resolución CRC 3101 de 2011  Debe tenerse en cuenta el Principio de Neutralidad Tecnológica, a partir del cual las disposiciones legales y regulatorias se aplican con independencia de la tecnología empleada <sup>1</sup>
Costa Rica	Yes	Yes	Reglamentación relativa a la prestación de los servicios de Telecomunicaciones	<a href="http://sutel.go.cr/normativas">http://sutel.go.cr/normativas</a>		Ley General de Telecomunicaciones Reglamento de acceso e interconexión de redes de Telecomunicaciones Plan Nacional de Numeración Reglamento a la Ley General de Telecomunicaciones Reglamento del Régimen de Competencia en Telecomunicaciones

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Cuba		Yes <sup>3</sup>	Resolucion No.128 de 2008 <sup>3</sup>	www.mic.gov.cu <sup>3</sup>		No existen limitaciones para que el Operador Concesionario (ETECSA) brinde servicios de telefonía IP nacionales según el Decreto 275-03 que aprueba la concesión. <sup>3</sup>
Dominica	Yes <sup>1</sup>	No <sup>1</sup>				
Dominican Rep.	Yes	No			Yes	INDOTEL, de conformidad con lo establecido en la Ley General de las Telecomunicaciones No. 153-98 sólo regula servicios independiente de la tecnología aplicada. El servicio de VoIP está regulado de acuerdo a las reglamentaciones existentes en cuanto al servicio de voz.
Ecuador	Yes <sup>6</sup>	Yes <sup>6</sup>	Resolución del CONATEL/ Acceso a Voz sobre Internet (VoIP) <sup>6</sup>	<a href="http://www.conatel.gov.ec/site_conatel/index.php?option=com_content&amp;view=article&amp;id=251:resoluciones-julio-septiembre-2006&amp;catid=132:resoluciones-2006&amp;Itemid=201">http://www.conatel.gov.ec/site_conatel/index.php?option=com_content&amp;view=article&amp;id=251:resoluciones-julio-septiembre-2006&amp;catid=132:resoluciones-2006&amp;Itemid=201</a> <sup>6</sup>		
El Salvador	Yes	No				
Grenada	Yes <sup>4</sup>	No <sup>4</sup>			No <sup>4</sup>	Regulations are currently under revision to deal with new challenges with respect to ICT regulations for example VOIP etc. <sup>4</sup>
Guatemala	Yes <sup>2</sup>	No <sup>2</sup>			Yes <sup>2</sup>	
Guyana	Yes <sup>8</sup>	No <sup>8</sup>			Yes <sup>8</sup>	
Haiti	Yes <sup>4</sup>	No <sup>4</sup>			Yes <sup>4</sup>	

Country	Individual users allowed to use VoIP	Specific VoIP policies or regulations in place	Title of VoIP policy/regulation	Website	VoIP subject to general ICT laws/regulations	Remarks
Honduras		No <sup>1</sup>				No se tiene regulado. <sup>1</sup>
Jamaica	Yes	No			Yes	
Mexico	Yes	No			No	
Nicaragua	Yes	No			Yes	No existe legislación específica para Operadores de VoIP en Nicaragua, ya que por su naturaleza corresponde según la categorización de la Ley a un servicio no regulado.
Panama		Yes <sup>1</sup>				
Paraguay	Yes <sup>2</sup>	Yes <sup>2</sup>	Ley 642/95 – Art. 21 <sup>2</sup>	<a href="http://www.conatel.gov.py">www.conatel.gov.py</a> <sup>2</sup>		
Peru	Yes	No			Yes	No hay normativa específica para la transmisión de voz por Internet (VoIP). En caso de emplear dicha tecnología para el servicio de Telefonía (Telefonía IP), se le aplica la normativa de la Telefonía Fija.
St. Kitts and Nevis						
St. Lucia	Yes <sup>1</sup>	No <sup>1</sup>				
St. Vincent and the Grenadines	Yes	No				
Suriname	Yes	No				
Trinidad & Tobago	Yes	No			Yes	
United States	Yes	Yes	Part 9 of the Commission' s rules, Interconnected Voice over Internet Protocol Services, and other Commission regulations.	<a href="http://www.fcc.gov/guides/voice-over-internet-protocol-voip">http://www.fcc.gov/guides/voice-over-internet-protocol-voip</a>		
Uruguay		No				
Venezuela		No			No	No existe reglamentos actuales que regulen el servicio VoIP

