

**Government of India**  
**Ministry of Communications & IT**  
**Department of Telecommunications**  
**Sanchar Bhawan, 20, Ashoka Road. New Delhi - 110 001**  
**(DS- Cell)**

No. 813-7/2005-LR(Vol.II)

Dated 22<sup>nd</sup> April, 2009

To,

Secretary  
Telecom Regulatory Authority of India  
Mahanagar Doorsanchar Sadan  
Jawahar Lal Nehru Marg, Old Minto Road  
New Delhi.

**Subject : TRAI's Recommendations on "Issues relating To Transition From IPv4 to IPv6 In India"**

This has reference to the recommendations of TRAI on "Issues relating To Transition From IPv4 to IPv6 In India" forwarded vide No: 6-1/2003-CN dated 9th January 2006.

2. The said recommendations have been examined in this Department and I am directed to state that in the opinion of DoT recommendations at Para 4.3(i)& (ii) need reconsideration. It has been viewed that it would be most appropriate to establish National Internet Registry under the purview of DoT due to the various reasons mentioned in Annexure .
3. Accordingly, under 5<sup>th</sup> proviso of section 11(1) of the Telecom Regulatory Authority of India Act, 1997, TRAI is requested to reconsider the recommendations under Para 4.3(i)& (ii) of TRAI's recommendations mentioned above.
4. The Recommendations after reconsideration may be forwarded to this department in terms of 5<sup>th</sup> proviso of section 11 (1) of TRAI Act, 1997 (reproduced below):

"Provided also that if the Central Government, having considered that recommendation of the Authority, comes to a prima facie conclusion that such recommendation can not be accepted or needs modifications, it shall refer the recommendation back to the Authority for its reconsideration, and the Authority may, within fifteen days from the date of receipt of such reference, forward to the Central Government its recommendation after considering the reference made by the Government. After receipt of further recommendation, if any, the Central Government shall take a final decision".

सलाहकार (सीएन)  
डायरी सं. 666  
दिनांक 27/4/09

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22-04-09

Enclosure: as above

Reasoning for having Nation Internet registry (NIR) under the purview of DoT :

Asia Pacific Network Information Centre,(APNIC) Australia ( [www.apnic.net](http://www.apnic.net) ), a regional body responsible for IPv6 resources allocation in Asia Pacific Region has issued various documents pertaining to National Internet Registry(NIR) for IPv6.

- i. According to Para 4.1 of “IPv6 Address Allocation and Assignment Policy” of APNIC, (<http://www.apnic.net/policy/ipv6-address-policy.html>) allocation of IPv6 address space is a licensing activity. These provisions are reproduced below :-

***“ 4. IPv6 Policy Principles***

*To address the goals described in the previous section, the policies in this document discuss and follow the basic principles described below.*

***4.1. Address space not to be considered property***

*It is contrary to the goals of this document and is not in the interests of the Internet community as a whole for address space to be considered freehold property.*

*The policies in this document are based upon the understanding that globally-unique IPv6 unicast address space is licensed for use rather than owned. Specifically, IP addresses will be allocated and assigned on a license basis, with licenses subject to renewal on a periodic basis. The granting of a license is subject to specific conditions applied at the start or renewal of the license.”*

**As per Government of India (Allocation of Business) Rules 1961** following activities have been allocated to Department of Telecom:

*“Policy, Licensing and Coordination matters relating to telegraphs, telephones, wireless, data, facsimile and telematic services and other like forms of communications”*

Allocation of IPv6 address space being a Licensing activity, Nation Internet Registry(NIR) for allocation of IPv6 falls naturally under the purview of Department of Telecom as per the Allocation of Business Rules (1961) .

- ii. As per Para 3.2.4 of **“Criteria for the recognition of NIRs in the APNIC Region”** (<http://www.apnic.net/policy/nir-criteria.html>) National Internet Registry(NIR) for IPv6 should have capacity for appropriate verification and audit mechanisms. These provisions are reproduced below :

#### **“3.2.4 Capacity**

An NIR must have the organisational and technical capacity to thoroughly implement all aspects of APNIC address management policies at all times. While operational procedures governing an NIR’s interaction with APNIC are designed to provide appropriate verification and audit mechanisms, the NIR must nevertheless maintain the capacity to undertake those procedures correctly, and to implement policies faithfully.”

For enforcement of Licensing Condition, DoT takes appropriate action through Telecom Enforcement & Resource Monitoring (TERM) Cells . In view of aforesaid requirements of APNIC for appropriate verification and audit mechanisms for IPV6 allocation, NIR for IPv6 should be under the purview of DoT .

