ITU and Internet Governance

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1. Background

1.1 Internet Governance is one of the two hot issues that emerged during the first phase of WSIS, requiring further work during the second phase. While Financial Mechanisms is being handled by a Task Force (TFFM), Internet Governance is being addressed through a Working Group on Internet Governance (WGIG) established by Mr. Koffi Annan, UN Secretary-General. In line with the decision of Tunis PrepCom-1, it is expected that the WGIG will present a preliminary report to PrepCom-2 (17-24 February 2005) and a final report to PrepCom-3 (August/September 2005), for consideration of appropriate action during the second phase of WSIS which will be held in Tunis, 16-18 November 2005.

1.2 ITU has some formal statements such as Resolutions 101, 102, 133 etc., concerning Internet-related issues, covering both technical and policy-related aspects. ITU Council approved its own Resolutions and Decisions on WSIS, and an ITU Council Working Group on WSIS (WG-WSIS) established in 2002 made a tremendous contribution to the success of Phase 1 of WSIS. It will continue its work for Phase 2. The ITU elected officials are requested to make their own contributions, through WG-WSIS, to the WSIS process.

In reply to the request by the ITU Council-2004, I promised during my informal consultation with ITU Members during the last TSAG meeting held on 15 July 2004 that I would prepare an input to assist the discussion on this issue. This document fulfills that promise.

A first draft of this paper was prepared on 26 September 2004 and informally sent to those who were aware of my intention and who asked for a copy. I note that that draft was circulated more widely than I had imagined. Based on comments received, a new version was prepared and posted on the ITU-T web site on 23 October 2004, with an invitation for comments to be sent by 15 November 2004. The present version is based on comments received. As the earlier version has received wide attention, I did not want to make big changes to this document, but comments received have been reflected.

I take this opportunity to express my sincere thanks for all comments received.

1.3 Let me start by discussing the question of scope. In accordance with ITU's Constitution, the ITU is concerned with the transmission, emission, and reception of

information[1], not with the content of the information. Questions related to content are outside the scope of ITU.

Furthermore, let me note that, in recent years, ITU has been directly involved in important issues related to Internet, such as VoIP, ENUM, MPLS, cable modems, ADSL, etc. These issues have resulted in stronger collaboration with other Internet standardization bodies and have confirmed that ITU has an important role to play with respect to the key issues related to the continuing evolution of the global telecommunication system.

2. Internet governance issues

2.1 Debates

During the debates on Internet governance, many issues and questions were raised that touched upon sovereignty, security, stability, privacy, international coordination, intellectual property rights (IPR), who does what, etc. In my opinion, the debates reflected the reality that Internet governance is not limited to technical issues, nor to policy issues only. It has increasingly included important social, economic, and national security issues. In addition, people were troubled by the fact that there is no consensus on areas of responsibility (who should do what).

2.2 Internet, a large-scale public critical infrastructure and commercial service

IP-based networks and IP-based services (commonly referred to as "the Internet") have become today a large-scale publicly available and commercial infrastructure that is critical to the national security and economic well-being of many countries[2]. Although in a few places it is still debated whether Internet and IP-based services should be considered new telecommunication services or not, I believe, except in a few cases, that it is widely agreed that these large-scale Internet offerings to the public can no longer be considered as an academic trial, or an educational network, or a closed private network/service. Indeed, they are rapidly becoming integrated with other existing public telecommunication infrastructure to constitute the Next Generation Network (NGN). Given the Internet's importance for the global economy, its stability, the availability and quality of the services and applications that it enables, and its security have become subjects of interest for public authorities, at the national and international levels.

In addition, the financial aspects of Internet are becoming more important. Indeed, Internet has become a significant source of revenue, and also a significant system for transferring funds (for example, by individual consumer transactions). ITU has undertaken studies on certain aspects of the financial flows related to Internet traffic, and work is ongoing on economic models. However, more work, and broader work, is probably needed.

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[1] Article 1, paragraph 1(a) of the ITU Constitution states that the purposes of the ITU are "to maintain and extend international cooperation among all its Member States for the improvement and rational use of telecommunications of all kinds". And telecommunication is defined at 1012 in the Annex to the Constitution as "Any transmission, emission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems". See http://www.itu.int/aboutitu/Basic_Text_ITU-e.pdf

[2] The WSIS Declaration of Principles states: "The Internet has evolved into a global facility available to the public and its governance should constitute a core issue of the Information Society agenda" (par. 48)

2.2.1 At the national level, Internet governance varies from one country to another, notably with respect to the roles of government, civil society, and the private sector. In those countries where the management of Internet at the national level is still in the hands of the private sector, the private sector, in most countries, normally has established relations with governments. I have noted that governments all over the world support the development and deployment of the Internet in their country; indeed, I find it difficult to believe that Internet would be available in a country if that country's government opposed it.

As far as government engagement is concerned, the situation today is rather diverse: the government functions are carried out, or influenced by, Telecommunications Ministry, Telecommunications Regulator, Science and Technology Ministry, Education Ministry, Information Ministry, Justice, Security, or Commercial Ministry, etc. The word "Ministry" here implies the authority of government, which could be indeed a Ministry in some countries, or a "Department" of a government in other countries.

The trend is that as Internet and IP-based services become widely deployed and accepted as a publicly available infrastructure and commercial service of national importance, national oversight responsibility will be eventually handed over to the national authority, although the national authority might delegate some of its powers to the private sector, for example through industry self-regulatory mechanisms (although the reserve regulatory power for critical public infrastructures would, normally, be retained by the government).

Some believe that there is a tendency such that Ministries responsible for scientific and academic matters will eventually hand over their responsibility for the national management of public Internet and IP-based services matters to an authority established to deal with the public policy issues that arise with respect to telecommunications infrastructure, namely the Telecommunications, Information Technology, or Commercial Ministries/Departments of government, noting that some countries have renamed their telecommunication authorities to "information" authorities or "communication and information" authorities, or similar designations.

2.2.2 At the international level, there is no single international (intergovernmental or private) organization that coordinates all the issues related to the Internet and IP-based services. Currently, a wide range of organizations are involved. Some of those organizations are private sector, some are intergovernmental, some are multilateral arrangements such as the Cybercrime Convention. Each has unique strengths and contributes in its own way to the success of the global Internet. However, it appears to me that a more coordinated approach at the international level would be beneficial for everybody.

2.2.3 There is unanimous agreement in WSIS, as per the two output documents "Declaration of Principles" and "Plan of Action", that Internet Governance should be "multilateral, transparent and democratic, with the full involvement of governments, the private sector, civil society and international organizations". It is therefore clear, as agreed by all, that governments should play an appropriate role in Internet governance, at the international and national levels.

I believe that, although some governments have tried to strengthen their engagement in Internet governance, many believe that the operational issues, and in particular those issues with commercial implications, should be better left to the private sector. I support this.

The questions that now arise are:

a) how can governments play their role nationally? And

b) what (if any) intergovernmental activities are necessary at the international level?

I would like to concentrate on question b) above.

3. ITU's role in coordinating public telecommunications infrastructure and services and its work on Internet and IP-based services

3.1 About ITU

ITU is a well respected intergovernmental organization, a specialized agency within the UN family. Government representatives at ITU may come from Foreign Affairs Ministries, Telecommunication Ministries, Telecommunications Regulators, or other government entities, depending on the particular Member State. ITU does not choose the country representatives. It is the Member State which decides to nominate an appropriate government entity to represent them in ITU. Participation in a national delegation may be open to anyone recognized by the national government, whether government employee or not, at the government's discretion. Similarly, membership in Sector Member delegations is determined by the Sector Member itself.