# Summary

Number of countries/economies

Indicator		Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas	Total
Individual users allowed to use VoIP	Yes	20	8	25	8	40	27	<b>128</b>
	No	2	4	1	0	0	0	<b>7</b>
Specific VoIP policies or regulations in place	Yes	12	11	15	1	17	11	<b>67</b>
	No	24	8	19	4	23	22	<b>100</b>
Title of VoIP policy/regulation		8	8	12	2	14	10	<b>54</b>
Website		5	7	10	2	14	10	<b>48</b>
VoIP subject to general ICT laws/ regulations	Yes	6	3	11	3	23	12	<b>58</b>
	No	11	5	3	0	2	3	<b>24</b>
Remarks		12	6	9	1	15	12	<b>55</b>
<b>Region size</b>		<b>44</b>	<b>21</b>	<b>40</b>	<b>12</b>	<b>43</b>	<b>35</b>	<b>195</b>

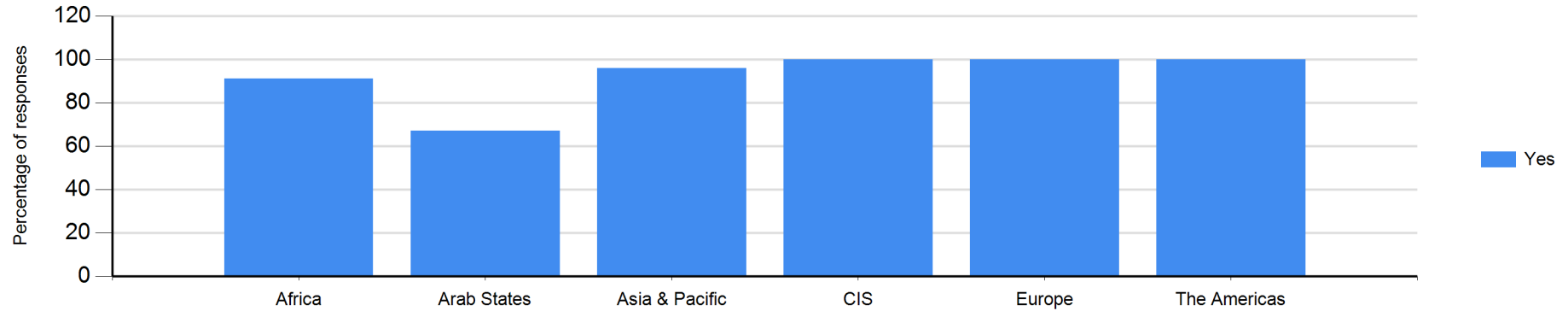
\* This indicator allows multiple choice per country/economy

Year: 2015 or latest available data.

Source: ITU World Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

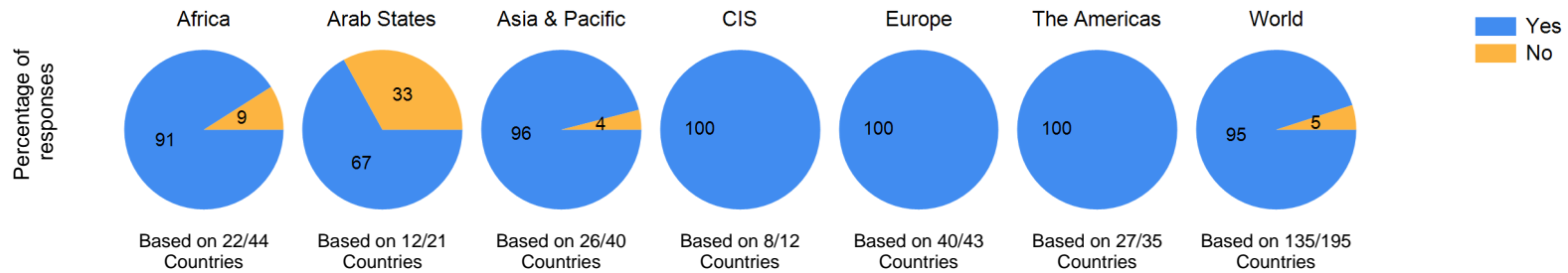
Individual users allowed to use VoIP, 2015