- iii. As per Para 3.2.2 of **“Criteria for the recognition of NIRs in the APNIC Region”** (<http://www.apnic.net/policy/nir-criteria.html>) NIRs should not have any special corporate or contractual relationship with any ISP within their service region. These provisions are reproduced below :-

#### **“3.2.2 Neutrality**

An NIR must be able to demonstrate that it holds a neutral position with respect to the Internet industry that it serves. NIRs should not provide ISP services to external entities on a commercial basis. Furthermore, apart from securing appropriate Internet connectivity, NIRs should not have any special corporate or contractual relationship with any ISP within their service region.”

NIXI, having commercial contracts with ISPs, for providing Exchange of Internet Traffic, does not satisfy the aforesaid criterion of APNIC to be an NIR. As Department of Telecom has a neutral position with respect to telecom service providers including Internet service providers, allocation of IPV6 address blocks through National Internet Registry(NIR) should fall under the purview of DoT.

- iv. With the spread of Next Generation Networks (NGN), networks by telecom service providers and their customers shall be the main users of IPv6

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addressing scheme. As per **Indian Telegraph Act 1885** and **Government of India (Allocation of Business) Rules 1961** Department of Telecom is the licensing authority for telecom services. Administration of National numbering plan (E.164) and allocation of numbering is also done by DoT. Allocation and management of IPv6 numbering resource being a similar activity to allocation of (E.164) numbering falls under the purview of DoT and not under NIXI.

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**A. K. SAWHNEY**

MEMBER  
TELECOM REGULATORY AUTHORITY OF INDIA

F.No.9-5/2008-CN  
6<sup>th</sup> May, 2009.

Kindly refer to letter No.813-7/2005-LR(Vol.II) dated 22<sup>nd</sup> April, 2009 referring Para 4.4 (i) & (ii) of TRAI recommendations on "Issues relating to Transition from IPv4 to IPv6 in India" for reconsideration of the Authority. TRAI has reconsidered the issues under reference. The views/comments of the Authority are placed at enclosed annexure.

2. The fast growth of Internet and likely migration towards NGN will require IPv6 addresses. In this background, creation of National Internet Registry (NIR) is urgently required. It is hoped that Department of Telecom would take early decision on the recommendations which will benefit Internet/Broadband sector in the country.

3. Copy of this letter is being placed at TRAI website [www.traf.gov.in](http://www.traf.gov.in) also

Yours sincerely,

  
(A.K. Sawhney)

Shri Siddhartha Behura,  
Secretary,  
Department of Telecom,  
Sanchar Bhawan,  
New Delhi-110 001.

Copy to :

✓ Mr. Jainder Singh,  
Secretary, Department of IT,  
Electronics Niketan,  
CGO Complex,  
Lodhi Road, New Delhi-110 003.

## **Annexure.**

### **TRAI's Reply to DoT letter No.813-7/2005-LR (Vol.II) dated 22<sup>nd</sup> April, 2009 on its recommendations on "Issues relating to Transition from IPv4 to IPv6 in India" dated 9<sup>th</sup> January, 2006.**

#### **1. DoT's Reference:**

1.1. Department of Telecom (DoT) is of the view that it will be most appropriate to establish National Internet Registry (NIR) under its purview due to various reasons mentioned in the annexure to their above referred letter and accordingly requesting the Authority for reconsideration of recommendations at para 4.4. (i) & (ii).

#### **2. Para 4.4. (i) (ii) of TRAI's Recommendations.**

- (i) Government (DIT) should initiate the necessary process for establishment of National Internet Registry (NIR) in the country in accordance with policy framework for NIRs by APNIC, the Regional Internet Registry (RIR) for Asia Pacific Region.
- (ii) To start with NIXI, National Internet Exchange of India can be considered to be entrusted with this activity as it is already dealing with .IN domain name and is also a Not-for-profit, Autonomous body with industry participation.

#### **3. Issues raised by DoT.**

3.1. As per DoT Para 4.1 of "IPv6 Address Allocation and Assignment Policy" of APNIC, allocation of IPv6 address space is a licensing activity. The provisions are reproduced below:

*"4. IPv6 Policy Principles.*

*To address the goals described in the previous section, the policies in this document discuss and follow the basic principles described below.*

*4.1. Address space not be considered property.*

*It is contrary to the goals of this document and is not in the interests of the Internet community as a whole for address space to be considered freehold property.*

*The policies in this document are based upon the understanding that globally unique IPv6 unicast address space is licensed for use rather than owned. Specifically, IP addresses will be allocated and assigned on a license basis, with licenses subject to renewal on a periodic basis. The granting of a license is subject to specific conditions applied at the start or renewal of the license.”*

3.2. As per Government of India (Allocation of Business) Rules 1961 following activities have been allocated to Department of Telecom:

*“Policy, Licensing and Coordination matters relating to telegraphs, telephones, wireless, data, facsimile and telematic services and other like forms of communications”*

Allocation of IPv6 address space being a Licensing Activity, National Internet Registry (NIR) for allocation of IPv6 falls naturally under the purview of Department of Telecom as per the Allocation of Business Rules (1961).