ITU is the only intergovernmental organization within the UN system that has had a special partnership between governments and industry members ever since it was created in 1865 to coordinate public telecommunication infrastructure and services. Today, ITU still enjoys and profits from this public-private partnership: it has 189 Member States and around 700 industry Sector Members, which covers almost all major industry players in the ICT field. In ITU, there are three Sectors: ITU Telecommunication Standardization Sector (ITU-T), ITU Radiocommunication Sector (ITU-R), and ITU Development Sector (ITU-D). Industry members (the private sector) have played a key role in all Sectors of the ITU, particularly in ITU-T.

ITU has always worked with the consent of Member States. It has never recommended anything which is against the legal or regulatory provisions of its Member States. In case of disputes between Member States, ITU encourages them to engage in discussions to find a solution. ITU does not intervene in any commercial disputes nor in any bilateral disputes.

As a member-oriented organization, ITU work is always driven by contributions (input documents) from its members (both Member States and Sector Members), that is, it works in a bottom-up manner. The strength of ITU is its Member-driven approach, with a well-established open (for its members) and transparent working environment, which is an open secret shared with many successful organizations.

Except for small and medium-sized Internet Service Providers (ISPs) and ccTLD operators, most industry players who are active in Internet-related activities are ITU

Sector Members. Greater participation in ITU by civil society and the academic world would be welcome and, in my opinion, ITU should take some steps to encourage this.

3.2 ITU's technical contributions

It is widely recognized that ITU's standardization work has assured the success of worldwide public telecommunication services and advanced new telecommunication technologies. Some think that the ITU has no role in Internet standardization. But this is not correct. It is true that the core transport and routing protocols for IP-based networks have been developed by the Internet Engineering Task Force (IETF). But ITU standards and other ITU activities have contributed, and continue to contribute, to the development and deployment of Internet in many ways. Indeed, convergent technologies such as VoIP and ENUM have induced a high level of cooperation amongst the various standardization bodies and have raised issues directly related to sovereignty, stability, and quality of service of telecommunication networks. In my opinion, it is not far-fetched to say that many now recognize that ITU's activities are among the key major contributors to Internet's wide-spread adoption.

As a matter of fact, ITU has been engaged with the technical development of packet-switched and connectionless technologies (which form the basis of the Internet) since very early, including during their inception period. In the early 1970s, as pioneers like Larry Roberts and Jim White sought to commercialize and globalize packet switched data networks and services, they created and led CCITT (now called ITU-T) Study Group activities.

ITU-T's standardization work touches almost all aspects of the world-wide infrastructure that provides IP-based services and forms the basis for the Internet: from multimedia terminals, access, transmission, inter-working, quality of service (QoS), security, tariff models, IP telephony; to technology-related policy studies, as well as end-user needs. But ITU is not concerned with issues related to content.

Five particularly successful areas of integration of various Internet developments occurred in the 1990s. One was in the security area which included extensive use of ITU-T X.509 (1988) digital certificates for authentication. Another was in the area of network management where ITU's network management protocol, ITU-T's X.500 directory, and X.600-series ASN.1 syntax expressions were adapted as the Simple Network Management Protocol (SNMP) that is used to manage the Internet's operation. The CCITT (now ITU-T) OSI X.500 "domain name system" is still used extensively within today's IP-based networks in the form of object identifiers for object code modules for SNMP. For that purpose, IANA manages a portion of the OSI DNS domain name space[3]. A third was the joint IEC/ISO SGML standard which was adapted by researchers at the nearby CERN research facility in a lightweight form known as HTML—which as served as the underlying language of the World Wide Web (WWW), and the entire XML information exchange industry. A fourth was the multimedia session initiation and

[3] itu-iso (root)
iso(1)
identified-organization(3)
dod(6)
internet(1)

management standard ITU-T H.323 which serves as the basis today for managing many of the Internet's multimedia applications. A fifth comprises the standards used by end-users to access their Internet Service Providers (ISPs), whether through conventional modems, cable modems, digital subscriber lines (DSL), or fiber to the home (FTTH). All of these initiatives were highly successful in the marketplace and became the basis for a significant part of the network security, network management, WWW, and multimedia products for the Internet, telecommunications, and computer information exchange industries.

In particular, ITU-T has not only followed all stages of Internet technical developments by contributing its own standards for facilitating the development of Internet, but also spares no efforts to seek an efficient and effective international cooperation with all partners concerned, particularly those involved in Internet developments such as ISOC/IETF, IEEE, W3C, as well as ISO, IEC, ETSI, and many SDOs/forums.

Through its standardization work, ITU has assured the past success of global telecommunication services, and ITU continues to contribute to the successful development and deployment of the Internet and other new services today. Furthermore, ITU is now leading the study on Next Generation Networks (NGN) for tomorrow.

3.3 ITU's policy contributions

For the past 20 years, ITU has supported the liberalization of telecommunications markets. In the late 1980s, new technical developments (including the emergence of packet-switched connectionless networks that form the basis of Internet) were central to the policy dialogue which resulted in the revision of the International Telecommunication Regulations (ITR), an intergovernmental treaty developed and adopted at the 1988 World Administrative Telegraph and Telephone Conference (WATTC-88). Four key provisions turn out, in retrospect, to have significantly facilitated the development of the Internet. Article 9 of the ITR allowed, for the first time, the use of private international leased lines for the purposes of constructing data network capabilities available to the public. This article—which legitimized the existence of shared international data networks—subsequently became a mechanism for forcing the availability of reasonably priced international private leased lines for constructing the global Internet market. Article 4 allowed data and related services to flourish by adopting a broad definition of what constitutes public telecommunication services but a very narrow definition of the possible restrictions on access and service (e.g., quality of service). Section 4.2 provided a compelling (but not mandatory) suggestion that global standards should be used for data networks and related services. There was also a provision foretelling of misuse and vulnerability problems arising today, namely Section 9.1(b)—which requires a signatory country implementing data networking capabilities to avoid "technical harm" to facilities of third countries. I have been told that this last provision was inserted as a result of the famous Morris Internet worm incident that occurred in 1988.

As ITU activities have, directly or indirectly, supported the technical development of Internet from the very beginning, logically, ITU has also contributed to the policy-related studies. These began during the 1980s with User and Legal Symposia. They increased in the 1990s. During the last several years, ITU successfully organized global symposiums such as the Internet Policy Symposium in 2001 and various workshops on Internet issues.

Started in 2002, the Global Symposium of Regulators, with a purpose to exchange views on liberalization of ICT markets and promotion of Internet applications, is another ITU initiative, which is widely supported and appreciated by the international community.

In my opinion, the fundamental policy issues related to Internet are very similar to those related to other telecommunication applications and technologies. While the Internet is different in certain technical ways, it is not that different for what concerns public policy, although, of course, the specific policies adopted for Internet might be different, both at the national and international level, from those adopted for other technologies. Indeed, there is no reason to suppose that the policies adopted for Internet would be the same as those adopted in the past for other technologies (telephony or whatever), particularly when considering that the policies for older technologies are being revisited and revised in many countries. Some countries are even moving towards "technology-neutral" policies, which might well be different from previous policies.

Recognizing this, the ITU has many policy-related activities, some specifically related to the question of the ways in which existing regulatory regimes should be modified or adapted to encourage further development of the Internet. This includes issues such as tariffing, cost sharing, quality of service, service definitions, and security.