Source: ITU Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

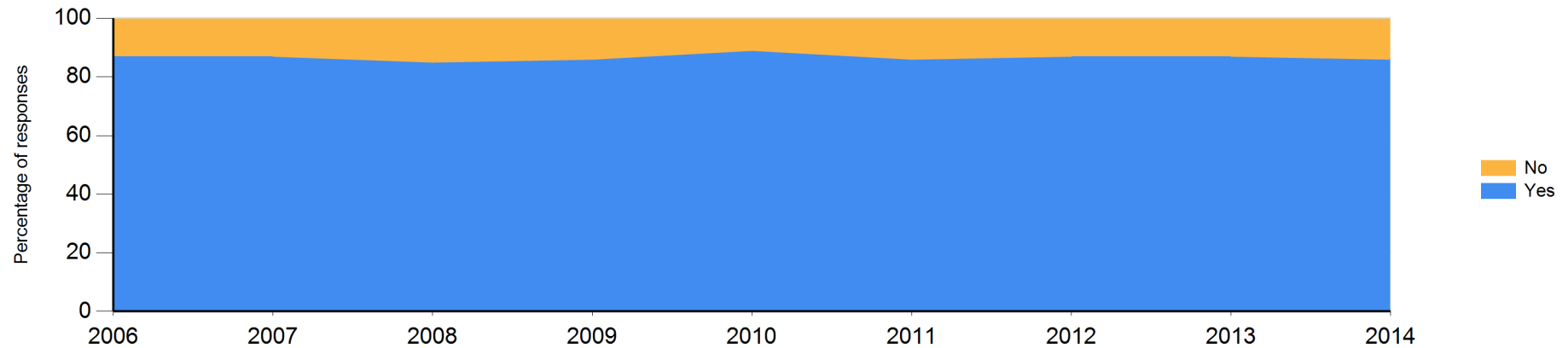
Individual users allowed to use VoIP, 2015



Source: ITU Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Individual users allowed to use VoIP, World

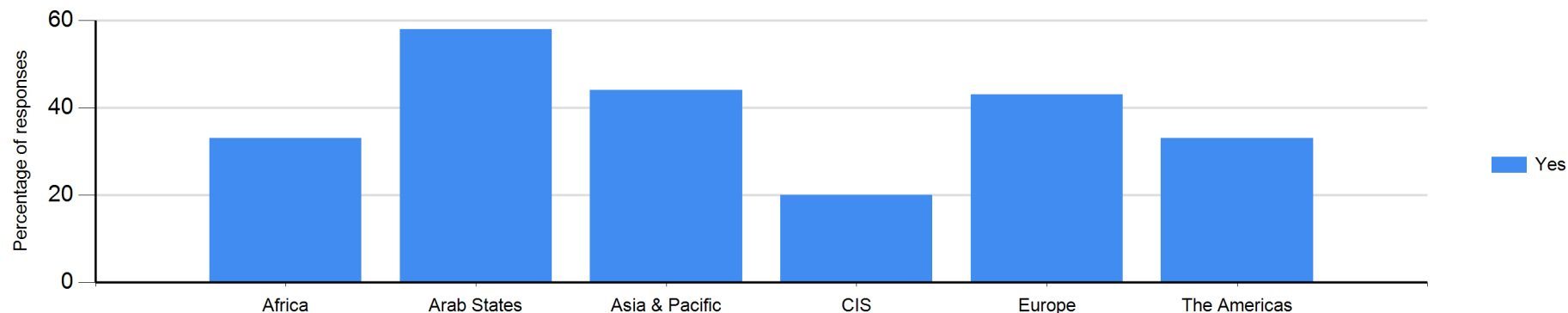


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ITU ICT-Eye: <http://www.itu.int/icteye>



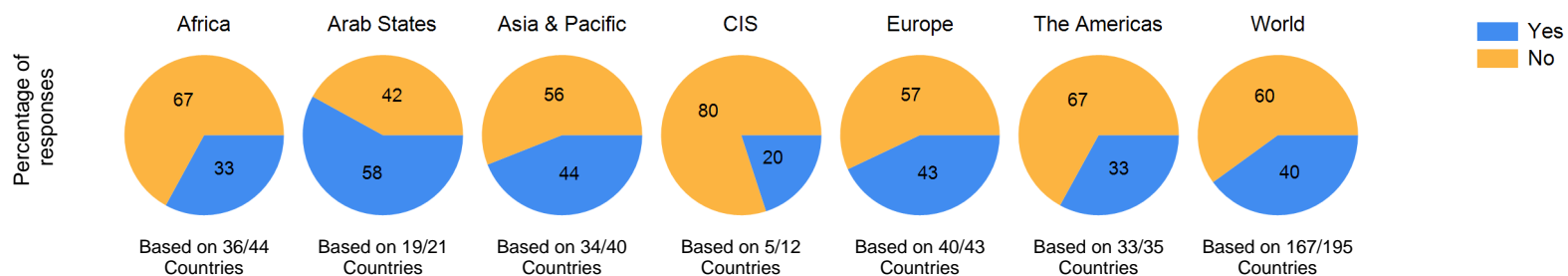
Specific VoIP policies or regulations in place, 2015



