Society of Cable Telecommunications Engineers

ENGINEERING COMMITTEE
Data Standards Subcommittee

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Requirements for Preferential Telecommunications over IPCablecom Networks

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SUMMARY

NOTE: This document is identical to SCTE 173-1 2010 except for informative components which may have been updated such as the title page, NOTICE text, headers and footers. No normative changes have been made to this document.

This standard defines requirements for Preferential Telecommunications over IPCablecom networks. The essential aspects of Preferential Telecommunications over IPCablecom that this standard covers can be grouped into two areas: prioritization and authentication. These two areas include capabilities to support telecommunications in IPCablecom that may require preferential treatment (e.g. Telecommunications for Disaster Relief and Emergency Telecommunications Service).

The implementation of priority and authentication is necessary for the support of preferential telecommunications in IPCablecom networks.

INTRODUCTION

Emergency/disaster communications for authorized users plays a vital role in the health, safety, and welfare of people in all countries. The common thread to facilitate emergency/disaster operations is the utility of assured capabilities for user-friendly emergency telecommunications that may be realized by technical solutions and/or administrative policy. The IPCablecom infrastructure offers an important resource for assured emergency/disaster communications.

Emergency/disaster situations can impact communications infrastructures. Typical impacts may include congestion overload and the need to re-deploy or extend communications capabilities beyond that covered by existing infrastructures. Even when telecommunications infrastructures are not damaged by these situations, demand for telecommunications resources soar during such events. Therefore, priority mechanisms are needed so that limited bandwidth resources can be allocated to authorized emergency workers.

Generally, when preferential or priority treatment telecommunication capabilities are offered, users of the service will be authenticated and authorized. Whether authentication and authorization are required or not is a national decision. However, without authentication and authorization, preferential treatment capabilities may be subject to abuse by non-authorized individuals.

This standard defines requirements for authentication and priority mechanisms in IPCablecom networks to provide preferential/priority treatment to services that need or benefit from such treatment.

1.0   SCOPE

The objective of this standard is to provide an initial set of requirements for preferential telecommunications within IPCablecom networks. Aspects of preferential telecommunications include provisions for Authentication and Priority (Special Handling). These requirements do not apply to ordinary emergency calls such as people calling police, fire department, ambulance, etc. This standard defines requirements for capabilities which when implemented should help support emergency telecommunication services. Note: Pre-emption requirements and authorization requirements are outside the scope of this standard and are considered to be national matters.

2.0   DEFINITIONS AND ACRONYMS

Assured capabilities - Capabilities providing high confidence or certainty that critical telecommunications are available and perform reliably.

Authentication -The act or method used to verify a claimed identity.

Authorization - The act of determining if a particular privilege, such as access to telecommunications resources, can be granted to the presenter of a particular credential.

CM – Cable Modem

CMS - Call Management Server

Emergency situation - A situation, of serious nature, that develops suddenly and unexpectedly. Extensive immediate important efforts, facilitated by telecommunications, may be required to restore a state of normality to avoid further risk to people or property. If this situation escalates, it may become a crisis and/or disaster.

International emergency situation - An emergency situation, across international boundaries, that affects more than one country.

Label - An identifier occurring within or attached to data elements. In the context of preferential telecommunications it is an indication of priority. This identifier can be used as a mapping mechanism between different network priority levels.

MTA   -Media Terminal Adapter

Off-Net - Not on an IPCablecom Network.

On-Net - On an IPCablecom Network.

PIN – Personal Identification Number

Policy - Rules (or methods) for allocating telecommunications network resources among types of traffic that may be differentiated by labels.

Preferential - A capability offering advantage over regular capabilities.

Priority treatment capabilities - Capabilities that provide premium access to, and/or use of telecommunications network resources.

PSTN – Public Switched Telephone Network

3.0 INFORMATIVE REFERENCES

Y.1271 "Framework(s) on Network Requirements and Capabilities to Support Emergency Communications Over Evolving Circuit Switched and Packet Switched Networks" (10/2004).

E.106 "International Emergency Preference Scheme for Disaster Relief Operations (IEPS)" (10/2003).

4.0 ARCHITECTURAL CASES FOR PREFERENTIAL TELECOMMUNICATIONS OVER IPCABLECOM NETWORKS

These architectural cases are defined in order to provide the different cases that need to be specified.

4.1 IPCablecom to/from PSTN

This case includes calls made from the PSTN (Off-Net) to the IPCablecom Network (On-Net) as well as calls made On-Net to Off-Net.

4.2 On-Net to On-Net

These three cases include calls made from a user on an IPCablecom Network to a user on the same (or another) IPCablecom network.

4.2.1 Intra-zone

Intra-zone defines calls that remain within the technical control of a single CMS.

4.2.2 Inter-zone, Intra-domain

Inter-zone, intra-domain defines calls that remain within the domain of a single Kerberos Realm, but travel beyond the technical control of one CMS.

4.2.3 Inter-domain

The inter-domain case is not within the current scope of this Specification.

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