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SERIES Q: SWITCHING AND SIGNALLING

Signalling requirements and protocols for the NGN –
Testing for NGN networks

Parameters for monitoring NGN protocols

Recommendation ITU-T Q.3910



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Recommendation ITU-T Q.3910

Parameters for monitoring NGN protocols

Summary

Recommendation ITU-T Q.3910 defines the protocols for measuring and monitoring PSTN/ISDN emulation service (PES) and IP multimedia subsystem (IMS) solutions, including real-time transfer protocol/real-time transfer control protocol (RTP/RTCP), session initiation protocol (SIP), H.248/media gateway control protocol (H.248/MEGACO), signalling transport (SIGTRAN) and bearer independent call control (BICC). How to monitor these parameters is out of scope of this Recommendation.

History

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FOREWORD

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Parameters for monitoring NGN protocols

1 Scope

In order to effectively manage the resources provided by signalling over the NGN network, it is necessary to monitor and measure the present, and estimate the future performance, utilization and availability of these resources. Thus, NGN monitoring and measurement parameters standardization should be provided. This Recommendation defines the protocols for measuring and monitoring PSTN/ISDN emulation service (PES) and IP multimedia subsystem (IMS) solutions, including real-time transfer protocol/real-time transfer control protocol (RTP/RTCP), session initiation protocol (SIP), H.248/media gateway control protocol (H.248/MEGACO), signalling transport (SIGTRAN) and bearer independent call control (BICC). How to monitor and measure these parameters is out of the scope of this Recommendation.

2 References

The following ITU-T Recommendations and other references contain provisions which, through references in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- [ITU-T H.248.1] Recommendation ITU-T H.248.1 (2005), *Gateway control protocol: Version 3*.
- [ITU-T Q.752] Recommendation ITU-T Q.752 (1997), *Monitoring and measurements for Signalling System No. 7 networks*.
- [ITU-T Q.3902] Recommendation ITU-T Q.3902 (2008), *Operational parameters to be monitored when implementing NGN technical means in public telecommunication networks*.

3 Definitions

None.

4 Abbreviations

This Recommendation uses the following abbreviations and acronyms:

ACM	Address Complete Message
ANM	Answer Message
APM	Application Transport
BICC	Bearer Independent Call Control
CFN	Confusion
CGB	Circuit/CIC Group Blocking
CGBA	Circuit/CIC Group Blocking Acknowledgement
CGU	Circuit/CIC Group Unblocking

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CGUA	Circuit/CIC Group Unblocking Acknowledgement
CIC	Circuit Identifier Code
CON	Connect
COT	Continuity
CPG	Call Progress
CQM	Circuit/CIC group Query Message
CQR	Circuit/CIC group Query Response
CRG	Charge information
FAA	Facility Accepted
FAC	Facility
FAR	Facility Request
FOT	Forward Transfer
FRJ	Facility Reject
GRA	Circuit/CIC Group Reset Acknowledgement
GRS	Circuit/CIC Group Reset
IAM	Initial Address Message
IDR	Identification Request
IMS	IP Multimedia Subsystem
INF	Information
INR	Information Request
IP	Internet Protocol
IRS	Identification Response
IUA	ISDN User Adaptation layer
LOP	Loop Prevention
M2UA	MTP 2 User Adaptation layer
M2PA	MTP2 User Peer-to-Peer Adaptation Layer
M3UA	MTP 3 User Adaptation layer
MG	Media Gateway
MGC	Media Gateway Controller
MEGACO	Media Gateway Control protocol
MTP	Message Transfer Part
NGN	Next Generation Network
NMS	NGN Management System
NRM	Network Resource Management
PES	PSTN/ISDN Emulation Service
PS	Packet Switching (network)
PRI	Pre-Release Information

REL	Release
RES	Resume
RLC	Release Complete
RSC	Reset Circuit/CIC
RTCP	Real-time Transfer Control Protocol
RTP	Real-time Transfer Protocol
SAM	Subsequent Address Message
SCCP	Signalling Connection Control Part
SCTP	Session Control Transfer Protocol
SDM	Subsequent Directory Number
SGM	Segmentation
SIGTRAN	Signalling Transport
SIP	Session Initiation Protocol
SLA	Service Level Agreement
SLS	Service Level Specification
SNMP	Simple Network Management Protocol
SS7	Signalling System No. 7
SUA	SCCP User Adaptation
SUS	Suspend
TM	Technical Means
UCIC	Unequipped Circuit Identification Code
URI	Uniform Resource Identifier
V5UA	V5.2-User Adaptation layer
UAL	User Adaptation Layer
USR	User-to-user information

5 Conventions

The NGN monitoring system is based on the evolution on the SS7 monitoring principles. According to [ITU-T Q.752], the following categories regarding the measured values should be defined in the NMS based on PES and IMS solutions:

- **fault (F):** Measurement for reporting processes and detecting problems, as well as for finding out some abnormal situations in the SS7, SIP and H.248/MEGACO signalling networks, and for NGN hardware, involving its reconfiguring and restarting procedures;
- **quality (Q):** Measurement for service level parameters intended for different traffic types involving voice and video under different services; for reporting processes; for assuming measures in providing the guaranteed service level, as well as for developing an operator's policy and strategy for providing a certain service level. It should be also used to have the SLA and/or SLS performed and relevant reports drawn up;
- **traffic (T):** Measurement for real-time traffic parameters based on IP-flow information for the purpose of identifying any unwanted or unauthorized traffic; studying any inside and

