

**OPINION (2) IN SUPPORT OF THE ADOPTION OF IPv6 AND OF CAREFUL MANAGEMENT OF THE TRANSITION FROM IPv4**

The fifth World Telecommunication Policy Forum (Geneva, 2013),

 *considering*

a) WTSA Resolution 64 (Johannesburg, 2008) on the subject of IP address allocation and encouraging the deployment of IPv6 which, *inter alia*, instructs the Director of the TSB in close collaboration with the Director of the BDT to:

1) initiate a project to assist developing countries, responding to their regional needs as identified by the Telecommunication Development Bureau (BDT); this project should be carried out jointly by the Telecommunication Standardization Bureau (TSB) and BDT, taking into consideration the involvement of those partners willing to join and to bring their expertise;

2) establish a website that provides information about global activities related to IPv6, to facilitate awareness-raising and the importance of IPv6 deployment for all ITU members and interested entities, and provides information related to training events being undertaken by relevant entities in the Internet community (e.g. Regional Internet Registries (RIRs), Local Internet Registries (LIRs), operator groups, the Internet Society (ISOC));

3) promote awareness of the importance of IPv6 deployment, to facilitate joint training activities involving appropriate experts from the relevant entities, and to provide information to developing countries;

4) study the question of IPv6 address allocation and registration for interested members and, especially, developing countries and to report to the ITU Council;

b) WTPF Opinion 5 (Lisbon, 2009) calling for acceleration of activities related to WTSA Resolution 64;

c) the work of BDT and TSB already undertaken on the subject of IPv6;

d) that IPv6 address allocation and deployment is an important issue for Member States and Sector Members;

 *recognizing*

a) that IANA has allocated the last IPv4 blocks to the RIRs;

b) that some RIRs have already exhausted or are close to exhausting their allocations and that all other RIRs are expected to exhaust their allocations within a few years;

c) that migration to IPv6 is gaining speed and that many prominent international web-based businesses have already implemented IPv6 portals;

d) that IPv6 extremely large address space enables global connectivity to many more electronic devices, mobile phones, laptops, in-vehicle computers, televisions, cameras, building sensors, medical devices, etc;

e) that IPv6‘s security, when enabled and configured with the appropriate key infrastructure, in form of IPsec, will enhance authentication, encryption, and integrity protection at the network layer;

f) that, nevertheless, the proportion of IPv6 traffic on the Internet remains very small;

g) that, because of incompatibility between IPv4 and IPv6, parallel (dual stack) operation is required and there will be a need for IPv4 addresses for an undetermined period until a critical mass of web-based services is available via IPv6 addresses, thereby allowing IPv4 to be taken out of service;

h) that new entrant Internet service providers will continue to require access to IPv4 addresses until that undetermined time when they can be taken out of service;

i) that approximately 40% of IPv4 address space was allocated in large blocks to individual companies and organizations prior to the establishment of the RIRs and that this legacy address space is under-utilized;

j) that a growing market has developed in the transfer of IPv4 addresses between entities and that the overwhelming proportion of transferred addresses are from legacy allocations which are not subject to the policies of the RIRs;

 *recognizing further*

a) that a black market in IPv4 addresses could threaten the viability of the WHOIS databases maintained by the RIRs, could result in scattering small blocks of IPv4 addresses thereby putting additional load on the Internet routers, and could eventually undermine the stability of the Internet;

b) that such a black market and its potential consequences could be mitigated by requiring that all IPv4 transactions be reported to the relevant RIRs, including transactions of legacy addresses that are not necessarily subject to the policies of the RIRs regarding transfers, and that transactions be in blocks of no less than /24 (256 addresses);

c) that the cost of transferred IPv4 addresses is orders of magnitude higher than the cost of new addresses from the RIRs and may be out of reach smaller new entrant ISPs, particularly in developing markets;

d) that legacy IPv4 addresses are predominantly in North America but that the need for additional IPv4 addresses is predominantly in Asia and other RIR regions and that there are no policies or procedures in place regarding inter-region transfers;

e) that issues regarding IPv4 can be minimized by accelerating the transition to IPv6;

 *is of the view*

a) that every effort should be made to encourage and facilitate the transition to IPv6;

b) that every effort should be made to manage and control the transfer of IPv4 addresses, including legacy addresses and inter-region transfers;

c) that plans and policies should be in place to allow new entrant ISPs to enter the market via access to a reasonable block of IPv4 addresses at reasonable prices;

 *invites*

a) the TSB and BDT to continue their work related to WTSA Resolution 64 in collaboration with all other stakeholders;

b) the ITU to develop policies which will manage the transfer of IPv4 addresses, ensuring continued availability where needed, the possibility of new entrant ISPs to enter the market, study IPv6 address allocation and registration, and the continued stability of the Internet;

c) Member States to consider policies and incentives to encourage, facilitate and support the fastest possible adoption and migration to IPv6 within their jurisdictions;

d) Sector Members with web and Internet business to offer their services via IPv6 as quickly as possible.