Source: ITU Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

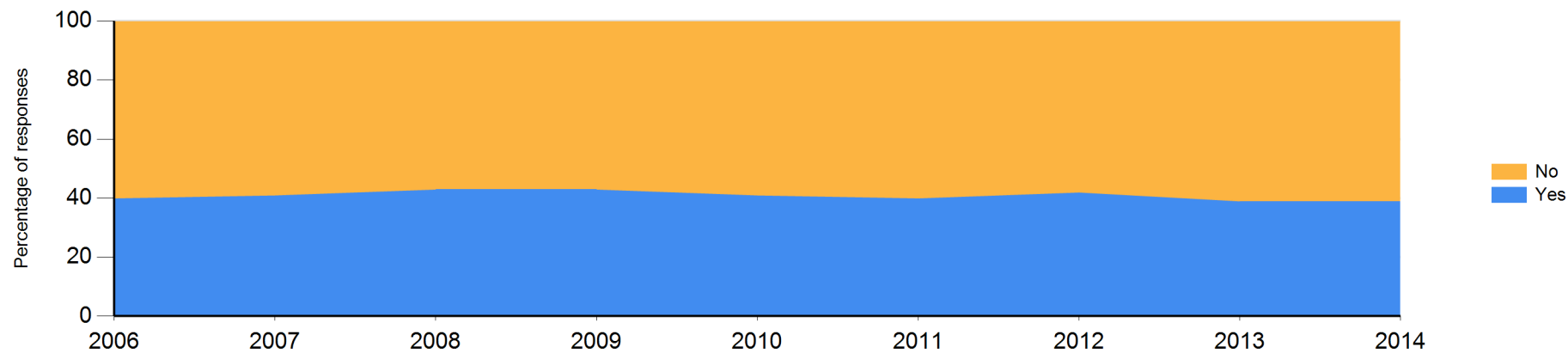
Specific VoIP policies or regulations in place, 2015



Source: ITU Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

Specific VoIP policies or regulations in place, World



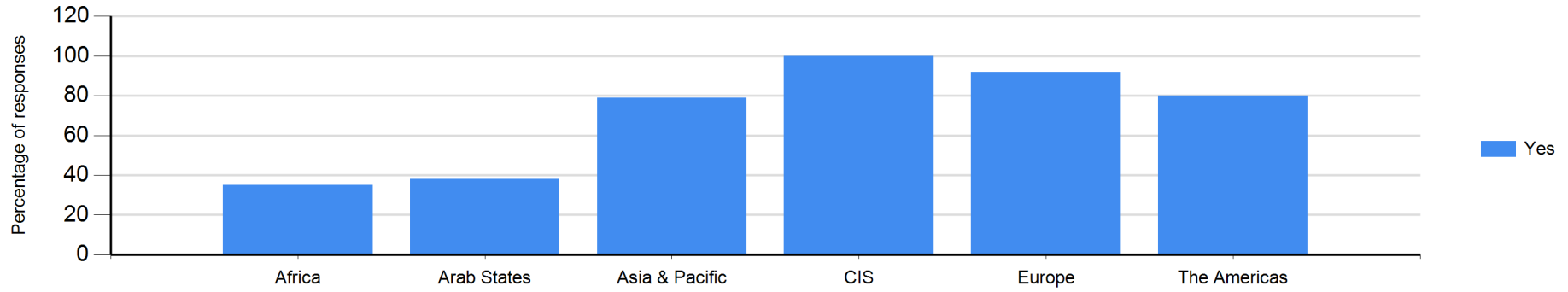
Source: ITU Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>





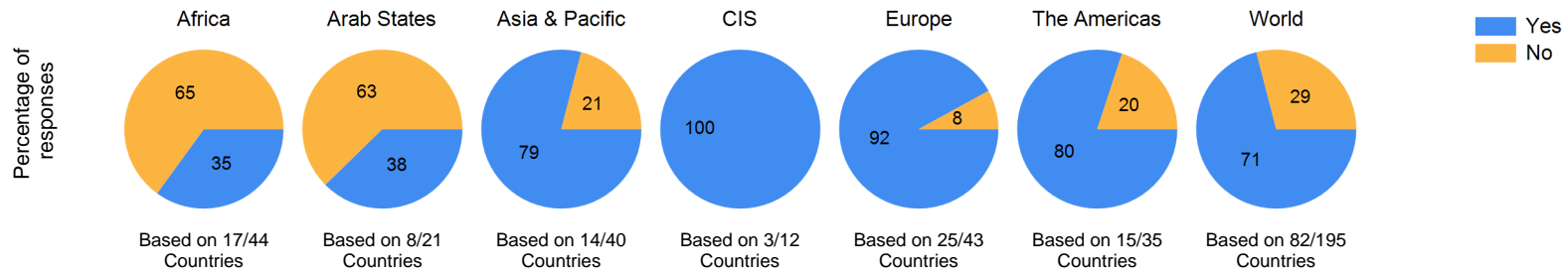
VoIP subject to general ICT laws/ regulations, 2015



Source: ITU Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>

VoIP subject to general ICT laws/ regulations, 2015



Source: ITU Telecommunication/ICT Regulatory Database

ITU ICT-Eye: <http://www.itu.int/icteye>