4. My proposed positions on issues

4.1 Definitions

ITU-T Study Group 2 received some inputs on definitions. Based on those inputs and other considerations, I offer the following definitions for consideration.

a) Definition of Internet

Internet is the publicly accessible global packet switched network of networks that are interconnected through the use of the common network protocol IP. It encompasses protocols; names and addresses; facilities; arrangements; and services and applications. IP-based services consist both of applications made available to the public on a large scale such as VoIP using E.164 identifiers, as well as signaling and directory services critical to providing infrastructure protection and meeting national public policy (including security and safety) mandates.

b) Definition of Internet Governance

Internet Governance consists of the collective rules, procedures, processes, and related programs that shape social actors' shared expectations, practices, and interactions and result in practices and operations that are consistent with the sovereign rights of states and the social and market interests of end-users and operators. It includes agreements about standards, policies, rules, and enforcement and dispute resolution procedures.

4.2 Sovereignty

Sovereignty is an issue that often arises, implicitly or explicitly, in debates on Internet Governance. My understanding and proposals in this area cover several aspects as follows:

a) Authority to establish rules for critical signaling and directory network elements and identifiers such as telephone country codes and Internet country code domain names.

Both telephone country codes and Internet country code domain names are public resources that fall within the scope of national sovereignty. In principle, a particular country code or a particular domain name associated with a particular country are the national resources of that country. The ultimate authority for these resources should be a national authority, although the operational work related to their management could be carried out by the authority itself or by a designated agency to which it could choose to delegate authority. There should be no question about this responsibility. I note the complicated situation for the management of country code domain names in some countries, largely because of historical reasons. To address these issues, I would suggest respecting the fundamental principle of national sovereignty, as well as finding pragmatic solutions to maintain the stability of the service and to protect the interests of the concerned operators. Concretely, I propose that consideration be given to ITU's maintaining and publishing the authoritative list of country code domain name delegations, at the request of those countries who wish ITU to undertake this task (with other countries free to continue present arrangements if they wish). There should be no inconsistency between lists maintained by ITU or others. Consideration could also be given to the development in ITU-T, in cooperation with all concerned parties, of a Recommendation on the issue of re-delegation of country code Domain Names.

The Council of European National Top Level Domain Registries (CENTR) has commented on this proposal, their comments are attached as Annex B of this paper.

b) Management of Internet Protocol (IP) addresses

The early allocation of IPv4 addresses resulted in geographic imbalances and an excessive possession of the address space by early adopters. This situation was recognized and addressed by the Regional Internet Registries (RIRs). However, despite their best efforts, and even though a very large portion of the IPv4 space has not been assigned, some believe that there is a shortage of IPv4 addresses and voice concerns regarding the principles and managements of the current system. Some developing countries have raised issues regarding IP address allocation. It is important to ensure that similar concerns do not arise with respect to IPv6. I have discussed with some industry experts my idea that, in addition to the current arrangements for allocation of IPv6 address by the RIRs, one could reserve a portion of the large IPv6 space for country-based assignments, that is, assign a block to a country at no cost, and let the country itself manage this kind of address in IPv6. By assigning addresses to countries, we will enable any particular user to choose their preferred source of addresses: either the country-assigned ones or the region/international-assigned ones. A competition between the country registration agency and the regional registration agencies will exist, but people will have a good choice. Sovereignty connected to the registration of addresses will be safeguarded. The details and constraints, in particular the very important issues related to routing table size (it is essential that address allocation continue to be consistent with the need of ISPs to continue aggregating routes), could be further discussed if this proposal encounters favor.

However, I note that the Number Resource Organization (NRO) has commented on version 1 of this proposal. Although their comments seem to be based on the incorrect

assumption that I was proposing to allocate all IPv6 addresses through national authorities, I find the NRO comments valuable and I attach them verbatim as Annex A of this paper together with my response to those comments, and the NRO response to my response.

Please note that, in order to eliminate any further ambiguity (as noted by the NRO), I have replaced the original sentence "to reserve a block of IPv6 addresses for allocation by authorities of countries" in my earlier draft with the new sentence "that, in addition to the current arrangements for allocation of IPv6 address by the RIRs, one could reserve a portion of the large IPv6 space for country-based assignments" in the present document.

c) Country/Geographic Area Codes

- ITU is the global authority for the assignment and management of telephone country/geographic area codes (E.164), for example "41" for Switzerland.
- ITU is also a member of the ISO committee that agrees the ISO-3166 codes used for Country Code Domain Names (for example, "ch" for Switzerland), and it provides input concerning UN recognition of Member States.

4.3 ITU and developing countries

Developing countries, or governments of developing countries, have consistently expressed their concerns over their roles and their interests in Internet governance. Quite often, ITU has been requested to defend the interests of developing countries in the development of new technologies and new services. ITU's role in protecting the interests of all countries implies that it deals with the issues that arise when developing countries are not in a position to make use of certain new technologies in the same timeframes as when they are deployed in developed countries.

The ITU Development Sector was established to work mainly to support developing countries. ITU provides, by itself or in cooperation with others, training courses for capacity building, consultation on policy issues, assistance on projects, case studies, global data collection, benchmarking, etc. ITU, particularly its Development Sector and the ITU regional/area offices, has strong connections with developing countries for ICT matters.

ITU is trusted to take care of the interests of the developing countries and to continue doing so. ITU will do its best to meet this expectation. Indeed, at the request of its members, ITU protects the interests of the developing. This however does not mean that ITU will take a biased position against the developed countries. ITU's mission is to promote telecommunications-related development by its member countries, including developed and developing countries, economies in transition, and least developed countries.

4.4 ITU and IPv6

ITU supports the implementation of IPv6. ITU has worked with external SDOs, particularly with IETF, IPv6 forums, and the RIRs for the development of IPv6. Instructed by ITU Resolution 102, ITU commits itself to this important work. ITU organized several IPv6 workshops, ITU expressed its support for IPv6 at various

international conferences, etc. In its latest efforts on standardization of NGN (Next Generation Network), reference to IPv6 is included.

ITU encourages its members, Member States and Sector Members, to actively participate in the management of IPv6 addresses, trials of deployment of IPv6 systems, strategy of transition from the current system into IPv6 systems

And ITU has worked with the European Union (EU) Task Force responsible for creating roadmaps for the deployment of IPv6 in all business sectors within the EU.

4.5 ITU and IDN

The matter of Internationalized Domain Names (IDN) raises complex policy and technical issues that can benefit from discussion in formal government processes. I would propose that ITU work with all concerned organizations, whether private or intergovernmental, to survey the issues and agree solutions, in order to facilitate and accelerate the continued adoption of Internet by all the world's peoples.

ITU has been engaged with telecommunication of human languages from the very early stage. The first was the Morse coding in the 19th century, and the latest was its successful work in 1980s for standardization of languages in its CCITT (now "ITU-T") Recommendations T.50-series, including Latin-based languages, and non-Latin based languages such as Arabic, Cyrillic, Chinese, Greek, Hebrew, Japanese (-Katakana, and –Kanji), and Russian.

ITU Resolution 102 and Resolution 133 specify the ITU's work on IDN. ITU organized several workshops on the IDN. It is expected, particularly by developing countries, that increased ITU involvement could facilitate and accelerate the deployment of IDN.

4.6 ITU and Security

ITU has always put security high on its standardization agenda. Over 70 ITU-T Recommendations are published in the field. One of the best known is ITU-T Recommendation X.509, which was first developed in 1988 and still provides the basis for public key infrastructures (PKI) used, for example, in the secure HTTPS protocol. Another is ITU-T Recommendation X.805, recently developed, which deals with security architecture for end-to-end communications.

