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| **RESOLUTION GSC-16/10: (GTSC)Next Generation Networks (NGN) including enhancements towards Future Networks (Revised)** |

The 16th Global Standards Collaboration meeting (Halifax, 31 October – 3 November 2011)

**Recognizing:**

1. that the standardization of different phases of NGN is reaching its completion and feedback is gradually being received from various implementations of NGN;
2. that there is a need to adapt to the key trends in society and technology by using future network technologies;
3. that future networks are expected to make use of technologies such as resource virtualization, data/content centric networking, energy-saving capabilities, autonomic management, policy-based network optimisation capabilities, distributed mobile networking;
4. a future network is a network able to provide services, capabilities, and facilities difficult to provide using existing network technologies;
5. a future network is either a new component network or an enhanced version of an existing one, or a heterogeneous collection of new component networks or of new and existing component networks that is operated as a single network;
6. that technologies supporting services such as messaging, Voice over IP (VoIP), multimedia as well as common IMS are now being deployed and are in service in a number of areas;
7. that users of future networks and interconnected networks will demand adequate Quality of Service (QoS), Quality of Experience (QoE) and security;
8. that there are different stages of network evolution and therefore interconnection to/and between NGN environments and future networks is becoming an important issue;
9. that the industry requires technical integrity and coherence among interrelated specifications;
10. that the evolution of future networks is driven by innovations in user applications and network capabilities;
11. that high-bandwidth video, cloud computing, P2P application and Over-The-Top (OTT) services will put a huge pressure on network resources; and
12. that interoperability continues to be important to NGN and future networks.

**Considering:**

1. that NGN and future networks must interwork with and allow a migration path from existing networks and services;
2. technical standards for NGN and future networks interconnection must become available in a timely and co-ordinated manner to allow global operation of services including converged services;
3. that offering end-to-end multimedia services, including mobility support and IPTV, requires interconnection across different NGN and future networks implementations capable of supporting satisfactory security and end-to-end QoS and QoE;
4. that NGN and future networks have a significant role as an infrastructure supporting interworking among different networks (mobile and fixed) and multimedia services including convergence serviced, on the basis of a minimum number of globally agreed protocol profiles;
5. that there is increasing demand for converged services with ubiquitous capabilities allowing users to obtain access to their services and profiles using any appropriate devices independent of the means of access (fixed, mobile, etc.);
6. that there is increasing deployment of broadband access capabilities, both fixed and wireless, capable of supporting advanced services envisaged for NGN and future networks;
7. that future networks will be introduced within an evolving policy and regulatory environment;
8. that there is a need to further globalize future networks standardization;
9. that there is a need to develop future networks standards in a timely manner;
10. that guidance is needed on mechanisms to enhance interoperability without compromising innovation and timely standards development and deployment;
11. that rich content and features can be delivered to end users so that they can benefit from them in their daily life;
12. that research and standardisation have to be brought closer to each other so that both parties can benefit from each other; and
13. that the operational and user perspective should be strengthened.

**Resolves:**

1. to develop a globally consistent long term vision of future networks in collaboration with ITU-T based on integrating national and regional perspectives;
2. to promote globally consistent standards that facilitate interoperability, innovation, market competition and infrastructure development to address user needs in a timely and cost effective basis through cooperation and collaboration among global, regional and national SDOs on NGN and future networks issues that have mutual impacts, including (but not limited to) the following:
   * interconnection and interoperability across mobile and fixed networks offering convergence multimedia services, including the ability to obtain services independent of underlying transport network;
   * a coherent and coordinated set of standards with global value to support interconnection of future networks and NGN at the service level;
   * enabling of migration towards NGN and future networks;
   * maximization of the commonality and interworking between different approaches;
   * recognition of potential social, policy, legal, emergency, and/or regulatory implications (for example, privacy, legal interception, location information, service quality, reference interconnection point definition);
   * options for transition, and planning considerations for achieving the future networks vision in an orderly and consistent manner;
   * control and realization of QoS/QoE mechanisms for all types of networks (fixed, wireless, mobile, satellite, IP-based core networks, etc.) capable of interoperating to deliver satisfactory end-to-end QoS/QoE;
   * control interface to network services, enabling applications to request required resource and service level on demand;
   * network services including but not limited to converged policy control based on network conditions and traffic identification (e.g. using Deep Packet Inspection);
   * interoperable and cost-effective security mechanisms and protocols to guarantee protection of customer information and network resource;
   * user mobility in all its forms (wide area, local area, nomadic, etc.), including seamless mobility across mobile and fixed networks;
   * utilization of the NGN and future networks for emerging applications and traffic sources including: machine-to-machine, Internet of Things, Smart Grid, intelligent transport systems; and
   * address the need for providing additional services via the future network technologies, including but not limited to Cloud Computing, Service-Oriented Networking, Autonomic management and adaptive control, Information – centric networking, Network virtualisation, and integration of Web technologies, e.g., RTC Web ones.
3. to focus on Service Enablers making future networks smarter, and interoperability up to the application level, to support a broad range of applications that utilize underlying network capabilities.

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