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SERIES X: DATA NETWORKS, OPEN SYSTEM
COMMUNICATIONS AND SECURITY

Cyberspace security – Countering spam

Short message service (SMS) spam filtering system based on user-specified rules

Recommendation ITU-T X.1242



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PUBLIC DATA NETWORKS	X.1–X.199
OPEN SYSTEMS INTERCONNECTION	X.200–X.299
INTERWORKING BETWEEN NETWORKS	X.300–X.399
MESSAGE HANDLING SYSTEMS	X.400–X.499
DIRECTORY	X.500–X.599
OSI NETWORKING AND SYSTEM ASPECTS	X.600–X.699
OSI MANAGEMENT	X.700–X.799
SECURITY	X.800–X.849
OSI APPLICATIONS	X.850–X.899
OPEN DISTRIBUTED PROCESSING	X.900–X.999
INFORMATION AND NETWORK SECURITY	
General security aspects	X.1000–X.1029
Network security	X.1030–X.1049
Security management	X.1050–X.1069
Telebiometrics	X.1080–X.1099
SECURE APPLICATIONS AND SERVICES	
Multicast security	X.1100–X.1109
Home network security	X.1110–X.1119
Mobile security	X.1120–X.1139
Web security	X.1140–X.1149
Security protocols	X.1150–X.1159
Peer-to-peer security	X.1160–X.1169
Networked ID security	X.1170–X.1179
IPTV security	X.1180–X.1199
CYBERSPACE SECURITY	
Cybersecurity	X.1200–X.1229
Countering spam	X.1230–X.1249
Identity management	X.1250–X.1279
SECURE APPLICATIONS AND SERVICES	
Emergency communications	X.1300–X.1309
Ubiquitous sensor network security	X.1310–X.1339

For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T X.1242

Short message service (SMS) spam filtering system based on user-specified rules

Summary

Recommendation ITU-T X.1242 describes the realization of the SMS spam filtering system based on user-specified rules. It defines the structure of SMS spam filtering system, SMS spam filtering functions, users' service management, communication protocols and basic functional requirements of terminals with SMS functions.

Source

Recommendation ITU-T X.1242 was approved on 20 February 2009 by ITU-T Study Group 17 (2009-2012) under the WTSA Resolution 1 procedure.

Keywords

Filtering system, SMS, SMS spam, SMS spam filtering system based on user-specified rules.

FOREWORD

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The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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CONTENTS

Page

1	Scope	1
2	References.....	1
3	Definitions	1
3.1	Terms defined elsewhere	1
3.2	Terms defined in this Recommendation.....	2
4	Abbreviations and acronyms	2
5	Conventions	3
6	System description.....	3
7	System structure	3
7.1	General structure	3
7.2	Module requirements.....	4
7.3	Device requirements.....	6
8	SMS spam filtering function.....	6
8.1	SMS working modes	6
8.2	Realization of SMS spam filtering	7
9	User's service management.....	9
9.1	Management methods.....	9
9.2	Management capability	11
10	Communication protocols.....	12
10.1	Structure of communication protocols	12
10.2	Authentication protocol	13
10.3	ISMG protocol.....	13
	Appendix I – Requirements of terminal software supporting the SMS spam filtering.....	14
I.1	General aspects.....	14
I.2	Basic software for SMS spam filtering	14
I.3	Enhanced software for SMS spam filtering.....	15
	Bibliography.....	16

Introduction

With the increasing popularization of mobile services, SMS has become one of the most profitable value-added services due to low price, excellent flexibility and easy usage. However, at the same time, SMS spam is growing rapidly and is bringing the following serious influences:

- reducing users' satisfaction about SMS
- wasting network resources
- increasing social instability
- bringing other negative influences.

Therefore, it is very important to find an effective and efficient solution to counter SMS spam while maintaining the operational efficiency of SMS. However, the following principles should be taken into account:

- minimize changes to the user SMS interface
- improve the users' confidence in the SMS
- be easy to implement and deploy
- minimize changes to the existing network system

Based on the above principles, the SMS spam filtering system based on user-specified rules is an effective and efficient way to counter SMS spam. It means to establish a SMS spam filtering system, in which users can manage SMS filtering rules and entrust the system that belongs to the service provider or the network operator to block the correlative short messages.

