Abstract

Title of Presentation: The model network methodology for NGN testing: Approach of service and QoS Testing

The intensive increase a number of equipments and software with NGN functionality and the lack of uniform principles and mechanisms for deployment NGN networks to require harmonization of new NGN technologies and to develop a uniform approach for implementation NGN technologies.

This problematic take a mirror on the ITU activities and is presented in Resolution WTSA-08 76 "Global interoperability" and Resolution WTDC-10 47 "Enhancement of knowledge and effective application of ITU Recommendations in developing countries, including conformance and interoperability testing of systems manufactured on the basis of ITU Recommendations".

With purpose for realization this Resolutions ITU plans to follow a directional policy in functional compliance and interoperability testing of equipments, system-network solutions and services.

Over the past six years, the ITU conduct the serious work to detect of testing approaches and testing methodologies. In accordance with the decision of the WTSA-04 was open the Q.8/11 question «Specification testing of signaling protocols NGN», developed and approved a series of recommendations Q.3900 — Q.3904, is presented by ZNIIS (Central Research Telecommunication Institute) on behalf of the Communications Administration of the Russian Federation and some new draft 12 recommendations include participation of expert from different countries (Austria, South Korea, Poland and China) were prepared.

In current time a research area in testing part has expanded considerably, according to the WTSA-08 to cover following questions: QoS (Q.10/11), monitoring systems (Q.9/11), service testing (Q.11/11) and USN testing (Q.12/11).

After analysis of existing experience of operators, ITU experts came to the idea of determining the Model network — as a basic tool for interoperability and compliance testing. This approach provides a possibility to design and simulate various scenarios of interaction in terms of border characteristics of equipment working without broken the existing SP's infrastructure. This approach is reflected in the acting ITU-T recommendation Q.3900.

However, on the exist date the central and actual question — standardization of testing methodologies for different exist ITU-T standards, especially for interoperability process.

This report will present a general approach for NGN testing, planned and implemented by ITU in pursuance of WTSA-08 Resolution 76 and WTDC-10 Resolution 47.

While delivering new services operators faced with different technical problems. The main reason of this problems are incompatibility of equipment for service delivery, so operators providing new services with restrictions and cannot deliver services with guaranteed QoS.

International standardization organization (ITU, ETSI) provide approaches to services standardization and testing. The purpose of service conformance testing is to determine to what extent a single implementation of a particular standard conforms to the individual requirements of that standard.

ETSI TISPAN WG 6 provides approaches based on manual and automatic test suites to ensure the conformance to TISPAN, 3GPP and ITU standardized protocols. These tests ensure the global

interoperability of ISDN, PES and IMS Core NGN R1/R2, QoS between networks and Performance Benchmarking for NGN.

ETSI test specifications are designed to concentrate on areas critical to interoperability, including testing an implementation's reaction to erroneous behaviour.

ITU study group 13 Q.14/13 provide services delivery scenarios and NGN development model (Basic requirements for telecommunication services). ITU study group 11 Q.10/11 provide NGN services testing specifications).

QoS testing and monitoring is another trend in NGN. ITU developed G, P and Y – series recommendation contain approaches to estimate, control and deliver QoS in NGN.

RACF Resource and Admission Control Functions (abbreviated RACF) is an element of the ITU-T NGN architecture. RACF can form the basis of an infrastructure that can be used to satisfy user quality requirements and provide opportunities for delivering new services with additional revenue. ITU developed Q series recommendations about RACF architectures, system elements and interfaces.

Presentation cover approaches to service conformance testing, QoS testing and monitoring, RACF systems deployment which can help operators to solve problems with new services delivery.

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