3.3. As per DoT, Para 3.2.4 of “Criteria for the recognition of NIRs in the APNIC Region” National Internet Registry (NIR) for IPv6 should have

capacity for appropriate verification and audit mechanism. These provisions are reproduced below:

*“3.2.4. Capacity.*

*An NIR must have the organizational and technical capacity to thoroughly implement all aspects of APNIC address management policies at all times. While operational procedures governing an NIR's interaction with APNIC are designed to provide appropriate verification and audit mechanisms, the NIR must nevertheless maintain the capacity to undertake those procedures correctly, and to implement policies faithfully”*

For enforcement of Licensing Condition, DoT takes appropriate action through Telecom Enforcement & Resource Monitoring (TERM) cells. In view of aforesaid requirements of APNIC for appropriate verification and audit mechanism for IPv6 allocation, NIR for IPv6 should be under the purview of DoT.

3.4. As per DoT, Para 3.2.2 of “Criteria for the recognition of NIRs in the APNIC Region” NIRs should not have any special corporate or contractual relationship with any ISP within their service region. These provisions are reproduced below:

*“3.2.2. Neutrality.*

*An NIR must be able to demonstrate that it holds a neutral position with respect to the Internet industry that it serves. NIRs should not provide ISP services to external entities on a commercial basis. Furthermore, apart from security appropriate Internet connectivity,*

*NIRs should not have any special corporate or contractual relationship with any ISP within their service region”.*

NIXI having commercial contracts with ISPs, for providing Exchange of Internet Traffic, does not satisfy the aforesaid criterion of APNIC to be an NIR. As Department of Telecom has a neutral position with respect to telecom service providers including Internet service providers, allocation of IPv6 address blocks through National Internet Registry should fall under the purview of DoT.

3.5. As per DoT, the spread of Next Generation Networks (NGN), networks by telecom service provides and their customers shall be the main users of IPv6 addressing scheme. As per Indian Telegrph Act, 1885 and Government of India (Allocation of Business) Rules, 1961, Department of Telecom is the licensing authority for telecom services. Administration of National Numbering Plan (E.164) and allocation of numbering is also done by DoT. Allocation and management of IPv6 numbering resource being a similar activity to allocation of (E.164) numbering falls under the purview of DoT and not under NIXI.

#### **4. TRAI's Views.**

4.1 A consultation paper on “Issues related to Transition from IPv4 to IPv6” was issued by TRAI in August, 2005. After consideration of the submissions by stakeholders, consumer organizations & others and analyzing International best practices, the Authority sent its recommendations to Government ( Both Department of Information Technology (DIT) and Department of Telecommunications (DoT)) on 9<sup>th</sup> January, 2006.

4.2. Section four of the recommendations deals with creation of National Internet Registry (NIR). It was emphasized that NIR will be in better position to provide services to local ISPs requiring Internet resources and implement operational procedures suitable to local requirement.

4.3. Asia Pacific Network Information Centre (APNIC) criteria for recognition of NIR in its document dated 1<sup>st</sup> December 2002 in clause 3.2 clearly indicate that NIR must be independent legal entity established on a non profit structure and must be able to demonstrate neutral position with respect to Internet Industry. Since Department of Information Technology, Government of India, had taken initiatives in setting up Inter-agency IPv6 Implementation Group (IPIG) and was also working on a pilot project for IPv6 test bed through ERNET and Academicians in 2005, the recommendation in para 4.4 (i) indicated Government (DIT) to take necessary steps to setup NIR. National Internet Exchange of India (NIXI) was created in 2003 under section 25 of the companies Act 1956, as a company limited by guarantee, not for profit and facilitating pilot project on IPV6, hence recommendations 4.4 (ii) indicated NIXI for NIR to start with.

4.4. APNIC had now updated the IPV6 address Allocation and Assignment Policy in 2008. As mentioned by DoT at para No.3.1, this document under section 4 (IPv6 Policy principals) talks about licensing the address space. The revised policy document of APNIC issued in 2008, addressed many issues with much clarity which was not available at the time when TRAI's recommendations were made. As per these guidelines, an emphasis has been given on the neutrality aspect of NIR body.

4.5. It is important here to mention that TRAI's emphasis at that time was on the creation of NIR in the country at the earliest and even now

the emphasis is for immediate setting up of a body for NIR. The modalities as to who should create and administer NIR is basically left to the Government i.e. Ministry of Communications & Information Technology (IT).

4.6. It is noted with concern that after lapse of approximately three years NIR has not been created. Early action to create NIR is the need of the hour.

**4.7. TRAI carefully considered the issues raised by Department of Telecom in the letter dated 22.4.2009. TRAI has no objection to DoT's proposal. TRAI's main emphasis is on early creation of NIR.**

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