Speech Title: **IPv6-based New Internet empowering Super IoT, 5G, Blockchain and Cloud Computing**

Abstract:

The IANA central IPv4 address space has been fully depleted back in February 2011 making the deploying of new large-scale networks especially IoT and 5G networks, non scalable, and non end to end secure. Hence the new IP protocol IPv6 has been designed to cater for this already back in the 90s and waiting for its killer apps to take off. 4G was the first one to adopt IPv6 in larger scale, especially in the US and India.

The IPv6 Deployment worldwide is becoming a reality now with some countries achieving more than 50% user penetration, with India and Belgium with over 60% at the top ranking (http://labs.apnic.net/dists/v6dcc.html) and reaching double digits v6 coverage on Google IPv6 stats. Many Autonomous Networks (ASN) reach more than 50% with v6 preferred or v6 capable penetration: (http://labs.apnic.net/ipv6-measurement/Economies/US/). Over 1 billion users are accessing the Internet over IPv6 and obiously not even knowing it.

The US was by far the biggest adopter of IPv6 with some 100 Million users, but India has surpassed the US with over 250 M IPv6 users, followed by Germany, Japan and China with some 20 + M users. Worldwide IPv6 deployment has passed the 30 % Google usage bar doubling every 12 months (http://www.google.com/intl/en/ipv6/statistics.html ). If this trend continues, we should achieve 90% by 2025 which would be the inflection point when the full roll-out of IPv6 becomes a strategic plumbing decision of the networks, a topic that is avoided so far due to many strategic and resources issues (lack of top management decision-making, lack of v6 skilled engineers and v6 deployment best practices, very limited ISP v6 access deployment, ..).

The deployment of Carrier-grade NAT is in full swing making networking and user experience more brittle. IPv6 will kick in big time for IoT and 5G to take them to the next level which are "Things-to-Things" beyond the current network of things under the non-IP IoT umbrella as Kevin Ashton coined the term IoT for RFID back in 1990 before even RFID suported the IP stack and still today don't. This is another technology myth or fake news. IoT will suffer immensely under lack of built-in security which together with cybersecurity issues are like always brushed over at this stage due mainly to lack of IPv6 security skills.

New topics are more in the lime light such as Cloud Computing, SDN, NFV, 5G and Blockchain with no attention to the issues dragged by IPv4. These fields are taking IP networking for granted designing them on IPv4/NAT building non-scalable and non-end to end solutions. The IPv6 Forum is driving new initiatives to garner support and create awareness on the impact of IPv6 on topics such as real IoT, open Cloud Computing, openstack based SDN-NFV, IPv6 only 5G and IPv6 based Blockchain, probably replaced by DatablockMatrix down the road.