Guided by ITU Plenipotentiary Resolution 130, "Strengthening the role of ITU in information and communication network security", ITU organized several workshops and symposiums on security during the recent years, including the Cybersecurity Symposium associated with WTSA-04 (World Telecommunication Standardization Assembly, Brazil, 5-14 October 2004), and this constitutes an ITU action to implement the WSIS "Plan of Action".

A handbook on security, which provides an overview of ITU-T Recommendations related to security, was published prior to the first phase of WSIS in December 2003, and ITU-T work in this area continues.

4.7 ITU and national security needs, including spam

ITU organized the first WSIS Thematic Meeting on Countering spam in Geneva, 7-9 July 2004. Over the past several months, strong linkages between spam and other forms of

cybercrime and critical infrastructure protection have emerged. Countering spam is just one of many elements of protecting the Internet that include availability during emergencies, and supporting public safety and law enforcement officials.

4.8 Intellectual Property Rights (IPR)

ITU has worked on IPR for more than two decades. In the mid-1980s, a "Code of Practice for Patents" was created to guide the standardization work with patents. This "Code of Practice" was later updated and three options were identified:

1) patent holder waives its rights,
2) license granted on a reasonable terms and on a non discriminatory basis, or
3) not willing to follow either 1) or 2)

In case (3), no Recommendation will be developed. In case (2), the commercial negotiation on licensing and royalty terms takes place outside ITU.

ITU is still working on the various patent issues. ITU has started to study two other aspects of IPR: software copyright and trademarks. There is no policy yet approved for the latter two items. However, guidelines in line with the patent policy are under development.

4.9 Other areas

In addition, ITU, in accordance with its mandate, would take care of other work, such as: work on Internet exchange points, Internet interconnection charging regimes, and methods to provide authenticated directories that meet national privacy regimes. ITU will study any new items for the Next Generation Networks (NGN) and services.

4.10 International cooperation

It is sometimes said that because of the intrinsic constraints of their processes, inter-governmental institutions like ITU should not be trusted to coordinate Internet governance. But I do not agree with that. In my opinion, there has to be a division of labor. For example, wherever possible, the management of operations on a commercial basis should be done by the private sector, but for those issues normally taking a long time, like policy issues, cross-boundary issues, an intergovernmental organization (IGO) is perhaps better placed (and ITU in particular is well placed). It is important to recognize that in today's environment, no single body alone can take care of everything. That is, a grand collaboration between all concerned bodies is needed.

ITU has enjoyed long-standing good cooperation with IGOs such as UNESCO, UPU, WIPO, etc. and bodies such as IEC, ISO, etc.

The relation between ITU, an intergovernmental organization, and other Internet standards bodies (such as IETF) is, in my opinion, an excellent example of cooperation between ITU and external SDOs. Increasingly, as Internet infrastructure and the services it enables become integrated into the NGN, the long-established regional and national SDOs will be assuming significant roles.

In its long history, ITU has tried very hard to find ways to accommodate opinions and contributions by non-Members. ITU will continue its efforts to work with external bodies

in the interest of the public for ICT matters, particularly with civil society, NGOs, RIRs, ccTLDs, forums, international/regional organizations. ITU will continue its cooperation with UN and its specialized agencies UNESCO; WIPO, and others.

It would be appropriate for ITU to consider how it could encourage greater participation from NGOs, civil society, and universities and research institutions. I would particularly welcome suggestions in that respect.

4.11 ITU and ICANN

As a new organization started in 1998, ICANN has had significant success in many areas under its competence, particularly in its operational and administrative work in encouraging new gTLDs, promoting competition, and implementing dispute resolution procedures.

Having read the paper issued by Dr. Lynn, then President of ICANN, who called for a reform of ICANN in February 2002, I was impressed with his recognition of the fact that ICANN had not succeeded in obtaining support from all governments around the world. He particularly indicated that early attempts to keep governments away from Internet matters proved wrong, and he asked for increased engagement by governments.

We noted that ICANN has made great efforts to reform itself. Many positive changes, such as internationalizing its board, are widely recognized. Surely there is still a lot of work to be done for this young organization. We have to give it more time to change.

The US government has played a unique role in the development of ICANN. In the early days of Internet development, the issues were in the hands of a few US experts, later on with a few competing US organizations. Realizing in 1997 the significance of the issues related to Internet governance, the US government initiated the concept of ICANN and provided its support to ICANN in the form of a Memorandum of Understanding (MoU) between the US Department of Commerce and ICANN, which assumed some of the functions that had previously been performed by a contractor (IANA) of the US Department of Defense. The US government has always encouraged ICANN be develop into an internationally accepted organization. Keeping in mind its responsibility to maintain stability of the global Internet service, the US government carefully choose not to relinquish its own role up to now. I have noted a statement by US authorities to the effect that the US government will not extend its MoU with ICANN after the expiration of the current MoU in 2006.

I share the same concerns as the US government concerning the stability of Internet and the role of the private sector. ICANN served a need that existed in 1998 while the Internet and IP-based services were emerging as a large-scale public infrastructure and offerings. As there is no a better solution so far, in my opinion, we ought to recognize and appreciate the efforts made by the US government.

As a matter of fact, since the creation of ICANN in 1998, ITU has supported and cooperated with ICANN. In July 1999, ITU signed an MoU on “Protocol Supporting Organization (PSO)” with ICANN, ISOC/IETF, W3C and ETSI. After ICANN reform, ITU continues its role in the Technical Liaison Group (TLG). ITU supported the nomination of candidates by PSO to the ICANN Board since 1999. ITU also committed to the work of ICANN Independent Review Panel Nomination Committee before 2002.

ITU was one of founding member of ICANN's Governement Advisory Committee (GAC). In reply to the public call for ICANN Reform launched by the then President of ICANN, I prepared a paper, after intensive informal consultations with ITU members, which was submitted to ICANN in April 2002, and which was unanimously supported by the ITU Council-2002. And ICANN and ITU have worked together to organize workshops on ccTLDs and on the top level domain ".int".

While we appreciate the changes ICANN has introduced into its own process, we have to address another important issues: its own legitimacy and its role with respect to intergovernmental coordination. The latter cannot be easily achieved, in my opinion, within ICANN's current structure.

During recent years, particularly during the WSIS debates, ICANN has been under challenge for various issues. It would be fair to say that not all criticisms were justified. Some issues were in fact beyond ICANN's competences. However, some ambiguity in, or misunderstanding of, ICANNs plans and actions, not necessarily as expressed by its staff or its members, but as perceived by external people, led to some criticisms.

It would be necessary and useful if the mission of ICANN were further clarified, and restricted to its areas of technical competence. The WGIG provides a good opportunity for ICANN to establish a different image.

I believe that ITU should support ICANN to continue wherever it has successfully managed its tasks so far. I support ICANN as an organization to deal with technical and operational matters of Internet domain names and addresses, in particular IANA functions that are unrelated to intergovernmental cooperation and coordination for public infrastructure and services. I welcome and support ICANN's contribution to all policy discussions wherever appropriate.

4.12 The role of governments at the international level

In my opinion, it is very important to recognize that the success of any ICT technology or service, and of the Internet in particular, depends on the collaboration of all parties, and in particular of governments and the private sector. Indeed, I think it is not seriously disputed that governments should set appropriate frameworks for public policy issues such as security, allocation of scarce resources, etc.