The system has the following merits:

- protect the users' privacy through user-specified rules
- meet the users' requirements on countering SMS spam
- implement easily without changing the existing network systems
- run as a value-added service which can bring profits for service providers

This Recommendation is suitable for the design, deployment and evaluation of SMS spam filtering system based on user-specified rules in mobile networks and fixed networks.

Recommendation ITU-T X.1242

Short message service (SMS) spam filtering system based on user-specified rules

1 Scope

This Recommendation describes the realization of the SMS spam filtering system based on user-specified rules (hereafter referred to as the SMS spam filtering system or the filtering system). It defines:

- the structure of the filtering system
- the SMS spam filtering functions
- users' service management
- communication protocols
- functional requirements of the terminal

This Recommendation is suitable for the design, deployment and evaluation of SMS spam filtering system based on user-specified rules in mobile networks and fixed networks.

NOTE – Some filtering mechanisms described in this Recommendation may affect the privacy of telecommunication traffic. Therefore, implementations of SMS spam filtering systems have to take care to be in alignment with the applicable legislations. This Recommendation or parts of it may not be applicable in Germany due to German legislation.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference 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.

[ETSI TR 101 632] ETSI TR 101 632 V7.0.0 (2000-06), *Digital cellular telecommunications system (Phase 2+) (GSM); Interface protocols for the connection of Short Message Service Centres (SMSCs) to Short Message Entities (SMEs) (GSM 03.39 version 7.0.0 Release 1998).*

<<http://pda.etsi.org/exchangefolder/tr-101632v070000p.pdf>>

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 mobile station (MS): Entity capable of accessing a set of UMTS services via one or more radio interfaces. This entity may be stationary or in motion within the UMTS service area while accessing the UMTS services, and may simultaneously serve one or more users. [b-ETSI TR 125 990].

3.1.2 short message: Information that is conveyed from a sending user to a receiving user via an SMSC. [b-ETSI TS 102 507].

3.1.3 short message entity (SME): The SME is an entity that composes and decomposes short messages. A SME may or may not be located within, and be indistinguishable from, an HLR, MC, VLR, MS, or MSC. [b-ITU-T Q.1742.3].

3.1.4 short message service centre (SMSC): Function unit, which is responsible for the relaying and store-and-forwarding of a short message (SM) between two SM-TEs or SME and an MS. The SMSC can functionally be separated from or integrated in the network. [b-ETSI ES 201 986].

3.1.5 SMS-DELIVER: Short message transfer protocol data unit containing user data (the short message), being sent from an SC to an MS. [b-ETSI TS 100 901].

3.1.6 SMS-STATUS-REPORT: Short message transfer protocol data unit informing the receiving MS of the status of a mobile originated short message previously submitted by the MS, i.e., whether the SC was able to forward the message or not, or whether the message was stored in the SC for later delivery. [b-ETSI TS 100 901].

3.1.7 SMS-SUBMIT: Short message transfer protocol data unit containing user data (the short message), being sent from an MS to an SC. [b-ETSI TS 100 901].

3.1.8 status report: SC informing the originating MS of the outcome of a short message submitted to an SME. [b-ETSI TS 100 901].

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 Internet short message gateway (ISMG): The entity between the SP and SMSC, implementing the transportation of short messages from the SP to the SMSC and from the SMSC to the SP, while implementing protocol conversion of interactive information between the SP and the SMSC.

3.2.2 short message service (SMS): The services in telecommunication networks, which provide mobile phones, telephones and other SMEs to transfer and receive text messages through SMSCs that store messages if the receiving terminal cannot be contacted.

3.2.3 spam: The electronic information delivered from senders to recipients by terminals such as computers, mobile phones, telephones, etc., which is usually unsolicited, unwanted, and harmful for recipients.

3.2.4 SMS spam: Spam sent via SMS.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

FMD	Filtered Messages Database
ISMG	Internet Short Message Gateway
MS	Mobile Station
SC	Service Centre
SCM	Service Control Module
SM MO	Short Message Mobile Originated Point-to-Point
SM MT	Short Message Mobile Terminated Point-to-Point
SME	Short Message Entity
SMPP	Short Message Point-to-Point
SMS	Short Message Service