It is very difficult, from a structural and legal point of view, for a private organization to obtain formal advice directly from worldwide governments—other than its own national government—because, by definition, a private organization works under, and is bound by, the laws of one jurisdiction, and many sovereign states find it difficult to waive sovereignty and to give advice that could be overridden by another government, which would make them subject, de facto, to the laws of a different state.

There is of course no difficulty for some governments to participate informally in the work of a private organization, but not all governments have that flexibility. And, in any case, there is a big difference between the legitimacy that comes from formal participation, as compared to informal participation.

The usual solution to this difficult problem is to charge an intergovernmental organization with the task of developing internationally agreed public policies (that is,

advice to private organizations), which policies are then transposed as appropriate into national laws and apply to private organizations as appropriate.

Therefore, it would appear to me practical to build on the long and successful tradition in which private sector operators have obtained guidance from their national governments for national matters, and from the ITU or other appropriate bodies such as WIPO, WTO, etc. for international matters. That is, to recognize the respective competencies of the private sector and of governments, whether at the national or international levels.

Concretely, it might be helpful to build on ITU's unique position as an intergovernmental organization that has private sector members—especially since those active ITU members are also major players in providing Internet infrastructure—and to consider relying on ITU (and other IGOs as appropriate) to provide appropriate public policy frameworks at the international level for what concerns Internet matters. It would be better, I believe, to exploit already existing organizations, mechanisms and task owners as appropriate, before a new entity (if any) is established.

The details could be further discussed if this proposal is considered worth pursuing.

4.13 The results of the 2004 World Telecommunication Standardization Assembly (WTSA)

I noted that an early draft of this paper had been circulated informally before the 5-14 October 2004 WTSA. It seems appropriate to mention in this paper some of the key results of WTSA-2004 with respect to Internet. These include:

a) New Resolution 46 [G]: ITU-T contribution to Council Working Group on WSIS.

b) New Resolution 47 [M]: Country Code Top Level Domain Names.

c) New Resolution 48 [N]: Internationalized Domain Names.

d) New Resolution 50 [L]: Cybersecurity.

e) New Resolution 51 [P]: Combating spam.

The text of the Resolutions can be found at:

http://www.itu.int/ITU-T/wtsa/resolutions.html

5. Opinions and proposals

As Internet governance covers a very wide range of topics, including technical issues, it is preferable to have existing inter-governmental organizations under the UN system to take care of issues that require inter-governmental coordination, while recognizing the role of existing international and private sector organizations with respect to technical and operating matters. It would be cost-effective to charge existing UN family organizations with this task.

As discussed above, ITU is involved in the key areas of Internet governance that are subject to international coordination, at a different level of engagement depending on the topics. Internet governance should work the same way the Internet does, decentralized where possible and highly networked. Thus, I don't think that any one existing or future organization should have a preponderant role in Internet Governance.

I believe that ITU should study the issues and look for new ways to create a proper environment to meet the challenges.

The WGIG provides an excellent opportunity to find way of improving the current situation at the global level. The WGIG should establish a matrix to identify who could do what and to provide guidelines on efficient and effective international cooperation of all stakeholders.

My specific proposals address issues of sovereignty by including a role for ITU-T maintaining and publishing the authoritative list of country code domain name delegations, at the request of those countries who wish ITU to undertake this task; in allocating a block of IPv6 addresses to countries; in promoting the implementation of Internationalized Domain Names (IDN); in security initiatives, including countering SPAM; in work on Internet exchange points and Internet interconnection charging regimes; and in methods to provide authenticated directories that meet national privacy regimes.

I believe that ITU should actively participate in the work of WGIG and, given its history and mandate, I expect that ITU will have a significant role to play in any outcomes.

I wish the great success of WGIG and WSIS on Internet governance issues, and all other issues, as part of the ongoing activities to forge appropriate intergovernmental coordination and to foster international cooperation.

Annex A:
Response from the Numbering Resource Organization (NRO) and further communications with NRO

NRO Response to ITU Comments on the Management of Internet Protocol (IP) Addresses

15 November 2004

On 21 October 2004, the Director of ITU TSB published a memorandum, "ITU and Internet Governance" for public comment. The Number Resource Organization (NRO) respectfully offers this public response on behalf of the Regional Internet Registries: APNIC, ARIN, LACNIC and RIPE NCC.

This response is limited to section 4.2(b), titled "Management of Internet Protocol (IP) addresses". This focus is consistent with the purview of the RIRs, and should not be interpreted as agreement with the remainder of the ITU memorandum.
Note: Throughout this memo the terms "number" and "address" will be used interchangeably to denote network layer addresses. In particular the term "Internet address" does not refer to a domain name, URL, URI or mailbox name.

Summary
The ITU memorandum has proposed a new IPv6 address space distribution process, based solely on national authorities. This proposal appears to be based on certain assumptions about the history and status of IPv4 address space and the current allocation principles for allocating IPv6 address space, and an attempt to safeguard what the memorandum terms the "sovereignty connected to the registration of addresses".
It also appears that behind the proposal is an assertion of primacy of public sector interest in the administration of address resources for the Internet. Since the inception of the Regional Internet Registry (RIR) system in the early 1990s, the RIRs have recognized not only the legitimacy of this public sector interest but also that of the private sector. The RIRs believe that the balance of these two interests requires careful consideration. The RIRs work within a broad spectrum of stakeholders in Internet address administration, and have developed open regional policy development processes that include the active participation of both public and private sector bodies as well as civil society.
The IPv6 address space distribution proposal in the ITU memorandum overlooks the success of the RIRs in including public and private sector considerations in open regional policy development processes. It also disregards the widely accepted and long-held views that IP addresses are endpoint network identifiers that intrinsically have no national attributes, and that allocation principles regarding their distribution must be guided primarily by technical considerations relating to the viability of the operation of the Internet.

In addition, the memorandum makes assertions about IPv4 and IPv6 address space which are inconsistent both with authoritative statistics about IP address space and with the

established consensus-based allocation principles developed by the global Internet community.

Rather than addressing the diversity of requirements of the global Internet community or the body of experience already gained in the operation of the global IP address distribution function, the ITU memorandum proposes a uniform model of Internet address distribution as a public sector activity within autonomous national boundaries. The memorandum ignores any consideration of the technical impacts of its proposal on the global Internet (specifically on address space routability) and simply suggests that considerations of "details and constraints, in particular issues related to routing table size" should be postponed until an unspecified time in the future.

This proposal, if adopted, would disrupt the stable, proven mechanisms for IP address space distribution on which the success of the Internet has been founded and on which the global Internet community relies for future operational stability and continued growth.

Internet Number Resource Distribution

Internet number resource distribution is an engineering function co-ordinated between Internet operators under consensus agreements. The development and execution of address allocation principles are organised on a regional level by four (shortly to be five) RIRs: APNIC, serving the Asia-Pacific region; ARIN, serving Northern America, parts of the Caribbean, and continental Africa south of the equator; LACNIC, serving Latin America and portions of the Caribbean; and RIPE NCC, serving Europe, the Middle East, Central Asia, and continental Africa north of the equator. AfriNIC will soon be formally recognised as the fifth RIR, to manage Internet number resources in Africa under an autonomous self-governing framework.

These RIRs are funded and governed by over 8000 organisations worldwide, representing the users of the Internet number resources. Allocation principles and procedures are developed in regional fora which are open not only to the RIR members, but to all interested parties including Government.

This long standing, open policy-making structure has been implemented since the early 1990s and has been a tremendous success. The fairness and efficiency of Internet number distribution is very widely recognised, as is the openness and accessibility of the associated allocation principles. In particular this structure has demonstrated repeatedly that it can adapt quickly to the rapid changes that take place in the Internet environment.

Diversity

The RIRs recognise that today different national environments feature a wide variety of models of regulation, public sector activity, private sector investment profiles, participatory frameworks, cultural considerations and technology deployment models. Such a broad diversity of profile across national communities does not readily lend itself to the uniform imposition of a particular administrative model for network infrastructure elements. The current RIR system can and does accommodate this diversity, while avoiding the inherent shortcomings of a uniformly imposed public sector approach, based

solely on national address distribution models. It also avoids pitting the public and private sector in direct competition at a regional or national level. Coordination functions such as these are not enhanced by allowing the operation of competitive markets to dictate polices and services. Where there is a strong coordination component of the activity, in order to ensure address routability, aggregation, fairness of access and ultimately considerations of viability of the Internet itself, competitive supply practices tend to undermine the orderly operation of responsible administration of such infrastructure elements.

The RIR system encompasses both private and public sectors within its global framework. The RIR system as a whole has specifically not mandated one model or the other, but has allowed regional and national communities to determine what is in their best interests in terms of structure of participation. For example, in several nations there are National Internet Registries with direct public sector involvement. In some cases this is a public sector activity, while in other cases this is a private sector activity within a national context.

Therefore, there is no valid reason to impose a single uniform administrative model upon each regional community that implicitly scripts a leadership role to either the public or private sector. To impose a level of uniformity to this sector at an international level by asserting the primacy of participation of either the public or private sector is not an accurate or helpful characterization of the Internet as a truly international facility. Nor are there grounds to set up public and private sector activities that engage in openly competitive frameworks for infrastructure administrative services. The RIRs accurately reflect the diversity of the international environment, and the outcome of their framework is a stable administrative service that is performed efficiently and effectively, and in which diversity is a strength and asset. The RIR system, with its diversity of models for national community participation, is one of the more eloquent expressions of today's richly diverse environment.

IPv4 Address Space: Allocated Globally According to Regional Needs

It is important to understand the issue of historical allocation of IPv4 address space. The ITU memorandum refers to "geographic imbalances and an excessive possession of the address space by early adopters", but recognises correctly that the current Regional Internet Registry system has successfully addressed that problem. However since the historical imbalance is sometimes described as a failing of the current system, this issue will be addressed specifically.

During the 1980s and early 1990s, early adopters of the Internet were able to receive IPv4 address space under the allocation policies that existed at the time. These early adopter organisations were allocated and often still hold many more addresses than they would be allocated under present allocation principles, placing them in a relatively advantaged position today. This enduring imbalance is not a result of the current principles but rather a reflection that different allocation principles were in place in the past. Those principles reflected certain technological constraints of the time, and assumptions about the limited

function and future of the Internet itself, which together promoted a relatively lax approach to address consumption.

Fortunately, technology has improved since the early days of the Internet, as have the systems under which addresses are allocated. Indeed, today's Regional Internet Registry system was proposed in 1992 specifically to address the administrative problems evident at that time, and is recognised widely as an outstandingly successful solution.

Today, it is clear that sufficient IPv4 addresses are available to be allocated on a fair and equal basis to all users for many years to come. Through the current system of IP address administration, IP addresses are allocated according to immediate need wherever that need is demonstrated, in accordance with well-known allocation principles. The distribution of this global resource is organised in an efficient and very widely accepted manner.

While there are many issues in the management of IP address space, the transformation of IP addresses into a nationalised management regime has never emerged as a relevant solution. On the contrary, such a move is widely regarded as a significant step towards stockpiling and unfair distribution of Internet number resources. Under the current system, sufficient IPv4 addresses are available to all network users, on a fair and equal basis. The distribution of this resource is organised in an efficient and very widely accepted manner.

IPv6 Address Space Distribution

The ITU proposal is founded on the premise that transforming IP addresses to a national resource will ensure that IPv6 distribution would somehow avoid the problems that are allegedly experienced with IPv4 distribution.

Under the current distribution scheme IPv6 service providers receive address space following current allocation principles, established through open self-regulatory industry processes. These principles have been developed not in isolation, but by building on the extensive experience of developing the IPv4 system. They use the already established and globally recognised framework of the Regional Internet Registries for developing and executing the associated allocation principles. The distribution of IPv6 address space is not only building on what has been already developed, but is starting with a playing field which is level from the outset. In addition, there is also allowance for future changes in allocation principles.

The ITU memorandum proposes a new, independent and unproven process for IPv6 address space distribution, based solely on national authorities. This disregards the fact that IP addresses have no national attributes and that there is no compelling reason for specific national policies regarding their distribution. Unlike other number spaces such as E.164, IP addresses are not structured along national boundaries. IP addresses are also invisible to the Internet user, unlike E.164 numbers that are visible to the user and thus also serve as "names". Naming, addressing and routing are separate functions in the Internet. Languages are visible in Internet domain names and a large part of the domain

name space is indeed structured along national boundaries. This has led to the development and implementation of national policies through appropriate local mechanisms. This works well because separate parts of the Internet domain name space can be administered and operated totally independently from each other. However this model does not apply to IP addresses, which are useful because of their uniqueness and require global coordination, which would be disrupted, not aided, by competition. While competition is a good mechanism in many areas, it is hard to see how different systems can compete meaningfully in the distribution of a global resource.

Conclusion
The RIRs observe that the ITU is proposing a model of IP address space distribution that is based on a limited set of considerations and has not adequately considered the need to ensure stable, fair and consistent distribution of a global resource. The ITU proposal has no means to guarantee stable mechanisms for IP address space distribution, and for the benefit of the Internet (including the ITU's own constituency), we urge the ITU to carefully reconsider this proposal.

There are many issues within the area of what has come to be known as "Internet Governance", particularly issues of fairness and a level playing field on a global level that accommodates public and private sector interests The Regional Internet Registry system has evolved over more than a decade to become one of the successes in this area. Internet number resource distribution is fair and accessible to all. Its policy development process is open and transparent.

The NRO welcomes the opportunity to contribute to this memorandum, and looks forward to further discussion with the ITU TSB on these important matters.

Signed
NUMBER RESOURCE ORGANIZATION

Houlin Zhao's Response to NRO Statement: "NRO Response to ITU Comments on the Management of Internet Protocol (IP) Addresses"

19 November 2004

Dear Paul,

Having read your document, I find many valuable information and opinions, which I share with you without hesitation and reservation. However, I also find some misunderstandings to my proposals on IPv6. To avoid further confusions and unnecessary reactions, I would like to provide you with the following clarifications on my positions:

1) My draft text in question is in fact a draft input to an internal ITU Working Group on WSIS, which will meet in December 2004. In reply to the request of this Group, I prepared this draft input. To save time and for the sake of tranparancy, I posted it on ITU-T web site for public comments. My targeted public is the ITU-T Members. As indicated

in the paper, I will prepare an "official" input to that Group after 15 November. I am very pleased to advice you that by the deadline of 15 November, I received a number of comments from the ITU-T Members, as well as a few from non-Members including your document. I will take care all comments from ITU-T Members and non-Members to prepare my "official" input to the ITU Council Working Group on WSIS.

2) In your paper, there are plenty of historical events and explainations on the development of IPv6/IPv4 and on the work done by RIRs. I found those information and opinions very important and very relevant to the ICT society. I share those views with you. As you might have noted, I have supported RIRs from the very begining when I started my role of TSB Director in 1999, and I have been working to strengthen the cooperation between ITU and RIRs since then. One example, the IPv6 workshop ITU-T organized in 2002 received a lot of useful information from RIRs. ITU highly appreciated the presense of RIRs at that workshop. Another good example of our cooperation would be the ENUM trials, which I always referred as a model of cooperation between ITU and a private sector member. If you could agree, I would be pleased to invite RIRs to provide tutorial sessions on their competences to the ITU Members. I believe such tutorial sessions would be welcomed by the ITU Members.

On the other hand, the problems I mentioned in my paper on the assignments of IPv4 addresses should be considered as a historical lesson. Whether you and I would share the same views on the problems is another issue. However, I would like to remind you a fact that in my draft paper, I do not present any critism to the work of RIRs. Ï am very pleased to note that in the part of "IPv4 Address Space:..." of your paper, you indicate that ITU refers to...(problems), BUT RECOGNISES CORRECTLY that the current RIR system has successfully addressed that problem". I would like to reconfirm to you that we will continue to support RIRs on its handling the allocations of IPv4 addresses as well as IPv6 addresses. We are also looking forward to strengthening our cooperation wherever possible.

3) I got an impression that the rest of your paper was based on a misunderstanding on my proposals. Please allow me to refer to some of those statements in your paper. The first sentence of your "Summary" starts with "The ITU memorandum has proposed a new IPv6 address space distribution process, based solely on national authorities." At its fifth para, the paper accused ITU "Rather than addressing ..., the ITU memorandum proposes a unifrom model of Internet address distribution as a public activity within autonomous national boundaires." In the part "Diversity", the first para again refer to "avoiding the ...of a uniformly imposed public sector approach, based solely on national address distribution models" and further down to its third para, the paper says "there is no valid reason to impose a single uniform administrative model upon each regional community... In the part "IPv6 Address space Disteribution", your paper accuses my proposal "based on the premise that transforming IP addresses to a national resuource will ensure ...IPv6 ... avoid the problems that are allegedly experiences with IPv4 distribution." and in its third para, your paper again accuses "The ITU memorandum proposes a new independent and unproven process for IPv6 address space distribution, based on solely on national authorities."

I would accept your arguments as listed above if I did "propose a uniform model...within autonomous national boundaries" or "a new IPv6 address space distribution process, based solely on national authorities" (both quoted above). However, if I argue with you that the base of your comments is not true, what you would tell me? How would you explain to me your understanding on my sentence in 4.2 (b): "By assigning addresses to countries, we will enable any particular user to choose their preferred source of address: either the country-assigned ones or the region/international-assigned ones. A competition between the country registration agency and the regional registration agencies will exist, but people will have a good choice." Here, do you see any sign that I have proposed a new system "based solely on national authorities"? A few words before this sentence, I put my idea as "to reserve a block of IPv6 address for allocation by authorities of countries, that is, assigning a block to a coutnry at no cost and letting the country itself manage this kind of address in IPv6". I draw your attention to those words "to reserve a block of IPv6 address". Do you understand these words as "the whole set of IPv6 addresses"?

As ITU has received from time to time some voices from developing countries to have IP addresses free of charge, the sovereignty related to internet governance often refered to the address issues, the very huge amount of IPv6 addresses capability, and technical feasibility to assign a block (not clear about the size) to countries for their own management as one of possible arrangements, etc.. all these have driven me to make my proposal as shown in 4.2 (b) of my paper. I would like to confirm to you that I have not proposed a uniform system based solely on national authorities in my paper, and I will not propose such a system as the only system in the future. What I have proposed in my paper is to offer one system, as one of many systems, including national ones, regional ones, multinational ones, and international ones. I do not expect that "my system" will avoid all problems we have learnt from the IPv4 processes. I thought "my system" could help address the sovereigntiy issue. I would agree with you that it is not proved yet. It might fail in the end. We do not know the result and we will have to wait to see. However, I have not expected such a system can address all problems, particularly technical problems, we learnt from the IPv4. I am fully aware of the technical problems, the administrative problems, the implementation problems, etc. which are associated with the deployment of IPv6 systems, so that I conclude my short para of 4.2 (b) by the following sentence: "The details and constraints, in particular issues related to routing table size, could be further discussed if this proposal encounters favor." Do you see my ignarance on those problems from this sentence? If yes, I would be glad to modify it if you could provide me a better sentence.

I do not believe I have to remind you another fact that ITU-T Rec. E.164 provides a base not only for a worldwide public telephone numbering scheme based on national territories, but also for a set of numberings for global usage, ie. 800-series numberings, which are not limited to the national boundaries.

4) Having explained my views on your comments, I would once again re-emphasize my sincere thanks to you all for your attention to my paper, and for your efforts to provide

me with your comments, although I do not share with them completely. I am particularly pleased with the last part of your paper "conclusion", which provides your desire to discuss with ITU on this important issue under a friendly term. I would like to assure you that ITU woud welcome any comments from you, no matter whether they are positive or negative. A fair and open dialogue between RIRs and ITU will bring benefits to the whole family and the public. I will keep you informed with future development on my paper and I would be glad to continue to receive your comments.

5) I appreciated your advice that you have put your comments on your web. I would be pleased if you could add my reply to the same web site where you have posted your document.

Best regards,

Houlin

Clarification on NRO statement: "NRO Response to ITU Comments on the Management of Internet Protocol (IP) Addresses”

19 November 2004

In the NRO response to the ITU Memorandum "ITU and Internet Governance" we said, "The ITU memorandum has proposed a new IPv6 address space distribution process, based solely on national authorities." We understand that some parties have expressed concern that we may have overstated this point and should clarify our position. While we acknowledge that the ITU proposal is not exclusive to national authorities, we still maintain that this does not undermine the issues we have raised in our response to the ITU memorandum. We will shortly post three items to the NRO website regarding this discussion. First, a revised response to the ITU memorandum reflecting the clarification mentioned above; this revised response document will be posted alongside the original NRO document and the original ITU Memorandum. Second, we will post a copy of the ITU response to the NRO statement. Third, as soon as it becomes available to us from the ITU, we will provide pointer links to our statements on the ITU website for the convenience of those who would prefer to view the dialogue on the ITU website.
We thank Houlin Zhao for the comments he has sent regarding the NRO statement "NRO Response to ITU Comments on the Management of Internet Protocol (IP) Addresses". The NRO has read these comments with interest and is looking forward to further discussion with the ITU on these important issues. We are also pleased to accept the invitation to provide tutorial sessions to ITU members. We welcome any further comments or questions so as to promote the open and constructive dialogue to which we are committed.

Axel Pawlik
Secretary
Number Resource Organization

Annex B:
Comments by the Council of European National Top Level Domain Name Registries (CENTR)

Brussels, 23 November 2004

Dear Mr. Zhao,

With reference to the document on Internet governance published on October 21, the Council of European National Top Level Domain - CENTR would like to draw your attention to some considerations that were discussed at the 24th General Assembly in Zurich last week.

We do understand there is a plethora of opinion from many different stakeholder's visions and concerns regarding the definition of Internet governance and the way we should look at the Internet management future.

Our purpose is to participate actively and constructively in the discussion where the benefit we should look at is the one of the worldwide Internet users.

As a regional organisation, CENTR takes advantage of the membership of over 50 country code Top Level Domains of developed and developing countries. We believe that the dialogue we have established with all different parties is the most valuable means for any decision.

Consequently, we look forward to interacting with you and others in the ITU, WSIS and WGIG processes in the spirit of mutual cooperation and growth.

Yours faithfully,

Paul Kane
CENTR Chairman

Council of European National Top Level Domain Registries (CENTR)
comments on Mr. Zhao's draft paper
on "ITU and Internet Governance"

Executive Summary

- CENTR recognises the value of the inputs of Mr. Zhao in the Internet governance debate as well as the historical role of the ITU in the international telecommunication sector. However, we have noted that these inputs do not match with the opinions expressed by other representatives of ITU.
- CENTR members believe that the present discussion on this subject should be based on a core message that Mr. Zhao has clearly expressed: "Internet governance should work the same way the Internet does, decentralized where possible and highly networked".
- As the WSIS process has acknowledged, "Internet Governance should be multilateral, transparent and democratic, with the full involvement of governments, the private sector, civil society and international organisations".
- CENTR is one of the many actors that play in the Internet arena. Representing over 50 ccTLDs both from the developed and developing countries, it has gained a considerable experience in perceiving its members needs and wishes at all the Internet governance levels. Therefore, it is delighted to make it available for a better coordination of the Internet.
- CENTR recognises the importance of technical aspects and supports all those actions that can contribute to improve the Internet functioning.
- CENTR is aware that there have been difficulties and criticism for the way Internet is currently managed. Nevertheless, it believes that any future action in the Internet governance context should be focused to improve the present status in the maximum interest of the Internet users.

Introduction

Based in Europe, the Council of European National Top Level Domains Registries (CENTR) is an association of country code Top Level Domain registries which includes government agencies and private sector members from countries all around the world. Around half of CENTR's members are from developing or emerging economies. CENTR outreach programme offers training days, giving pro-bono software and computer equipment to members and interested parties in various regions. CENTR's mission is to empower learned decision making at a decentralised local level, via informed debates, workshops and training sessions on policy, operational aspects and management procedures.

In the past CENTR and its members have been active participants in ITU ccTLD workshops in 2003 and earlier this year. We do hope this exchange of information will continue in the future. CENTR sponsors and participates in numerous events designed

specifically to facilitate information sharing and Internet management awareness and techniques.

CENTR and its members do believe that we need to pay attention to the reasons why decentralised decision making is flourishing and proving so successful today. CENTR members stands ready to work with the ITU to identify common areas of interest to stimulate the development of the Internet to the benefit of local Internet users in both the developed and emerging Internet communities. By empowering decentralised, informed decision making and resolving issues in a timely manner we are confident the Internet will contribute to the societal and economic well-being of all its users.

In response to Mr. Zhao's draft paper on "ITU and Internet Governance", CENTR would like to submit few comments and seek clarification on certain assumptions and proposals to stimulate a constructive, informed debate.

Internet governance issues

First of all, the debate on Internet governance has broadened in the last period. This process reflects both the involvement of many entities at international level and the concerns of some governments, especially those of developing countries.

Wherever the discussion leads us to, we urge those who are involved in the process not to forget that at present Internet functions although it has grown exponentially in the last decade at commercial and social level; that all national, regional and international entities that have managed the net so far have provided the Internet user communities with great value and have achieved important goals for the benefit of all stakeholders.

CENTR believes that, thanks to the historical expertise of the ITU and other intergovernmental organizations, Internet governance can be enriched by providing all stakeholders with the inputs for a fruitful coordination of the net.

However, CENTR expresses its concerns for all those actions and opinions that aim to create an organisation with all the competency to adequately deal with the diverse policy mandates. It is our view that this will not solve any Internet problem, but it will imprison the Internet spirit and organisation and thus impair the necessary flexibility to cope with the rapid pace of development of the Internet, the constantly changing technology and interests of stakeholders.

Internet and the governments

The report alludes in very general and broad terms to a march toward so-called "authorities", presumably governmental, operating the "national oversight responsibility". More specifically, it sees the role of management of public Internet matters moving toward governmental telecommunications and commerce ministries and in some cases delegating some of its powers to the private sector for instance through industry-self regulatory mechanisms.

CENTR believes that any general assumption like this should be carefully considered. It should be based on case by case evidence and take explicitly into consideration the particulars of national arrangements. Based on the evidence, the trend noted in the paper can be supported only in a limited number of cases.

Consequently, governments roles should be ultimately limited to the national scope for which they are responsible – and that there is no need for a preponderance of intergovernmental activity in areas where issues can be handled locally. Local authorities have demonstrated to be fully capable and competent in managing Internet policy at national levels. The principle of subsidiarity, in its EU conception, should be fully applied.

Importance of technical aspects

IANA database

The draft paper calls for ITU to operate the IANA function for countries that wish to use it, with others continuing to use ICANN.

A distinction is made between the gTLD and ccTLD space. The proposal put forward in the paper only addresses the ccTLD name space. From a technological and overall consistency in the DNS usage and the Internet perspective we do not share this vision. The DNS and therefore the Internet as it functions today relies on universally accepted protocols by all registries both the ccTLD and gTLD's, registrars, Internet service providers and domain name users. All comply to the same set of RFC's, which lies at the core of the DNS.

The DNS is hierarchical and foresees distributed responsibilities: this was and is the strength of the DNS and the Internet. At the heart of this system is the IANA function, which is based on a single, coherent and authoritative database.

Therefore, on one hand, it is hard to see how competing distinct databases (one for the gTLD's, one for ccTLD's which will remain with IANA and one for those ccTLD that wish to use the ITU) could operate, other than by introducing new, bureaucratic procedures and new unprecedented legal arrangements, and at the same time remain to be effective and efficient.

On the other hand, we do appreciate the concerns which underlie the proposal, as we also understand the concerns of non-governmental stakeholders in developing countries, not effectively represented in ITU structure or WSIS process. However, dividing the IANA database into two distinct administrations can create potential confusion rather than help in sorting out the expressed concerns. On the contrary, CENTR believes that ITU can help and support the entire process through its active and effective involvement in GAC.

IPv6 addresses

CENTR nor its members are experts on the allocation of IP-addresses. Allocation of IP-addresses is done by the Regional Internet Registries. Therefore we are not in a position to comment on this section. However, we note the discussion on IPv6 addresses in the paper is based on the perception by some of scarcity of IPv4 addresses. We also note the statement in the paper that this perception is not based on facts. Actually, as is adequately put in the paper, a very large portion of the IPv4 space has not been assigned.

An informed and constructive discussion is in our view only possible if it is based on facts and not on perceptions. With regard to the allocation of IP-addresses and for that matter the discussion on ccTLD's, CENTR is available to inform other stakeholders and participate in for instance the workshops organized by the ITU.

Conclusion: a roadmap for future Internet governance

CENTR has experienced that the dialogue on Internet governance is greatly assisted by having different parties express their future vision.

CENTR expresses its gratitude to Mr. Zhao for having made his thoughts available to the Internet community, so that they can be shared and enriched by further contributions.

CENTR vision of the Internet governance scenario can be summarised as follows:

- Nowadays, Internet functions. As any technology, it has its pro and contras, its advantages and its problems.
- At present, the domain names are over 64 millions and there is a continuously growing number of Internet users: their interest should be our only goal.
- The presence of ccTLDs during the preparatory phases of the World Summit of Internet Society, increasing participation of governments within ICANN GAC, specific meetings organized by governments of the European Union are all good examples of what has already been achieved as a result of the collaboration between public and private sector, and CENTR truly believes those efforts must be maintained and where possible intensified.
- CENTR agrees that "no single body alone can take care of everything. That is, a grand collaboration between all concerned bodies is needed" and stands ready to work with the ITU and other organization and stakeholders to identify key areas of interest to the benefit of all Internet users.